

# CULTURAL LOSS AND CLIMATE CHANGE – A NEW FIELD OF RESEARCH

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*This paper introduces the field of study of the relationship of culture loss to climate change, its key rubrics, and the Singapore based "Cultural Loss and Climate Change Project". This is an interdisciplinary research project under the auspices of Nanyang Technology University and the National Research Centre for Contemporary Art.*

*Cet article présente les lignes directrices du projet de recherches interdisciplinaire initié par Nanyang Technology University et du National Research Centre for Contemporary à Singapour ("Cultural Loss and Climate Change Project") sur les conséquences du changement climatique sur les biens culturels.*

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## **I INTRODUCTION**

As extreme weather events such as supercharged cyclones and mega floods are intensifying and inundating large swathes of the planet, the call for reparations from those who have least contributed to the climate emergency are growing louder. At Cop27 which is currently underway in Egypt, voices from the global south are raising the issue of climate loss and damage – loss and damage from the adverse impacts of climate change often those which cannot be addressed by adaptation or are irreversible – where the poorest nations are bearing the brunt while contributing the least to global heating. Communities are already experiencing loss of land and livelihoods, knowledge and traditions, and inevitably of cultural heritage

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About the effect of Climate change and the notion of "loss and damages" on culture, Prof Lindsay Stringer said:<sup>1</sup>

A lot of cultural things aren't written down. We see this a lot with local traditional knowledge and Indigenous knowledge. For example, a lot of African Indigenous knowledge is passed down through storytelling, dance and song. So often we don't know what we're losing.

The definition of Culture is complex and has been debated among heritage specialists and anthropologists for decades. For the American anthropologist Clifford Geertz for instance, culture is supposed to be a set meaning organized in multiple systems specific to each group. Symbolics by nature, meaning systems provide values and subsequent prescriptions and proscriptions that have to be respected. Human beings and cultural meanings are intertwined and codependent, and this co-dependance gives a stable but dynamic frame for the socialisation and the social acceptance (or marginalization) of individuals. From these meaning systems emerges material and immaterial heritage. In the *Merriam-Webster Dictionary* there are 10 different meanings presented, including the following traditional definitions: "the customary beliefs, social forms, and material traits of a racial, religious, or social group and also the characteristic features of everyday existence (such as diversions or a way of life) shared by people in a place or time". Thus, culture can be described as a complex and multifaceted aspect of social existence. The United Nations Educational, Scientific and Cultural Organization (UNESCO) defines culture as "the set of distinctive spiritual, material, intellectual and emotional features of society or a social group, that encompasses, not only art and literature, but lifestyles, ways of living together, value systems, traditions, and beliefs".<sup>2</sup> However, there are more narrow definitions of culture, as something that comprises arts, education, science and any social and intellectual inter-exchange, or basically artistic culture. Anyway,<sup>3</sup> "it is very difficult to conceive of culture in a static way. Because the type and quantity of interactions transform, individuals come into contact with new people and thus new ideas. Culture is a process of how shared meanings are created, maintained, and changed."

Climate change is a more easily quantifiable phenomenon than culture – although there is always a gap between real and perceived changes – but remains a complex

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1 «Loss and damage: What happens when climate change destroys lives and cultures?» Carbon Brief, 28.09.2022, website: <https://www.carbonbrief.org/loss-and-damage-what-happens-when-climate-change-destroys-lives-and-cultures/>.

2 UNESCO (2001). UNESCO Universal Declaration on Cultural Diversity. Paris: UNESCO.

3 Hana Shepherd "Culture and Cognition: A Process Account of Culture" (2014) 29 Sociological Forum 1007-1011.

topic. The United Nations defines climate change as a long-term change in temperature and weather patterns. These changes could be natural, such as variations in the solar cycle. For the IPCC, climate change is a change in the state of the climate that can be scientifically detected by changes in the mean and/or variability of its properties which persists over an extended period, typically decades or more. It may be due to natural internal processes or external forces or persistent anthropogenic changes in atmospheric composition or land use. The United Nations Framework Convention on Climate Change, in art 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 Convention thus distinguishes between climate change due to human activities that alter the composition of the atmosphere and climate variability due to natural causes.<sup>4</sup> However, since the preindustrial period (1850-1900), human activities have been the primary cause of climate change, due primarily to the use of fossil fuels such as coal, oil, and gas. The combustion of fossil fuels produces greenhouse gas emissions, which act like a wrap around the Earth, trapping heat from the sun, and consequently raising temperatures.<sup>5</sup>

