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Climate Change Adaptation through the Cultural Approach with Creativity in Ambon City of Music, Maluku

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Abstract

Culture and creativity are vital resources for climate change mitigation and adaptation, as climate and culture are deeply interconnected and mutually reinforcing. While climate change threatens local traditions, knowledge systems, and cultural heritage, these same cultural assets—when preserved and empowered—can contribute significantly to environmental protection and the strengthening of climate resilience. Beyond safeguarding heritage, culture plays a transformative role in global climate action by shaping mindsets, attitudes, and behaviours, and by inspiring innovative, place-based solutions. In urban contexts, culture-driven policies and creative practices are increasingly recognised as essential for addressing climate-related risks. Place-based culture and creativity foster collective visions, enhance awareness, build local capacities, and support social integration, enabling cities to respond more effectively to climate challenges and advance sustainability transitions. These culture-based approaches are particularly relevant for city policymakers, cultural practitioners, and urban communities. The 2025 MONDIACULT Declaration underscores the urgency of integrating cultural heritage and creativity into international climate discourse, highlighting the role of traditional and indigenous knowledge and cultural innovation in climate action, especially in the face of extreme events. This paper examines Ambon City of Music as a case study, where the preservation of endemic plant species—essential for traditional musical instrument production—has led to the establishment of a "music forest." This initiative demonstrates how cultural ecosystems can support biodiversity conservation, disaster mitigation, and cultural resilience within fragile small-island environments.

Keywords: Music Forest, MONDIACULT 2025, Ambon City of Music

Introduction

Culture and creativity are key resources for reducing and adapting to climate change. Climate change and culture are interconnected and mutually reinforcing however, climate change can erode local traditions, knowledge systems, and cultural heritage. The core components of this culture, if preserved and empowered, can contribute to environmental protection and the building of climate resilience. In addition to addressing the impact of climate change on culture, it is essential to enhance the potential of culture for global climate action, through the protection of natural sites, the preservation of traditional knowledge, and support for cultural institutions and practitioners, but also through the power of culture in changing mindsets, attitudes, and behaviours towards the environment and the design of new and innovative solutions.

In urban contexts, local policies and strategies, driven by culture and innovation, are crucial for addressing the impact of climate change. Place-based culture and creativity have the power to create collective visions and behaviours that are responsive to climate-related risks, through increased awareness, capacity building, and social integration. This is how culture-based solutions to climate change can help cities adapt to current climate challenges and advance their transition towards sustainability, targeting city policymakers, professionals from the cultural sector, and urban residents in general.

According to UNEP (United Nations Environment Programme), cities are major contributors to climate change, as urban activities are a primary source of greenhouse gas emissions. Estimates show that cities are responsible for 75 percent of global CO2 emissions, with transport and buildings being among the largest contributors. The threat of global biodiversity loss and climate change puts our planet at risk due to our lifestyle choices. We need targeted and curated action. Currently, the world population has reached 8 billion and is estimated to reach 9.7 billion people on Earth by 2050. Can the world feed 10 billion people when agriculture is already a significant contributor to climate change? This will be a shared responsibility to take care of our planet. Our future now depends on our behaviour and how we choose to live, work, and play as global consumers - how we manage our homes, the food we consume, how we move, how we relax, what we buy, and how we take care of our planet are all important factors. Currently, we consume more resources than ever before, exceeding the planet's capacity for regeneration. Meanwhile, waste and pollution are increasing, and the gap between rich and poor is widening. Health, education, equality, and empowerment are all negatively affected. As UNESCO Creative Cities, we continue to promote urban adaptation and mitigation processes/strategies, methods for utilizing renewable energy sources, cleaner production techniques, regulations or incentives, sustainable consumption and production, plastic and food waste management, etc. to limit carbon emissions and strategies/projects to achieve a transition to a low-carbon society and ultimately a carbon-neutral society.

Where is the role of music in climate change? Some questions and statements below will encourage music efforts and the concept of City of Music in the sustainability of cities and the planet in the future.

