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DISASTERS AND RESILIENCE

災害とレジリエンス

UNESCO Chair on Nature-Culture Linkages in Heritage Conservation

筑波大学・世界遺産専攻・世界文化遺産学専攻  
University of Tsukuba・World Heritage Studies

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## **DISASTERS AND RESILIENCE**

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Organized by

**UNESCO Chair on Nature-Culture Linkages  
in Heritage Conservation**

In collaboration with

**UNESCO World Heritage Centre  
International Union for Conservation of Nature (IUCN)  
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# Table of Contents



■ Foreword .....	1
■ Introduction.....	3
■ Acknowledgements .....	5
■ <b>Part One: Proceedings of the Third Capacity Building Workshop on Nature-Culture Linkages in Heritage Conservation. Disasters and Resilience</b>	
Historic Cities of The Straits of Malacca UNESCO World Heritage Site: Threats and Challenges, by Rohayah Che Amat.....	9
Lamu Old Town: Balancing Economic Development with Heritage Conservation, by Hoseah Wanderi .....	16
Exploring a Nature-Culture Approach to Improve the Resilience of a Heritage Site: A Case Study of Dujiangyan Old Town, China, by Huaiyun Kou.....	23
The Galle Fort World Heritage Site: A Nature-Culture Approach to the Conservation of Cultural Heritage along the Southern Coast of Sri Lanka, by Wijerathne Bohingamuwa .....	29
Integrated Approach for Nature-Culture Linkage at Mahasthan Heritage Site, by Mohammad Sazzad Hossain.....	38
The Mixed Heritage Values of Mount Mayon Natural Park: A Case Study on Harnessing a People-Centered Approach to Nature-Culture Linkages Conservation in a Multi-Hazard Context, by Jefferson M. Chua .....	44
Promoting Traditional Cultural Practices for Disaster Risk Reduction: A Preliminary Study on the Use of <i>Gotong-Royong</i> in Siosar Protected Forest in North Sumatra, Indonesia, by Petrayuna Dian Omega .....	53
Post-Earthquake Recovery of Traditional Tibetan Villages in Jiuzhaigou Valley Scenic and Historic Interest Area, Natural World Heritage, by Hongtao Liu .....	59
Nature – Culture Linkages in The Cu Lao Cham – Hoi An World Biosphere Reserve, by Thao Le Ngoc.....	66
Disaster Risk Reduction at UNESCO Global Geoparks and Biosphere Reserves, by Irina Pavlova	73
Nature–Culture Linkages of Pulicat Lagoon: a Cultural Landscape Protecting The Coromandel Coast, by Xavier Benedict .....	78
The Cultural and Natural Heritage of Kaho’olawe Island, by Ryan Yamane .....	85

Rapa Nui World Heritage Site – Initiatives and Challenges for the Risk Management, by María Andrea Margotta Ruiz .....	92
Nature-Culture Mapping in the Trans-Himalayas, by Radhika Kothari.....	99

## **Part Two: Report on the Third Capacity Building Workshop on Nature-Culture Linkages in Heritage Conservation. Disasters and Resilience.**

Executive Summary .....	108
Module 1: International Symposium .....	112
Module 2: Understanding Nature-Culture Linkages in the context of Disasters and Resilience ...	145
Module 3: Management, Implementation and Governance in Disasters and Resilience .....	159
Module 4: Reflection on Theory and Practice.....	166

## **Annexes**

Annex 1: CBWNCL 2018 Participants Abstracts .....	175
Annex 2: List of Participants.....	179
Annex 3: Program of the CBWNCL 2018.....	181

# List of Acronyms

ACA	Agency for Cultural Affairs (Ministry of Education, Culture, Sports, Science and Technology, Japan)
BR	Biosphere Reserve
CBD	Convention on Biological Diversity
CBWNCL	Capacity Building Workshop on Nature-Culture Linkages
CREATE	Climate Resilience Evaluation for Adaptation Through Empowerment (IUCN)
DRM	Disaster Risk Management
Eco-DRR	Eco-Disaster Risk Reduction (IUCN)
GIAHS	Globally Important Agricultural Heritage Systems (UN FAO)
HUL	Historic Urban Landscape (UNESCO)
ICCROM	International Centre for the Study of the Preservation and Restoration of Cultural Property
ICH	Intangible Cultural Heritage
ICOMOS	International Council on Monuments and Sites
ICORP	International Scientific Committee on Risk Preparedness (ICOMOS)
IUCN	International Union for Conservation of Nature
MAFF	Ministry of Agriculture, Forestry and Fishery, Japan
MEXT	Ministry of Education, Culture, Sports, Science and Technology, Japan
MIDAS	Multi-Internationally Designated Areas
MLIT	Ministry of Land, Infrastructure, Transport and Tourism, Japan
MoE	Ministry of the Environment, Japan
OUV	Outstanding Universal Value (UNESCO World Heritage Convention)
RLE	Red List of Ecosystems (IUCN)
RRF	Rapid Response Facility
SDG	Sustainable Development Goal (UN Agenda 2030)
SPs	State Parties
UN	United Nations
UNDRR	United Nations Office for Disaster Risk Reduction (formerly UNISDR)
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFAO	United Nations Food and Agriculture Organization
UNISDR	United Nations International Strategy for Disaster Reduction
WHLP	World Heritage Leadership Programme





# Foreword



UNESCO is playing an important role in connecting culture to disaster risk management and post-disasters recovery, since building resilience to disasters is a critical challenge where cultural and natural heritage can play a key role.

Continuing with the implementation of the World Heritage Capacity Building Strategy adopted by the World Heritage Committee in 2011, the UNESCO World Heritage Centre in cooperation with the Advisory Bodies to the World Heritage Convention (IUCN, ICCROM and ICOMOS) have been developing training courses and capacity building about disaster risk management and about the relationships between nature-culture-communities, including through the World Heritage Leadership Programme. In partnership with these initiatives, for the third consecutive year, the UNESCO Chair on Nature-Culture Linkages in Heritage Conservation at the University of Tsukuba held a Capacity-Building Workshop where the themes of nature-culture linkages and disasters and resilience were explored simultaneously. This is the first course that interrelates the two themes, with interesting outcomes about how the exploration of nature-culture linkages in vulnerable landscapes could contribute to build their resilience.

There is an urgency to address these issues and develop concrete actions in line of the various decisions related to disasters taken by the World Heritage Committee, such as a *Strategy for Reducing Risk from Disasters at World Heritage properties*, *Climate Change Policy for World Heritage* and the *World Heritage Policy on Sustainable Development*. In this task, the partnership of UNESCO Chairs and Category 2 Centres is crucial for the dissemination and delivery of training and capacity building.

This special issue of the Journal of World Heritage Studies of the University of Tsukuba includes the outcomes of the workshop and the International Symposium on Nature-Culture Linkages in Heritage Conservation on Disasters and Resilience, where renowned international and Japanese experts shared their experience in including disaster risk management as an integral part of the conservation of cultural heritage and in using natural heritage as a solution for disaster risk reduction at global and local levels.

Furthermore, the proceedings of the CBWNCL 2018 cover fourteen cases, twelve in Asia and the Pacific, one in Africa and one in Latin America, which include cultural landscapes composed of archaeological sites, historical cities, natural protected areas, biosphere reserves, geoparks, from which six are UNESCO World Heritage properties, two on the Tentative Lists of their respective countries, bringing out a rich array of case-study experience from the region and beyond.

It is the sharing of such experiences among different stakeholders, which contributes to the continuous evolution in the implementation of the World Heritage Convention advancing heritage conservation globally.

Mechtild Rössler  
Director, UNESCO World Heritage Centre



# Introduction



The Third Capacity Building Workshop on Nature-Culture Linkages in Heritage Conservation in Asia and the Pacific focused on the theme of “Disasters and Resilience” was organized by the UNESCO Chair on Nature-Culture Linkages at the University of Tsukuba, Japan, in collaboration with the UNESCO World Heritage Centre, ICCROM, IUCN, and ICOMOS. This workshop was the third in a series of four workshops, running from 2016 to 2019. It gathered fifteen heritage practitioners from both the culture and nature sectors from Australia, Bangladesh, Chile, China, Hawaii (US), India, Indonesia, Kenya, Malaysia, Philippines, Russia, Sri Lanka, and Vietnam, as well as four students from the Certificate Programme on Nature Conservation at the University of Tsukuba, from the Democratic Republic of Congo, Ethiopia, Jamaica and Sudan, who took part in the process as observers.

In the following special issue of the *Journal of World Heritage Studies*, we have, on the first part, the proceedings of the workshop. We have collected fourteen articles from the fifteen case studies presented during the workshop (see Annex 1).

In the second part, we report the activities developed during the workshop, structured by modules.

In Module 1: International Symposium, the keynotes and debates are reported. Five international experts participated: representatives from the partner organizations, the IUCN, ICCROM, and ICOMOS, as well as two representatives of the Japanese Government, one from the Ministry of the Environment and another from the Agency for Cultural Affairs. The roundtable discussion is presented, including the guest speakers and participants’ reflections during the symposium debates, regarding the challenges faced in disasters within the region and globally as well as the need to build up the resilience of landscapes and communities.

In Module 2: Understanding Nature-Culture Linkages in the Context of Disasters and Resilience, lecturers and participants were invited to the University’s campus for three days. The lectures given by the international experts in the field of heritage, in both the nature and culture sectors, have been summarized. The report includes summaries of the participants’ case study presentations and discussions, focusing on the main issues regarding disasters and resilience.

For Module 3: Management, Implementation, and Governance in Disasters and Resilience, there is a recount of the four-day field trip to the Tohoku region, affected by the 2011 Great East Japan Earthquake and Tsunami.

In Module 4: Reflection on Theory and Practice, the working groups’ exercise is presented. The outcomes of their analysis and recommendations for the places visited are reported as well as summaries of the lessons they learned during the workshop.

In the annexes, the abstract of the presentations of all workshop participants (Annex 1), the list of participants (Annex 2) and the program of the workshop (Annex 3) can be found.



# Acknowledgements



The editors would like to thank the editorial board of the Journal of World Heritage Studies for their continuous support in the publication of the CBWNCL Proceedings as a special issue of the Journal.

We would like to acknowledge and thank the collaboration of our partners, ICCROM, IUCN, ICOMOS and the UNESCO World Heritage Centre, and their support to the UNESCO Chair on Nature-Culture Linkages in Heritage Conservation. Moreover, we would like to especially thank Jessica Brown, Kristal Buckley, Rohit Jigyasu, Radhika Murti, Thomas Schaaf and Gamini Wijesuriya for accepting collaborating as reviewers of this third special issue of the Journal of World Heritage Studies. Special thanks go to Dr. Mechtild Rössler, Director of the UNESCO World Heritage Centre for her kind support and collaboration. We would like to acknowledge as well, the cooperation of the authors who have patiently work on their articles, contributing to a diverse and rich illustration of the landscapes and their issues in relation to increasing disasters and building resilience in Asia and the Pacific region and beyond.

Thanks are also due to the academic and administrative staff of the World Heritage Studies and Certificate Programme on Nature Conservation at the University of Tsukuba for accompanying this project. The cooperation of students involved in these programs is also appreciated, their support during the symposium has been indispensable.

Maya Ishizawa, Nobuko Inaba and Masahito Yoshida  
Kigali and Tsukuba, 2019





Part One:

Proceedings of the Third  
Capacity Building  
Workshop on Nature-  
Culture Linkages in  
Heritage Conservation,  
Asia and the Pacific

**DISASTERS AND RESILIENCE**





# Historic Cities of The Straits of Malacca UNESCO World Heritage Site: Threats and Challenges

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## Abstract

*This paper presents the impacts of new development projects on the UNESCO World Heritage Site of the Straits of Malacca, which is composed of two cities: Melaka and George Town. Apart from potentially affecting their World Heritage status, these intrusions could erode the character of the heritage sites due to inadequate urban planning and a lack of proper zoning for urban development that respects the boundaries of the protected cultural heritage properties. There are legal instruments for the conservation of both cities, but the absence of a management plan and effective enforcement is causing the erosion of their values. Moreover, there is no specific model or management system for controlling the vulnerabilities to hazards in both cities, which could increase due to the new development projects.*

**KEY WORDS:** Straits of Malacca, UNESCO World Heritage Site, Management

## 1. Introduction

The Historic Cities of the Straits of Malacca, consisting of George Town and Melaka, were inscribed as a UNESCO World Heritage Site (WHS) on 7<sup>th</sup> July 2008. These two cities claim to be the most extensive historical port settlements in the history of Malaysia. Their urban patterns date back to the 16<sup>th</sup> Century (Melaka) and the 18<sup>th</sup> Century (George Town). George Town represents 200 years and Melaka 500 years of multi-cultural trading exchanges between the West and the East, which created both tangible and intangible heritage. These elements convey the multi-cultural identity of these cities. The heritage values of George Town and Melaka have been recognised as demonstrating Outstanding Universal Value (OUV) through their inscription on the World Heritage List, based on criterion (ii), as exceptional examples of multi-cultural trading towns; criterion (iii), as living testimonies of multi-cultural heritage, tangible and intangible; and criterion (iv), as melting pots of unique architecture, culture, and townscape

(UNESCO 2009). Both cities are jointly inscribed as a WHS due to sharing a footprint of rich multi-cultural trading heritage that associates with colonialism and foreign cultures (UNESCO 2009).

## 2. Significance of the Historic Cities of the Straits of Malacca

The Straits of Malacca are located between the Peninsular of Malaysia and the island of Sumatra, Indonesia [Fig. 1A]. This area is one of the most ecologically vulnerable, also known as “Sunda Hotspots,” which contains essential biodiversity for the world’s total endemic plant species and endemic vertebrates (Wuff et al. 2013). Historically, this waterway was an important highway for maritime traders and merchants from all over the world. The Straits played an important role in the political expansion and economic development of the Malay Kingdom (SAP 2013). Not only were they the busiest highways, but the Straits of Malacca were also the only waterway for spice routes and contributed to the growth of Melaka as an entrepot. Melaka [Fig.

1B] was established as an important regional empire during the Malay sultanate in the 15<sup>th</sup> century, followed by the Portuguese colonization, between 1511-1641, the Dutch occupation, between 1641-1824, and the British era in 1824-1957 (UNESCO 2009). The founder of Melaka was Parameswara, the prince of Palembang (Winstedt 1948). The footprint of Melaka town was from Hindu-Buddhist Srivijayan heritage (Hitchcock, King & Parnwell 2010); although, this was demolished during the colonial periods. Like George Town, Melaka began as a small fishing settlement. The mouth of the Melaka River divided the city into two: the administrative enclave and the residential/commercial enclave. Melaka is a melting pot of multi-cultural heritage, including Malay, Chinese, Peranakans (Baba-Nyonya), Chetti (Indian Peranakans), and Portuguese Eurasian (Kristang) cultures.

George Town [Fig. 2] is the capital city of Penang State and it represents the British footprint of the 18th century's development: it is both the first British port town and the oldest British colonial town in South East Asia (UNESCO 2009). George Town is recognized as having a significant architectural and cultural townscape, without parallel to any places in the East and Southeast Asia (UNESCO 2008). The city became an entrepot, where the products from Britain and India were sold to local merchants and distributed throughout the country (Purcell 1928; Baker 1991). The city

successfully developed and became a maritime base used to protect the British against their rivals, the French and Dutch. As a port city, George Town brought a large number of traders from the Northern region of Sumatra, the Malay Peninsula, India, China, and the Arab region, which resulted in cultural integration through intermarriage (SAP 2011). The intermarriage between immigrants and local people is reflected in the lifestyles of the local people and co-existence of various ethnic communities living in George Town.

As important trading ports, various cultures have been present in Melaka and George Town, leaving significant footprints of unique architecture. Melaka's urban pattern features streets which are laid out in a tangle of irregular narrow streets; whereas George Town displays blocks and streets patterned in a picturesque grid pattern (Shuhana 2011). There is a mixture of building types in these cities, combining clan houses, mosques, temples, administrative buildings, government, residential quarters, schools, warehouses, railway stations, etc. Yet, shophouses are the most predominant building type in these historic cities [Fig. 3]. George Town has the highest number of these pre-war buildings<sup>1</sup> compared to any other urban centre in Southeast Asia. There is also the presence of terrace townhouses which creates an atmosphere of domesticity [Fig. 4].

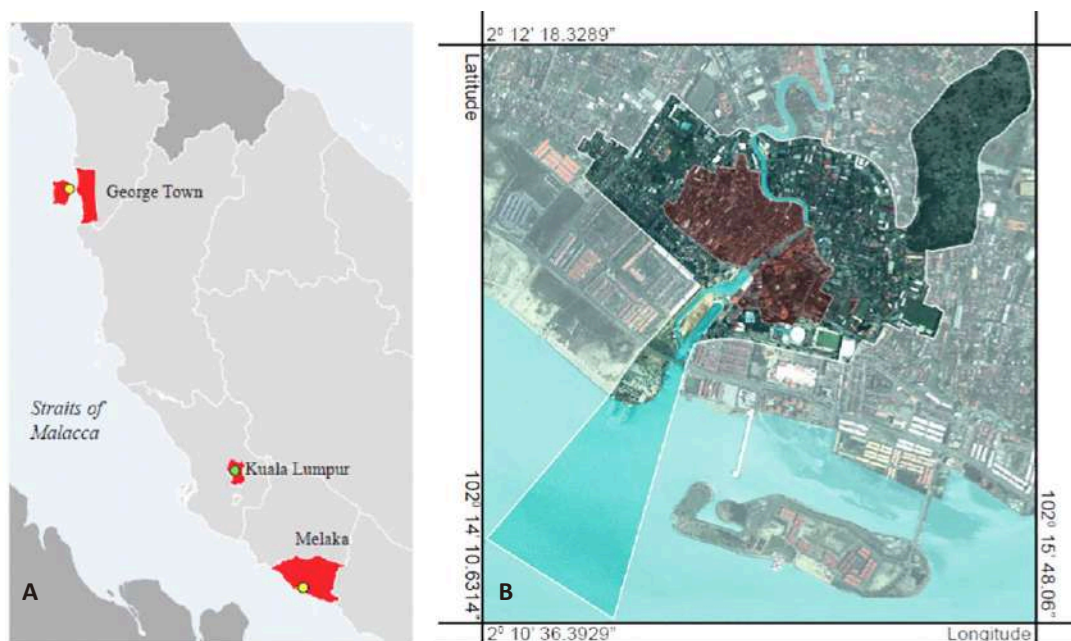


Figure 1: A. Map of the Historic Cities of the Straits of Malacca, George Town and Melaka; B. Map of Melaka UNESCO World Heritage Site (Source: SAP 2011, 2013)

<sup>1</sup> In Malaysia, historic pre-war buildings are defined as historic pre-World War II built ranging from 1800 to 1948 (Kamarul et al in Kartina et al, 2016).





Figure 2: Map of George Town, Penang UNESCO World Heritage Site (Source: SAP 2011, 2013)



Figure 3: George Town, Penang shophouses (Author 2018)



Figure 4: George Town, Penang the presence of the terrace townhouse (Author 2018)

In exploring nature and culture linkages, we find that these two cities represent cultural landscapes where the historic built environment, present cultural activities, and surrounding natural features of the straits, forest, and hills are interdependent layers. Historically, water had been the main transportation system and starting point for the development of both cities before reclamation and development took place and disrupted their relationship with the sea. Currently,

Melaka city centre is no longer facing the seafront and the access to the sea is limited, while some parts of the historic George Town waterfront are visually blocked from the public because of the presence of marinas and residential developments.

### 3. Management, State of Conservation and Challenges for Continuity

The monitoring of heritage properties in George Town WHS is carried out by George Town World Heritage Incorporated and in Melaka by the Melaka Historic City Council. These two organizations are responsible for managing the statutory and non-statutory issues pertaining to the World Heritage 'Historic Cities of the Straits of Malacca.' There are existing by-laws that govern both cities, such as: Town and Country Planning Act 1976, National Heritage Act 1976, Local Government Act 1976, Enactment of Conservation and Restoration of Cultural Heritage in Melaka 1988, Uniform Building by-laws, Guidelines for the Conservation Area and Heritage Buildings for George Town 2010, and other related laws.

Before its inscription on UNESCO's World Heritage List, the historic enclave of George Town captured public attention after being included as one of the World's 100 Most Endangered Sites by the World Monuments Fund's Watch List (WMF 2002; 2004). After the World Heritage inscription in 2008, George Town faced the risk of losing its place on the World Heritage List because development projects contravened height restrictions that are described in the Nomination File (UNESCO 2009a). Due to the impact of these proposals, the Penang State government had to implement the recommendations made by the World Heritage Committee during its 33<sup>rd</sup> session in June 2009 (UNESCO 2009a). Special Area Plans (SAPs) for both cities were gazetted in the year 2013 and implemented as statutory resources for the cities. In reviewing the effectiveness of the plans, there are several shortcomings in the implementation of the conservation guidelines for both cities. The guidelines in the SAPs acknowledged the need to manage the development of both cities, but inadequately addressed the intangible elements that currently affect the *genius loci*.

The World Heritage nomination dossier (UNESCO 2008) highlighted the threats of development and the impact of tourism facilities which causes pressure on these historic cities. Tourists prefer living experiences that display local cultures and festivals on the streets. Conversely, this attraction potentially poses a threat because of excessive mass tourism which flows into the historic centres. For instance, many residents of the inner city of George Town have moved out due to rent increases caused by the abolition of the Rent Control Act in January 2000 (MPPP & MBMB 2011).

This resulted in the abandonment of some of the historic shophouses.

Consequences of the eviction and displacement of urban communities in George Town is greater than in Melaka (Lee et al. 2017; Khazanah Research Institute 2017). Some of the communities have been forced to evacuate their premises to make way for contemporary businesses, moving from multi-cultural trading into mono-functional commercial development. Gentrification has displaced the living community and, hence, the character of these cities has changed. The scenario affects the traditional artisans and tradespeople who sustain the OUV by depleting the underlying value of multi-culturalism, criteria (ii) and (iii) of UNESCO inscription for both cities. The cultural activities and practices of different ethnic groups exhibit the importance of interchange, which characterizes Malaysian tradition and culture. The diversity of multi-cultural activities are continuously evolving with the coexistence between different faiths, cultural traditions, trades, cuisine, language, and inter-ethnic assimilations that make both cities culturally vibrant.

As main tourist destinations, physical and socio-economic transformations occurred within the area and led to substantial environmental degradation, including land reclamation, traffic congestion, and air and water pollution. There is a contentious issue related to land reclamation, a current challenge for both historic cities [Fig. 5]. Most of the development on these lands will be used for high-rise condominiums, hotels, and terminals. The issues have brought into conflict two parties with different interests - the pro-development groups and the heritage conservationists. The pro-development groups are concerned with socio-economic improvements, while on the other hand, the heritage conservationists prefer to adopt a more holistic viewpoint, where the development should proceed within the boundaries of what keeps the integrity and balance of the existing urban heritage aspects intact. Any reclamation of the seaside in front of these World Heritage sites (WHS) will have an adverse effect on their authenticity and would change the profile of the WHS [Fig. 6].

There is an approved development of mega-structures scheduled to be built within the reclamation projects on the Melaka River [Figs. 5 & 6]. Once completed, the view of St. Paul's hill, the landmark of the Melaka WHS, will be screened from the Straits of Malacca. Significantly, the geographical feature has changed, the mouth of the





*Figure 5: View of the Mouth of Melaka River from St. Paul's Hill, showing the reclamation of the sea-edge. The reclamation of the coastline resulted in the disruption of the setting of this historical port city (Source: Author 2018).*



*Figure 6: Disruption of the relationship between the natural and cultural heritage. Reclamation of the sea in Melaka for higher density commercial development is changing the historical setting. The core zone of the WHS is located in the inland and now with no direct relationship with the sea (Source: Author 2018).*

Melaka River has been relocated further out to the sea. Melaka has lost its natural setting of a historic centre, no longer facing the seafront, and visual access to the sea is limited. This setting is important to Melaka's historical footprint as an international port city and commercial hub. It will affect its original, nestled, setting in between the hills of St. Paul and Bukit China, by the river mouth of the Melaka. These reclamation projects will also affect the Portuguese Settlement, the last bastion of Portuguese descendants in Melaka, the livelihoods of its fishermen, and interrupting the setting of the community's seafront settlements. Besides the visual integrity and setting, the functions and traditions of these historic cities that were acquired over time need to be safeguarded by adapting to new functions without losing the inhabitants, the community [Figs. 7 & 8]. The reclamation may also change the regional groundwater regime, modifying the coastal environment, flooding pattern, and stability of slopes and foundations.

Besides reclamation projects, the forested hilly area of Penang has been cleared for development since the inscription as a UNESCO

WHS. A few recent landslides occurred that caused the hilly areas to collapse and, at the same time, Penang (George Town) also launched large-scale reclamation projects, strategically placed near the buffer zone of the city. In 2017, a catastrophic flood in George Town forced the government to conduct a review on the disaster risk management of Malaysia, especially in these historic cities. In promoting both cities as cultural heritage destinations, the government seems to forget the value of maintaining its natural resources, which are essential for the integrity and resilience of both cities.



*Figure 7: New architectural designs that fail to respond to the unique historical townscape of George Town UNESCO WHS. (Source: Author 2018)*

In spite of these common challenges, there are significant dissimilarities in the two cities. For instance, unlike Melaka, Penang has a vibrant and thriving community that is actively concerned about safeguarding George Town's natural and cultural heritage. Local authorities are working together with NGOs, stakeholders, and dynamic civil society to ensure that the sense of belonging remains. Furthermore, both cities experience differences in the development approach they employ for their heritage sites. The development of Melaka is focused on economic benefits, based on tourism, while the development in George Town has been oriented towards the conservation of its living heritage and the provision of better infrastructure. These variations may affect the conservation of both historic cities differently, negatively impacting their management of the area as one World Heritage property.

#### 4. Recommendations

The conservation of urban heritage is a new phenomenon in Malaysia. To date, there are increasing efforts to reinforce and integrate past heritage with the present development of historic cities. There is a growing interest in preserving the past, both for continued economic growth and for strengthening the national identity.