Linking culture and climate change is especially difficult (and also with nature) because of the breadth of the definition of the notion of culture. More importantly, for UNESCO:<sup>6</sup>

Culture not only suffers greatly from the effects of climate change, which include the loss of cultural heritage, the disruption of artists' livelihoods, and the potential destruction of traditional ways of life, but culture can also teach us invaluable lessons about how to combat and adapt to the effects of climate change.

Culture is then endangered by climate change but can also provide an opportunity to adapt to it; its fact renders its disappearance even more disastrous. But if we consider social sciences' acceptance of the definition of culture, not only heritage but social relationships are also endangered; this makes social adaptation longer and more difficult that structural adaptation.

Despite these difficulties, how can we assess this phenomenon?

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4 [https://www.ipcc.ch/site/assets/uploads/sites/2/2019/10/SR15\\_Glossary\\_french.pdf](https://www.ipcc.ch/site/assets/uploads/sites/2/2019/10/SR15_Glossary_french.pdf).

5 Climate action, United Nations, website: <https://www.un.org/en/climatechange/what-is-climate-change>.

6 Cutting Edge | Culture: the ultimate renewable resource to tackle climate change, UNESCO, website: <https://www.unesco.org/en/articles/cutting-edge-culture-ultimate-renewable-resource-tackle-climate-change>.

Referring simply to the law to answer this question seems insufficient and even impossible although law is a tool to which we turn to address the contemporary challenges of climate loss and damage and, by extension, climate justice. This is why a transdisciplinary research project under the Nanyang Technological University<sup>7</sup> (NTU – Singapore), especially through the National Research Centre for Contemporary Art<sup>8</sup> (NTU – CCA) was created in 2021 ("Cultural loss and climate change" project or 3CL - MOE AHRC Tier 2 grant by Singapore's Ministry of Education). This project examines how climate crisis and cultural loss interconnect; it deploys a research team with transdisciplinary methods to build on emerging environmental jurisprudence in the Pacific region and to produce narrative visualisations demonstrate to the links between cultural loss and climate change.

Assuming that this research project will find a perfect answer to the topic of cultural change and climate change may be hasty, but it nevertheless represents a new way of tackling this issue with a new methodology (Part II) for a cultural loss and climate change assessment (Part III).

## ***II THE 3CL PROJECT, AN INNOVATIVE ANSWER TO THE ISSUES OF DEFINING CULTURAL LOSS AND CLIMATE CHANGE***

The objectives of the 3CL project are substantial but are rooted in preexisting work in law, anthropology, architecture, and arts.

### ***A The Aims of the 3CL Project***

By combining scholarly knowledge with artistic and curatorial practices, the project's goal is to develop an innovative framework for addressing the impact of accelerated climate change. Using tools from visual and spatial studies, from ethnography and law to film and GIS, to make scientific evidence on climate change socially robust and impactful, it will also create an interchange between local perspectives and knowledge generated in different academic fields.

The core objective is the co-production of knowledge that can lead to a changed understanding of environmental justice,<sup>9</sup> which, in turn, will suggest changes to existing legal and policy frameworks. The project hypothesises that a fundamental connection between people and their environments has been lost in contemporary

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7 Website: <https://www.ntu.edu.sg/>.

8 Website: <https://ntu.ccasingapore.org/>.

9 Geoffrey R Browne, Lucy Dubrelle Gunn, and Melanie Davern "A Framework for Developing Environmental Justice Indicators" 2022 Standards 2, no 1: 90-105 <https://doi.org/10.3390/standards2010008>.

urban contexts, resulting in feelings of alienation and indifference towards the climate crisis or unexplained feelings of climate anxiety.

Data visualisation and audiovisual presentations of ecological and cultural loss will be instrumental to transform ecological grief and loss into catalysts for climate action. Such narrative visualizations highlight the necessity to re-establish a direct relation between human societies and the environment, especially in the rapidly changing urban fabric of a metropolis like Singapore. Without such combined knowledge, and dialogue between those at the frontiers of the climate crisis and those in protected urban environments, there is the risk that the gravity and urgency of climate change and cultural loss will not be fully comprehended.