- *Make music a driver of change*
- *How can musical activities contribute to protecting our environment?*
- *How can the music sector be more environmentally friendly?*
- *How can music help raise awareness about the need for climate action in general?*
- *How can music help us address the climate crisis?*
- *Immediately link music and climate action*
- *How to reduce the climate impact on the music industry?*

The Intergovernmental Panel on Climate Change (IPCC) has warned that it is very likely that warming will exceed 1.5°C during the 21st century. To stay within the 1.5°C limit, emissions must be reduced by at least 43% by 2030 compared to 2019 levels, and by at least 60% by 2035. The MONDIACULT 2022 Declaration emphasizes the need to further integrate cultural heritage and creativity into international discussions on climate change and affirms the need to protect all aspects of culture in the context of extreme climatic events and natural disasters. This declaration also highlights the multidimensional role of culture in climatic action, particularly through traditional and indigenous knowledge systems and cultural creativity.

In the development of Ambon City tourism, a concept of tourism development has been built that is not oriented towards nature but towards attractions. Therefore, there has been a change from conventional tourism to alternative tourism that is related to attractions. In line with the City of Music brand, what is being developed is music tourism, which has been outlined in a Strategic Design and Action Plan drawn up jointly between Ambon Music Office (AMO) and the Ministry of Tourism and Creative Economy in 2020.

Results of Vegetation Analysis at Music Forest (Sound of Green: SoG)

Ambon Music Office (AMO) launched Sound of Green (SoG) in 2020 as a 5-year flagship programme to connect music with environmental education towards creative industry in align with the United Nation's Sustainable Development Goals (SDGs) including 4 Quality Education, 8 Decent Work and Economic Growth, 13 Climate Action, and 15 Life on Land. SoG is structured around four interconnected components: events, conservation initiatives, conventions, and a carnival. Collectively, these activities emphasise principles of sustainable development and responsible sourcing of materials used in musical instrument production (TFCC, 2021).

The Negeri Amahusu area is one of the areas in the Nusaniwe Sub-district of Ambon City where the music forest is located. Geographically, Negeri Amahusu is one of five areas in the Nusaniwe Sub-district of Ambon City, located in the centre of the Nusaniwe Sub-district in the coastal area and hills, with a distance of approximately 25 minutes to the capital city, covering an area of ± 8 km^2. The area of Negeri Amahusu, with its geographical location, is in the lowlands and coastal areas, with an elevation of 120 meters above sea level and a total area of ± 838.90^2 ha, consisting of 4 Soa/dusun, namely: Soa Wakan, Soa Nahel, Soa Westopong, and Soa Gunung Nona. Ambon City is the capital of Maluku Province, with a land area of 359.45 km^2 and a sea area of 17.55 km^2, and a coastline of 98 km (Land Use Survey, 1980). The administrative area of Ambon City, as per Government Regulation Number 13 of 1979, covers 377 km^2 or 2/5 of the total area of Ambon Island. Geographically, Ambon City is located at 3°34'8.40" - 3°47'42.00" South Latitude and 128°1'33.60" - 128°18'3.60" East Longitude. Ambon, a city in eastern Indonesia, boasts a unique cultural identity shaped by its own traditions and acculturation.

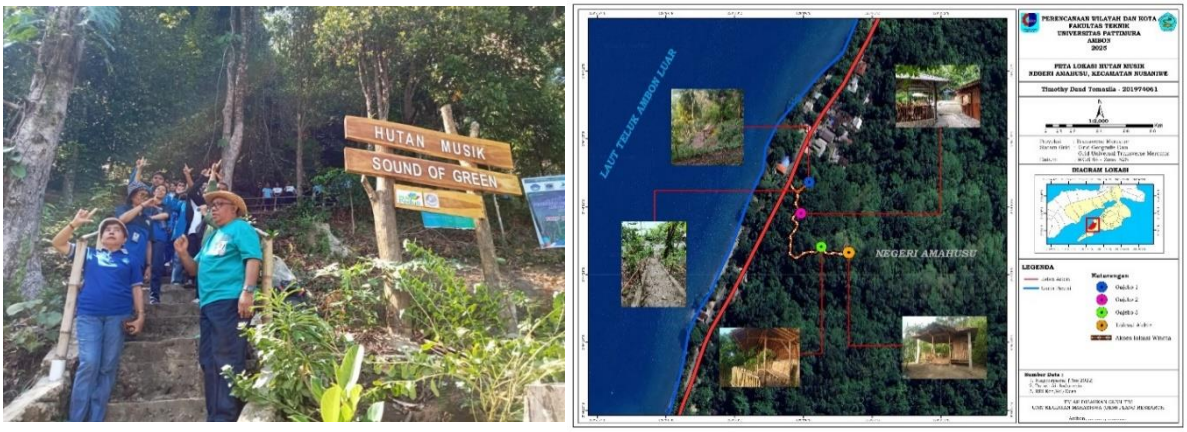


Figure 1 Location of Music Forest (Sound of Green: SoG)
in Amahusu Village, Ambon City