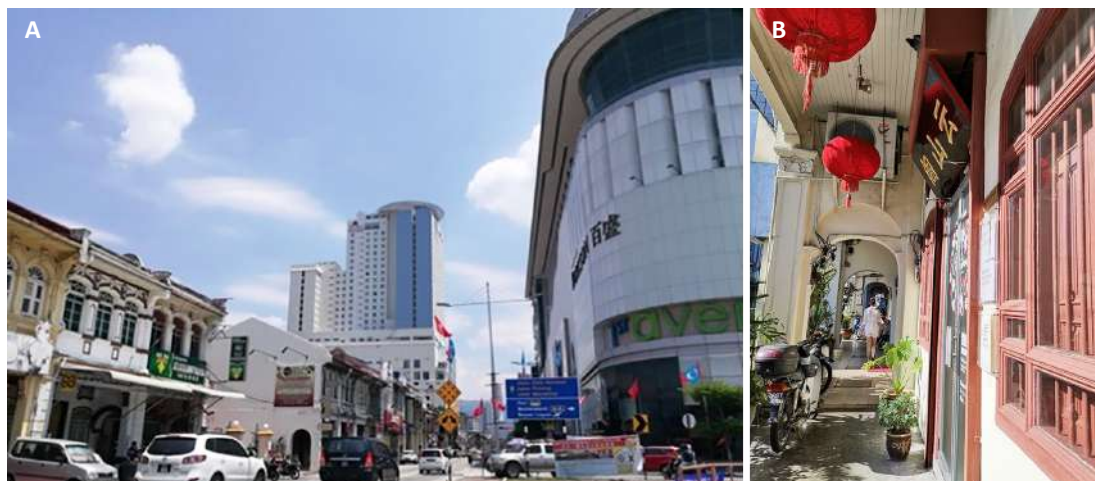


Figure 8: A. New development in George Town UNESCO WHS is changing the physical character and setting of human activities by removing the 'kaki lima' (five foot walkway) B. Example of 'kaki lima' (Source Photo: Author 2018)

However, the declaration of the Straits of Malacca as a UNESCO World Heritage Site was a primary factor in increasing the interest of developers into pursuing commercial projects in these cities. These investment opportunities are highly profitable, especially for the tourism industry. Notwithstanding, the author suggests that the current trend in the development and growth of both historic cities are encroaching on their historic fabrics in efforts to boost their tourism potential. Therefore, it is recommended that the character and integrity of the individual cities must be protected, and measures should be introduced that ensure the conservation of these historic cities within their conurbations as well as measures to guide and control the outward expansion of agglomerations.

The existing policies and guidelines are general and need to be translated to address the concrete situations of both cities. A comprehensive review for the SAPs is recommended for future development and guidance, to safeguard their heritage, observing the larger ecosystem and the local culture. As the custodians of these WHS cities, the authorities need to enforce and apply an adequate method in assessing the heritage impact of the new development proposal. There should be a limitation of acceptable changes between the conservation area (core and buffer zone) and new development districts. Both cities are witnessing development that is not respecting the historical context of these heritage sites and a Heritage Impact Assessments are highly recommended (ICOMOS 2011).

The natural environment of these cities is an inextricable part of their cultural significance. Disrupting their setting would erase the traces of how they functioned in the past while conserving it would support retaining its urban fabric. The visual

integrity of the historical setting is important for safeguarding the cultural heritage of the historic urban landscape. Hitherto and generally, it will affect the sensory experience, wholeness, and intactness of these historic cities' urban fabrics and landscape. The protection of these WHS cities needs to follow a territorial approach, by looking at the whole landscape setting, following the UNESCO Recommendation on the Historic Urban Landscape (UNESCO 2011). A landscape approach would help to maintain nature-culture linkages, relating the conservation of the historic cities with their larger ecosystem, clarifying the effects of land reclamation beyond landscape views, and highlighting the increasing vulnerability of the whole area of the Straits of Malacca. For instance, silting of the coastal areas narrowed the channels of the Straits, threatening the marine resources and ecosystems. The strong interconnection between natural and cultural heritage elements require integrated management to mitigate the vulnerability of the historic cities and their large landscape.

The inadequate enforcement of conservation guidelines in the WHS, and their buffer zones, and the lack of a comprehensive monitoring system for new developments could not only cause the loss of cultural heritage but also, the increase in vulnerability to hazards and, hence, the increase in disasters risks. Thus, an integrated conservation management plan is urgent, where the nature-culture linkages would be identified, and disaster risk management integrated to the conservation of these World Heritage cities.

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# Lamu Old Town: Balancing Economic Development with Heritage Conservation

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## ■ Abstract

*Lamu Old Town, a typical example of a predominant Swahili settlement that thrived on marine resources, faces an uncertain future. Development projects have added to the effects of climate change and might cause important changes in Lamu's biodiversity and culture. This paper describes the interrelations between cultural and natural values within this World Heritage Site and the potential impacts of development projects and climate change in the larger ecosystem. The paper postulates that the impacts on biodiversity will have adverse consequences on the resilience and livelihoods of the communities occupying this historical coastal town, which has existed for over 700 hundred years, increasing their vulnerability to disasters.*

**KEY WORDS:** Conservation, Heritage, Livelihoods, Mangroves, Local community, Biodiversity, Resilience, Swahili culture

## ■ 1. Introduction

Lamu Island is part of a chain of islands known as the Lamu Archipelago which also includes Manda, Pate, and Kiwayu. Located on this island, Lamu Old Town is a living town that thrives on the East African Coast and has a history dating back over 700 hundred years [Fig. 1]. The settlement is a conglomeration of historical buildings of *Swahili* architectural character, separated by very narrow alleys [Fig. 2]. Being the oldest and best-preserved Swahili settlement in East Africa that has retained its traditional functions (National Museums of Kenya 2001), Lamu Old Town was inscribed on the World Heritage List in 2001 under criteria (ii) (iv) and (vi) (<https://whc.unesco.org/en/list/1055>).

The island is located about 350 km North of Mombasa and has a population of approximately 11,700 (Ngugi et al. 2013). The Old Town, occupying 16 hectares, is located on the eastern side of the island and rests on a gentle slope which rises from the sea before gradually dropping to sandy farmlands on the western side.

## ■ 2. Natural and cultural significance of Lamu

The warm waters of the Indian Ocean created within the Lamu Archipelago a natural habitat for marine flora and fauna, where local populations adapted by making use of the available sea resources, such as fish and construction materials, for their livelihood. This reliance on the marine resources characterizes the conspicuous Swahili culture of Lamu, including their food, architecture, and transport systems.

The Lamu Archipelago is intersected by narrow and shallow channels, creating a fragile marine ecology which is protected from strong ocean currents by coral reefs and mangrove forests (Bakker et al. 2015:37). These shield the coastlines from storms and waves, thereby minimizing damage to the settlements in Lamu. The nine species of mangroves found in Lamu also serve as spawning grounds for fish, crustaceans (e.g. prawns and crayfish), and for endangered fauna, such as sea turtles (Government of Kenya 2017: 7). Due to the proliferation of microscopic organisms in the forests, they are also a natural habitat for numerous migratory bird species [Fig. 3] which get their food



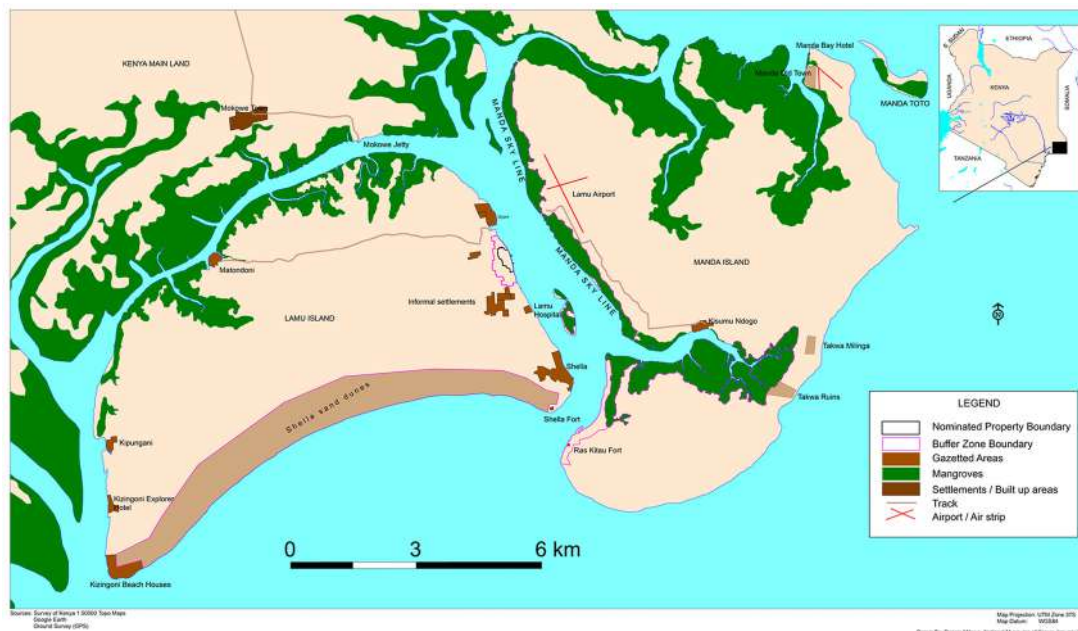


Figure 1: Map of Lamu. Source: National Museums of Kenya



Figure 2: Aerial View of Lamu Old Town. Source: Google Maps

therein (Kairo 2001). Bird species include unique sea birds, such as roseate terns, which sometimes make up a breeding colony of more than 10,000 birds. The habitat also supports over 350 species of fishes and 40 classes of corals, five species of sea turtles, and 35 species of marine mammals, including whales, dolphins, and the endangered dugong. The diverse coral communities support a wide diversity of fish and shellfish communities that are generally more abundant and larger than in other parts of the Kenyan coast (Malleret-King et al. 2003: 15). This ecosystem is the bedrock of the Swahili livelihood. The marine ecology has been utilized by the Swahili culture for millennia to produce the outstanding

cultural landscape, part of which is the Lamu Old Town World Heritage Site.



Figure 3: Migrant waders, mangrove forest in the background. Source: Shema Sidney

Interactions between the Swahili, Arabs, Persians, Indians, and Europeans in the East African region finds its most outstanding expression in Lamu Old Town architecture and planning. Foreign cultural influences were adapted into traditional Swahili techniques, producing a unique heritage. The town is characterized by narrow winding streets and magnificent stone buildings with impressive carved doors, the result of the fusion of different building styles [Fig. 4]. The housing clusters are divided into a number of small wards (*mitaa*), each being a group of buildings where a number of closely related lineages live. The buildings are well preserved and carry a long history that represents the development of Swahili building technology, based on coral, lime, and mangrove poles. The mangroves are a characteristic material for the Swahili architecture and the Lamu mangroves constitute 61% of mangrove cover in the Kenyan coast (Government of Kenya 2017: 8). The coral

stone, coral lime, and mangrove timber construction characterizes the simplicity of the structural forms and enriches such features as inner courtyards, verandas, and elaborately carved wooden doors (NMK 2001).



Figure 4: *Narrow Street in Lamu. Source: Author*

In spite of these significant interrelated cultural and natural values, Lamu faces an uncertain future. The construction of the Lamu Port and development of the Southern Sudan-Ethiopia Transport Corridor (LAPSSET project), in addition to the effects of climate change, might cause important changes in Lamu's biodiversity and culture, reducing the local communities' resilience, and increasing their vulnerability to disasters.

### 3. Current management arrangements

Heritage management in Lamu Old Town is divided into the conservation of cultural heritage, focused on the town fabric and buildings, and the nature conservation, focused on the larger ecosystem of the island.

The Old Town is co-managed by the National Museums of Kenya (NMK), under the National Museums and Heritage Act of 2006, and the County Government of Lamu. NMK manages the conservation of the cultural fabric of the town while the County Government manages business controls, such as building and maintaining the town's infrastructure. The Heritage Act mandates

NMK to conserve and manage heritage for the benefit of Kenya. Other acts supplementing this mandate include the National Environmental and Management and Coordination Act of 1999 and the Physical Planning Act of 2012. In addition, a new Lamu World Heritage Site management plan is proposed to explore new factors and emerging issues in Old Town.

Lamu archipelago's mangrove forests are managed by the Kenya Forest Service, in collaboration with the Community Forest Associations, under the Forest Conservation and Management Act of 2016 [Fig. 5]. The Kenya Wildlife Service, on the other hand, manages conservation of terrestrial and marine wildlife in line with its mandate instituted by the Wildlife Conservation and Management Act of 2013. Both acts recognize the community's role in the conservation of nature.



Figure 5: *Mangrove Forest at Kiwayu Channel, Lamu. Source: National Museums of Kenya*

The Ministry of Interior and Coordination of National Government of Kenya established a national disaster management unit in 2013. The unit borrows heavily from the Sendai Framework for Disaster Risk Reduction 2015-2030. There is also a draft for a National Policy for Disaster Management in Kenya that aspires to develop an effective disaster management system to create a safe, resilient, and sustainable society (Government of Kenya 2009: 15). However, previous disasters have been responded to in an unstructured manner, resulting in lapses in response time, coordination in the response, and in the application of early warning systems.

### 4. Challenges to Conservation

#### 4.1 Development projects

The major threat to the conservation of Lamu Old Town is the development of the Lamu Port and Southern Sudan-Ethiopia Transport Corridor (LAPSSET project). The project has six major components which have implications on increasing the vulnerability of Lamu, namely: the Lamu Port,



a resort city, oil refinery, airport, crude oil pipeline, and a dam (<http://www.lapsset.go.ke>).

In 2014, a Heritage Impact Assessment (HIA) was carried out to understand the project's potential impacts on the Outstanding Universal Value (OUV) of the World Heritage Site. The study focused on how this project may affect the cultural and natural values of the Swahili heritage. It concluded that, while the Lamu Old Town World Heritage property is physically removed from the direct LAPSET project footprint, there are many direct and indirect potential impacts on the setting of the World Heritage property and on its cultural and natural heritage (Bakker et al. 2015: iv). For instance, the proposed oil refinery was found to bear a potential risk in the event of oil leaks that would kill marine life, among other environmental degradation.

Moreover, the initial impacts on the fragile ecosystem have already started to be observed. The first three berths of the Lamu Port entailed the clearing of large swathes of mangrove forests, including reclamation of land with fish landing sites or fish spawning grounds [Fig. 6]. Mangroves are fragile species whose germination and rooting success can be threatened by prolonged disturbance. Furthermore, the Lamu Port development entailed deepening the channels through dredging. Deeper channels pose grave danger by increasing threats of violent sea waves that might disturb marine life and their breeding patterns, thereby denying the local community a crucial food source. Dredging of the channels, reclaiming land for berths, and clearing of mangrove forests that absorb the force of tidal waves all pose threats to the age-old established balance between culture and nature.

Another problematic project in Lamu is a coal power plant that is planned to supply electric power for industrial activities in Lamu. Possible adverse impacts on the local terrestrial and marine ecosystem could be experienced, increasing the vulnerability of the people.

#### 4.2 Climate change

A report by the Intergovernmental Panel on Climate Change (IPCC 2007) states that the impact of climate change on coasts is worsen by increasing human-induced pressures and that developing countries already experience the most severe impacts from present coastal hazards with the most vulnerable areas being concentrated in exposed or sensitive



Figure 6: Lamu Old Jetty. Source: National Museums of Kenya

settings such as small islands which it refers to as 'hotpots' (IPCC 2007: 40). In that sense, climate change currently threatens the long-established ecological equilibrium in the Lamu Archipelago. Coupled with intense economic activities, climate change could also adversely affect Swahili heritage.

According to the Kenya Institute for Public Policy Research and Analysis KIPPRA, noted changes in the Indian Ocean include acidification, sea surface temperature changes and increased intensity of storms (KIPPRA 2018 para 11). Another report by Kenya Marine and Fisheries Institute KMFRI noted that *Kusi* (South-East Monsoon) currents have become increasingly cold which forces the poorly equipped fishermen to stay in the sea for less hours and thus catching less fish (KMFRI 2011: 24). The report also indicated that sea level in Lamu has been rising over the past decade. Many respondents in this study recalled the Tsunami of 2004 which caused destruction of homes and fishing boats (ibid).

#### 4.3 Potential impacts of infrastructure development and climate change on Swahili people's livelihoods

Although no culture is static, the Swahili culture, as is known today, will drastically change with the possible disruption of the economic activities around the seascapes [Fig. 6].

The most serious threats resulting from development is the loss of traditional routes and fishing grounds, the potential loss of heritage places, and exposure to unfamiliar tide conditions that could be life threatening. Abungu and Abungu state that, through centuries of seafaring experience, Swahili culture has a deep respect and understanding of cosmology and how it affects the sea, to the extent that the sailors can predict tides for months in advance (Abungu, G. and Abungu, L. 2009: 23). Destruction of the mangrove habitat that shelters the Lamu Archipelago from tidal waves could cause a rise in accidents in the sea due to the disruption of the over 1000 years of accumulated indigenous knowledge of the sea. Loss of fishing grounds would result in depleted fish catches, exposing the local population to perennial hunger.

Another likely impact on the livelihood is the possibility of oil leakage and oily wastes, which if disposed of in the bay/ocean, may cause direct damage to fishery resources, aquatic biota, and the coastal habitat, seriously damaging the marine and coastal ecology (Bakker et al. 2015: 136).



Figure 7: Land reclamation for Lamu Port. Source: LAPSET Authority

### 5. Ongoing mitigation initiatives

The HIA in Lamu and the Environmental and Social Impact Assessment (ESIA) of the Lamu Coal Plant, made evident the possible impacts of these development projects on the area. Activism by community-based organizations has further pressurized for sensibility in the implementation of some of these projects.

For instance, a local community pressure group lodged a legal suit in the Kenyan High Court, challenging the failure of full disclosure of the LAPSET project by the proponent, the non-involvement of the local community in the project design phase, and the possible negative impacts on the local culture and on the Outstanding Universal Value of Lamu World Heritage site. In May 2018, the High Court upheld the petition, acknowledging the potential dangers of the project to both the cultural and natural heritages, which are inextricably linked. Moreover, the High Court acknowledged the insufficiency of the local community's involvement in the project and thus ruled that the Strategic Environmental Assessment Study (SEA), that had been commissioned by the LAPSET Authority on the proposed LAPSET project, be redone with an emphasis on community's views. Both the High Court's ruling and the HIA study emphasize the need to reduce the possible disaster risks and both call for building the resilience of the people, their heritage, and their livelihoods. The initial SEA report had failed to incorporate the HIA recommendations in its findings.

As a result, the LAPSET Authority initiated actions to mainstream communities into its plans in order to address current and future concerns. In

collaboration with the local Beach Management Units, which are fisher folk cooperative groups, they are rolling out training for artisanal fishermen and equipping them with modern fishing gear as a way of adopting new technologies.

In the case of the Lamu Coal Plant project, a local pressure group has staged a spirited campaign against the plant with a slogan "coal is poison." Their pressure saw the relocation of the plant site from the Pate Island to the mainland and more opposition is being raised for dropping the project altogether.

The HIA called for a territorial perspective for heritage protection by recommending the establishment of a special conservation area in the framework of the UNESCO 2011 Recommendation on the Historic Urban Landscape (HUL). Besides, in the effort to build the Swahili people's resilience, comprehensive documentation of their intangible cultural heritage (ICH) has been initiated with the assistance of UNESCO. The ICH exercise focuses on the recording of the indigenous knowledge that is currently threatened by modernity. Integrating traditional and contemporary knowledge is critical in developing resilience strategies. Traditional knowledge includes the collective memory of a people living in a specific cultural and geographical setting. That memory is handy in post-disaster period, owing to past experiences. Documenting the ICH will facilitate the blending of contemporary ideas with the traditional in order to formulate sustainable strategies for building resilience. This people-centered approach offers prospects for better and more comprehensive understanding of risks, for community support on corrective actions, and for developing coping mechanisms in post disasters periods.

Abungu and Abungu (2009) stated that the walls of the traditional Swahili stone houses were constructed of coral rag and coral stone, joined together with lime mortar, and then plastered. They explained that for many centuries, lime was made by burning coral stones on a pile of mangrove wood; the lime would then be left to mature for years in the rain, which would wash away the salts and other impurities (Abungu and Abungu 2009: 53). The resultant lime afforded constructions that were structurally sound for centuries, unlike the modern cement and reinforced steel that becomes powdery and corrodes, respectively, over a short time in the humid tropical coast, thereby increasing the risk of houses collapsing. Contemporary technology has sometimes aggravated the vulnerability of historical buildings. Such indigenous building techniques

are being documented in detail for the purpose of revitalization before the bearers die with the knowledge.

Furthermore, as a response to the destruction of the fragile mangrove forests on the Kenyan Coast, the Kenya Forest Service initiated what has been referred to as the National Mangrove Ecosystem Management Plan for a period running from 2017 to 2027. Large areas deprived of the mangroves have been identified for replanting.

## ■ 6. Recommendations

To address the imminent risks on the sustainability of the Swahili livelihoods and the conservation of Lamu Old Town, there is need for more innovative and proactive methods of dealing with the uncertainties and the anticipated technological and environmental related risks. Adoption of new technologies is needed for monitoring climate change and to constantly evaluate other impacts in order to recognize early warnings about threats that could be irreversible once they occur. Planners and developers need to create safeguards to not disrupt the resilience mechanisms and the cultural and natural heritage of Swahili people, especially where developments are coupled with threats of climate change.

Mangrove forests and the larger marine ecosystem of the Lamu Archipelago are facing imminent risk from the LAPSET project. This project is increasing the vulnerability of the island to climate change and natural hazards. The potential impacts on the ecosystem will strongly affect the cultural heritage and livelihoods of Lamu's local communities.

With the increasing vulnerability of Lamu and its communities, adopting legislation specifically addressing disaster countermeasures is critical in ensuring that the communities' resilience can be enhanced, especially for post-disaster recovery in the aftermath of eventual disasters. For instance, the culture's traditional methods of conservation of the mangrove forests includes the selective harvesting of only straight trees and shifting harvest areas to allow for regrowth (Maina et al. 2011: 4). This is a nature-based solution for disaster risk reduction that could be integrated into a comprehensive heritage and disaster risk management plan.

As clarified in this paper, natural and cultural heritage need to be viewed as interlinked and inseparable entities. Moreover, the interrelations

between the natural and cultural values of the heritage site need to be understood and integrated under territorial approaches, such as the HUL approach, and take into consideration that the local communities are the stakeholders who have a more comprehensive and collective memory of their environment. In disaster risk prevention and post-disaster recovery, local communities' knowledge, intangible cultural heritage, and values ought to be considered in any heritage and disaster risk management plan as well as in the post-disaster recovery plan. In post-disaster recovery, conservation and restoration projects should bear the memory of the past to rebuild the future. Environmental restoration should sensitively address the social-cultural needs of the local community. Therefore, local solutions are paramount for real resilience.

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# Exploring a Nature-Culture Approach to Improve the Resilience of a Heritage Site: A Case Study of Dujiangyan Old Town, China

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## Abstract

*Dujiangyan Old Town is the starting point of the Songmao ancient trade route, adjacent to the World Heritage site, Dujiangyan Irrigation System. The Old Town is surrounded by mountains and rivers and retains cultural heritages including the city walls, the mosques, temples, towers, and traditional wooden houses. It suffered during the Wenchuan earthquake (magnitude 8.0) in 2008 when over 80% of the buildings were damaged. The local government launched a three-year reconstruction plan with multiple objectives of heritage conservation, housing improvement, and tourism development. The post-earthquake reconstruction enforced the seismic performance of the buildings, improved the infrastructures, enhanced the traditional spatial features, and stimulated tourism. During the process, the number of residents reduced sharply, from 15,000 to 3,000, following a functional transition from residential to commercial. In addition, earthquakes and mudslides still threaten Old Town. Exploring a nature-culture approach is an urgent issue in order to improve the resilience of the Town.*

**KEY WORDS:** Post-earthquake Reconstruction, Resilience, Nature-Culture Approach, Dujiangyan Old Town

## 1. Introduction

### 1.1 Overview of the heritage site

Dujiangyan City is a small county-level city in the Sichuan province with approximately 680,000 inhabitants. It is famous for its rich cultural heritage, especially the World Heritage site, Dujiangyan Irrigation System, which was built around 250 BC and is still working today [Fig. 1]. Dujiangyan Old Town covers 0.73 square kilometers and embraced by mountains on the North and West sides. It is the beginning of the City which extends along the Min River in a fan-shaped layout [Fig. 2].



Figure 1: Location of Dujiangyan City in China (Source: Base map from Google Map)





Figure 2: Location of Dujiangyan Old Town in Dujiangyan City (Source: Base map from Master Plan of the Post-earthquake Reconstruction of Dujiangyan City, Shanghai Tongji Urban Planning and Design Institute 2008)

### 1.2 Brief description of the landscape

Dujiangyan Old Town is adjacent to the World Heritage site, Dujiangyan Irrigation System [Figs. 3 & 4]. It was the Eastern terminus of the Songmao ancient trade route which spanned from the Chengdu Plains to the Tibetan Plateau. The town retained its commercial prosperity beginning in the Tang Dynasty (618-907 AD) through the Qing Dynasty (1616-1912 AD), lasting over one thousand

years. During the Ming Dynasty, between 1488-1505, walls surrounding the town were built and the urban form was gradually shaped. In 1949, new highways reached Dujiangyan and, as a result, the ancient trade road was abandoned. With the consequent development and expansion of the town, the walls and most of the traditional buildings were demolished; however, the historic fabric of the town was basically preserved. There are also two historic districts, Xijie and Wenmiao, which are well-conserved in Old Town.



Figure 4: Perspective of Dujiangyan Old Town (Source: Copyright the author)

## 2. Significance of Dujiangyan Old Town

Dujiangyan City was designated a National Famous



Figure 3: Dujiangyan Historical map of the Qing Dynasty (Source: Local official promulgation materials)



Historic and Cultural City in 1994<sup>1</sup>. The Old Town is the core conservation area in Dujiangyan City.

Dujiangyan Old Town was named after the Dujiangyan Dam. It used to be called the “Irrigation Outlet.” There were four rivers in the Old Town as well. Worshipping water is a distinct feature of this region. The locals hold solemn rituals every year, both officially-led and privately-sponsored, to worship Li Bing and his son who constructed the Dam, as well as other water gods.

The location of Dujiangyan Old Town, along the ancient trade route, allowed for ethnic groups, such as Tibetan, Qiang, and Hui from the Tibetan area, settle alongside the dominant Han nationality. Consequently, various ethnic groups established their social and religious institutions, including the Maogong Temple, the Nanjie Mosque, the Erwang Temple, and the Confucian Temple, making Old Town a diverse center for cultural and religious exchanges.