This project is situated in Singapore and engages with specific locations across the Pacific: Fiji, French Polynesia, and Vanuatu. It seeks to create a trans-local method of inquiry that captures the complexity of climate change impact more accurately by stressing the entwinement of climate crisis and cultural loss. The overarching goal of this project is to substantiate the correlation between climate crisis and cultural loss by bringing together state of the art knowledge in various areas that exists in parallel with each other through a multidisciplinary approach. Utilising a combination of ethnographic, cultural, legal, visual and spatial methods to examine and create diverse sets of data to broaden existing knowledge on climate change, the project explores a new strategy to respond holistically to the complexity of the climate crisis. The project is hence pursuing two broad and three specific aims.

Broadly, it seeks to investigate how ecological factors influence human behaviour and to critically examine emerging environmental jurisprudence across the Pacific, in particular customary laws and policy frameworks for the protection of cultural, human, and environmental rights. Specifically, one of the aims is to provide necessary evidence to demand adjustments of existing national and international legal frameworks of impact to the environment, utilise tools from visual culture and research-based artistic and curatorial practice to demonstrate a deeper spatial relation between culture and the environment, and present the project's research findings as transferable knowledge to other geo-cultural contexts, to increase acceptance of necessary civic climate action in urban contexts.

This project, by identifying gaps in different scientific approaches, makes a novel contribution by joining up bodies and knowledge that were previously separate from each other. Combining the methods used by each discipline, creates an effective research toolkit. The other key element of this project lies in bringing together academic research studying climate change and cultural loss with peoples of the Pacific and their valuable empirical knowledge of climate change, customary law,

and cultural loss. The application of such pluralistic expertise, corroborated by first-hand accounts, will ensure a socially robust project outcome.

The 3CL research project is not limited to indigenous or small island territories' issues and is expanded to all type of environments.

### ***B Cultural Loss and Climate Change, a Topic Surveyed in Different Scientific Approaches***

The study of cultural loss and climate change has already been tackled using different approaches by lawyers, scientists, or artists.

Cultural heritage conservation as well as various legal concepts and international treaties broadly recognise a direct link between nature, culture, and rights. Crucially, the 2003 Convention on the Safeguarding of Intangible Cultural Heritage<sup>10</sup> (ICH) pledged to protect customs, practices, skills, expressions, and intergenerational knowledge transmissions, in addition to objects, tools, artifacts, monuments and heritage sites such as national parks. Article 13 specifically pledged to "foster scientific, technical and artistic studies, as well as research methodologies, with a view to effective safeguarding of the intangible cultural heritage, in particular the intangible cultural heritage in danger."

Since 2003, UNESCO has utilised various media, instrumentally an interactive digital map, to provide a comprehensive picture of cultural practices worldwide that face potential risk of erasure. In 2007, the UN Human Rights Committee recognised the relationship between indigenous culture and their territories and that a right to protect their culture can encompass rights to the protection of their connection with land, sea, natural features, and resources.

It also recognized that "respect for indigenous knowledge, cultures and traditional practices contributes to sustainable and equitable development and proper management of the environment."<sup>11</sup> An important reference for the proposed project Climate Crisis and Cultural Loss is the recognition and consideration of Māori cosmology and relations to the natural world in establishing legal personality and protection for the Whanganui River and Te Urewera under New Zealand law. Not only has this landmark legislation resulted in better environmental protection but it is an example of cultural and thus legal pluralism, it also makes a case for the protection of nature, in this case for the Whanganui river itself, as well as for the

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10 Saúl Lázaro Ortiz and Celeste Jiménez de Madariaga "The UNESCO convention for the safeguarding of the intangible cultural heritage: a critical analysis" (2022) 28(3) International Journal of Cultural Policy, 327-341, DOI: 10.1080/10286632.2021.1941914.

11 UN Declaration on the Rights of Indigenous Peoples, adopted by the United Nations General Assembly in 2007.

people of the river. The successful case of the Waitangi Tribunal on the Whanganui River is an example of how an expanded legal framework that includes indigenous or customary law can influence a shift in the understanding of climate change as a form of land alienation, and therefore, as a geo-cultural and socio-political issue as well.