In Ambon, the natural environment is closely connected to musical traditions. The availability of diverse natural materials has shaped the evolution of locally crafted musical instruments, which utilise resources such as bamboo, various types of wood, and seashells. Within this cultural landscape, Tuni and Amahusu villages—officially recognised as music villages in Ambon City in 2020—have developed strong communities of artisans with specialised expertise in traditional instrument making. In the Ambonese context, the making of musical instruments holds deep cultural significance, forming an integral part of everyday life. Musical instruments function not only as vehicles for artistic expression but also as essential elements within traditional ceremonies and religious practices (TFCC, 2021).

Ambon has initiated plans to cultivate bamboo and various trees as renewable resources for the production of musical instruments. This initiative would benefit from a more holistic approach to social and economic development, particularly through the integration of international knowledge exchange and collaborative learning. The composition of vegetation in the Music Forest at various levels of tree growth can be described as follows: based on the results of research by FKIP Pattimura University Ambon students in collaboration with AMO, 2024:

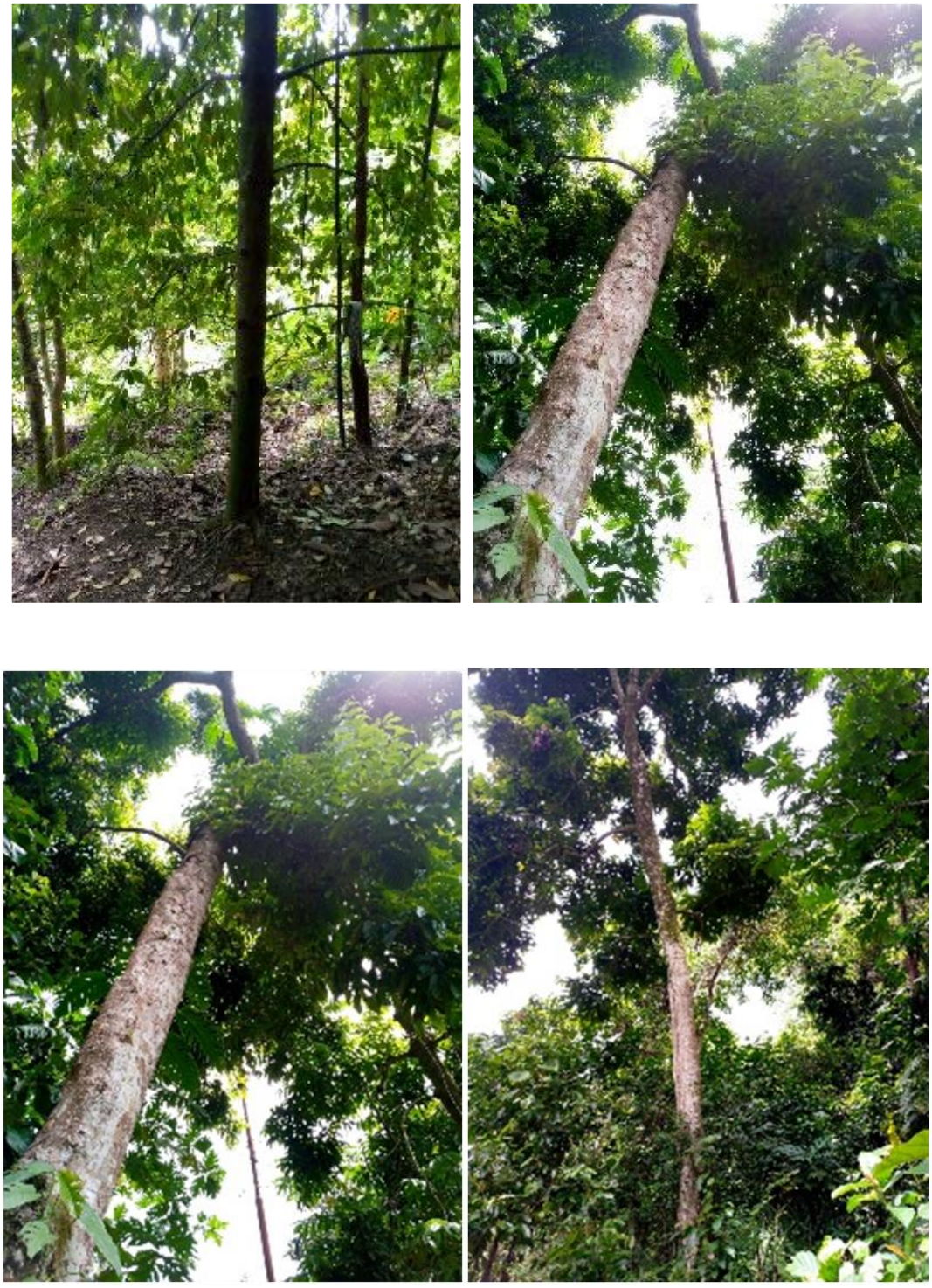
Tree Level (diameter > 20 cm) consists of *Leucaena leucocephala, Inocarpus fagiferus Forst, Gossypium hirsutum L, Bambusa Sp., Commersonia bartramia, Gnetum gnemon L, Arenga pinnata, Hibiscadelphus wilderianus, Myristica fragrans houtt, Mangifera indica, Canarium vulgare Leen, Syzygium aqueum, Artocarpus communis, Syzygium aromaticum L.* and *Acacia auriculiformis.*