The built structures in Dujiangyan Old Town adhered to the topography and sought a harmonious integration with the surrounding

mountains and rivers. It reflects the traditional Chinese architecture philosophy of submitting to nature and taking advantage of local circumstances.

The remaining vernacular dwellings in Dujiangyan Old Town belong to the West-Sichuan architecture style, found in Southwest China. This style features the cone-shaped wooden structure, called ‘Chuan-Dou’ (or column and tie beam), framing system. The wooden houses have better seismic performance because of the ductility of the timber and the Chuan-Dou framing system (Huang, Chen, and Fu 2014). This type of building is mainly concentrated in the Xijie Historic District.

### 3. Post-Earthquake Reconstruction

#### 3.1 Earthquake and Reconstruction

Located closest to the epicenter of the 2008 Wenchuan earthquake, Dujiangyan Old Town suffered severe damages during the disaster. Over 80% of the housing was damaged to various degrees. The Cultural Relic Protection Units, like the Maogong Temple, the Erwang Temple, the Confucian Temple, and the Kuixing Tower, suffered



Figure 5: Street Scene before Earthquake (2005) (Source: Local official promulgation materials)

<sup>1</sup> The heritage conservation system for tangible heritage in China includes two categories: the Cultural Relic Protection Units and the Famous Historic and Cultural Cities. The former contains historic sites, monuments, ancient buildings, and such; the latter contains historic cities, districts, towns and villages.



Figure 6: Street Scene after Earthquake (2008) (Source: Copyright the author)

severely.

Besides the earthquake, Dujiangyan Old Town had already endured a gradual decrease in its appearance because of urban development. Two of the original four streams were landfilled and 55% of the houses were newly built brick-concrete structures, which were incongruous with the traditional West-Sichuan style. There were even several high-rise buildings in Old Town. The reconstruction project of Old Town was designated as a part of Dujiangyan's integral post-earthquake reconstruction efforts and had multiple goals, including housing reconstruction, heritage conservation, and infrastructure upgrading. According to the reconstruction plan and policy, the orientation of the Town's function was transformed from residence and commerce to tourism service. The reconstruction began its implementation in 2009 and was basically completed in 2012. The Cultural Relic Protection Units received careful repairs or renovations and the historic fabric with four streams was recovered and reinforced. Additionally, the Xijie Historic District was well preserved, green spaces and cultural facilities were added, and infrastructures, like the sewage, drainages, road surface, and traffic systems, were improved.

### 3.2 Anti-seismic Measures

Six measures were applied to mitigate the disaster damage from the earthquake, both during and after the reconstruction in Dujiangyan Old Town. First, reducing the resident's density; second, increasing the green spaces and plazas; third, restricting the building height to less than five floors; fourth,

increasing the fortification of civil structures/public buildings with concrete frame structure from 7/8 degrees to 8/9 degrees (excluding monuments and wooden structures); fifth, preserving as many wooden frame houses as possible; and sixth, conducting regular disaster prevention drills throughout the communities in the Town.

### 4. Management and Challenges for Continuity

The Dujiangyan Old Town Sub-district Office is the administrative agency. It has a section dedicated to managing the tourism of Old Town. The management of the World Heritage site, Dujiangyan Irrigation System, falls under the responsibility of a specialized agency, the Qing-Du Bureau, which is an administrative department of Dujiangyan City and is independent of the Sub-district Office. There is no special disaster prevention management department.

Located in the earthquake zone and surrounded by the mountains, Dujiangyan Old Town is facing long-lasting threats from earthquakes and mudslides.

Old Town is also facing challenges from the society in the post-earthquake redevelopment process. The population dropped from 21,500 to 6,500 after the reconstruction. This reduction is due to three reasons: first, the seriously damaged houses were demolished and the residential function of those plots were converted to commercial functions according to the reconstruction plan and policy, therefore the residents moved to the government-provided housing outside of the Old Town; second, tourism development increased the housing prices

in Old Town, especially in the Xijie Historic District, so the residents decided to rent or sell their houses for economic benefits; third, the non-living functional positioning made it inconvenient for residents to live in Old Town and they move out gradually. Although reducing the population density is one of the important earthquake-resistant measures that facilitates safe evacuation during disasters, the reduction of residents poses a threat to the vitality, diversity, and sustainable tourist attractions of the Town in the long run. Moreover, changes in population also make it harder to foster community cohesion to resist disaster.

## ■ 5. Recommendations

Although Dujiangyan Old Town is a type of cultural heritage, the composition and formation of its values should not be separated from the natural environment. Old Town also faces dual threats from both nature and society. However, the six anti-seismic measures mentioned above are mostly architectural and social, except for the increase in green spaces. This also reflects the existing gaps in the approaches to post-disaster recovery activities, of not looking at the overall picture and explore nature-based solutions. Therefore, exploring an approach combining natural and cultural perspectives is necessary to improve the resilience of Old Town. Four steps are recommended in the application of this approach.

The first step is to design a nature-culture linked risk assessment system. The potential risks of the cultural values, as well as the natural environment, should be predicted; meanwhile, the threats from both society and nature should be considered. In addition, both the capacity of the communities and the surrounding environment to withstand disasters should be inspected. Qualitative and quantitative combined methods should be introduced to the assessment system (Kou et al. 2018).

The second step requires the exploration of nature-culture linked solutions. In addition to the physical anti-seismic measures and the community capacity training in Dujiangyan Old Town, the surrounding mountains and rivers should be taken into account, including measures to prevent mudslides and landslides. By enhancing the resilience of the environment, the intensity of disasters can be minimized directly.

The third step is to establish a nature-culture linked local management system. This system

should be composed of officials from different departments and experts with different professions, including urban planners, architects, sociologists, economists, geologists, and botanists, etc. They will be in charge of the risk assessment and build the capacity of the communities and the environment.

The fourth and final step is to build a nature-culture linked international cooperation network to conduct cross-regional collaborations and interdisciplinary research. The network at the international level will contribute to raising special funds for the resilience of cultural heritage, standardizing evaluation criteria, sharing technical achievements, and promoting the capacity building projects of the local communities, decision-makers, and experts.

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# The Galle Fort World Heritage Site: A Nature-Culture Approach to the Conservation of Cultural Heritage along the Southern Coast of Sri Lanka

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## Abstract

*This paper focuses on the Galle Fort World Heritage site, assessing current practices and issues related to heritage conservation concerning disasters. The purpose is to highlight the importance of understanding nature-culture links for the conservation of coastal heritage sites, exposed to natural conditions, such as sea breeze, sea erosion, and hazards like tsunamis. The Galle Fort is strongly connected to its larger cultural landscape, for which the conservation of the entire ecosystem is required. This paper suggests the development and implementation of integrated and people-centered policies involving all stakeholders in conservation plans, giving due consideration to nature-culture linkages.*

**KEY WORDS:** Sri Lanka, Galle fort, Coastal cultural heritage, Nature-culture links, People-centered conservation

## 1. Introduction

### 1.1 Overview of the heritage site

The distinction between nature and culture as separate entities, and rigid categorizations based on arbitrary divisions, as seen in various charters and conventions on heritage (see Askew 2010: 19-44; UNESCO 1972), are now being challenged and the traditional definitions and scope of heritage are also being reconsidered (see e.g., Harrison 2015: 24-42; 2013). The symbiotic relationship that exists between nature, culture, and people is increasingly emphasized and reinforced. Similarly, heritage sites, cultural or natural, are no longer considered as isolated entities, but they are identified as being interconnected to and interdependent on people, landscapes, and the accompanying ecosystems (Larsen and Wjesuriya 2017: 42; Leitão 2017: 195-

210; Lilley 2013).

These discussions are highly relevant to the Galle Fort World Heritage site, as well as the heritage in the Southern Coastal Belt of Sri Lanka (hereafter referred to as the Southern Coastal Belt). The unique cultural landscape of this region is partly a result of the area having been under the control of the Portuguese, the Dutch, and the English, from 1505 to 1948. The Old Town of Galle and its fortifications (Galle Fort) have been a UNESCO World Heritage Site since 1988. It was built and maintained by all three colonial powers, and is multicultural in its character, termed as 'heritage of dual parentage,' like many other heritage sites along the Southern Coastal Belt (Da Silva 1992).

In this context, the present study focuses on the Galle Fort World Heritage site to assess



current practices and issues related to heritage conservation in relation to disasters. The Galle Fort is constantly exposed to the sea breeze, sea erosion, and natural hazards, such as tsunamis, in addition to human-induced hazards. However, its architectural and planning characteristics, as well as coral and boulder/granite reefs, protect the site from disasters, as is shown by the reduced impact of the 2004 Indian Ocean Tsunami. The Galle Fort is, therefore, an example to be further analysed of how cultural heritage relates to the natural environment in the context of disaster risk management. This study is based on the author's long-term observations made at the Galle Fort, as a member of the Management Board of the Galle Fort Heritage Foundation, a survey undertaken after the 2004 Tsunami (cf. Poisson et al. 2009), and interviews conducted between July and August 2018 with various stakeholders of the Galle Fort<sup>1</sup>.

### 1.2 Brief description of the landscape

The Galle Fort is part and parcel of a larger ecological setting and its values and meanings are derived from the greater cultural landscape of the Southern Coastal Belt. Consequently, neither nature nor people can be separated from the fort, which is located in the District of Galle, adjacent to the

historic city by the same name [Fig. 1]. The Southern Coastal Belt has a rich biodiversity, including lagoons with numerous maritime species, mangroves, and forest covers with specific maritime vegetation (Jayatissa 2009; Dahdouh-Guebas 2005) which are used daily by people. The cultural evolution in the region is a result of human interaction with this environment. The Galle Fort is a great manifestation of this interaction over the centuries. The unique coastal environment provided distinct living conditions for its dwellers which brought together diverse belief systems, along with the historical conditions cited above, that led to the development of this distinct cultural landscape. Therefore, the author considers that the nature-culture linkages existing in the Galle Fort, as well as the traditional livelihood of the communities who have demonstrated resilience to threats and used opportunities provided over the years, need to be safeguarded. This paper highlights the potential of the Galle Fort to be a model of nature-culture linkages and resilience to disasters in the Southern Coastal Belt, provided that an integrated management approach is developed.

## 2. Significance of Galle Fort

Located in a distinct natural setting, the Galle

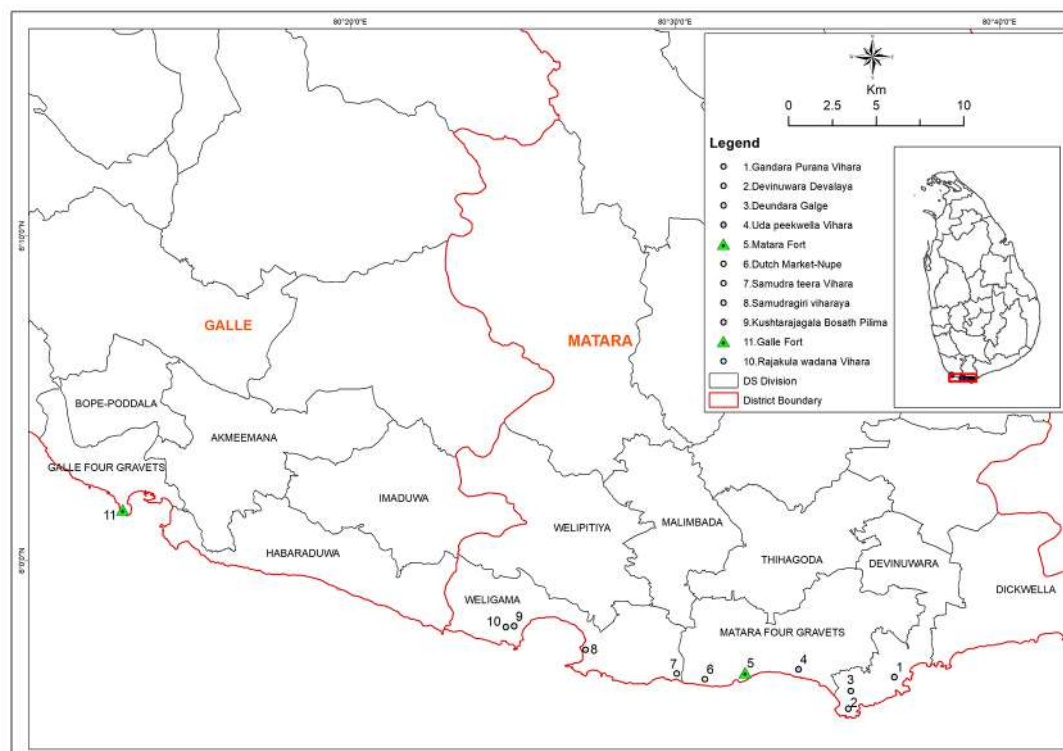


Figure 1: Map showing Galle and Matara Fortresses and other main heritage sites in the region. (Source: Author)

<sup>1</sup> The author consulted and interviewed a number of stakeholders involved in the cultural heritage conservation in Sri Lanka as well as an expert involved in heritage conservation and training at international level.



Fort has important values and meanings to its users (Ministry of Culture and Arts Government of Socialist Republic of Sri Lanka 2015:13-14). The Galle Fort represents the European expansion in Asia and thus it can be used to read the history of the colonial occupation of Sri Lanka. It was declared a UNESCO World Heritage Site due to its unique historic and architectural value (Da Silva 1992). It was first built by the Portuguese in 1588 and was modified and used by the Dutch starting in 1649 until it was captured by the English in 1796 (Kuruppu and Wijesuriya 1992). This fort encloses an area of 52 hectares and houses a large number of buildings, such as courts, churches, temples, mosques, and warehouses. The fortification contains 14 bastions, a gateway, and a clock tower. Some of these architectural works are great examples of the blend of European and Asian designs and concepts (Bandaranayake 1992) [Fig. 2]. This fort is also a living heritage site, which is inhabited by over 1,686 people<sup>2</sup>, and for those living there, heritage is a daily experience.

The social formation in this area is a result of the cross-fertilization of various ethnic and religious traditions over centuries: the fortress has places of worship for Buddhists, Christians, and Muhammadans, and is home for various ethnic groups, such as Sinhalese, Muslims, Tamils,

Burghers, and Malays. All of these communities have lived in harmony and practiced their faiths for centuries, leading to the development of multi-culturalism within the region. The Galle Fort has remained a living monument throughout its history.

This fort has many attributes that need to be preserved. For instance, fortifications, grid streets, street houses with frontal veranda and backyards, public and private buildings, and an underground sewer system all still display originality in their form and design (Ministry of Culture and Arts Government of Socialist Republic of Sri Lanka 2015: 14, 16). The sewer system functions as a drainage system even today and some of the tsunami floods reached the Fort through it in 2004. The architectural design of the Galle Fort owes much to its local geomorphology. The ramparts of the fort, for example, follow local topography, while the bastions are located at the most strategic points in sea and land fronts (Ministry of Culture and Arts Government of Socialist Republic of Sri Lanka 2015: 73), protecting it from natural hazards.

In addition, the Galle Fort is located adjacent to the Rumassala hillock which gives an astounding scenic beauty to the setting of the Fort. The biodiversity observed in Rumassala, the coastal vegetation, and the sea around the fort,



Figure 2: Galle Fort UNESCO World Heritage Site; Front view (Photo credit: Amila Bandaranayake)

<sup>2</sup> Number as at 31.12.2018, Performance report Galle Heritage Foundation 2015.

as well as the uninterrupted oceanic view from the fort, make this heritage site inseparable from nature [Figs. 3 & 4]. Moreover, Rumassala is also associated with Ramayana myths (Ravi Prakash 1998). The Buona-vista Coral Reef, which was once identified as having the greatest marine biodiversity among all coral reefs in Sri Lanka, was located at the base of the Rumassala hill. This reef, along with the Closenburg Reef, is destroyed now, largely due to human intervention, including port expansion. The Galle Fort Reef, located close to the Galle Fort wall, is the only living coral reef around the fort today (see Karunaratne and Weerakkody 1996). These reefs are part of the Galle Fort heritage and need to be included in its conservation planning. Coral reefs along the Southern Coastal Belt are a major attraction for marine eco-tourism. The Coral reefs in Sri Lanka as a whole are, however, endangered due to mining and the deterioration of water quality, and therefore, need a proper conservation and management plan.



*Figures 3 & 4: Galle Fort, View from the sea and Rumassala (Photo credit: Rasika Mutukumarana)*

The fort is also intimately connected with the everyday life of the fishing community, who still practice sustainable traditional fishing techniques, which are currently great tourist attractions. Ritipanna, or stilt fishing (fishing while sitting on a narrow pole tied to a stick installed in the seabed), is one such technique uniquely found along the Southern Coastal Belt [Fig. 5]. This tradition, however, is endangered due to the overexploitation of marine resources and becoming less economical.



*Figure 5: Stilt fishing/Ritipanna (Photo credit: M.A.U. Rukshan)*

However, due to population pressures and the increasing demand for luxury living, the heritage sites are being modified. Many traditional houses and public buildings have been modified into guest houses and even as luxury hotels, and in some cases, this is causing considerable damage to the heritage. Moreover, the site is permanently exposed to the sea breeze and sea erosion, in addition to having been hit by the 2004 Tsunami. Coastal heritage, thus, is vulnerable to decay and destruction from natural and human activities and needs the constant attention of heritage managers [Fig. 6].



*Figure 6: Effect of sea erosion at Galle Fort (Photo credit: Amila Bandaranayake)*

### 3. Current management arrangements

There are a number of institutions and policy frameworks in place in Sri Lanka to deal with the conservation of natural and cultural heritage. Legislation concerning both cultural and natural heritage has been in place in Sri Lanka since the 1940s. The National Archaeology Policy (2006) and the Antiquities Act No. 09 of 1940, and its subsequent amendments (Act No 24 of 1998) are the main legal and policy framework made available for the protection of cultural heritage. Until the 1980s, the main state institution that dealt with cultural heritage, except the Department of National Museums, was the Department of Archaeology. The 1980s were a turning point in heritage research and conservation, with the expansion of institutional arrangements and the establishment of the Central

Cultural Fund and the Postgraduate Institute of Archaeology. At that moment, the conceptualization of heritage took a broader perspective, new policy frameworks were introduced, and international agreements, such as the 1972 UNESCO World Heritage Convention, were ratified.

Currently, the Department of Archaeology and the Central Cultural Fund are the main bodies that undertake cultural heritage conservation. Legislation, such as the Heritage Foundation Acts, established to deal with specific sites, are also in place. The Galle Heritage Foundation, established under the Galle Heritage Foundation Act No. 7 of 1994, manages the Galle Fort. This Foundation is represented by 14 different institutions, including the Department of Archaeology and the Central Cultural Fund<sup>3</sup>. In addition, there is also a Citizens' Collective (forum of residents) at the Galle Fort. Although these institutions consult each other in carrying out their respective duties, there is a lack of coherent and integrated policies at national-level planning and understanding between various stakeholders and residents in the heritage site.

The Ministry of Tourism Development, Wildlife and Christian Religious Affairs, through its departments, such as Wildlife Conservation, deals with natural heritage, including the Rumassala Forest Reserve. The Coastal Conservation Department is responsible for marine life around the Galle Bay and the coast. However, concerns have been raised about the proposed Galle Harbour Expansion Project (2007), and the management of the Rumassala Forest Reserve (Goreau 1998).

In relation to the integration of disaster risk management in cultural heritage conservation, Sri Lanka is yet to integrate international instruments, such as the Sendai Framework for Disaster Risk Reduction (2015) and the Strategy for Risk Reduction at World Heritage Properties (2007). At the local level, there are a number of state-level arrangements to deal with disasters. While the Ministry of Mahaweli Development and Environment is the main ministry that deals with environmental conservation, climate change, and biodiversity, the Ministry of Disaster Management deals with disasters specifically.

However, there are gaps and issues in these arrangements. Lack of understanding about the nature-culture link among the agencies that

deals with these aspects are a major issue. At the Galle Fort, where nature, culture, and people are inseparably linked, this rigid institutional division creates conflicts of interest, both in the planning and implementation of policies. Even among the Coastal Conservation Department, the Department of Wildlife Conservation, and the Ministry of Fisheries, which deals with natural heritage - marine life, coral reefs, mangroves, and landforms, conflicts of interests arising from overlapping territorial and subject areas are noted. This leads to issues in managing the ecosystem around the Galle Fort. Similar situations occur in managing of the cultural heritage at the Galle Fort, where several agencies, such as the Department of Archaeology, Central Cultural Fund, and the Galle Fort Heritage Foundation, are involved. The main focus of the Galle Fort management has been on its tangible heritage. This leads to the negligence of intangible heritage, such as the traditional livelihoods and belief systems of the communities, as well as the natural environment, of which the fort and the built heritage is only a part. This leads to inefficient disaster responses and recovery, such as to threats like tsunamis.

#### 4. Current State of Conservation and Challenges for Continuity

The author examined the entire area affected by the 2004 Tsunami, between the Nilwala river in Matara to the Walawe river in Ambalantota in Southern Sri Lanka (Bohingamuwa 2004, see also Bohingamuwa 2009). This study was undertaken as part of the conditional survey initiated by ICOMOS Sri Lanka, in collaboration with the Ministry of Higher Education. The author also examined the Galle Fort as part of a social, economic, and cultural survey project initiated by the Galle Heritage Foundation. The objective of this survey was to assess the state of the conservation of the property, including the impact of the tsunami, and to recommend necessary conservation methods. The entire Galle Fort was surveyed and the residents were interviewed using a questionnaire prepared by the author (Bohingamuwa 2006). In 2018, the author conducted a new survey and interviews to reassess the heritage management of the Galle Fort.

It was found that during the 2004 Tsunami, much of the damage to human life and heritage was due to the weaknesses of disaster preparedness and risk reduction mechanisms. The coastal

<sup>3</sup> Other key institutions involved are, Galle Municipal Council, Urban Development Authority, Coast Conservation Department and Ports Authority.



communities neither had any prior knowledge or experience of such disasters nor had they been part of any Disaster Risk Reduction programmes. This resulted in causing complete shock and panic among them during the disaster. However, they overcame material and emotional losses within a short period and either resumed their traditional livelihoods or adopted new strategies. The coastal ecosystem that was devastated by the tsunami recovered even faster, illustrating greater resilience and adaptability.

The 2004 Tsunami tested the state's preparedness and capacity, including the strength and efficiency of heritage agencies that deal with such disasters. In their sincere efforts to recover, reconstruct, and restore affected properties and human life, both the government and non-government actors and agencies, as well as individuals, acted to their fullest capacity. However, the author's active involvement in the post-tsunami Archaeological Impact Assessments and heritage conservation activities allowed him to perceive the lack of coordination between these actors, which caused considerable damage to cultural properties. For instance, the Municipal Council, the Urban Development Authority, and the other state agencies that deal with everyday needs of the people, acted fast to restore the affected infrastructures before heritage agencies could put in place conservation plans. Even the findings of the ICOMOS Sri Lanka post-tsunami study on the affected sites did not lead to making any comprehensive and concrete conservation programmes.

The Galle Fort itself only received limited impact from this tsunami, primarily due to its strong high wall and the coral and boulder reefs around it [Figs.7 & 8]. The selection of the location and architectural planning of the fort, with minimal intervention to the natural coastal environment, saved both properties and lives within the fort. Tsunami water entered the fort mainly through the entrances situated on the land side. No loss of life was reported from the fort and only some cultural properties were affected. In contrast, the adjacent historic city and the surrounding area were devastated by the tsunami waves that came from either side of the Fort.

The natural landscape on these sides of the fort have been modified for augmenting the Galle Sea Port and a waterway. Approximately 70 % of the buildings located on the coastline were destroyed and at least 30 % of those up to 1km inland suffered



*Figures 7 & 8: Galle Fort, Granite boulders that protect Fort from sea waves (Photo credit: Rasika Mutukumarana)*

considerable damage in Galle. In the city of Galle, 497 people perished while another 412 people went missing due to the tsunami (cf. Department of Census and Statistics 2005). The Southern Coastal Belt was the worst affected area. The case of the Galle Fort, therefore, is an exception in the Southern Coast area, illustrating that much can be learned from the past-wise use of local conditions- and from heritage for increasing resilience and developing Disaster Risk Reduction programmes for the rest of the region. Conservation of the natural coastal environment - mangroves, coastal sand dunes, and coral reefs - are vital for the conservation of the Galle Fort and coastal heritage as a whole. Jayatissa (2009) and Dahdouh-Guebas (2005) discussed how mangroves acted as natural barriers against the 2004 Tsunami, protecting both cultural heritage and humans living in vulnerable areas. Understanding traditional knowledge and passing that on to future generations would help protect nature, culture, and human lives along the coast.

Nevertheless, the Galle Fort and the coastal heritage, in general, is vulnerable to decay and destruction due to exposure to sea breeze and erosion. The growth of algae and fungi on Buddhist temple paintings, peeling of wall plasters, corrosion of metal objects, and the decaying of roofs, which results in leaking rainwater and cracked walls, are the main state of conservation issues noted in the Galle Fort and other sites in the Southern Coastal Belt. Moreover, movable cultural properties, such

as the Ola Leaf Manuscripts<sup>4</sup>, require constant monitoring.

Illegal construction and modifications made to heritage buildings are reported from the Galle Fort World Heritage Site, threatening its integrity. The encroachment of the buffer zone of the Galle Fort prompted the UNESCO World Heritage Committee to request that Sri Lanka prepare a comprehensive Integrated Management Plan for the Galle Fort in 2010 (The WHC decision 34COM7B.72). This plan was approved by the UNESCO World Heritage Committee in 2016 (Ministry of Culture and Arts Government of Socialist Republic of Sri Lanka 2015). In keeping with these requirements, the Antiquity Ordinance, as well as the Galle Heritage Foundation Act, are being amended (Mandawala 2015: 6 and Pers. comm. 2018).

## ■ 5. Lessons learned and Recommendations

The challenge to all heritage stakeholders is to protect both properties and human lives from both natural and human-provoked hazards. The exploitation of natural resources and developmental activities have caused considerable damage to the ecosystem and landscape along the Southern Coastal Belt and around the Galle Fort, exposing communities, as well as cultural and natural heritage, to natural hazards, endangering people's livelihoods. The impact of the 2004 Tsunami exemplifies the power of nature, as well as the resilience of both coastal communities and the natural environment in their ability to overcome such disasters. However, the impacts on cultural heritage need to be dealt with by heritage managers, whose role was largely overlooked in this disaster. The 2004 Tsunami showed the limitations of the disaster risk preparedness and disaster recovery system of Sri Lanka.