Scientist and legal anthropology scholar, Tamatoa Bambridge, explains in his book *The Rāhui: Legal Pluralism in Polynesian traditional management of resources and territories*<sup>12</sup> that traditional societal frameworks such as the rāhui demonstrate that a "resource," such as the sea, is not understood in terms of rights of property, but as the rights of use in which an entire community partakes. Such anthropological insights are also provided in the works of Ashlee Cunsolo and Karen E Landman (see for instance the book *Mourning Nature: Hope at the Heart of Ecological Grief and Loss*<sup>13</sup>), that masterfully shows the different ways in which societies can (or cannot) deal properly with the loss of the ecosystems in which they are evolving. Inscribed within contemporary sustainability sciences,<sup>14</sup> these works demonstrate the magnitude of the loss of existing links between human beings and the elements of nature, and how such ecological loss can generate deep psychological damage for humankind today. The concept of "ecological mourning", which is relatively recent,<sup>15</sup> has been examined in a number of indigenous communities, in particular among the Inuit across Canada, Alaska and Greenland, and the Aborigines of Australia. It is based on studies of the negative feelings of sadness and sorrow induced by the disappearances of nature and landscape changes brought by climate change.

Understanding that human existence is intrinsically linked to the continued survival of the environment is internalised or even embodied, will help to remove the opposition towards necessary behavioural changes. Furthermore, this would trigger a drive for human self-protection. The works of filmmaker-artist Lynette Wallworth<sup>16</sup> presents a compelling example of narrative visualisations of cultural

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12 Tamatoa Bambridge *The Rāhui: Legal pluralism in Polynesian traditional management of resources and territories* (Anu Press, 2016, 9781925022919 (online); 9781925022797 (Print version) fhal-01298590).

13 Ashlee Cunsolo and Karen Landman (eds) *Mourning Nature: Hope at the Heart of Ecological Grief and Loss* (McGill-Queen's University Press, Montreal, Canada, 2017) 332.

14 Jianguo Wu, Xiao-Chuan Guo, Jie Yang, Gui-Xia Qian, Jianming Niu, Cun-Zhu Liang, Qing Zhang and Ang Li "What is sustainability science?" (2014) 25 *The journal of applied ecology* 1-11.

15 T Jensen "Guilty Grief and Ecological Mourning" *Ecologies of Guilt in Environmental Rhetorics*, Palgrave Studies in Media and Environmental Communication, 2019.

16 Website: <https://lynetthewallworth.com/>.

loss experienced by indigenous Aboriginal communities whose cultural practices are tied to natural environments. Her film *Collisions* used cutting-edge virtual technology to recount Martu tribe indigenous elder Nyarri Morgan's journey to the land in the remote Western Australian desert; it offers an immersive experience of the impact of destructive technology through Nyarri's eyes and the Martu perspective on caring for the planet for future generations. In the field of exhibitions, *Moana Don't Cry*<sup>17</sup> curated by Argentinian Gabriela Salgado demonstrates the unique ability of the curatorial method to engage difficult and complex realities relating to climate change, induced cultural loss and the resultant climate anxiety. As stated by Salgado:<sup>18</sup>

Faced with past and present threats to ocean life, the exhibition addresses the need to protect life as kaitiaki (guardians) with a duty of care for the planet entrusted to us. An ontological turn connected to indigenous spirituality and ways of doing becomes paramount, to counter narratives of loss articulated by the colonial logic of dispossession.

Over the past decades the practice of curating as a method of inquiry and research has been studied and critically reflected upon. Curator and art historian Patrick D. Flores<sup>19</sup> noted in his seminal text *Past Peripheral: Curation in Southeast Asia* that the curatorial action is fundamentally about context-making, not just about exhibition-making but about assembling and intervening into networks, discourses, and an array of spaces of which the exhibition is but one possibility. According to curator and writer Maria Lind, "The curatorial is conceived as a strategy for the production of meaning, a mode of thinking and working that traverses the complex field of cultural production and articulates itself in different formats and temporalities."<sup>20</sup>

The 3CL project is also based on different approaches. Filmmaking, photography, and curatorial methods like the one used in "The Current"<sup>21</sup> or "The Oceanic"<sup>22</sup> which connected the inquiries of twelve cultural producers and researchers who, in groups of five, joined on three 14-day field trips on a motor vessel to engage with remote island regions in the Pacific. Spatial analysis is also an important part of the

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17 Website: <https://www.contemporaryartlibrary.org/project/moana-don-t-cry-at-te-tuhi-auckland-18101>.

