NEWS RELEASE

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NTU Singapore-led project aims to help address the loss of cultures worldwide caused by climate change

A team of international researchers, led by **Nanyang Technological University, Singapore (NTU Singapore)**, has announced the initial findings of a project to address the loss of cultures by measuring the impact that climate change has on communities.

One finding from the joint project, titled **Climate Crisis and Cultural Loss**, or **3CL**, is the practice of recognising and including indigenous customs in a country's law, such as those of the Māori people of New Zealand.

The group of researchers, which features collaborators from the **Norwegian University of Science and Technology**, **Arizona State University**, Italy's **ISIA Urbino**, and the **University of French Polynesia,** noted that the legislation is not only effective in protecting the Māori culture, but it also protects the environment, particularly the Whanganui River and Te Urewera National Park.

Elsewhere in the Pacific, other fading local cultural practices, such as the *rāhui* in French Polynesia, which is a traditional conservation practice that involves banning access to a space, or prohibiting the taking of a natural resource, in order to promote regeneration for the benefit of an entire community, are being integrated into contemporary legal frameworks in response to challenges brought on by the climate crisis.

Supported by the Singapore Ministry of Education (MOE) Award Academic Research Fund, 3CL's initial findings, which also covers countries in Southeast Asia, were published recently in the scientific peer-reviewed *Comparative Law Journal of the Pacific* in March.

The study also aims to discuss how to safeguard communities worldwide against cultural loss from climate change, applying an approach that combines scientific, humanities, and legal studies with exhibition-making, data visualisation, film, and photography.

3CL lead researcher **Professor Ute Meta Bauer from NTU's School of Art, Design and Media**, and **Founding Director of the NTU Centre for Contemporary Art Singapore**, said: "The project marks an important milestone in the emerging field of artistic research as a means of knowledge production. The topic of cultural loss and climate change is not entirely new, but understanding its full extent remains challenging.

"The primary goal of 3CL is to tackle this lack of clarity using innovative and interdisciplinary scientific and artistic approaches. While it may not provide all the answers to these issues, it serves as a bridge to enhance our understanding and acknowledgment of the deeply interwoven connections between culture and climate change. In times of global uncertainty, it is crucial to seek common ground between the arts and the hard sciences that benefit both urban areas and remote territories."

3CL collaborator **Dr Hervé Raimana Lallement-Moe**, **Associate Researcher at the University of French Polynesia and the University of Lyon III**, explained: "Culture and traditional knowledge can offer valuable insights and solutions for addressing the interrelated concerns of climate change, such as food security, disaster risk management, sustainable development, and social cohesion. However, everywhere in the world — from the most developed states to local communities - many cultural practices, traditions, and knowledge systems are disappearing."

Culture and climate's uncanny connection

The team of researchers said that tackling climate change requires a multi-faceted approach as it sits at the confluence of many different topics including culture. The study is also highlighting the importance of living heritage, in the form of local and indigenous knowledge, as a particularly vital source of resilience, through traditional food security strategies or water and land management techniques.

One of the collaborators in the NTU-led project, **Dr Guigone Camus, anthropologist and Research Engineer (Science Data) at the CEA-DRF Saclay French National Centre for Scientific Research**, explained: "Traditional knowledge or indigenous knowledge and know-hows are now clearly acknowledged by institutions like United Nations Educational, Scientific and Cultural Organization (UNESCO), Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) and IPCC (Intergovernmental Panel on Climate Change) to be crucial in the face of climate change threats.

"Traditional architecture has proven to be more resilient in front of extreme events than what we usually call 'modern architecture.' For instance, very often, the fact that some constructions can quickly be unbuilt and rebuilt — as is the case for some houses in

Kiribati — makes them movable quickly, in case people need to settle further away from the rising sea."

3CL co-lead researcher, **Associate Professor Yun Sang-Ho, Director of the Remote Sensing Lab at NTU's Earth Observatory of Singapore (EOS)** and project collaborator **Professor Nabil Ahmed** from the **Norwegian University of Science and Technology** are collaborating as part of the joint project to study the lingering impacts of Cyclone Pam, in collaboration with Vanuatu-based non-profit Further Arts.

Their collaboration places, side-by-side, ground testimonies and cultural imprints left by the disaster, and satellite image maps of cyclone damage produced by Assoc Prof Yun. This novel composition of findings, levelling disparate but complementary layers of disaster response, will be presented as a mixed-media installation in a group exhibition to be held at the end of the three-year study, alongside other sub-inquiries of the project.

These include but are not limited to the creation of new ethnographic film works by award-winning filmmakers and artists Armin Linke and Lisa Rave, and local initiatives to record the oral histories of Singapore's resettled Southern Island descendants by Firdaus Sani, Founder of Orang Laut SG, a group that is dedicated to reclaiming indigenous narratives.

Artistic research and transdisciplinary knowledge production

The project also includes mapping carried out by researchers at **EOS**, using satellite Synthetic Aperture Radar (SAR) data and Geographic Information Systems (GIS) to visualise community-level impacts from coastal flooding or sea level rise.

Assoc Prof Yun, who is also from **NTU's Asian School of the Environment and the School of Electrical and Electronic Engineering**, said: "Bringing together current streams of knowledge that exist in parallel to each other creates diverse and insightful datasets to broaden existing knowledge on climate impacts, and explores a new strategy to respond with a holistic approach to the complexity of the climate crisis.

"This project uses a myriad of tools: from visual and spatial studies, from ethnography and law to film, GIS, and space technologies, to make scientific evidence on climate change socially robust and impactful. In time, this will also create an interchange between local perspectives and knowledge generated in different academic fields."

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Notes to Editor:
The research paper titled *"Cultural Loss and Climate Change – A New Field of Research" was* published in *Comparative Law Journal of the Pacific* in March 2023. DOI 10.21979/N9/IZMNOV

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About Nanyang Technological University, Singapore

A research-intensive public university, Nanyang Technological University, Singapore (NTU Singapore) has 33,000 undergraduate and postgraduate students in the Engineering, Business, Science, Medicine, Humanities, Arts, & Social Sciences, and Graduate colleges.

NTU is also home to world-renowned autonomous institutes – the National Institute of Education, S Rajaratnam School of International Studies, Earth Observatory of Singapore, and Singapore Centre for Environmental Life Sciences Engineering – and various leading research centres such as the Nanyang Environment & Water Research Institute (NEWRI) and Energy Research Institute @ NTU (ERI@N).

Under the NTU Smart Campus vision, the University harnesses the power of digital technology and tech-enabled solutions to support better learning and living experiences, the discovery of new knowledge, and the sustainability of resources.

Ranked amongst the world's top universities, the University's main campus is also frequently listed among the world's most beautiful. Known for its sustainability, over 95% of its building projects are certified Green Mark Platinum. Apart from its main campus, NTU also has a medical campus in Novena, Singapore's healthcare district.

For more information, visit www.ntu.edu.sg