Yet, the Galle Fort showed to be an exception, resistant even to threats from the tsunami. The resilience of properties and coastal communities in other areas could be increased by protecting the coastal landscape and mangroves which act as buffers against the threats of nature. Understanding and respecting the nature-culture and people linkages and educating and involving communities in heritage management and disaster response programmes are the way forward for the

management of heritage at the Galle Fort and along the Southern Coast Belt. An active role of heritage managers is vital in such efforts.

A number of positive initiatives have been undertaken in the recent past and some more efforts are being made to safeguard the heritage, like the preparation of an Integrated Management Plan for the Galle Fort. However, a number of issues, such as deeper understanding about the nature-culture linkages and a people-centered approach to heritage conservation, remain largely unaddressed. This highlights the need for fresh thinking and integrated planning at a national level to bring all stakeholders together for the effective functioning of heritage management. Key to achieving any success in these efforts depends on training an adequate number of heritage managers and involving local communities in heritage protection.

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<sup>4</sup> Ola leaf is a palm leaf prepared for writing in ancient Sri Lanka. Ola leaf manuscripts written on various subjects such as Buddhism, traditional medicine and horoscopes, are found in the island.

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# Integrated Approach for Nature-Culture Linkage at Mahasthan Heritage Site

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## ■ Abstract

*Mahasthangarh and its Environs is on the Tentative List of Bangladesh for nomination as World Heritage due to the significant interchange of human values that it exhibits, with interactions between nature and culture since the 3<sup>rd</sup> century BC. Due to changes in the landscape and the constant threat from natural hazards related to the monsoon climate, the linkage between nature and culture is being affected. For instance, the ancient water system that protects the settlements from stagnation of rainwater is not operational. Moreover, the local communities' traditional building techniques are currently threatened by the flow of modern materials. The objective of this paper is to explore these underlying issues which are eroding the nature-culture linkages of this site and outline recommendations for a comprehensive approach for the conservation of its nature and culture.*

**KEY WORDS:** Cultural heritage, Natural settings, Building resilience, Community.

## ■ 1. Introduction

Mahasthan and its surroundings exhibit an important relationship between nature and culture. The remains of the walled citadel show an outstanding example of an ancient metropolis, where people made use of the physical setting, topography, and natural features. For instance, changes in the course of the river and landforms created a protective separation between the ancient structures and potential natural hazards. Moreover, the villages surrounding the archaeological site have a long tradition of adobe architecture which reflects construction techniques adapted in response to the natural threats. Since the 3<sup>rd</sup> century BC, the Mahasthan area has undergone urbanization, then suburbanization, and later de-urbanization (Hossain 2013). In the present context, Mahasthan is located in a rural area, flourishing as the suburb of the new urban center of Bogra in Bangladesh. Since the beginning of the 19<sup>th</sup> century, different measures have been taken to protect the heritage site. But, due to the lack of a comprehensive approach that looks at the archaeological site and its surrounding

villages as a whole, the site faces great challenges for the use of its natural and cultural resources for sustainable development. This study explores the underlying issues that need to be addressed in order to build resilience, using nature-culture linkages through a community-based approach.

## ■ 2. Significance of Mahasthan and its surroundings

Mahasthan and its surrounding environments in Bengal exhibit a significant interchange of human values, like cultural practices and religious belief, ranging from the 3<sup>rd</sup> century BC to the 18<sup>th</sup> century AD. The remains of the ancient metropolis show developments in a township that evolved as overlapping layers of intervention on the fabric. The site is exceptional as it represents the ancient Pundranagar, which was the Provincial administrative headquarters, successively of the ancient Mauryan, Gupta, and Pala civilizations, which have already disappeared (Ahmed 1975). The ancient citadel and its surroundings are outstanding examples of making the best use of its physical setting, topography, and natural features. For

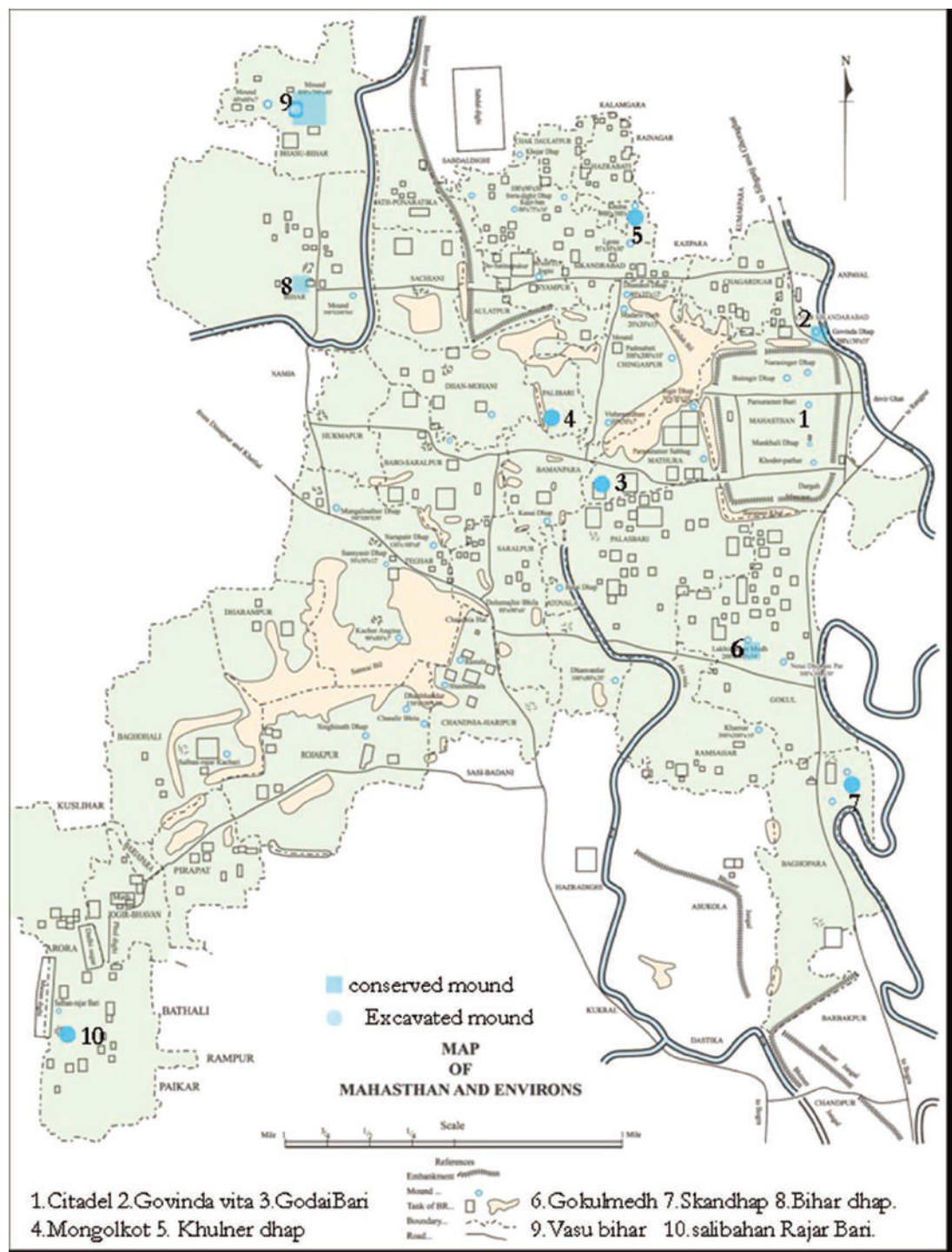


Figure 1: The core zone of Mahasthan's heritage site. (Source: Hossain 2013)

instance, in order to avoid flooding, the ancient metropolis was established on high lands, letting the water flow into the river through the surrounding moats. Moreover, the site is surrounded by traditional villages built of adobe which represents indigenous techniques that are resistant to the impact of strong winds, cyclones, and heavy rainfall.

#### The Archaeological Remains

The extensive archaeological remains of Mahansthargarh are spread along the Western bank of the River Karatoya. The site has two special features: the fortified citadel and its suburbs. The

citadel occupies an area of almost 208 hectares. The existing rampart wall and its inner remains reveal the fortified capital of the ancient city. The Northern, Western, and Southern sides of the fortified city were encircled by a deep moat. The river Karatoya flows on the Eastern side. Many isolated mounds are scattered around the citadel, testifying the existence of the vast suburbs of the ancient metropolis. The ruins form an oblong plateau, measuring 1.5 km N-S and 1.3km E-W, and is enclosed by the rampart walls that rise to an average height of 6m from the river level.

The excavation at the North Eastern area

within the citadel, conducted by the Department of Archaeology in 1960-61 and 1965-66, revealed dwellings of successive periods. Among the several building and rebuilding periods, the latest was found to represent the latter part of the Pala period (11<sup>th</sup> century AD) which is uniformly characterized by wall and floors that are composed mostly of the brickbats of earlier buildings. A remarkably well-preserved brick paved floor from the 2<sup>nd</sup> century BC, with a hearth and some timber holes at the center, was found in a deep trench. Moreover, there was a partial archaeological excavation in 1961 within the citadel that exposed an interesting temple complex from the 8<sup>th</sup> century AD (Ahmed 1975). According to the First Interim Report of The French Bangladesh joint excavation in 1993-99, the Eastern rampart area was a small domestic neighborhood. The excavation yielded remains of earthen architecture, like mud walls, clay floor, brick wall, and roofing tiles that dated from the 3<sup>rd</sup> centuries BC to the 2<sup>nd</sup> century AD. The excavation also revealed 7<sup>th</sup> – 12<sup>th</sup> centuries human settlements, like houses, courtyards, and wells, lined along a South to North well-paved street with brickbats (Bernard Boussac and Breuil 2001). Excavations in 2000 at the South-Eastern part of the Mazar area revealed both a pre-Muslim and Muslim building period. The remains of the pre-Muslim occupation are a fortification wall, a well-paved street with brickbats, and many movable objects. The remains of the Muslim phase are streets, a well, and other urban elements. Regular excavation up to 2005, conducted in the Mazar area, revealed a road and some remains of human settlements with a drainage system. Besides the citadel, 134 medieval and early medieval sites were identified in the Bogra district.

#### *Architectural Heritage*

Muslims ruled Mahasthan from Lakhnawati since the Muslim conquest at Bengal in 1204 AD. The kingdom of Lakhnawati came under the rule of the Mughals in 16<sup>th</sup> Century AD. In 1757, the British occupied Bengal (Ali and Bhattacharjee 1986). Some Mosques from the Mughal period still exists in the area. Also, many residential and administrative buildings from the British colonial period still exists, though in decay.

#### *Traditional Adobe Villages*

There are traditional adobe settlements of the potter and blacksmith communities. The traditional houses commonly have walls and floors made of local clay, thatched roofs, and terracotta tiles. The traditional settlements reveal significant features

of the traditional architecture in the region. To resist strong winds, they use gabled or hip roofs, tied with the main structure. The traditional craftsmanship of the local artisans and their settlements blended the components of intangible and tangible heritage.



Figure 2: Traditional adobe settlement. (Source: Author 2009)

#### *Palaeo-environment and Natural Heritage*

Bangladesh has a tropical monsoon climate that is determined by the monsoon wind. The climate is characterized by heavy rainfall, often excessive humidity, and fairly marked seasonal variations. Thus, Mahasthan and its surroundings are embedded in a rich natural environment that includes a diversity of trees, seasonal birds, and fish (Rahman 2000).

The cultural heritage of this site is deeply connected to the landscape. The early settlers of Mahasthan may have selected the Barindh high terraces to build their metropolis on the flood free area. The high terraces are located to the East of the Brahmaputra and were developed by river sediments, dating back to the Pleistocene period that was deposited by the ancient river system of the Tista (Rahman 2000).

The moat and the river might have served as a major transportation-route and drainage-line for the fortified city. The Karatoya River flows below the site of Mahasthan. It was formerly fed by the Tista and therefore used to have a heavy flow (Christine, Cyril and Kevin 2001). Nowadays, the Tista no longer feeds the Karatoya, and the Karatoya has become a very small river which dries up at the end of the dry season. A water channel was built along the north face of the ramparts to divert water into Barindh as the city's ramparts were destroyed by flooding on several occasions (Christine, Cyril and Kevin 2001). The fortified citadel is surrounded on its three sides by the artificial moats. Yet, the vast suburbs



are comprised of numerous marshes, lakes, and channels, like Hatibandha, Baranoshi, Kalidaho, and Sagor.



Figure 3: Part of the artificial moat around the citadel. (Source: Author 2019)



Figure 4: Part of the River Karotoya at Mahasthan. (Source: Author 2019)

#### *Intangible Heritage*

The cultural festivals and activities, like Baishaki mela, Chand mela at Shiladevir ghat, Poradaho mela, and Sesh Baishaki mela, are deeply rooted in the cultural landscape of the historic zone. The historic legends and folklores, associated with the cultural landscape of Mahasthan, have significant cultural values. *Laksindarer Medh*, or Behula-Laksindarer Basar-ghar, is popularly known as the nuptial room of the traditional heroine and hero of a popular ballad, Behula and Laksindar. It is also associated with the angry snake goddess -*Manasa*. The popular tales about the death of princess Sila, the beautiful daughter of King Parasurama, relates to Sila devir Ghat. During the Chand mela, a huge number of people of the Hindu religion, from Bangladesh and India, assemble at Shiladevirghat, near the western bank of the river Karotoya, for a bath.

### 3. Current management

The Bangladesh Government's Department of Archaeology is the main authority concerning the management and protection of the archaeological site. The Department of Tourism is also responsible for the promotion of tourism in the area. Within the "Antiquities Act, 1968 (Amendment at 1976)," there is a mandate for heritage resources protection and conservation. Areas located on the bank of the river Karotoya and within an 8 km radius around the South East corner of the citadel were already declared protected by the Department of Archaeology, Bangladesh in 1920.

The ownership pattern is different for different portions of the site. Most of the areas of the large sites are under different private ownership and are mostly used for agriculture. But some of the plots were acquired by the Government under the 'Land Acquisition Act 1894.'

### 4. Current State of Conservation and Challenges

Since the British colonial period, different measures have been taken to conserve different sites and monuments. During the rainy season, the water becomes stagnant due to drainage problems, which may affect the archaeological remains located at a lower level. Therefore, most of the archaeological sites are buried again soon after excavation. Large portions of the Northern and Eastern rampart walls, including the gateways, are already being restored by the Department of Archaeology. Inside the fortified citadel, the Jahaj ghata, Munirghon, and Jiat Kunda, the base remains of the pre-Mughal mosque, were also restored. Moreover, outside the citadel, part of the Bhasu bihara, Bihar dhap, Godabari dhap, Govinda vita, and Gokul medh were also restored. In 1920, under the 'Ancient monuments preservation Act-1904,' areas located on the bank of the river Karotoya and within the 8 km radius surrounding the south-east corner of the citadel were declared as a protected area. However, challenges to conservation still exist.

#### *Gap between ancient settlements & changing landscape*

Since the 2<sup>nd</sup> century BC, the landscape has changed notably, and many features of the ancient settlements have lost their original function. The river course has changed and the water flow has decreased. At present, the water channels and moats mostly remain dry and have already lost their original functions. However, most of



the archaeological remains inside the citadel are currently buried and the original drainage system, which was originally connected to the surrounding moats, is no longer in function. Thus, the linkage between nature and ancient remains is seriously affected and heavy rainfall has become a serious threat. In 2004-2005 a large portion of the Eastern rampart wall collapsed due to heavy rainfall.

#### *Gap between current practices and indigenous technique*

To resist natural threats, like cyclones, heavy rainfall, and strong winds, the communities of the traditional villages used local building techniques based on local materials. However, due to the lack of a comprehensive approach to conservation, with a focus on the resilience of cultural heritage, modern materials and techniques are gradually replacing the traditional ones. Industrial bricks are now replacing the earthen ones and traditional thatched roofs are now widely replaced by corrugated iron. Therefore, traditional values are being eroded. Moreover, for disaster preparedness and risk management, a top-down approach that does not consider local culture, experience, and skills are enforced, neglecting the potential of traditional and local knowledge for reducing vulnerabilities.

### ■ 5. Recommendations

Shifting the focus from an individual structure to the larger context, in the process of conservation, may reinforce the nature-culture linkages between the archaeological sites, its surrounding villages, and the natural setting. Conservation, therefore, may work as a planning tool to incorporate nature-culture linkages in building resilience. It is necessary to establish guidelines for sustaining heritage values and adapting them to the economic, social, and environmental contexts.

There are a number of recommendations that can be used to address the underlying issues found in this site.

#### *Revitalize the water-ways*

Rivers, water channels, and surrounding moats may be well dredged and interconnected to revive their function. These may be activated as important conduits for water-transport and drainage to revitalize the area. Moreover, different inland water bodies, marshes, lakes, channels, and household water reservoirs need to be revitalized in this regard.

However, the remaining archaeological layers may be further explored to identify the original drainage system inside the citadel. Reversible intervention may also be allowed to adopt an integrated drainage system which will allow stagnant water to pass through during rainy seasons.

#### *Promote indigenous knowledge and techniques for building resilience*

Traditional knowledge about natural phenomena and construction techniques to build resilience to disaster are being passed on to subsequent generations. Therefore, it is important to introduce heritage support programs to promote the traditional living pattern in the artisan villages, characterised by local materials. Moreover, capacity building programs on disaster preparedness and risk management with a focus on local know-how would be beneficial in order to adopt new strategies to address threats without affecting the heritage values.

#### *Introduction of special planning zone*

The entire heritage site may be included under a special planning zone for disaster preparedness and risk management, with a focus on protecting the cultural values. An effective buffer zone should be introduced, with guidelines for land use to protect the heritage from potential threats. It is also important to engage the local community in the planning process and integrate their feedback into the decision-making process.


#### *Ensure community participation in the heritage management*

In the neighbourhoods surrounding the archaeological site of Mahasthan, communities have been living for generations and possess a sense of belonging to the place. The benefit of this attachment is evident in cases of the Mughal mosques that are well managed and maintained on a regular basis by the local Muslim communities who keep the structures in continuous use. Communities are most knowledgeable about their heritage. The traditional adobe settlements are safeguarded and used by the local communities and embody the local identity and cultural essence in both tangible and intangible forms. Active community engagement in heritage management and conservation, with a focus on disaster and risk management, will help to ensure continuity and sustainability of the linkage between nature and culture.

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# The Mixed Heritage Values of Mount Mayon Natural Park: A Case Study on Harnessing a People-Centered Approach to Nature-Culture Linkages Conservation in a Multi-Hazard Context

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## Abstract

*This essay will explore how the mixed heritage values of Mount Mayon Natural Park (MMNP) can be utilized to craft people-centered disaster mitigation mechanisms in a multi-hazard context. Apart from frequent volcanic activity, the greater area of Mayon is also frequented by other disasters. This was exemplified in the November 2006 disaster involving Typhoon Reming/Durian, where it inundated the slopes of the recently erupted Mayon, causing destructive mudflows that reached towns outside the designated danger zones. While there were disaster risk mitigation plans in place, the sheer scale of the disaster shows that there are still gaps in the overall management regime around the site, which can be improved. These gaps can be possibly addressed through the ongoing efforts of nominating Mayon Volcano as a World Mixed Cultural and Natural Heritage Site; specifically, in adopting a people-centered approach that looks at nature-culture linkages for heritage conservation as a tool in crafting innovative disaster risk reduction mechanisms.*

**KEY WORDS:** Mayon, Volcano, Multi-hazard, World Heritage, Mixed Site

## 1. Introduction

### *1.1 Overview of the heritage site*

Rising up to 2,462 meters above sea level, Mayon Volcano, the centerpiece of the Mount Mayon Natural Park, is a classic, conical, Basaltic-Andesitic Stratovolcano, whose natural heritage values have been essential to the cultural fabric of the communities around it. A product of the convergent boundary where the Philippine Mobile Belt subsumes the thinner, but heavier, Philippine Sea Plate, the volcano was formed

approximately 20,000 years ago and is part of a cluster of volcanoes lining the subduction zone between the two plates. Because of its placement on a highly restive portion of the Earth's crust, Mayon follows a cyclical and relatively regular Vulcanian-Strombolian eruption sequence, making it the most active volcano in the Philippine archipelago, with 50 eruptions since recordings began in 1616. This ensures that new layers of volcanic material constantly replace any natural deformation, common in volcanic landscapes, forming an unusually concave profile indicative of the interplay between creation and destruction

throughout its geologic history. This creates a unique, natural regulatory, system that maintains the volcano's near-perfect symmetrical shape. This cycle of creation and destruction is reflected, as well, in the cultural values that have been enriched through the lived experiences of the communities, with the aesthetic and physical qualities of the landscape. This is demonstrated in the manner communities have utilized the surrounding lands for agricultural use and mining, providing them with much-needed raw materials for sustenance and development. Conversely, communities have also had to deal with the destructive effects of living in an abundant landscape, with infamous historical eruptions, leaving traces, not only on the physical landscape but also in the intangible heritage of the community. This has resulted in a rich cultural tapestry of visual art, traditions, and performances, and most importantly, the formation of resilience values through community stories and local myths that also act as indigenous disaster risk reduction schemes. These values have also led to the ease of adapting modern disaster risk mitigation plans and regimes, representing continuity in the community's relationship of resiliency with the landscape.

### 1.2 Brief description of the landscape

Mayon Volcano is the highest mountain in Southern Luzon. On its summit is a small crater that serves as an outlet of its single vent. The volcano's circular base has a circumference of 62.8 kilometers, based

on a 10-kilometer radius set by the Philippine Institute for Volcanology and Seismology (PHIVOLCS) [Fig. 1 (a)]. Set in a landscape predominated by plains and low-lying hills west of Albay Gulf, its imposing profile is visible from the base to the summit, has been noted for its symmetry, and has often been described as a “near-perfect cone” (Fernandez 2001).

The politico-administrative boundaries of the cities and municipalities of Albay are symmetrically notched from the crater rim of Mayon Volcano, with the City of Tabaco and the Municipality of Malilipot in the northeast; the Municipalities of Sto. Domingo in the east quadrant; the City of Legazpi and the Municipalities of Daraga in the southeast quadrant; the Municipality of Camalig in the south; and the City of Ligao and the municipality of Guinobatan in the southwest [Fig. 1 (b)].



Figure 1 (b) : Political Map of Albay (Source : Wikipedia 2016)

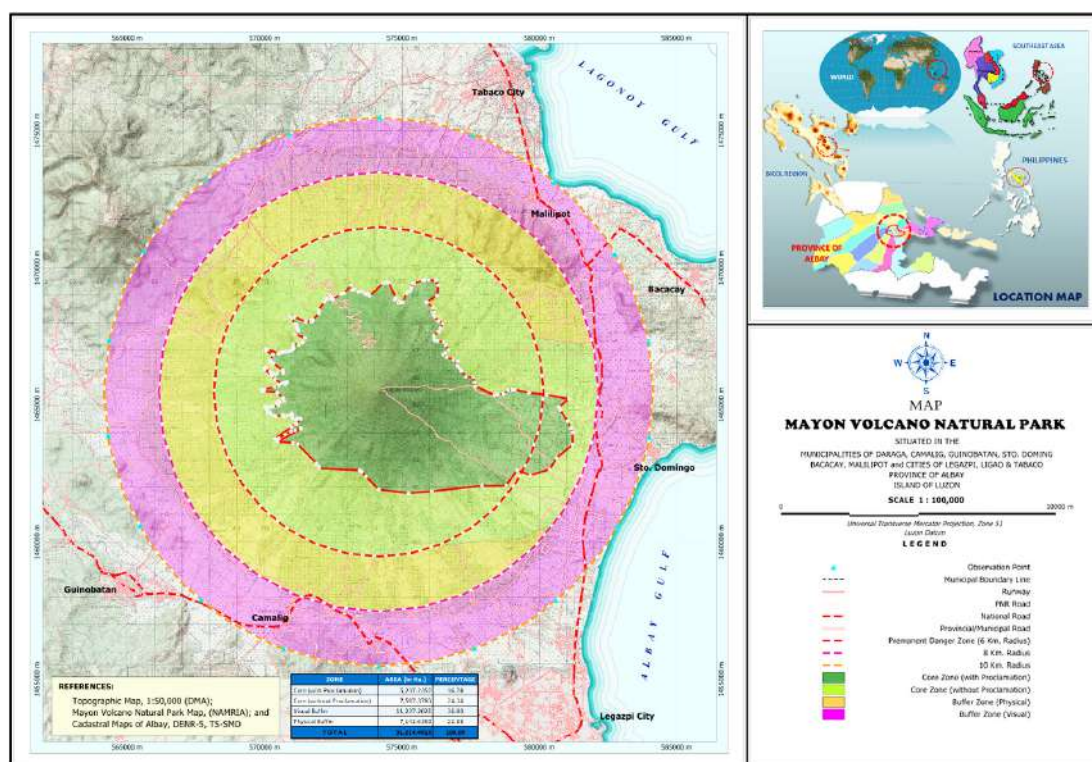


Figure 1 (a) : Mayon's proposed visual easement map (Source: Albay PLGU 2017)

## ■ 2. Mount Mayon Natural Park's (MMNP) Mixed Cultural and Natural Heritage Values

Mayon Volcano's intertwined cultural and natural heritage values are manifested in the associative relationship communities have with the active volcanic landscape. In this regard, the cultural fabric of the communities living around the site is inextricably linked to their interaction with the landscape, which can be characterized in two major ways: (1) the community's rich tangible and intangible heritage resources borne out of their lived experience of the volcanic landscape's aesthetic qualities and (2) the landscape symbiosis and community resilience in response to the geologic activity of the volcanic landscape. Thus, it can be said that communities around the landscape live in a cycle of creation and destruction, of flourishing and adaptation, in response to the regular but unpredictable changes brought about by the landscape's geological activity.

First, the cultural resources of the communities around Mayon have flourished extensively, owing to their interaction with the various natural aesthetic phenomena associated with the landscape, specifically the volcano's symmetrical shape and the concurrent geological activity associated with its geomorphology. The volcano's symmetrical shape is attributed to its ongoing geological activity, where its relatively mild Vulcanian-Strombolian eruptions act as natural maintenance mechanisms, as well as the corresponding Basaltic-Andesitic qualities of its ejecta. During Mayon's eruptions, lava piles up at the summit crater from the volcano's singular vent, covering older deposits and maintaining the upward movement of the volcano. These cappings eventually give way due to the collapse of the crater rim during major eruptions, distributing the buildup to its lower slopes (Punongbayan and Ruelo 1985). The lava's moderately high viscosity, the high degree of crystallinity, and high yield strength are compensated by the effect of the gravitational pull. Due to its steep slopes, volcanic material is evenly distributed around it, resulting in its uniquely symmetrical shape without any unusual cone elongation relative to anywhere around it. The combination of these geologic processes produces its iconic shape whose aesthetic quality is further enhanced by its notoriety and its proximity to human communities.