18 Website: <https://artfacts.net/exhibition/moana-don%27t-cry/884864>.

19 Website: <https://curatorsintl.org/about/collaborators/5506-patrick-d-flores>.

20 Maria Lind, *Situating the Curatorial*, *E Flux Journal* #116 – March 2021.

21 Website: [https://www.tba21.org/#item--the\\_current--1157](https://www.tba21.org/#item--the_current--1157).

22 Website: <https://ntu.ccasingapore.org/exhibition/the-oceanic/>.

project. It includes the process of detecting and reporting on environmental deterioration through the method of "forensic architecture".<sup>23</sup> Anthropology is also a basis for the 3CL project and highlights the issues related to the consequences of global warming on the preservation of biodiversity and livelihoods of human societies living in small island countries. At last, the legal field is not forgotten in the search for better legal definition and solutions for cultural loss linked to climate change.

Though the 3CL research project aims to expand on the cultural loss and climate change topic, it does not preclude discussions of preliminary elements regarding these notions.

### ***III A PRELIMINARY CULTURAL LOSS AND CLIMATE CHANGE ASSESSMENT***

The notion of culture needs to be presented in connection with other related notions, which are also sometimes difficult to define. Regarding the links between culture and climate change, UNESCO addresses the topic as particularly interesting.

#### ***A Culture, Cultural Heritage, and Cultural Loss***

UNESCO is the main international organisation concerned with the protection of culture. It was created in London in 1945 at the Conference of 44 States. The Charter of the Organization was signed at the Conference and came into force on 4 November 1946. Only 28 States were members of UNESCO at that time; now there are 193 member States and 11 associate members. In accordance with the United Nations Charter, the aim of the Organization is to render assistance in the cause of peace by the means of education, science and culture, the co-operation of nations for securing a common respect for justice, legality, basic rights, and freedom of the person.

The Convention for the Protection of the World Cultural and Natural Heritage and the Recommendation Concerning the Protection of the Cultural and Natural Heritage in the National Plan were both adopted at the XVIIth Session of the General Conference (Paris, 16 November 1972). The Recommendation, as indicated by its title, is a set of recommendations for member states of UNESCO that are intended to improve the protection of cultural property. It is important to emphasize that this recommendation cannot be seen as interfering with a state's internal affairs because each state decides whether to implement these measures based on its own sovereignty.

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23 Nabil Ahmed "Earthly poison: Arsenic in the Bengal delta" in Ines Weizman (éd) *Architecture and the Paradox of Dissidence*, Routledge, Chapter 14, 2014, p. 194-205.

The cultural protection issue was included into different war regulations. For example, according to Article 27 of the Hague Convention on 18 October 1907 and its Annexed Regulations on the Laws and Customs of Land Warfare:<sup>24</sup>

In sieges and bombardments all necessary steps must be taken to spare, as far as possible, buildings dedicated to religion, art, science, or charitable purposes, historic monuments, hospitals, and places where the sick and wounded are collected, provided they are not being used at the time for military purposes. It is the duty of the besieged to indicate the presence of such buildings or places by distinctive and visible signs which shall be notified to the enemy beforehand.

For some authors, the loss of culture, especially caused by human conflicts, has no justification, and should be punished.<sup>25</sup>

The items and customs that represent a society's way of life and way of thinking, as well as its intellectual and spiritual achievements, make up its cultural heritage. They stand in for a specific worldview and bear witness to its development and veracity. Although cultural experts from a variety of fields have a reasonably clear understanding of the subject-matter of their research, one of the most challenging issues facing academics today is the legal definition of cultural heritage. National laws employ a range of techniques, while UNESCO recommendations and conventions use definitions targeted to the specific objectives of the relevant instruments.<sup>26</sup>

For some authors<sup>27</sup> cultural heritage may be embodied in material things such as monuments and sites. In addition to these important immovables there is the significant category of movable objects. Later another aspect of the cultural heritage was developed – the ideas on which new skills, techniques and knowledge are built, sometimes linked with the legal system of "intellectual property". A fourth significant element of cultural heritage comprises intangibles such as patterns of behaviour and knowledge embodied in skills, ceremonies, rituals, and ceremonies where traditions may be handed on in song, dance or spoken words. Oral history embedded in myths, sagas, songs, or poetry falls into this category but many other practices can be included. Music, particular style of presentation and dance are also

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24 Convention No IV of 1907, p 317.