Pole Level (diameter 10-20 cm) consists of *Knema tomentella, Metrosideros petiolata L., Metrosideros vera L., Sterculia apetala (Jacq). Karst, Canarium indicum L., Burseraceae, Carbera manghas. L, Ficus Coronata, Alstonia scholaris, Ficus monckii* and *Covellia racemifera.*

Sapling Level (tree saplings with height > 150 cm, but diameter < 10 cm) consists of *Agathis dammara, Knema tomentella, Metrosideros petiolata L., Metrosideros vera L., Myrcia bracteolari (Poir.) DC., Lansium domesticum, Gnetum gnemon L.,Canarium indicum L., Macaranga involucrata, Clerodendrum minahassae L.* and *Carica papaya L.*

Seedling Level (tree saplings with height < 150 cm) consists of *Adiantum sp, Polypadiaceae valgare, Vernonia amygdalina, Axonopus Compresus, Clidemia hirta, Lygodium palmatum, Nephrolepis cordifolia, Apipremnum aureum, Anubias pinto, Selagi nillaceae, Epipremnum amplissimum, Aglaomorpha sp, Clinacanthus nutans* and *Cissus sicyoldes*

Undergrowth (non-woody plants, generally found on the forest floor) consists of *Clidemia hirta, Tabebuia rosea, Ficus benjamina L., Ligustrum sinense L, Justicia gendarussa Burn, Caryota mitis L, Myrstica fragrans, Mangifera Indica, Piper betle L, Codiaeum pariegatum, Gnetum gnemon L, Centotheca lappacea L, Flagellaria indica Linn, Pseuderanthemum reticulum, Ilex decidua walter, Swietenia mahagoni L., Hibiscadelphus wilderianus Rock, Syzygium aromaticum L.* and *Stachytarpheta jamaicensis L.*



Figures 2 Several types of trees found in the music forest

Conclusion

The existence and continuity of cultural communities play a critical role in sustaining cultural practices and expressions. In the context of Cities of Music and other music-based creative cities, increasing attention has been given to the conservation of endemic plant species that are essential to the production of traditional musical instruments. These instruments are crafted from specific natural materials, including Titi wood and Sukun wood, as well as bamboo species such as Sero bamboo and Tui bamboo. The degradation or loss of these endemic plant and animal species poses a direct threat to cultural continuity. Without sustained ecological conditions, traditional musical instruments cannot be produced, leading to the gradual disappearance of the cultural communities and craftsmanship practices that depend upon them. Consequently, biodiversity loss may result in the erosion of cultural identity and the weakening of music-based cultural heritage.

In response, the establishment of a "music forest" represents an integrated approach to safeguarding both cultural and ecological systems. By preserving endemic species, the music forest contributes not only to the continuity of traditional music practices but also to disaster risk reduction, climate resilience, and local creative economies. This initiative is particularly significant for Ambon City of Music and Ambon Island, a small island context characterised by ecological fragility and heightened vulnerability to environmental change.

Addressing such challenges requires collective and coordinated action. UNESCO Creative Cities worldwide share a responsibility to collaborate in advancing culture-based climate solutions in align with MONDIACULT 2022 Declaration, recognising that cultural diversity, human unity, and shared knowledge are essential components of global climate resilience.

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