Mayon's eruptive history and its aesthetic quality has directly contributed to the enrichment of the cultural heritage around the landscape

and has also become an important symbol and source of heritage values. Local origin myths of the volcano, such as the legend of Daragang Magayon – Magayon meaning beautiful in Bikolano –, are directly associated with the aesthetic appreciation of the volcano's geomorphology. The local pantheon of gods also identifies Mayon as their sacred earthly abode, with the supreme god, Gugurang, said to have left the heavens to reside in the volcano. Mayon's eruptions, in this case, were seen as a manifestation of Gugurang's sacred fire and the resulting fertility of the land was a blessing from the gods. This resulting fertility has also been a source not only of economic development but also further enriching the cultural heritage of the area. Examples include agricultural festivals, such as the Pagsuwak Festival in Guinobatan, festivals syncretized with Christian beliefs, such as the Himoluan Festival in Oas in honor of St. Michael the Archangel, and festivals specific to the celebration of Mayon as a cultural symbol, such as the Cagsawa Festival in Daraga and the Sarung Banggi Festival of Sto. Domingo. Moreover, its symbolic significance, because of its aesthetic qualities, have made it a reference point for the region in numerous historical accounts and travel logs from the Spanish colonial era, easily recognizable and admired for both its beauty and destructive activity. Mayon has likewise contributed to the evolving science of volcanoes worldwide, especially during the 18<sup>th</sup> century, during which the direct scientific observations by Spanish scientists have contributed to the modernization of the understanding of volcanic phenomena (Jimenez 2007). Numerous visual artworks and literary pieces bear testament to the enduring and universal appreciation of the volcano's aesthetic qualities, especially during its most destructive phases. Its geometry and notorious history have made it a global icon for volcanoes, known for its shape, identifiability, and the dangers it poses to those living around it, thus becoming an essential pedagogical aid in science education on volcanism and geology (Wood 2009).

In addition to the cultural heritage associated with the landscape's aesthetic qualities, its interaction with the people has also provided the ground for the community's adaptive practices, especially in the context of the drastic and irreversible changes brought about by the dynamic geological and meteorological processes in and around the site. This symbiosis between the landscape and the communities around it is thus a representative example of the dynamic interplay between volcanoes and the human communities living around them.



The fertile slopes of Mayon and the immediate plains of the landscape have become a primary source of livelihood in the area since pre-colonial times, with agriculture becoming the dominant industry due to the soil's fertility [Fig. 2 (a)]. Crops, such as taro, abaca, coconut, rice, and sugar, comprise the majority of agricultural produce, some of which, such as taro and abaca, are prized for their

quality. Likewise, the volcanic deposits have also been identified and extracted for mining operations, with the volcano's frequent activity regularly supplying these sites with minable material. This has resulted in the use of these raw materials for the construction of structures imbued with cultural significance, for instance, the Churrigueresque Baroque-style church of Daraga and the Rococo-



Figure 2 (a) : Mayon and the agricultural landscape around it. (Source: Trina Halili, "MOUNT MAYON," retrieved from <https://app.emaze.com/@AWLWQOIF#1>)



Figure 2 (b) : The ruins of Cagsawa Church, which was destroyed in 1814 by Mayon's most destructive eruption to date. (Source : Photo by the author)

style Tabaco Church, both of which are considered National Cultural Treasures. Conversely, Mayon has likewise brought destruction and the loss of life, most famously in 1814 when the town of Cagsawa was buried by pyroclastic surges and lahar, killing 1,200 people [Fig. 2 (b)]. Traces of the volcano's destructive past can also be seen in the gullies and pyroclastic deposits near some municipalities, such as Sto. Domingo and Malipot, with some deposits being in remarkable condition, showing very distinct layering (Newhall 2018).

Despite these constant risks, communities have in fact thrived for centuries and have learned to adapt to the drastic changes brought about by the volcano and its effects. These resiliency values are represented in the informal and institutional efforts through which these communities respond to the volcano's activity. Indigenous methods of disaster response have been documented, as well as early warning measures, in the form of folktales and *kwentong bayan* (community stories) which have helped save lives during Mayon's previous eruptions (Cerdena 2008). One such *kwentong bayan* is the ominous appearance of an old lady asking for water before an eruption, which can be explained as the community's experience of nearby water sources drying up prior to an eruption sequence. This, along with other narratives, has provided communities with the requisite cultural resources to have been able to adopt a culture of resilience, but also to adapt easily to modern and comprehensive disaster risk mitigation plans as well as extensive and state of the art volcanic monitoring systems.

### ■ 3. Current management arrangements

The site is protected by National Legislation as a Natural Park by virtue of the National Integrated Protected Areas Systems (NIPAS) Act of 1992. A Natural Park, according to the NIPAS Law, is a protected area having no material alteration from human activity and where extensive extractive practices are not allowed so as to maintain the scenic, scientific, and educational significance of the site. In this regard, "Natural Park" corresponds to Category III under IUCN's classification for Protected Areas. Selected tangible cultural heritage sites around the volcano are also protected through the National Heritage Act of 2009 as National Cultural Treasures, which includes Tabaco Church, the ruins of Cagsawa Church, and Daraga Church, which was built with volcanic material from Mayon. Additionally, the Natural Park is itself a component of the Albay Biosphere Reserve, which has been part of the UNESCO Man and Biosphere Network

since 2016. Finally, as the most active volcano in the Philippines, Mayon is monitored by a vast network of sensors and field offices managed by PHIVOLCS; the agency works hand-in-hand with the Albay Public Safety and Emergency Management Office (APSEMO) whenever the volcano erupts.

Part of the ongoing efforts to protect the site is the current World Heritage nomination process, which began when the Province of Albay and the Park Management of MMNP initially voiced their interest, leading to the site being placed on the Tentative List last 2015, under provisional criteria (vii), (viii), and (x). When the province formally signified their desire to work on a World Heritage nomination last 2017, after the designation of the province as a Biosphere Reserve, the National Government, through the Philippine National Commission for UNESCO, has committed to supporting the site through technical and expert-level support and assistance.

Since then, the nomination process has evolved, expanding into the cultural values that animate the landscape. Currently, the National Commission for Culture and the Arts (NCCA) is in the process of conducting a comprehensive heritage mapping activity surrounding the circumferential base of the volcano, in order to identify and validate the different natural and cultural elements related to the volcanic landscape. The results of this mapping activity will be used not only in the nomination dossier but also to identify the appropriate actions needed to protect these linked values between culture and nature, such as more comprehensive geotourism facilities and training for guides and operators on narrativizing the volcano's geological heritage and its resulting cultural values. Further, in order to protect the visual integrity of the volcano across its 360-degree visual easement, there are ongoing negotiations to establish clear infrastructure guidelines and building height regulations. As these are being completed under the general framework of the World Heritage, it is then essential to adopt an overall people-centered approach in the values protection scheme for the site. This will hopefully include institutional arrangements to empower local communities, in the form of local heritage councils, and coordination with the DENR regarding the expanded citizen deputation of *Bantay Gubat* (Forest Rangers) in order to enforce current Protected Area rules and regulations as well as monitor the local biodiversity around the volcano.

In terms of disaster preparedness, the whole



province successfully completed its Albay Disaster Risk Reduction Management Plan in 2009 and has implemented it quite a number of times since then, not only because of Mayon's volcanic activity but more frequently because of the passage of typhoons. For this reason, the province has been cited as having one of the most comprehensive and forward-looking disaster management plans in the country.

#### 4. Current State of Conservation and Challenges for Continuity

The hazards that communities face within the site are multi-dimensional in nature. The combination of the volcano's constant activity, the resulting topography from its geologic history, its location in the Pacific typhoon belt, and the proximity of human communities and settlements around the volcano increase their risk factors (Albay DRRM 2009). These converged back in November 2006, when Typhoon Reming/Durian inundated the region with almost 466mm worth of rain, falling in a 9-hour window (Orense and Ikeda 2007). The slopes of Mayon had just been resupplied by fresh volcanic material following its most recent activity, 4 months prior. This resulted in unusually large lahar flows which descended down Mayon's lower gullies, into river channels, basins, and finally into communities, resulting in 8 barangays being buried and causing 665 deaths, more than half of the total

1,266 fatalities caused by the typhoon (Paguican et al. 2009) [Fig. 3 (a) (b)]. While multi-hazard events have historically occurred with relative frequency, the sheer scale and volume of the 2006 event was enough to overwhelm the existing systems of dikes and sabo dams, which were designed to mitigate mud and lahar flows on a smaller scale, resulting in a complete failure of the conventional means of disaster mitigation (Pierson et al. 2014).

Since then, Albay has learned from their lessons and was able to incorporate a multi-hazard approach to their disaster preparedness schemes, culminating in the 2009 Disaster Risk Reduction Management Plan. The plan has proved invaluable in enabling local authorities to act in an orderly fashion in times of calamity, as well as strengthening inter-agency communication and cooperation. This was seen, for example, during Mayon's 2009 and 2018 eruptions, where evacuations and relief operations were instrumental in ensuring a zero-casualty outcome for the province, which has become the gold standard not only for Albay but for the whole country (Salceda 2013).

There were still gaps in the overall management regime of the site in terms of overall disaster preparation and risk mitigation in the years following the disaster (Scott 2010), though these have been addressed over time, specifically regarding the construction of hard infrastructure

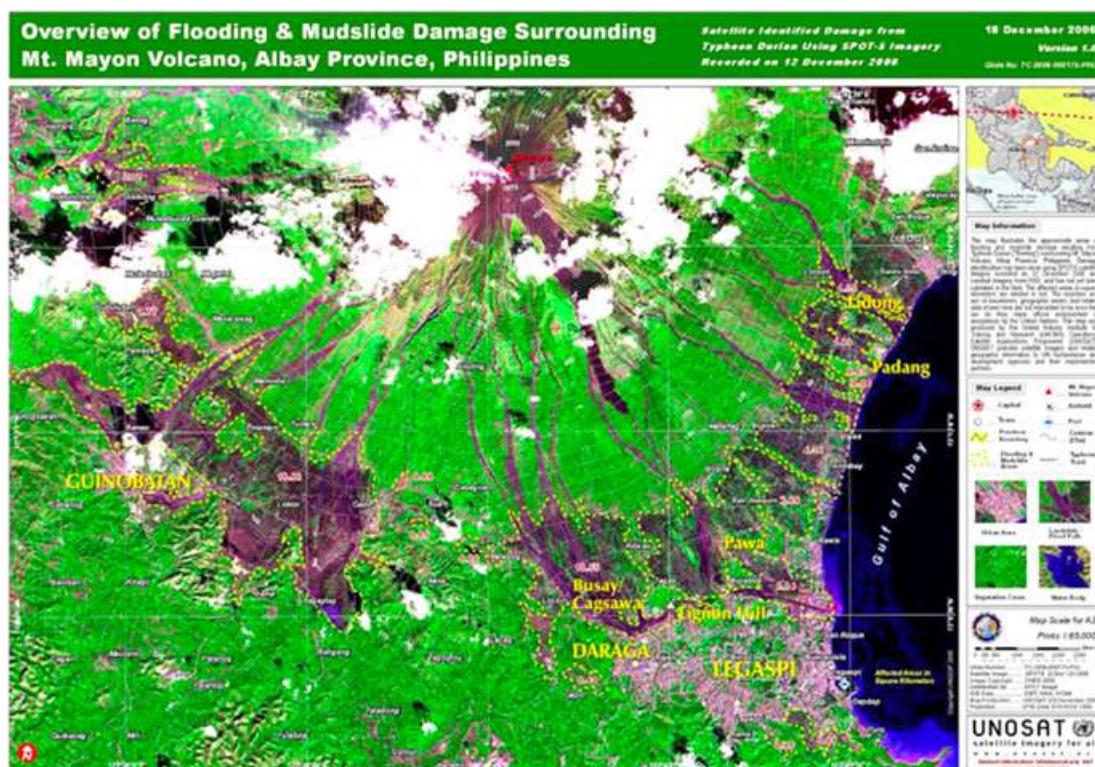


Figure 3 (a) : Flood and lahar damage from the 2006 disaster showing the hardest-hit areas of Lidong, Padang, Guinobatan, Daraga, and Pawa. (Source : UNOSAT 2006)



Figure 3 (b) : Houses covered in lahar in Budiao, Daraga, Albay. (Source: [www.geoview.info](http://www.geoview.info))

to re-channel future lahar flows. Despite this, the previous disaster also exposed the need to mobilize communities further in utilizing the linked heritage values between nature and culture to mitigate the effects of disasters. The 2006 event can thus point us to a number of key issues that affect the site, not only from a disaster mitigation perspective but also from a heritage conservation standpoint.

First, it has been noted that one of the decisive factors which magnified the effects of the 2006 disaster was the complete failure of communication between the communities and local authorities (Orense and Ikeda 2007). Once the typhoon cut communication lines, communities were left isolated and were not able to cope with the speed of the lahars. Since the disaster, local authorities have held community-based risk mapping workshops to capacitate locals with the ability to act on their own whenever large-scale disasters occur again. Apart from this, however, little has been done to capacitate community resilience values from a multi-hazard perspective incorporating heritage values.

Second is the basic lack of identification and appreciation of the linkages between natural and cultural heritage values, which results from the lack of any holistic institutional arrangement for the community to connect with these values. This is a fundamental issue that needs to be addressed because community values around volcanoes, in general, form the bedrock, not only for community cohesiveness and resilience (Kitagawa 2018) but

also provides the requisite value system for people to appreciate their connection to the natural environment. That these values, at present, exist only as oral traditions and implicit in community life but are not fully documented and mapped poses a serious challenge to the protection of these values, as well as the lack of institutions that can transmit these values to the greater public.

## 5. Recommendations

The site is currently in the process of completing its nomination dossier to be submitted for consideration by the World Heritage Committee. Concurrently, efforts are being made to expedite the comprehensive identification of natural and cultural heritage values so that protective measures are put up once the mapping activities around the volcano are accomplished. Through the ongoing nomination efforts, continued engagement in the World Heritage nomination process will capacitate local authorities with the ability to adopt a people-centered framework that incorporates both natural and cultural values protection and their interlinkages. This can be achieved by identifying spaces and institutions where these values are being nurtured and transmitted, including more community-based approaches on disaster risk management or affording protection and promotion of local intangible heritage elements associated with the experience of the community with the volcano.

On a smaller scale, ways of connecting with the site's heritage values through conventional



and non-conventional means should be studied for eventual implementation. For instance, interpretation facilities for Mayon's geological heritage can be set up akin to those in Mt. St. Helens, which was able to take advantage of the 1980 eruption and build a comprehensive museum showcasing the important values related to the volcano (Newhall 2018). Other measures include the identification of significant deposits which can be utilized for geological tourism activities, with comprehensive training for guides and operators to narrate Mayon's heritage from the point of view of geological science, and from the community's perspective through stories about those historical eruptions.

Finally, sites of memory such as the Cagsawa ruins from the 1814 eruption [Fig. 2 above] and the Padang memorial cross from the 2006 disaster [Fig. 4], could be rehabilitated and improved with interpretation facilities, promoting the protection and maintenance of practices and intangible elements centered on commemorating the community's experiences of the volcano's eruptions. Memorialization practices and sites serve as identity markers and help foster a sense of community belongingness and provides opportunities to showcase the communities' experiences of living in a multi-hazard context (Preston et al. 2015). It is hoped that the findings of the ongoing mapping exercise, done by the NCCA, will also lead to the improvement of heritage protection schemes,

especially with regard to sites of memory around the volcano.

These recommendations, while provisional, are fundamental in terms of providing avenues and media for community values to be fostered and integrated into a DRM approach as well as in the World Heritage nomination process. By adopting a people-centered approach and focusing on the heritage links between nature and culture, the site could embody the values of adaptation and resilience, which would become an example in the World Heritage context and contribute to the development of comprehensive and inclusive measures for disaster preparedness and risk reduction in multi-hazard sites similar to Mayon.



Figure 4: Padang memorial cross. (Source: Brahmin Reyes, "Beauty and madness" 2012, retrieved from <https://brahmineyes.wordpress.com/?s=padang>)



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# Promoting Traditional Cultural Practices for Disaster Risk Reduction: A Preliminary Study on the Use of *Gotong-Royong* in Siosar Protected Forest in North Sumatra, Indonesia

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## Abstract

*In 2016, the Indonesian government used around 450 hectares of the Siosar Protected Forest (SPF), owned by the Ministry of Environment and Forestry, for the relocation of three villages affected by the eruption of Mount Sinabung. The use of this protected area for relocation has caused deforestation, increasing its vulnerability to disasters. This paper explores the incorporation of traditional cultural practices for disaster risk reduction in the SPF. In the study, based on observation and interviews, it was found that the local community inhabiting the vicinities of the SPF has continuously performed the traditional practice of gotong-royong (communal work) for maintaining the forest. In this paper, the author proposes the use of gotong-royong as a tool for the implementation of disaster risk reduction plans, while reinforcing the linkages between nature conservation and the safeguarding of the intangible cultural heritage of the local and relocated communities. Moreover, the author suggests reconsidering the use of the SPF for relocation purposes while implementing comprehensive disaster risk reduction plans for its sustainability.*

**KEY WORDS:** Siosar Protected Forest, Disaster Risk Reduction, Relocation, Gotong-royong

## 1. Introduction

Mount Sinabung, in North Sumatra-Indonesia, erupted in September 2010 and has been erupting continuously since September 2013 [Fig. 1] (Gunawan et al. 2017). The eruptions have affected homes and farming areas, causing the evacuation of the surrounding communities. The evacuees stayed in refugee camps for several years and experienced difficulties in their living conditions, sleeping in small tents or in the villages' meeting halls (known as *Jambur*). Even though the government still provides the minimum logistic supplies, the refugee camps have limited food, space, and water supply, as well

as poor hygienic conditions and air circulation, causing discomfort and an unhealthy environment. The residents of three villages (Simacem, Suka Meriah, and Bekerah), located at Mount Sinabung, initially stayed at refugee camps but have since been relocated, in 2016, to reside within the Siosar Protected Forest (SPF), a protected area located about 43.2 km from Mount Sinabung [Fig. 2]. The residents of the Bekerah and Simacem villages were moved to a place called Namantaran, while the residents of the Suka Meriah village were relocated to another place, called Payung (Kompas 2018). Since the relocation, the residents of these three villages are neighbors within the SPF.



Figure 1: Mount Sinabung eruption (author's personal collection, 6 May 2016)

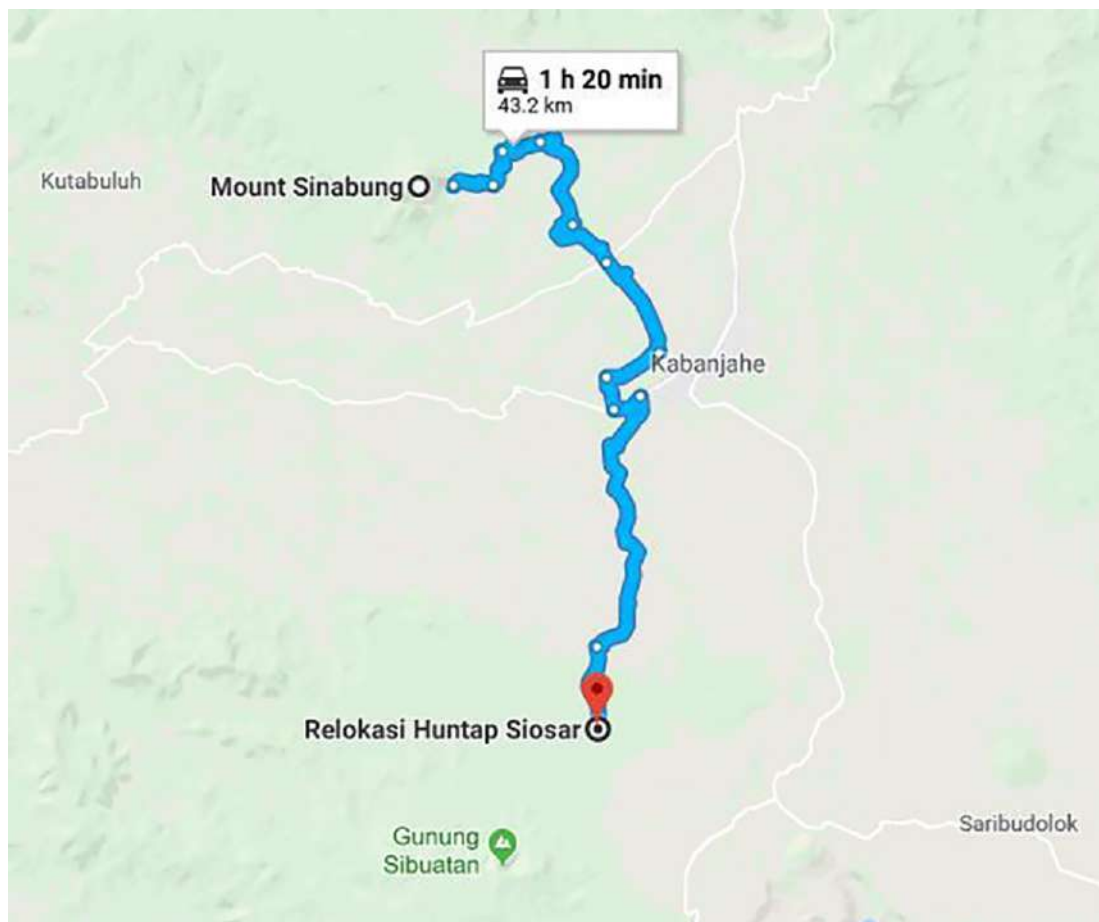


Figure 2: Map indicating the distance between Mount Sinabung and Relocation Centre Siosar (Google Maps, 16 November 2018)

The Siosar Protected Forest is located on the Mount Sibuatan, in the Karo county, in North Sumatra province of Indonesia [Fig. 3]. The SPF is owned and managed by the government, under the Department of Forestry (Analisedaily 2016), as a conservation area. In 2015, part of the SPF was allocated for refugees' residences and farms, increasing the forest's vulnerability to disasters, such

as forest fires and landslides, through deforestation [Fig. 4]. The relocated residents live in stressful conditions at Siosar because some of them could not work in the farms nearby. Vegetable seeds, such as potatoes, were not sufficiently provided by the government at the time of relocation, forcing some of the relocated residents to go back to agricultural work in their village of origin at Mount Sinabung.

Furthermore, their farming land is limited and, as a result, their income has been reduced. The Indonesian government has provided this residence area temporarily within the SPF which could cause new problems when relocating these communities again.

This paper explores the incorporation of traditional cultural practices for disaster risk reduction in the SPF. In the study, based on observation and interviews, it was found that the local community inhabiting the vicinities of the SPF has continuously performed the traditional practice of *gotong-royong* (communal work) for maintaining the forest. In this paper, the author proposes the use

of *gotong-royong* as a tool for the implementation of disaster risk reduction plans, while reinforcing the linkages between nature conservation and the safeguarding of the intangible cultural heritage of the local and relocated communities. Moreover, the author suggests reconsidering the use of the SPF for relocation purposes while implementing comprehensive disaster risk reduction plans for its sustainability.

## 2. Significance of the Siosar Protected Forest

The Siosar Protected Forest, at Mount Sibutan, is part of the Sumatra Tropical Rainforest and extends

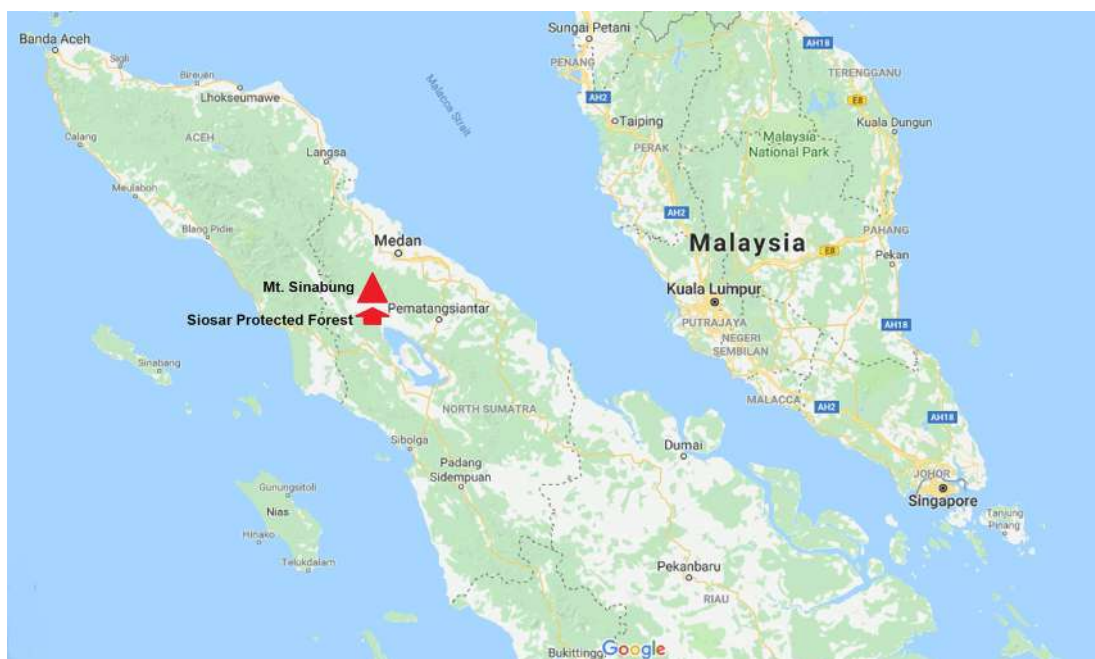


Figure 3: Map indicating Mount Sinabung and Siosar Protected Forest (Google Maps, 30 August 2018)



Figure 4: Deforestation in Siosar Protected Forest Relocation (author's personal collection, 5 May 2016)



1,650 km, from the Aceh to Lampung province (Kompas 2012). Sumatra Tropical Rainforest is one of the 200 ecoregions in the world that is in critical condition (Olson & Dinerstein 2002). The SPF is located about 200 km from Mount Leuser National Park, part of “The Tropical Rainforest Heritage of Sumatra” (TRHS) that was inscribed on the World Heritage List in 2004 (UNESCO 2018) and has been on the List in Danger since 2011, due to a severe deterioration of the natural forest caused by agricultural development (UNESCO 2018). The SPF on Mount Sibuatan contributes to strengthening the TRHS by supporting the migration of animals from Mount Leuser National Park, especially its 580 species of birds (UNESCO 2018).