25 Liudmila Galenskaya "International Co-operation in Cultural Affairs (Volume 198)" in *Collected Courses of the Hague Academy of International Law*, 1986.

26 L V Prott and P J O'Keefe in *Law and the Cultural Heritage, Movement* (Butterworths, London 1989) Vol III 26-36.

27 Lyndel Prott "Problems of Private International Law for the Protection of the Cultural Heritage" in *Collected Courses of the Hague Academy of International Law*, 1989, Vol 217.

included. A fifth significant element in relation to all the others is information. A cultural object whose contextual information has been lost is less valuable to the further development of culture than it would otherwise be.

UNESCO follows this larger scope and emphasises that cultural heritage is not limited to monuments and collections of objects – it also consists of living expressions inherited from ancestors, such as oral traditions, performing arts, social manners, rituals, festive events, knowledge, and practices related to nature and the universe, and knowledge and techniques linked to traditional crafts. Despite its fragility, intangible cultural heritage or living heritage is an important factor in maintaining cultural diversity. This aspect is embodied in the UNESCO Convention of 17 October 2003 for the Safeguarding of the Intangible Cultural Heritage.

The distinction between culture and cultural heritage is not clear.<sup>28</sup> For some, the difference between the two notions is linked to the political considerations involved in deciding what should be maintained for future generations<sup>29</sup>.

Cultural loss may be preliminarily and broadly defined as an aggression on culture or more precisely on cultural heritage. The UNESCO's document "Operational principles and modalities for safeguarding intangible cultural heritage in emergencies" was initiated in May 2019 in Paris. These principles were endorsed by the Intergovernmental Committee at its fourteenth session in Bogota, Colombia, December 2019 (Decision 14.COM 13) and adopted by the General Assembly at its eighth session in September 2020 (Resolution 8.GA 9). The first principle states:

Intangible cultural heritage exists only in its enactment by the communities who practice and transmit it, and is inseparable from their social, cultural, and economic life. Its safeguarding is therefore indivisible from the protection of the lives and well-being of its bearers.

The word "protection" covers at least three different situations: a State may be seeking to protect the rights of an owner of the object;<sup>30</sup> it may be protecting the physical continuance of the object; or it may be protecting access to the object, acting as the custodian of the cultural heritage for the community. Anyhow, the protection of "cultural heritage" is bound to the national jurisdiction of States and may differ greatly in the world.

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28 J Blake "On defining the Cultural Heritage" (2000) 49 ICLQ, 61 at 68.

29 J Blake, above n 28, at 69.

30 Eg JH Merryman "The Retention of Cultural Property" (1988) University of California Davis Law Review 477, esp 489, 508.

On 30 September 2016, the UN Human Rights Council adopted Resolution A/HRC/33/L.21 on cultural rights and the protection of cultural heritage. The resolution notes the detrimental impact that the loss of cultural heritage has for the enjoyment of cultural rights and calls for action. Talking in specifically about tangible heritage, Roger O'Keefe noted:<sup>31</sup>

The framing of the conservation of tangible cultural heritage as a human right reminds us that we seek to preserve and protect such heritage not for its own sake but as an indispensable element of human flourishing.

Unfortunately, in too many parts of the world, cultural heritage is under threat. For example, indigenous art is widely misappropriated, and indigenous traditional knowledge is ignored or used without the consent of the indigenous groups.<sup>32</sup>

### ***B Links Between Culture and Climate Change***

Being at the confluence of many different topics including culture, climate change is complicated. Culture not only suffers greatly from the effects of climate change, which include the loss of cultural heritage and the potential destruction of traditional ways of life, but culture can also teach invaluable lessons about how to combat and adapt to the effects of climate change within the two main pillars of global climate policy: mitigation which aims to lessen or prevent the effects of climate change, and adaptation which aims to deal with its inevitable consequences.