The SPF has been claimed by the Sukamaju village as their customary land since 1975 (Analisdaily 2016) and it represents their cultural identity. They practice communal work, or as it is called *gotong-royong* in the Indonesian language. *Gotong-royong* is a traditional cultural practice that exists in almost every area in Indonesia and is a form of collaboration by members of the community working on the same project for non-economical reward (Effendi 2013). Sukamaju village has continuously practiced *gotong-royong* for environmental management, especially for maintaining the SPF, showing the linkages between the conservation of nature and the safeguarding of intangible cultural heritage.

### ■ 3. Current management arrangements

#### 3.1 Official Institutional Management

The current management in the SPF involves different stakeholders, such as the Ministry of Environment and Forestry, Karo county government, Indonesian Armed Forces (TNI), and the Ministry of Public Works. They work together coordinating their different roles. The use of the land at SPF for the relocation centre was permitted by the Ministry of Environment and Forestry through the initiative of Karo Forestry Department and Karo county government (Analisdaily 2016). Indonesian Armed Forces built a small military base at the beginning of the relocation process at the Siosar relocation centre in order to secure the conditions and to avoid conflicts between the refugees and the local villagers. Meanwhile, the Ministry of Public Works built homes for 370 families from the three villages, Simacem, Suka Meriah, and Bekerah, in 2015 (Waspada 2015).

#### 3.2 Community-based Management

The Sukamaju village community follows the traditions of *jambur*, a traditional meeting hall used to discuss general problems that occur in the village, and *gotong-royong*. *Gotong-royong* is used to maintain the nature and the forest around the village. For instance, they have done *gotong-royong* for planting trees in 1975, with the cooperation of the local government. The forest and landscape vulnerability which increased due to the relocation centre could be mitigated at present by using *gotong-royong* to restore the forest. However, the residents of the relocation centre do not perform *gotong-royong* because they are new in this area.

### ■ 4. Current State of Conservation and Challenges for Continuity

As Mount Sinabung continues to erupt, new villages may need to be evacuated. Deforestation caused by the Siosar relocation centre and its farms could increase due to the possibilities for new villages to be relocated to the same area. Deforestation increases the vulnerability of the SPF, exposing the area to hazards and risks that may cause water-related disasters, for example, landslides and floods (UNISDR 2015).

Since the three villages were relocated to the SPF, conflict emerged with the Sukamaju village because the community did not want to lose their forest. However, the Head of Karo County Forestry stated that the SPF belongs to the government under the Department of Forestry (Analisdaily 2016). The relocation of residences and farms threatens the SPF and the culture of *gotong-royong*, which has been continued by the Sukamaju village community for maintaining their forest. Without *gotong-royong*, deforestation will advance, increasing the vulnerability of the protected area, the relocated communities, and the surrounding villages, such as Sukamaju.

Furthermore, the eruption of Mount Sinabung caused socio-economic and psychological vulnerabilities for the evacuees. The relocated residents are exposed to health problems, food scarcity, and lack of education infrastructures aggravated by their location in a remote area, such as the SPF [Fig. 5]. Besides, the relocation could be adding to the disaster and displacement trauma of the affected communities.





Figure 5: Relocation centre residences in the Siosar Protected Forest (author's personal collection, 5 May 2016)

## 5. Recommendations

The author described the current state and the challenges for the conservation and maintenance of the forest landscape in the Siosar Protected Forest. The main issues encountered are deforestation and conflicts among relocated communities and the local community. The author suggests that promoting *gotong-royong*, a traditional practice of communal work, could help all communities (Suka Meriah, Simacem, Bekerah, and Sukamaju villages) to become involved in both restoring the damaged forests and solving conflicts among them. *Gotong-royong* has been continuously practiced and can be a social capital to solve problems in Indonesia (Irfan 2016), such as for the three villages relocated in the SPF and the local Sukamaju community. Restoring the forest using *gotong royong* would not only decrease the risks to disasters but would also support rainfall absorption to regulate the water supply in the SPF. Furthermore, the government could promote the use of *gotong-royong* to implement disaster risk reduction plans in the SPF, linking the safeguarding of intangible cultural heritage to the conservation of nature.

Finally, the author recommends incorporating cultural practices, such as *gotong-royong*, into formal policy frameworks for sustainable forest management, to maximise community involvement. It could promote stakeholders engagement in the management of other problems and challenges, such as sustainable food supply. Moreover, relocation trauma could be avoided by embracing cultural practices that could support better integration between the relocated communities and the local community.

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# Post-Earthquake Recovery of Traditional Tibetan Villages in Jiuzhaigou Valley Scenic and Historic Interest Area, Natural World Heritage

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## Abstract

*This paper is based on the survey of the damage and post-earthquake recovery status of the Tibetan traditional villages located in the Jiuzhaigou Valley Scenic and Historic Interest Area, a Natural World Heritage property. Firstly, the situation of the Tibetan villages after the earthquake is clarified, as well as the problems entailed due to the process of recovery. Secondly, recommendations are given for the conservation and development of these traditional villages with cultural heritage value, located inside the natural heritage site, following the features of Tibetan architecture. Finally, the paper identifies the problems of community development and the requirements for disaster prevention and mitigation.*

**KEY WORDS:** Natural Heritage, Earthquake, Jiuzhaigou Valley, Tibetan Villages

## 1. Introduction

The Jiuzhaigou Valley Scenic and Historic Interest Area is located in the Aba Autonomous Prefecture, Sichuan Province, in the South Western area of China [Fig. 1]. It was listed as a UNESCO Natural World Heritage property in 1992 (UNESCO World Heritage Centre 1992). On July 7, 2017, a 7.0-magnitude earthquake occurred in the Jiuzhaigou Valley, with the epicenter located in a village 5 Km away from the scenic spot. It caused 25 deaths, 525 injuries, and damage to more than 73,000 houses (Southwest Jiaotong University World Heritage International Research Center 2018.) Due to the fact that many scenic spots were damaged to varying degrees, the Scenic and Historic Interest Area was temporarily closed. After the earthquake, the author did an investigation on the damage caused by the earthquake to the scenic spots and traditional Tibetan villages inside the World Heritage property and made recommendations for their

recovery.

## 2. Natural and Cultural Values of Jiuzhaigou Valley

The Jiuzhaigou Valley Scenic and Historic Interest Area meets criteria (vii) for its inscription on to the World Heritage List, which is “to contain superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance” (UNESCO 2017). The natural landscape features of the Jiuzhaigou Valley are considered formed by several large earthquakes around the year 1060 (Sichuan newspaper observation 2019). The superb landscapes of Jiuzhaigou Valley are particularly interesting due to their narrow conic karst landforms, spectacular lakes, and waterfalls [Figs. 2 & 3].

Jiuzhaigou Valley is located in the eastern part of the Qinghai-Tibet Plateau, which is a settlement of the Amdo Tibetan Area, one of



Figure 1: Location of Jiuzhaigou Valley (Source: author)

the three major Tibetan areas. Here, the original Tibetan culture of Amdo has been preserved [Fig. 4] because of the district's remote location. Jiuzhai means "Nine Villages Valley," which is named after the nine Tibetan villages scattered throughout the

World Heritage site.

There are three communities in Jiuzhaigou now: the Shuzheng community (including Shuzhengzhai, Chazhai Village, and Heijiazhai), the



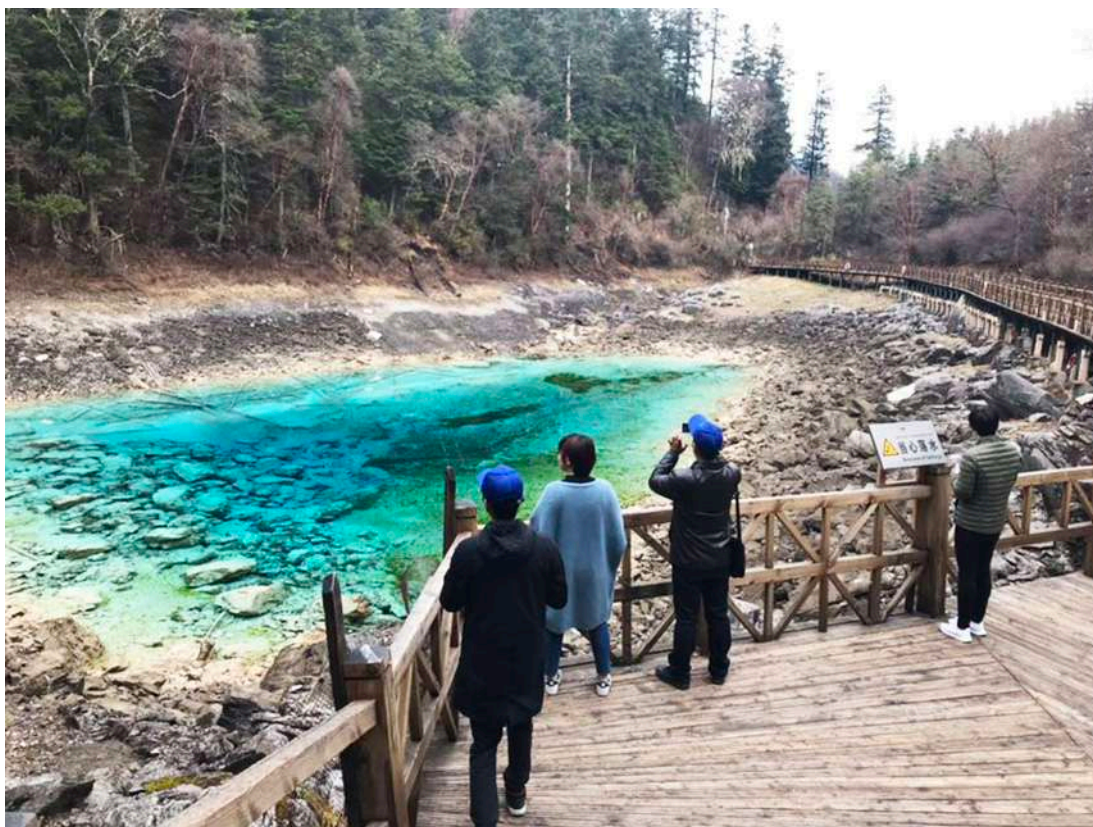


Figure 2: Lakes in Jiuzhaigou Valley before the earthquake (Source: author)



Figure 3: Waterfalls in Jiuzhaigou Valley before the earthquake (Source: author)

Heye community (including Heye Village, Pan Yazhai, and the Yala Village), and the Zharu community (including Jianpanzhai, Hot Xizhai, and Guoduzhai). At present, there are 357 households, with 1,387 people, in the three communities in the Jiuzhaigou Scenic Area. There are 49 households in Zharu, with a total population of 168; there are 160 households in the Heye community, with a total population of 645; and the total number of households in the Shuzheng community is 148, with a total population of 574 (Southwest Jiaotong University World Heritage International Research Center 2018).

These settlements can be traced back to 2,000 years ago, according to ancient records (Sichuan newspaper observation 2019). The architecture of these villages is mostly composed

of wooden structures, made of local fir boards, and are constructed with rooftops made with grey tiles, bark, or flaky stones, partition walls made with the fir boards, and load-bearing walls made with rammed earth, presenting a simple appearance and unique Tibetan characteristics [Fig 4].

### 3. Management Arrangements

As a national park and a national nature reserve, Jiuzhaigou Valley is protected by national and provincial laws and regulations. In 2004, the Sichuan Provincial Regulation on World Heritage Protection and the Regulation on Implementing Sichuan Provincial Regulation on World Heritage Protection in the Aba Autonomous Prefecture became laws, which provided a stricter basis for the protection of the property.

In terms of ecological protection, the traditional farming and animal husbandry by the local residents have largely affected the natural environment and landscape of the site. Since 1984, the Jiuzhaigou Administration has prohibited local residents from farming and grazing within the boundaries of the site and 7% of the income generated from the scenic spot tickets is distributed among the residents as a living allowance. At the same time, the Jiuzhaigou Administration has closed all the hotels and restaurants in the scenic area to relieve the environmental problems brought about





Figure 4: The traditional architecture of Tibetan culture of Amdo (Source: author)

by the dramatic development of tourism. Tourists are prohibited from finding accommodations within the scenic area; however, a tourist terminal service centre was established in the Zhangza town, which is 4km away from the scenic spot, to promote the development of the town while reducing the pollution within the heritage site. The Nuorilang Tourist centre, established in 2003, is the only dining spot within the site.

#### 4. Post-earthquake recovery and challenges for the conservation of the Tibetan villages

##### 4.1 State of the Tibetan villages after the earthquake

After the Jiuzhaigou earthquake, the Sichuan government department deployed and launched post-disaster recovery and reconstruction work (Sichuan newspaper observation 2019). The post-disaster reconstruction work within the Jiuzhaigou scenic spot began in early 2018. In March, due to the reopening of the scenic spot, the reconstruction project slowed down. After the park was closed again in July 2018, the management of the scenic spot has paid close attention to all aspects of its reconstruction. As of September 2018, the Jiuzhaigou Scenic Area Reconstruction Project started with a total of 20 projects, of which, 3 have been completed and 17 are still under development. In the investigation of the four villages of Shuzhengzhai, Heyezhai, Chazhaizhai, and Zharuizhai, it was found that a new Heye village, under the Heyezhai Mountain, was built after 1984, due to the relocation of the Jianpan, Panya, and Heye Laozhai during the opening of the scenic spot. The layout of the settlement is different from that of other traditional villages. Buildings are larger with structures combining three systems: wood

structures, brick and wood structures, and brick-concrete structures, of which, the most utilized is the brick-concrete structure. These have been built within the last 35 years and they were not damaged during the earthquake.

After the earthquake in Chazhaizhai, many traditional buildings were damaged and later collapsed. During the survey, it was observed that many buildings were being reconstructed on their original sites.

The Zharuzhai village is basically occupied by farmers. The houses have been reconstructed or newly built by its residents on the original historical buildings' sites, according to their needs. The earthquake destroyed and damaged some of the historical buildings and the houses that the farmers independently rebuilt. The new constructions were not greatly affected.

Wood structures were affected by the earthquake. Many buildings were seriously damaged and a larger number of buildings were slightly damaged. At the time of the survey, a total of seven buildings were being rebuilt, two seriously damaged buildings were being repaired, and other buildings were under renovation (Southwest Jiaotong University World Heritage International Research Center 2018).

##### 4.2 Vulnerability and disaster risks in the Tibetan villages

Jiuzhaigou Valley is located in the southwestern Sichuan fault block and the eastern part of the Bayan Har block, which is in the middle section of the seismic tectonic belt. There have been fifteen

strong earthquakes within the scope of the scenic spot since 1876, including five earthquakes with magnitude 7.0 or above.

In addition to earthquakes, the villages in Jiuzhaigou are prone to other hazards, such as collapse, mudslides, and landslides, caused by earthquakes. There have been 134 records of hazards in Jiuzhaigou, including 79 collapses, 15 landslides, 25 mudslides, and 15 unstable slopes.

The villages in Zha Ruzhai are located along the mountain and along the road, on the slope of the mountain foot valley. There have been 4 geological disasters: 2 landslides, 1 unstable slope, and 1 debris flow.

In the Heye Village, the mountain villages are mainly exposed to the risk of collapse and mudslides. There have been 5 geological disasters: 1 unstable slope, 3 collapses, and 1 debris flow (Southwest Jiaotong University World Heritage International Research Center 2018).

According to our survey and analysis, in addition to the objective factors that the earthquake has high magnitude and shallow source, and the epicenter is closer to the scenic spot, there are two main reasons for the earthquake damage in the Jiuzhaigou Valley:

- I. Prevention and mitigation systems, especially for landslides, have not been implemented in the Jiuzhaigou Valley, resulting in serious damage to the scenic spot.
- II. The traffic system is unsafe and chaotic. Almost all of the roadways and pedestrian walkways are constructed at the mountain foot since the terrain in the Jiuzhaigou Valley is complex with very few open flats, causing certain areas to coincide with geological hazard areas. As a result, when geological disasters occur in certain areas, it will directly lead to the chain destruction of the traffic system.

Jiuzhaigou Valley is also threatened by earthquake hazards such as landslides, mudslides, and fires. The installation of early-warning systems, as well as management and coordination systems, are still lagging behind, while the emergency response system is also not performing perfectly.

#### 4.3 Impact of Tourism Development on the Heritage Site

Modern building materials and technology have replaced the traditional wooden structure system, based on the natural environment and resources, in Jiuzhaigou Valley. The new buildings [Fig. 5] have a large volume and their overall layout presents a monotonous form, replacing the traditional dynamic and interesting landscape of traditional Tibetan architecture [Fig. 6].



Figure 5: The new buildings (Source: author)

## 5. Recommendations

### 5.1 Disasters Risk Reduction

In order to ensure that residents and tourists can rely on appropriate emergency response measures during disasters and to facilitate the post-disaster recovery in an orderly manner, an integrated disaster prevention management system for the villages needs to be established. This would include early warning monitoring, risk assessment, disaster prevention and relief, post-disaster recovery, and safeguarding measures. In addition, the Jiuzhaigou municipality can also implement post-disaster coordination management efficiently through this system, such as disaster relief, loss compensation, earthquake hazards prevention, and the disaster forecasting.

### 5.2 Protection of Tibetan Traditional Villages

The evolution of the villages in Jiuzhaigou Valley is closely related to the local culture and the surrounding natural environment. Due to the influence of tourism and foreign cultures, it is hard to adapt the traditional architecture to the new functions and space requirements. Thus, the villages of Jiuzhaigou Valley are undergoing a process of land use diversification. As a result, before undertaking the post-earthquake recovery of the traditional villages, it must be determined which historical



*Figure 6: The landscape of traditional Tibetan architecture (Source: author)*

period the villages should be restored to. Based on the research (Sichuan Urban and Rural Planning and Design Institute 2018), the author strongly recommends the government maintains the traditional architecture of Jiuzhaigou Valley to keep its historical originality. Furthermore, it is necessary to develop regulations for the construction of buildings, roads, and landscapes to ensure the preservation and continuation of these traditional villages. Handicrafts and green ecological products should be promoted to create a distinctive industry chain based on the local culture, in order to find a balance between development and conservation.

#### ■ Acknowledgements

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# Nature – Culture Linkages in the Cu Lao Cham – Hoi An World Biosphere Reserve

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## ■ Abstract

*The Cu Lao Cham- Hoi An in Vietnam was designated as a UNESCO Biosphere Reserve (CBR) in 2009 based on its natural and cultural values. Currently, these values are facing challenges from the threat of disasters and socio-economic development. Heavy typhoons and floods are impacting the ancient town of Hoi An and have given rise to collapsing river banks and beach erosion. Sedimentation and pollution are attacking coral-reefs and sea-grass beds. Moreover, there are several development projects on the river sand-dunes and beaches. These result in changes to the natural morphology, fragmentation of aquatic habitats, and alternations in the wildlife-cycle. In this paper, the author describes the values of the CBR and how the CBR zoning helps to conserve and promote them, as well as to mitigate the threats upon them. This paper explains that the conservation strategies and management are defined based on the relationship between the Marine Protected Area (MPA) and Hoi An Ancient Town (World Cultural Heritage)(Hoi An People's Committee, 2015) and it clarifies that the implementation of these measures aims to support sustainable development in Hoi An city and building resilience to climate change throughout the entire CBR.*

**KEY WORDS:** Cu Lao Cham – Hoi An, Biosphere Reserve, Nature-Culture Linkage

## ■ 1. Introduction

Located at the mouth of the Thu Bon river, the Cu Lao Cham-Hoi An World Biosphere Reserve(CBR) is marked by a diversity of coastal and estuary ecological systems. Canebrakes, sand-dunes, mangrove forests, sea-grass beds, coral reefs, seaweed masses, and natural forests on the islands, as well as the landscape and seascape, provides the city of Hoi An and its surrounding coastal and marine areas and adjacent islands with many ecological services, creating favorable conditions for socio-economic development, especially eco-tourism (Hoi An People's Committee 2015).

Being aware of, and consenting to, the principles and targets set by the UNESCO Man and the Biosphere Programme (MAB), the People's Committee (PC) of Quang Nam province proposed, in 2008, the establishment of the CBR<sup>1</sup> as an integration between the natural and the cultural environment, as well as between the conservation of nature, cultural heritage, and the protection of the community environment (Quang Nam People's Committee 2008). UNESCO recognized the proposal from the PC of Quang Nam and delivered the certificate of World Biosphere Reserve to Cu Lao Cham – HoiAn in 2009 (UNESCO 2015).

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<sup>1</sup> World Biosphere Reserve (WBR) is a system that includes natural and cultural values. Both categories of values are interrelated and create the basis for the implementation of the three functions of a WBR: (1) to preserve natural and cultural resources and their linkages; (2) to develop an environmentally-friendly economy; and (3) to support monitoring activities, scientific research, education programs, communication plans for local communities, and to raise stakeholders' awareness on environmental matters. A strategic objective of a WBR is to maintain life-quality in both a spiritual and material sense. This is also the objective of the 17 Sustainable Development Goals of the United Nations (Vietnam Government 2012; Vietnam Government 2018)



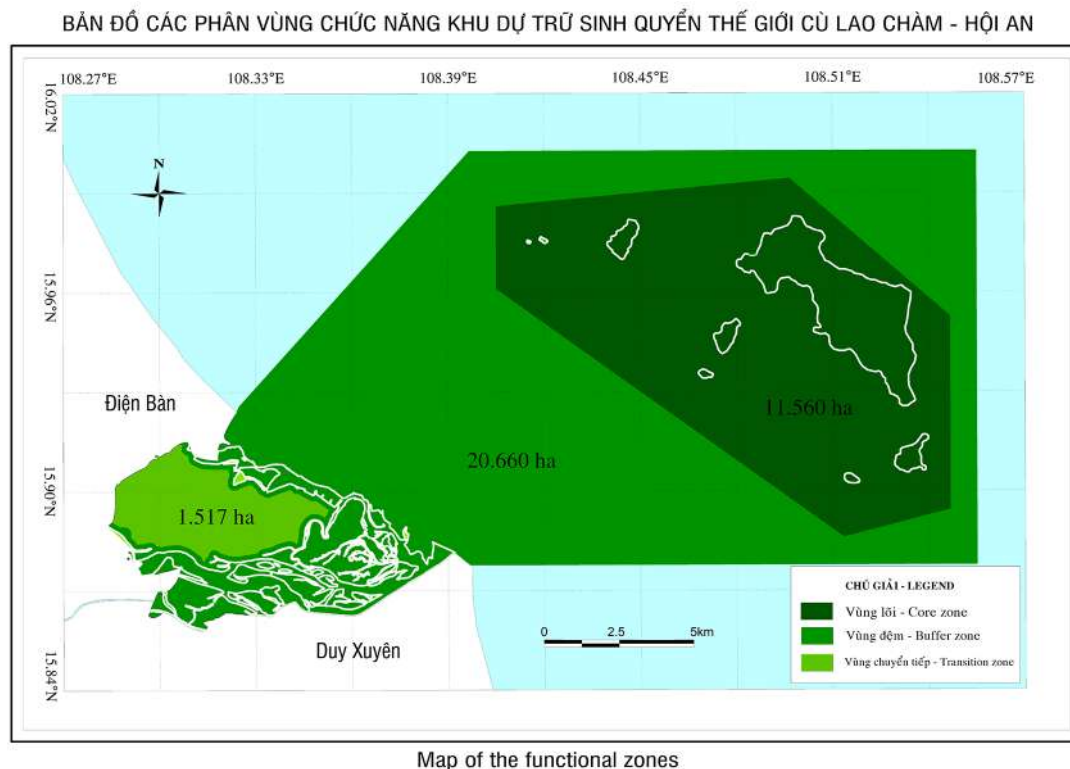


Figure 1: The CBR zoning map

The river mouth with its mangrove forests can be considered a “bridge” that connects the biodiversity of the Marine Protected Area (MPA) to the cultural values of Hoi An Ancient Town. This is a basic principle of the CBR conservation strategy (Hoi An People’s Committee 2015; Quang Nam People’s Committee 2008), which is also reflected in the zoning of the CBR [Fig. 1]:

- *The core zone* comprises almost the entire area of the MPA and includes strictly protected areas and ecological rehabilitation zones. It has a total area of 11,560 hectares to carry out the biodiversity conservation function of the CBR.
- *The buffer zone* has a total area of 20,660 hectares and includes the area around the core zone, the buffer of the river, natural wetlands, and the beaches of Hoi An city. It consists of the marine ecosystem and its close interactions with the core zone: mangrove forests, which play an important role in controlling water quality, as well as the aquatic ecosystems, habitats, and species linked with the river mouth and the islands.
- *The transition zone* is made up of Hoi An city, with a total area of 1,517 hectares, which includes the ancient town of Hoi An, a World Cultural Heritage property.

In this paper, the author describes how the BR zoning system in the CBR integrates human-ecology and natural-ecology. The paper shows how the CBR has become a great place for stakeholders in different cultural and natural sectors to work together and to work out integrated solutions for the conservation and development of the heritage city and its larger ecosystem in a sustainable way. Furthermore, the paper explains how all activities are coordinated towards the enhancement and harmonization of the relationship between humans and the biosphere.

## 2. Significance of the CBR

Hoi An Ancient Town (recognized as a World Cultural Heritage property in 1999) is an exceptionally well-preserved example of a South-East-Asian trading port dating from the 15<sup>th</sup> to the 19<sup>th</sup> century. Natural and cultural resources are important assets of the Hoi An World Heritage city. They do not exist in an independent way, but they influence each other, generating interactions. The commercial port, international shipping, and traditional villages were created on account of the river basin, beaches, islands, and ocean. The appearance of Hoi An Ancient Town on the sea silk-road in the past is an important evidence for culture and nature interrelations. Merchants and researchers came from Japan, China, the Middle-East, India, Europe, and other countries for commercial exchanges and set-up an international community. Their families

have been living in Hoi An ever since. Therefore, the outstanding universal value of the World Heritage property is also supported by the continuous cultural life of the local communities, beyond just the historical houses (Hoi An People's Committee 2014)

In addition, the MPA (created in 2006) consists of a marine biodiversity conservation area which, in this case, also includes the tropical forests on the islands. More than 357 hectares of coral-reef, 80 hectares of sea-grass beds and seaweed, 10 beaches, and 1,500 hectares of primary forests are protected by the MPA and the local people (Long, Thao and Trinh 2017). The natural and cultural resources are tourist attractions and life-sustaining for more than 3,000 people on the islands.

Recently, in 2017, a traditional practice of the communities living in the CBR received another designation from UNESCO, the *Bai-Choi singing* is representative of Vietnam's intangible cultural heritage (Vietnam 2017). This is a folk-singing genre of a coastal Vietnamese community. People use picture cards and traditional musical instruments to play in village huts such as public place, temple yards and village stadium. It is often performed at the spring festival and resembles a game. The Bai-Choi songs are moral lessons related to the living experience of the people in these communities. The game and songs were created by Madarine Dao Duy Tu (1572-1634) to help the locals protect their crops (Vietnam Plus 2019).

### 3. Current management systems of the CBR

In holding three UNESCO designations (World Heritage, Biosphere Reserve, and Intangible Cultural Heritage), Hoi An city is promoting the conservation of natural and cultural values in their development strategy. There is a proposal for nominating Hoi An as an ecological-cultural-tourism city in 2030. With this idea in mind, all departments and divisions of the city have begun integrating this mission into their plans and activities, establishing goals for the whole city. The CBR management board coordinates all activities that are related to the cultural and natural values of the city [Fig. 4]. Through the development procedure, the CBR tries to create a safe place for stakeholders to work together and figure out integrated solutions. There are several approaches that must be integrated into the action plans, such as the ecosystem approach, watershed approach, integrated coastal management, and the ridge to reef (2R) approach, in order to develop management models. One model which has been

successfully applied in the CBR is the 2013 Bai-Huong village sub-MPA co-management model [Fig. 3]. In this model, the Quang Nam province has been assigned 19 of the 235 hectares of Cu Lao Cham MPA area for the local fishermen in Bai Huong village to manage the marine resources and develop eco-tourism based on the conservation results (Quang Nam Province People's Committee 2013). This is a shared decision-making process that includes the government, the local communities, and other stakeholders. The local fishermen created resource management plans by themselves. Using this system, the local partners will be the real owners of the natural and cultural resources. They are decision-makers in the maintenance of the outstanding universal value of the Hoi An World Heritage city.



Figure 2: Coral bleaching (top and center) and sand dune concretion in river (bottom) (Source: Author 2017)

The master plan and implementation program of the CBR is continuously in the making, being updated, and coordinating with stakeholders, including the four main entities: the government, scientists, the private sector, and the local people (Hoi An People's Committee 2015) [Fig. 3]. The majority of the leaders in the city were invited to

be members of the CBR management board. This is an important characteristic of the system which serves to facilitate the collection of information and data, to discuss and to reflect on at workshops and meetings, to analyze problems, and to find out solutions. All of the CBR coordinators are responding to the balance between conservation

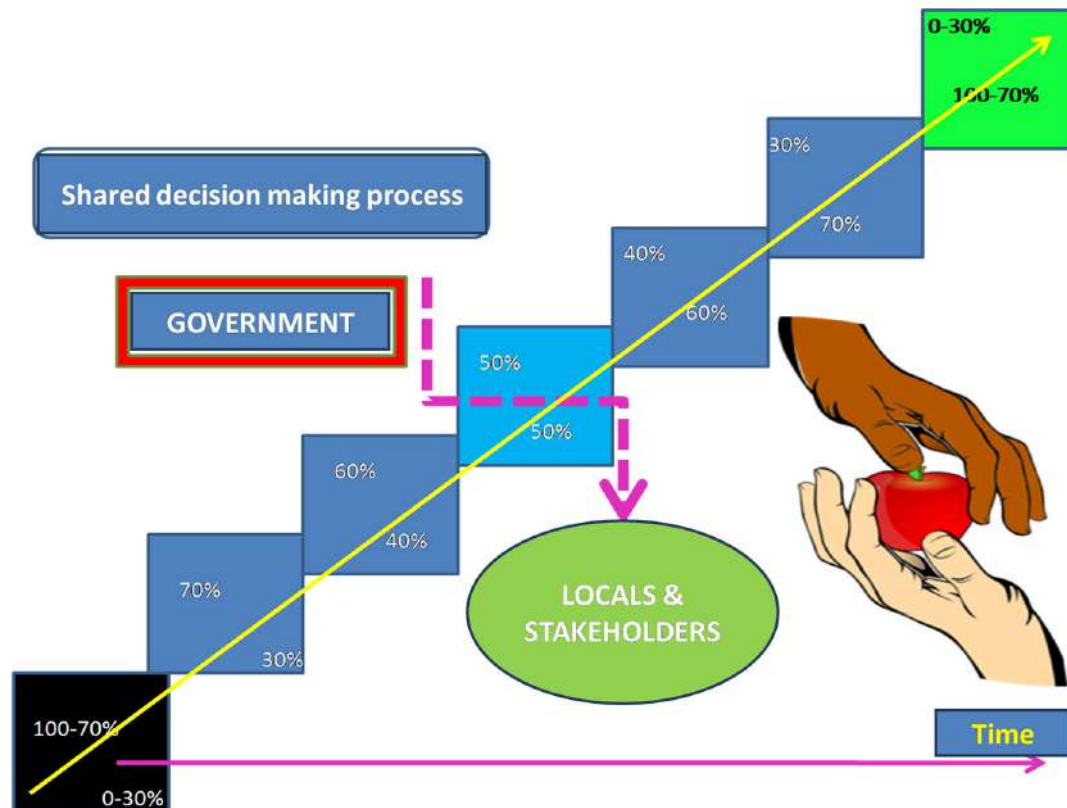


Figure 3: The co-management model in CBR (Source: Author)

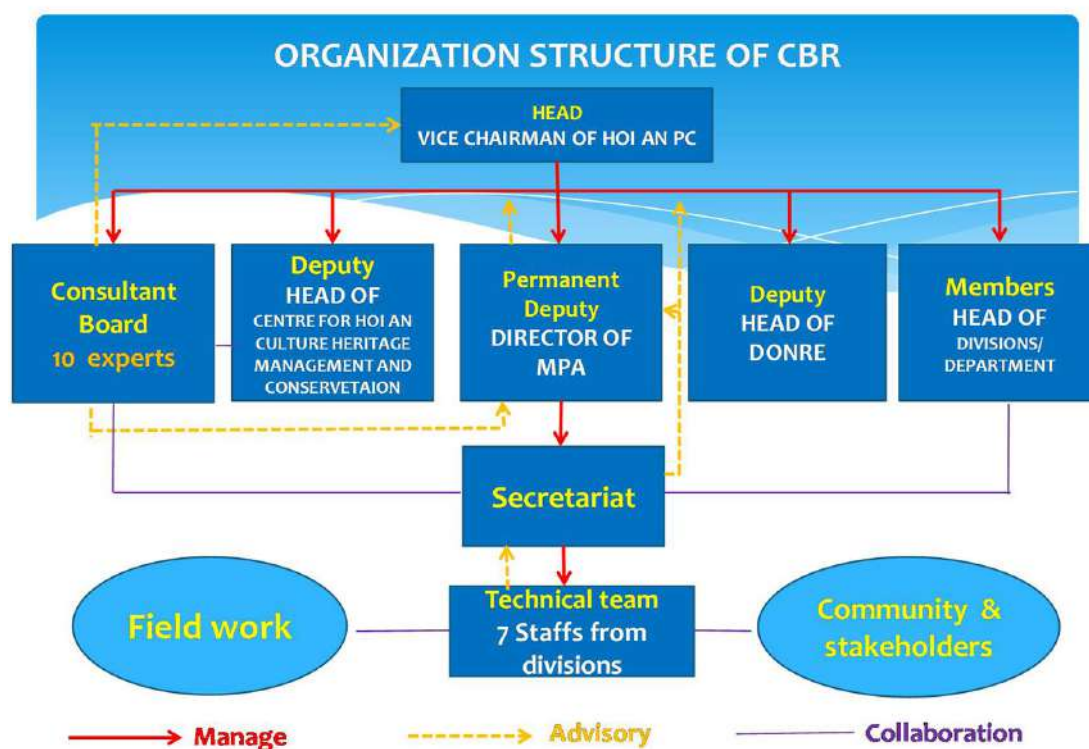


Figure 4: CBR organization structure (Source: Hoi An People's Committee 2015)

and development, focusing on sustainable development and resilience to climate change.

The CBR not only applies effective methods for the coordination of its activities through the participation of stakeholders but also executes the SLIQ model (System thinking – Landscape planning – Inter-sectoral coordination – Quality economy) [Fig. 5] (Nguyen 2018) in development projects and for the sustainable development of Hoi An World Heritage city.

The CBR has not only created a good relationship with local communities and stakeholders working together on conservation, livelihood development, eco-tourism, and education but it is also a space for system thinking, reflections on linkages with nature, and harmonization between humans and the biosphere. It is a wonderful foundation for sustainable development. Furthermore, the CBR integrates and adapts other international, national, provincial, and even local instruments. The IUCN's Red List and Vietnam's Red Data Book provides the basic criteria used to make plans for the protected areas, to propose projects or research, and especially related to harvest and the use of natural resources in a sustainable manner related to species, habitats, or ecosystems. Since the CBR was established in 2009, the communication, education, and research programs have been embedded into the compliance with the Convention on International Trade in Endangered Species in the Wild (CITES) (Management Board of Cu Lao Cham – Hoi An BR 2015). These programs have raised awareness and had an impact on the actions of the local people. They have not only stopped hunting and eating sea-turtles but also have been volunteering to protect and help them face challenges from disaster, climate change, and socio-economic development.

The Government agencies are using the CBR and its protected areas to increase sustainable fishery use. This is an important action so that the European Committee will remove the 2017 IUU (Illegal – Unreported – Unregulated) yellow card that Vietnam was flagged with.

#### 4. Challenges to the conservation of the CBR

Natural resources, especially in marine ecosystems such as in the CBR, are very sensitive to climate change and are facing hazards as well as impacts from socio-economic activities along river basins, on beaches, in the ocean of Hoi An city, and along the coast of Vietnam. There are usually around 10

typhoons, which cause flooding, per year in the central coast of Vietnam (UNDP 2015). They are directly impacting the housing structures of the ancient town, making river banks collapse, and eroding the beaches. Sediments and pollution from the mainland, following the Thu Bon river basin, are attacking the coral reefs and sea-grass beds in the vicinity of the islands. Fishing boats, tourist speed-boats, and ship movement, in general, jeopardize marine habitats and aquatic ecosystems in the MPA.

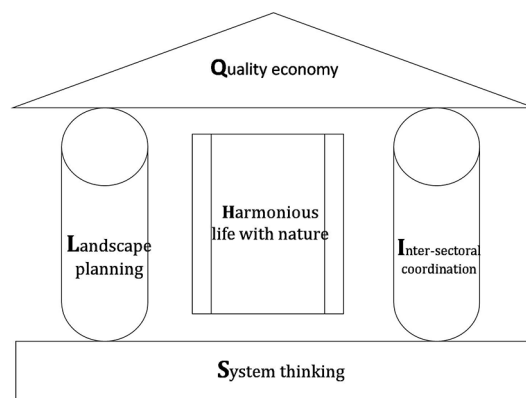


Figure 5: The SLIQ model (Created by Vietnam Man and Biosphere Programme National Committee) (Nguyen 2018)

Construction along the rivers, on the sand dunes and on the beaches, modifies the natural morphology, impacts the direction of the river flow, and puts the ecosystem's health in danger thus generating the loss of the nursery of species, habitat loss, and species lifecycles alternation. Because of these negative impacts, the CBR lost more than 40 hectares of sea-grass beds within ten years (2008-2017) (Long, Thao and Trinh 2017). This is an important lesson for the city to keep in consideration when preparing a new building strategy and master plan. The sustainability of the heritage city can only be based on the balance between development and conservation, according to the principle of harmony between people and nature (Nguyen 2018).

In addition, the quality of the tropical forests upstream is reducing. A hundred hydropower reservoir dams store water during dry periods but release water during the rainy season. This operation is creating salt-intrusion during the dry season and has increased flooding in the rainy season.

Some of the mitigation activities are being undertaken as part of the general strategy of the CBR and Hoi An city. These activities reflect that socio-economic development should be based on the linkages between natural and cultural resources. This linkage is helping the city to raise its resilience

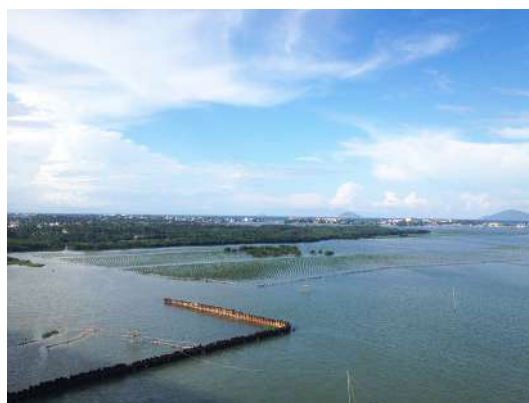


to climate change. For instance, the city has built concrete embankments to protect the structure of the old houses in the ancient town. Ecological dykes are used to maintain the sand dunes, river-banks, and beaches [Fig. 6], and the mangrove forests at the river mouth are being restored.

However, the value of the Hoi An cultural heritage is not only in the architecture of its historic houses but also in the traditional lifestyle of local people. Currently, this ancient town is a very good place for commerce service. Almost all tenants want to change the structure of the buildings and want to rebuild the historical houses, adapting them to commercial functions. The Government and heritage conservation agencies are trying to manage these activities by applying regulations on construction work, but they cannot control this negative development entirely. There are many people from other cities moving into the town in order to start commercial and service business activities. Such activities and modern life are changing and impacting the local traditional lifestyle, which is the soul of the World Heritage property.

## 5. Conclusion

Hoi An holds three international designations from UNESCO, which gives this heritage city advantages when compared to other cities in coastal Vietnam. The three designations include intangible and tangible cultural heritage and natural heritage (with the BR) and providing opportunities to work on nature-culture linkages at the management level. The CBR, which covers the larger area of these designations, has created its strategy involving a diversity of stakeholders, applying effective approaches to management models, raising the community's awareness on natural-cultural linkages, emphasizing biodiversity conservation, protecting the historical structure of Hoi An Ancient Town, and improving the capacity of the local communities on disaster prevention, post-disaster recovery, and their resilience to climate change.



*Figure 6: Ecological dyke (top and center - Source: Vu My Hanh) and mangrove forest rehabilitation (bottom - Source: Author)*



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# Disaster risk reduction at UNESCO Global Geoparks and Biosphere Reserves

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## Abstract

*UNESCO Global Geoparks and Biosphere Reserves are natural UNESCO designated sites that promote sustainable development and focus on the protection of natural and cultural heritage or the conservation and sustainable use of geological resources and biodiversity. More than 800 of these natural UNESCO-designated sites may be partly or entirely exposed to natural hazards and extreme weather events which can potentially impact the communities living in or near the sites and their livelihoods. Because of their high cultural and symbolic value, the impact of the loss or damage of a natural UNESCO-designated site can resonate across the world. At the same time, these iconic sites have tremendous potential as platforms to share knowledge on Disaster Risk Reduction. Many UNESCO-designated sites have community and tourism-oriented programmes to raise awareness about the source of natural hazards, associated risks, and ways to reduce their impact.*

**KEY WORDS:** Natural UNESCO designated sites, UNESCO Global Geoparks, Biosphere Reserves, Disaster risk reduction

## 1. Introduction

UNESCO's Natural Science Sector hosts Secretariats of two programmes dealing with designations of sites of international value. These two programmes are the International Geoscience and Geoparks Programme (IGGP) (UNESCO 2018a) and the Man and the Biosphere (MAB) Programme (UNESCO 2018b).

UNESCO Global Geoparks and Biosphere Reserves [Fig. 1] promote sustainable development and focus on the protection of natural and cultural heritage or the conservation and sustainable use of geological resources, in the case of UNESCO Global Geoparks, and biodiversity, in the case of Biosphere Reserves.

These two designations are complementary with another UNESCO designation – World Heritage properties.

### 1.1 Brief description of UNESCO Global Geoparks and Biosphere Reserves

UNESCO Global Geoparks are single, unified, geographical areas where sites and landscapes of international geological significance are managed through the holistic concept of protection, education, and sustainable development (UNESCO 2018 d). Their bottom-up approach consists of combining conservation with sustainable development while involving local communities. As of July 2018, there are 140 UNESCO Global Geoparks in 38 countries.

Biosphere Reserves are areas comprising terrestrial, marine, and coastal ecosystems. Each Biosphere Reserve promotes solutions reconciling the conservation of biodiversity with its sustainable use (UNESCO 2018e). Biosphere Reserves are 'Science for Sustainability support sites' – special places for testing interdisciplinary approaches to understanding and managing changes and interactions between social and ecological systems,

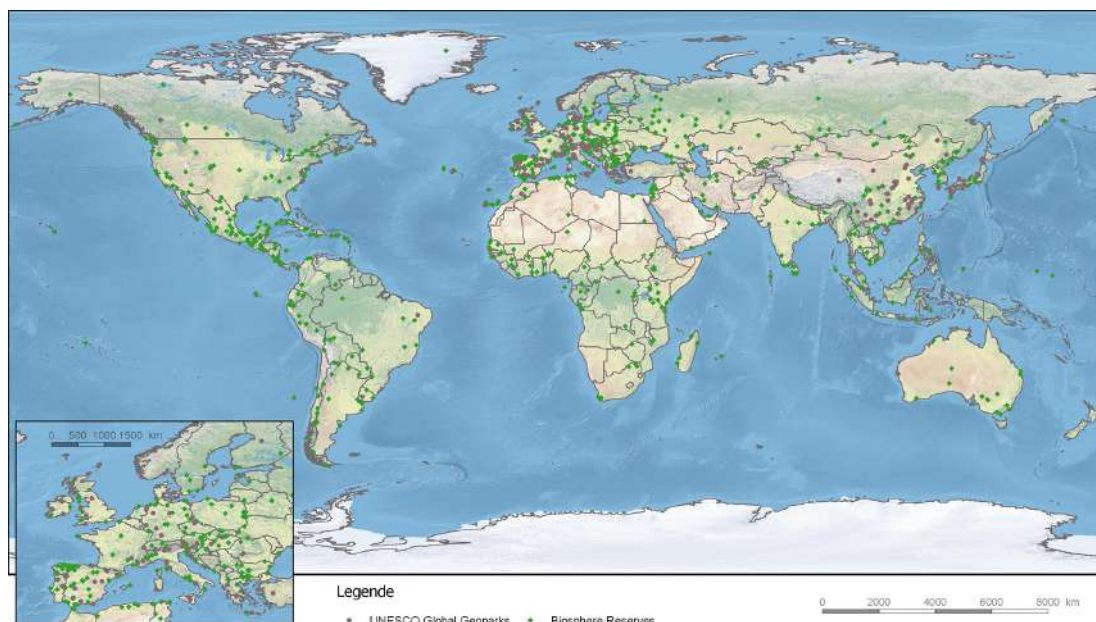


Figure 1: UNESCO Global Geoparks and Biosphere Reserves

including conflict prevention and management of biodiversity. As of July 2018, there are 686 biosphere reserves in 122 countries, including 20 transboundary sites.

Together with the other UNESCO site designations – World Heritage natural and cultural sites (UNESCO 2018 f) – these sites give a complete picture of celebrating our heritage while at the same time conserving the world's cultural, biological, and geological diversity as well as promoting sustainable economic development. Biosphere Reserves focus on the conservation and harmonised management of biological and cultural diversity while the UNESCO Global Geoparks give international recognition to sites that promote the importance and significance of protecting the Earth's geodiversity and World Heritage sites promote the conservation of natural and cultural sites of outstanding universal value. Some of these sites are called Multi-Internationally Designated Areas (MIDAs) (Schaaf, Th. and Clamote Rodrigues, D., 2016) when they have two or even three of these international designations overlapping, sometimes this is in addition to other international designations as well (e.g. Ramsar sites).

### 1.2 Overview of natural hazards at UNESCO Global Geoparks and Biosphere Reserves

UNESCO Global Geoparks and Biosphere Reserves are located in geographical settings which may be partly or entirely exposed to natural hazards and extreme weather events which can potentially impact the communities living in or near the sites and their livelihoods. Because of their high cultural and symbolic value, the impact of the loss

or damage of a UNESCO Global Geopark and a Biosphere Reserve can resonate across the world.

In recent years, natural hazards, both geological (such as earthquakes, volcanic eruptions, landslides, and tsunamis) and hydro-meteorological (such as floods, droughts, and avalanches), have already caused extensive damage to UNESCO Global Geoparks and Biosphere Reserves. Major earthquakes disrupted the functioning of the Wolong Biosphere Reserve in Sichuan, China, in 2008. Japanese Global Geoparks (Aso, Itoigawa, and Unzen) have been damaged by multiple hazards, including earthquakes followed by tsunamis, as well as volcanic eruptions. Many sites, such as the Katla UNESCO Global Geopark in Iceland and the Tacaná Volcano Biosphere Reserve in Mexico, have experienced significant volcanic eruptions, damaging infrastructures and the natural environment. Different types of landslides frequently occur on the slopes of mountainous sites, such as the Nanda Devi Biosphere Reserve, damaging access roads and tourist paths. Many sites face a high flooding risk, as was revealed by heavy floods in the past decade in Canada (Waterton Biosphere Reserve), France (Camargue Biosphere Reserve), Slovenia (Idrija UNESCO Global Geopark), and many other regions.

## 2. UNESCO's work on disaster risk reduction at UNESCO Global Geoparks and Biosphere Reserves

UNESCO assists the Member States and its designated sites in strengthening livelihood capacities in Disaster Risk Reduction (DRR) (UNESCO 2018f). Secretariats of the above-mentioned UNESCO Programmes, together with experts from

the UNESCO Section on Earth Sciences and Geo-Hazards Risk Reduction, encourage the identification of risks and protection from different hazards as well as fostering climate change resilience and the preservation of UNESCO Global Geoparks and Biosphere Reserves and their communities. UNESCO continuously contributes to building capacity in DRR, developing innovative policy, tailoring management strategies, and recognizing the value of resilient protected area systems.

In line with Shimabara (2012) and the English Riviera Declarations (2016), the Global Geopark Network established, in 2017, an official Working Group entitled «Geohazards Working Group», aiming to find ways on how to mitigate risks at UNESCO Global Geoparks in the face of geological and hydrometeorological hazards, with a view to strengthening the potential of UNESCO Global Geoparks in awareness raising.

This aim will be achieved through the following three objectives: (i) identify and assess disaster risks at UNESCO Global Geoparks; (ii) enhance and support collaboration and sharing knowledge among the UNESCO Global Geoparks, as well as with other international organizations, to mitigate risks in their territories, ensure the safety of visitors and staff, and improve resilience of their Geoparks; (iii) foster better communication through educational and awareness activities, among people, administrators, decision makers, and scientists on disaster risk reduction at UNESCO Global Geoparks.

According to the MAB Strategy 2015-2025 (2015) and the Lima Action Plan (2016), in the coming 10 years, the MAB Programme will concentrate its support to the UNESCO Member States and stakeholders in (i) conserving biodiversity, restoring and enhancing ecosystem services and fostering the sustainable use of natural resources; (ii) contributing to sustainable, healthy and equitable societies, economies and thriving human settlements in harmony with the biosphere; (iii) facilitating biodiversity and sustainability science, education for sustainable development and capacity building; and (iv) supporting mitigation and adaptation to climate change and other aspects of global environmental change.

### ■ 3. Current State of Conservation and Challenges for Continuity

In 2017, UNESCO DRR experts undertook a global assessment (<https://www.soscisurvey.de/>

[naturlhazardsunescosites/](https://www.soscisurvey.de/)), aiming to create an overview of disaster risk reduction at UNESCO Global Geoparks and Biosphere Reserves, in particular, to provide qualitative information concerning the global exposure of these natural UNESCO-designated sites to natural hazards and the increase the awareness of their site managers.

Further work was then undertaken to add to the database all available information on disaster risk reduction issues, including exposure and vulnerability to risks, current experience on prevention and mitigation measures, awareness raising activities, and site managers' needs. The evaluation of DRR issues started through the analysis of site managers awareness. For each site, records from various sources, including thematic surveys, published literature, and reports, were stored in one georeferenced database, provided by UNESCO Secretariat, and analysed using descriptive statistics.

Results reveal that more than 90% of UNESCO Global Geoparks and Biosphere Reserves could be potentially exposed to at least one out of the main natural hazards (94% of Biosphere Reserves and 96% of UNESCO Global Geoparks). Overall, earthquakes and landslides are the most frequent geohazards, while floods and wildfires are the most frequent among hydrometeorological hazards. As for the current regional distribution of sites, most hazardous regions appear to be Asia and Europe.

Despite a large number of sites potentially exposed to natural hazards, only 8% of Biosphere Reserves and 30% of UNESCO Global Geoparks have performed a detailed risk assessment. The list counts 14 Multi-Internationally Designated Areas (MIDAs). Twenty-one percent of the Biosphere Reserves, including 8 MIDAs, perform various monitoring activities. Twenty-four Biosphere Reserves are interested in assistance in risk assessment.

A number of Biosphere Reserves and UNESCO Global Geoparks are engaged in awareness raising, including educational activities, as well as mitigation strategy development on natural hazards and the need for the sustainable use of natural resources. Half of UNESCO Global Geoparks and at least 19 % of Biosphere Reserves participate in different kinds of educational and prevention and mitigation awareness activities.

Overall, more than 53% of UNESCO Global



Geoparks, in both the Europe and Asia regions, and 23% of Biosphere Reserve responded that they have good practices and are interested in sharing them with other UNESCO designated sites. At the same time, those who do not have practices to share are very motivated to receive training on prevention and mitigation. Twenty-six percent of UNESCO Global Geoparks and 6 % of Biosphere Reserves confirmed existing cooperation with other UNESCO designated sites.

As for MIDAs, from all natural Multi-Internationally Designated Areas, 7 MIDAS, that are designated as UNESCO Global Geoparks, and 68 Biosphere Reserves are exposed to at least one natural hazard.