In attempts to lessen its effects and adapt the wake of climate change, culture is a vast untapped resource. For UNESCO, cities are at the vanguard of innovation and creativity in the shift to more responsible production and consumption habits, and they may contribute vernacular wisdom to promote the sustainable use of natural resources. More than 75% of the world's greenhouse gas emissions come from cities. The UNESCO Cities Platform (UCP) brings together the Organization's eight city-centered or related networks and programmes: the UNESCO Creative Cities Network (UCCN), UNESCO Global Network of Learning Cities (GNLC), International Coalition of Inclusive and Sustainable Cities (ICCAR), World Heritage Cities Programme, Media and Information Literacy Cities (MIL), Megacities Alliance for Water and Climate, Disaster Risk Reduction Programme (DRR) and UNESCO/Netexplo Observatory. The solution 3 of the UCP is about culture:

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31 R O'Keefe "Tangible cultural heritage and international human rights law" in LV Prott, R Redmint-Cooper and S Urice (eds) *Realising Cultural Heritage Law, Festschrift for Patrick O'Keefe* (Institute of Art and Law, 2013), 87 at 95.

32 Alexandra Xanthaki "International Instruments on Cultural Heritage: Tales of Fragmentation", in A Xanthaki (and al) (eds) *Indigenous Peoples' Cultural Heritage: Rights, Debates and Challenges* (Brill Nijhof, 2017) 1-19.

Culture and creativity contribute in a myriad of ways to climate resilience and transition. As proof, not only can the mobilization of citizens for climate action be better achieved through culture and creativity, but also the acknowledgement of climate awareness and action themselves as culture, is among the most powerful means of passing on them from generation to generation. So as to amplify culture and creativity impact on climate resilience, culture enabled, and innovative local policies and strategies must be put in place to address climate change. The global export of cultural and recreational services in 2019 accounted for USD 67.13 billion, revealing as example the magnitude of the collective impact we could make if everyone starts opting for climate-friendly cultural products, services and amenities that integrate climate resilience into their portfolio in both form and content. This could range from the purchase of cultural goods made from sustainable materials, to consciously choosing to visit museums powered by renewable energy, among many others.

The effects of climate change are already being felt around the world and culture provides ways to adapt to this new reality. Living heritage, in the form of local and indigenous knowledge, is a particularly vital source of resilience, through traditional food security strategies or water and land management techniques. For example, following Tropical Cyclone Pam that devastated the Pacific Island of Vanuatu in 2015, it was discovered that the traditional nakamal buildings built with modern materials and techniques suffered greater damage than nakamals built using local materials and traditional building skills. This traditional know-how can guide local planning to make communities more resilient. The Paris Agreement recognises that climate action must "be based on and guided by [...] traditional knowledge, knowledge of indigenous peoples and local knowledge systems".

Culture is the bridge between global ambitions and locally adapted solutions, at the regional, national and community level. At a national level, strengthening the synergies between culture and other policy areas will be essential for more comprehensive and effective policy action. Given the fundamentally ethical nature of the climate change issue, culture can enhance human-centered and environmentally sustainable models of society that respect the intrinsic linkages between cultural and biological diversity. Bringing culture into environmental policies, for example, can incorporate communities' practices to construct tailor-made solutions for climate mitigation and adaptation strategies. Climate change is reshaping the entire policy landscape. As such, culture can also propose solutions in

diverse policy areas related, for example, to urban planning, food security, poverty reduction, new modes of responsible consumption and production, and tourism.<sup>33</sup>

#### ***IV CONCLUSION***

Though the topic of cultural loss and climate change is not completely new, it is still difficult to precisely comprehend the extent of this phenomenon. The aim of the 3CL research project is mainly to address lack of distinctiveness with innovative and transversal scientific and artistic approaches. It may be hasty to conclude that it will answer all the questions regarding these issues, but it can serve as a bridge for a better understanding and consideration of the links between culture and climate change. In these times of global uncertainty, it is necessary to try to find common solutions for urban areas as well as for remote territories.

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33 Cutting Edge | Culture: the ultimate renewable resource to tackle climate change, UNESCO: <https://en.unesco.org/news/cutting-edge-culture-ultimate-renewable-resource-tackle-climate-change>.