#### ■ 4. Recommendations

As is evident from the present study, Biosphere Reserves (which are located the world over), UNESCO Global Geoparks (which are mostly located in Europe and in Asia – see map), and their territories may be partly or entirely exposed to various natural hazards and extreme weather events. Potential harm to these natural sites may, or may have already, also put the livelihoods of local communities at risk.

However, even though there is a clear understanding that many UNESCO sites and their communities may be potentially threatened by disasters, no united methodologies on managing disaster risks at these natural UNESCO sites exist. Moreover, analysis of reported thematic surveys reveals that most Biosphere Reserves and UNESCO Global Geoparks currently do not have risk assessment and efficient risk management plans, nor do they have sufficient expertise and guidance on how to perform them.

Nature-culture linkages at many UNESCO designated sites created after major disasters have proven that lessons learned from past disasters can be embodied in local heritage and traditions and contribute to raising awareness on disaster risk. For these intangible forms of heritage to be effective, their story must be constantly told, transmitted, and shared within communities and with visitors. It is within this framework, that UNESCO Global Geoparks and Biosphere Reserves can play an essential role, providing guidance on good practices and sharing messages among communities.

UNESCO encourages activities which focus on providing assistance to site managers and the

Member States in the form of training and capacity building on the topic of Disaster Risk Reduction & Climate Change Adaptation. Closer links and knowledge exchanging should be established with World Heritage sites and their activities, such as already leveraging on existing training for site managers. In this sense, training organized at the regional level by UNESCO Chairs presents a good example of knowledge exchange, when practitioners and site managers from all three UNESCO designations could learn from each other and adapt gained experience in their countries.

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# Nature–Culture Linkages of Pulicat Lagoon: A Cultural Landscape Protecting the Coromandel Coast

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## ■ Abstract

*The Pulicat Lagoon is the second largest water body in India, covering an area of 759 km<sup>2</sup>., in the middle of the Coromandel Coast. Its cultural landscape is a testimony to nature-culture linkages that, by integrating the monsoon climate with cultural traditions, favours the development of a resilient society. Strongly present in the maritime history recounts, it has bridged transnational shared heritage. This paper focuses on describing the natural and cultural values of this wetland, which characterizes its cultural landscape: the traditional fishing practice, known as the padu-system, and the lagoon's capacity to absorb shock from disasters with the support of the Buckingham Canal, thus serving as a lifeline to this coast. However, sustainable livelihoods and development, maintained over several thousand years, are under threat due to the erosion of the nature-culture linkages, shown by siltation, blocking of river water inlets due to encroachments, industrial pollution, and the absence of law enforcement. This paper highlights the role of nature-culture linkages in supporting sustainable development and building resilience.*

**KEY WORDS:** lagoon, monsoon, textile, resilience, wetlands, Dutch, Coromandel

## ■ 1. Introduction

The evolution of nature relates to the environmental conditions of any place and the culture of society evolves in relation to that nature (Bezerra de Melo 2012). The resulting nature-culture linkages are the most valuable assets of a resilient society. In India, the region that shaped its social and economic status with its precious assets is none other than the unique Pulicat Lagoon in the Coromandel Coast (Benedict 2018).

The Coromandel Coast is located along the South-east coast of the Indian subcontinent, running parallel to the coast of the Bay of Bengal, from the Krishna river basin to Point Calimere, and extending southwards up to the coast of Rameshwaram. The origin of the name, Coromandel, has given rise to considerable speculation. For instance, it has been

derived by different authorities from *karu-manal*, meaning black sand, or from *Cholamandalam*, the most popular alteration of Chola-mandalam, which refers to the rulers of the coast during the 10<sup>th</sup> century CE, when Thanjavur was its capital (Thurston 1918). However, the name that has the geological reference to 'black-sand' would rightly be suitable for our understanding of this landscape (Anameka 2010; Stephen 1997). Moreover, the unique climatic condition of this coast makes it the only region in India with the ability to attract the Northeast monsoon. The most furious monsoons, that bring rain clouds to the Coromandel Coast from October to December, are called "trade winds" or "winter-monsoons".

The wetland system of the Pulicat Lagoon [Fig. 1] is one of the three most important wetland systems in India, shared by the states of Tamil

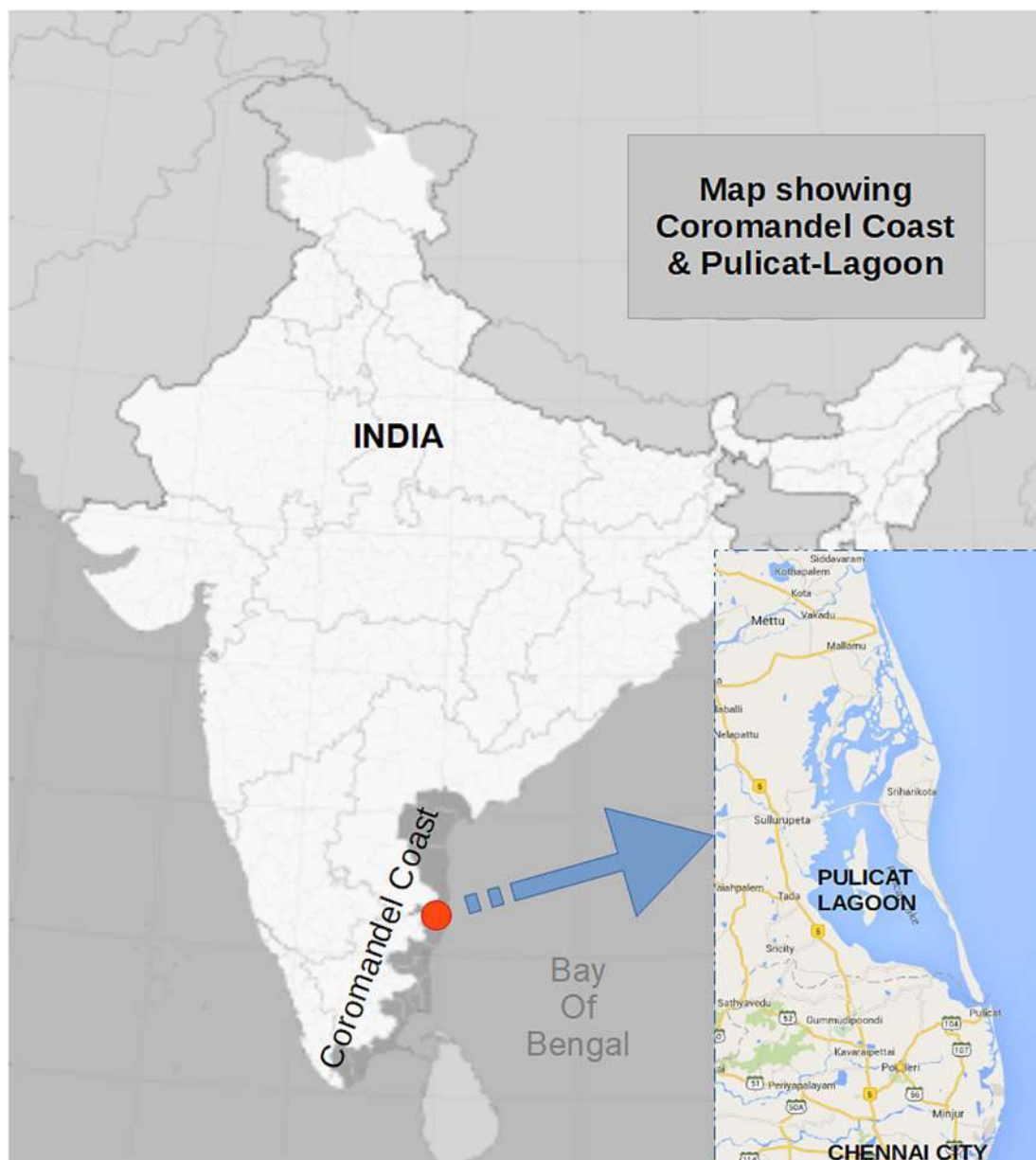


Figure 1: Map of the Pulicat Lagoon; Source: Author

Nadu (TN) and Andhra Pradesh (AP) (APFD 2010). Situated to the north of Chennai, it covers an area of 759 sq.km. The Pulicat Lagoon is known for its 2000-year-old maritime history, which includes exchanges as far as Japan and present-day Europe (Stephen 2014). This paper elaborates on the inextricability of the natural and cultural values in this significant cultural landscape and clarifies how these nature-culture linkages have supported the resilience of this coast.

## 2. Significance of Pulicat Lagoon as a cultural landscape

Pulicat is an anglicized word of the *Tamil* word for lagoon, *Pazhaverkadu*, which is a combination of three Tamil words: *Pazhaya* (old), *vergal* (root), and *kadu* (forest) (Azariah 2007; Benedict 2018). The wetland is a bird sanctuary of national importance and is the second largest brackish water ecosystem

in India. Hundreds of thousands of migratory waterfowl throng the lake from October to April, including large numbers of Greater and Lesser Flamingos (Jacobsen and Raj 2009). The reduction in the sea level over the last three centuries has caused the formation of a beach ridge dune, creating Sriharikota Island. The road connecting the island to the mainland bisects the lagoon in the middle, into two regions, the southern region, Pulicat Lake, and the northern region, the marshy land area [Fig. 3].

The Buckingham Canal stretches for 796 km along the South-east coast of India and its water levels are stabilized by the Pulicat Lagoon. The canal and the three rivers -Arani, Kalangi, and Swarnamukhi – flowing into the lagoon are part of the maritime history due to the popularity of Coromandel cotton and its textile products, which are made in the hinterlands connected by this water system. Arabs, East Asians, and Europeans have



been exchanging the finest textiles produced here for gold since the 6<sup>th</sup> century CE (Stephen 2014). However, due to a focus on the modernization of railways, authorities have neglected the canal and its water system for the last hundred years (Benedict 2018).

Documentation reveals that the lake used to cover an area of 700 sq.km. during high-tide and 400 sq.km. during low-tide, until about 80 years ago; however, the deterioration of the lagoon and its environment have reduced the numbers at present to 460 sq.km. and 250 sq.km. during high-tide and low-tide, respectively (Jacobsen and Raj 2009; Azariah 2007). The changes in water coverage not only cause adverse impacts on the local flora and fauna but also on the rainfall patterns (Sahoo and Bhaskaran 2015). The lagoon was once three meters deep and shell dredging was done regularly, which was used for making lime and poultry fodder. The lagoon has now become shallow and non-navigable following the ban on dredging for seashells, which came after the enactment of the Wildlife Act of India in 1972. The deposited layers of shells have hardened a few parts of the lagoon, which directly impacts its marine life.

The lagoon plays an important role in attracting rain clouds during the annual monsoon season. Historical records prove that a large percentage of cyclones crossed the five large wetlands along the SE coast of India (Sahoo and Bhaskaran 2015). They convey that the health of this wetland directly influences the attraction of rain clouds and the protection of the coastal towns. According to the vernacular knowledge of the inhabitants, the quantity of rainfall could be judged by the movement of winged migrants. The pattern is easily identifiable from early visitors during July-September months, called pilot-birds, who return to communicate with a large number of migrants for the winter monsoon visit. More birds mean a more bountiful fish and prawn harvest during peak monsoon seasons. The bird droppings form algae, which serve as fodder for fishes and prawns. The birds, rainfall, lagoon, and livelihood of the inhabitants are directly and proportionally interrelated, thus positioning these migratory birds at the top of the Pulicat wetlands food chain. However, the movement of migratory birds is being affected due to changes in the availability and distribution of food. Therefore, the lives and sustainability of the livelihoods of fishermen, established in the forty-one lagoon villages and depending solely on this water body, have become a serious concern for grass-roots movements

(Benedict 2018).

The ecology of the lagoon has influenced the economics of the coastal communities for more than one millennium, which can be seen expressed in the language, food, trade, commerce, and construction technology (Jeyaseela 1997). Marco Polo (1254-1324 AD) expanded on Herodotus's (484-425 BC) observation of Tamil-cotton as the finest and most beautiful cotton that is to be found in any part of the world (Jacobsen and Raj 2009). The arrival of Arab traders, in the 11<sup>th</sup> century CE, expanded the popularity of the cotton and its market, making this part of the country central to the movement of cotton in the world (Benedict 2018). Archival records show that more than 4,500 ships passed through the Pulicat Lagoon between the 16<sup>th</sup> and 18<sup>th</sup> centuries, not only influencing the development of the coastal region but also of its hinterlands (Stephen 2014). Gold was the standard medium of exchange in this region for textile purchases. Gold was imported from Hirado, Japan, by the Dutch starting in 1609 AD, to be minted at the Pulicat Dutch Fort located in the Pazhaverkadu village at the southmost end of the Pulicat Lagoon. Later, due to the heavy demand of gold for the exchange of textiles, they were compelled to import gold from Amsterdam in very large quantities after the Japanese imposed sanctions on the Dutch.

The Pulicat lagoon has sustained even after many modern interventions and maritime exploitations, due to a particular estuarine resource management system practised by the local communities for more than three centuries. The lagoon's unique fishing system is called *Padu*, meaning 'to share,' and is based on rotational fishing rights (Jacobsen and Raj 2009). Only male members from one of the four traditional fishing communities in the area are allocated fishing grounds under this system [Fig. 2]. With this management practice of the coastal commons, the members have nurtured a sense of collective social responsibility. Moreover, non-members of *Padu* cannot fish due to a strict vigil kept by the members on their resource territories (Azariah 2007). These nature-culture linkages have protected the lagoon from all destructive intrusion by state-administration or industrialization, showing the direct link between biodiversity, economic activity, and vernacular sustainable management.

The Hindu temples in the Pazhaverkadu village, built during the 10<sup>th</sup> and 13<sup>th</sup> centuries, showcase trade links with other regions from around the subcontinent. Unfortunately, the 13<sup>th</sup>-



Figure 2: Padu local fisherman fixing his net; Source: Author

century temple was damaged in 2013 and was left in ruin due to unprofessional conservation practices by the local government (Parthasarathy 2013). The protected cemeteries in the Pazhaverkadu village, dating from 1639 to 1850 AD, are considered to be the largest in Asia, bearing testimony to the history of the cotton trade, while Chinese jars and porcelain wares highlight the villages' magnificent trade and cultural links with East Asian countries, including Japan. The first European fort was established in the Pazhaverkadu village by the Portuguese who arrived in 1502, but it was destroyed and rebuilt as Fort Geldria by the Dutch starting in 1602. However, the Dutch fort was completely demolished by the British in 1825 AD and left in ruins. Now it is covered with thorny bushes and is inaccessible.

Another name for Pulicat is *Pallaecatta*, as it was once called by the Europeans, which was later used to describe the fabric quality. *Pallaecatta*, as a fabric, is known as sarong or lungi in Asia, is worn by both women and men, and lungee, in Persian, is used as turbans along the silk-route region. The bandanna in Mexico is still referred to as *Paliacate*, as the material was introduced by the Spanish and Portuguese. This famous fabric, with a particular pattern of weaving and dying, was later popularized by the British as 'Madras Checks.'

The built environment of the Pulicat villages reflects historical layers beginning in the 7<sup>th</sup> century.

Before the landing of Europeans in Pulicat, the Arabs had the largest trade links with the East and West Asian countries from the 6<sup>th</sup> century. They brought with them the skills of boat building and craft that led to the flourishing of cotton and shipbuilding industries along the coast (Stephen 2014). The socio-economic wealth in the region emerged with international trade and innovation in the financial market, like the creation of the world's first joint-stock Dutch East India Company. Unlike the Portuguese, the Dutch established a company to trade with India and Indonesia which was the first public company to issue negotiable shares and develop into one of the biggest and most powerful trading and shipping organizations. The influence of the Dutch East India company on the economic activity of this coast is definitive.

### 3. Management, State of Conservation and Challenges for Continuity

India has one of the most elaborate and stringent federal and local legislation for environmental management and protection. Public litigations and NGOs use the Wildlife Protection Act-1972 and Coastal Regulations Act-1991, amongst several environmental legislation, for the protection of the lagoon, as the other legislation does not refer to any kind of wetland systems at all. The enactment of the amended *Wetland (Conservation and Management) Rules* in Sept-2017 from the 2010-Act empowers



Figure 3: Satellite picture of Pulicat Lagoon; © ESRI-India

individual states to form local wetlands authorities. The decision-making power has been delegated to the state governments so that protection and conservation can be done at the local level. Tamil Nadu and Andhra Pradesh states have independent departments to manage their respective parts of the Pulicat Lagoon.

The Indian Space Research Organisation (ISRO) is the main occupant of the Pulicat Lagoon because Sriharikota Island is the only rocket launching station they control. During every winter-monsoon, rockets are launched for telecommunications, astronomical research, and weather satellite purposes. However, the ISRO is not involved in any protection or administrative processes. The protection of the Pulicat Lagoon is handled by the State Forest Department.

Tamilnadu and Andhra Pradesh are designated as Sanctuaries which the state's control, respectively. The decentralisation of federal wetlands authority and empowering state authorities have been criticised by environmentalists as the new enactment indirectly widens the ambit of permitted activities by inserting the 'wise-use' principle, giving powers to the state administration to decide what can be allowed considering higher interests. Absence of prohibited activities in the legislation has led to arbitrary decisions. The Pulicat Lagoon can be easily encroached upon or polluted because there is no clarity on the governing agency. In 2014, the buffer zone of the lagoon was reduced

from 10 km to 2 km by the federal government. Additionally, no clear demarcations, such as a "no construction zone," catchments, or its channels, were specified. This has put tremendous pressure on the ecosystem. Apart from government regulations, better monitoring mechanisms are needed to increase the knowledge of the physical, chemical, and biological characteristics of the wetland resources and their values for a better understanding of wetland dynamics.

Climate change is another main source of disruption to the coastal lagoons. The factors, like temperature, precipitation, and sea level rise, have a direct impact on coastal lagoons. In Pulicat, climate change is impacting the breeding ground of prawns and fishes, which is impacting the livelihood of the fishermen (Kripa et al. 2012).

Furthermore, the Tamil Nadu State is known for its multi-hazard vulnerability, the major natural hazards being cyclonic storms, urban and rural floods, and periodic droughts (TN State DRR). Of these, coastal flooding and storms provide the maximum threats. Moreover, the Coromandel Coast is prone to experiencing the heaviest wind speeds during the winter-monsoon season. It is recognized that "twenty-six of the thirty-five deadliest tropical cyclones in world history have been Bay of Bengal storms" (Basu 2015).

Tracing the historical data of cyclones proves that Chennai and its surroundings were less affected by floods until the large-scale encroachment took place, in the last two decades, on the water bodies and canal. Even during the tsunami in 2004, which was a rare event on the coast, there was less impact along the Pulicat and Buckingham Canal regions. According to Dr. B. Ramalingeswara Rao, of the National Geophysical Research Institute (NGRI), the lagoon and the canal acted as a buffer zone and reduced the intensity of the tsunami, this was evident in the sizeable quantities of seawater that entered all through the length of the canal, which runs parallel to the sea coast. The historical interconnections between lakes, lagoons, and irrigation tanks along the Coromandel Coast prove to be a significant resilience buffer, which is in dire need of protection.

The State Disaster Management Perspective Plan 2018-2030 has accorded primacy to the priorities enunciated in the Sendai Framework for Risk Reduction, the Sustainable Development Goals of the Agenda 2030, and the Paris agreement on Climate Change.

#### ■ 4. Conclusion

For centuries, the trade and commerce along the Coromandel Coast were at the forefront and influenced the post-independence growth of India. The Coromandel Coast was the first in bringing new technology, modern science and education systems, and an urban governance system, because of its direct links with Asian and European countries. This development has been supported by nature-culture linkages in the Pulicat Lagoon cultural landscape. Furthermore, these nature-culture linkages have been the base for the resilience of the lagoon communities. However, these strong nature-culture linkages are progressively dissolving due to the modern industrial occupation of the wetlands coupled with climate change. The wetlands of the Coromandel Coast prove to be regulators to this subcontinent, protecting, recharging, limiting flooding, stopping seawater intrusion to hinterlands, sustaining fishermen economy, and supporting the food chain of the ecosystem through its winged-visitors.

The lagoon is staring at a bleak future and is on the verge of vanishing from the map due to industrial pollution, siltation, reduction of the buffer-zone, vegetation removal, excessive fishing, open defecation, reduction in freshwater flow from the three rivers, land encroachments, the government interference into padu, and pollution due to tourism. It needs immediate attention and the establishment of a governing body, such as a Pulicat Lagoon Development Authority, that would develop sustainable development strategies for the whole area in order to enhance the coastal environment. Furthermore, the Pulicat Lagoon could be designated under the Ramsar Convention on Wetlands in order to raise international attention to its challenges.



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# The Cultural and Natural Heritage of Kaho'olawe Island

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## Abstract

*"Kaho'olawe represents both the end result of human-influenced environmental degradation and the beginning of collaborative healing as a force to mend our planet's damaged environments while restoring its people," states the Kaho'olawe Island Reserve Commission Financial Self-Sufficiency and Sustainability Plan of December 2016. Kaho'olawe faces a paradoxical situation between being an island rich in cultural and natural values while facing significant natural and human-made destruction. Currently, bomb ordinances both still remain on land and sea and, due to significant wind and rain erosion, there is very little topsoil for vegetation growth. Kaho'olawe is directly impacted by climate change and has no fresh water access, impeding vegetation reforestation. This paper aims at investigating options to support its long-term restoration and resource management.*

**KEY WORDS:** Kaho'olawe, Island Reserve, Climate Change, Cultural Heritage

## 1. Introduction

Kaho'olawe is an island 7 miles off of the southwest coast of Maui and the smallest Hawaiian Island in the State. Kaho'olawe is historically known as Kohemalamalama O Kanaloa in the Hawaiian culture. It is located at latitude 20.57°N and longitude 156.57°W with the island's highest elevation at 452.02 meters above sea level. The terrain is described as being low and flat, with very dry and arid conditions, only receiving just around 0.635 meters of rain annually.

Kaho'olawe was very culturally significant for native Hawaiians, specifically for sea navigation. It was known for its strategic importance despite its relatively small size of only 193.12128 ha, 1 mi<sup>2</sup> = 2.58998811 km<sup>2</sup> and being completely void of access to on-island fresh water.

For the native Hawaiians, Kaho'olawe is a very sacred place, deeply rooted in its history, culture, and religion [Fig. 2]. Kaho'olawe is part of the Maui Nui original "mega-island" that comprises

the islands of Maui, Lanai, and Molokai [Fig. 1]. The island formed approximately 1.2 million years ago when it was a collection of seven volcanoes that collectively covered a total land area of 14503.93 km<sup>2</sup>. When sea levels rose due to melting glaciers and the volcanoes slowly eroded, Maui Nui was separated into the four distinct islands.

Around 1830, Christian missionaries arrived in Hawaii and persuaded King Kamehameha III to replace the death penalty with exile. Kaho'olawe then became a prison island. From 1830 to 1940, the island was used as a prison and then for ranching until the U.S. Army expressed interest in using the island for training purposes [Table 1]. In 1941, the U.S. Army and Navy began using the island for target practice and began routinely bombarding and torpedoing various areas. In 1953 President Eisenhower transferred the island to the Territory of Hawaii however, maintaining control of access and use of the island. Kaho'olawe was placed on the National Register of Historic Places in 1981 but access was still limited by the military. The bombing of Kaho'olawe was eventually stopped

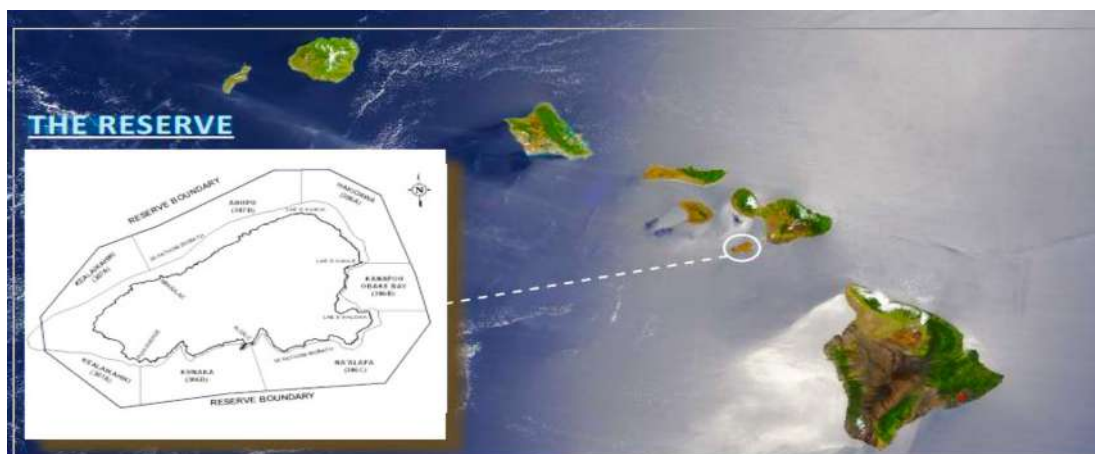


Figure 1: Reserve Map and satellite Image of the Hawaiian Islands in true-color Terra MODIS image acquired on May 27, 2003.



Figure 2: Kaho'olawe Island Highest Sacred Site. (Source: Author)

through an Executive Order by President George Bush Senior in 1990, and in 1991 the Kaho’olawe Island Conveyance Commission recommended that the island be returned to the State of Hawaii in 2003.

## 2. Heritage Significance of Kaho'olawe Island

Kaho'olawe Island Archeological District is an important National and Hawaii State heritage site. The Kaho'olawe Island Reserve Commission (KIRC) has restored 100 acres in the Hakioawa Watershed by planting 10,000 native Hawaiian plants. The KIRC is also currently involved in Coastal Restoration and is in their 5<sup>th</sup> year of coastal restoration planting in order to prevent further soil erosion. The Kaho'olawe Island Reserve has inventoried 3,000 historic sites, are featured in the National Register of Historic Places and are in constant need of protection from the weather, erosion, and climate change conditions.

Items like ancient stone tools were also located on the island. Indications of these early times can be found in the carved petroglyphs,

or drawings, in the flat surfaces of rocks located at various sites on the island. Other pieces of archaeological evidence are the stone platforms for religious ceremonies and rocks set upright as shrines for successful fishing trips. Some of the oldest and largest “Heiaus” (Hawaiian shrines) are located on Kaho’olawe. This island was also the place where the navigators and “Kahuna” (Elders), who guided the ocean voyages of early Hawaiians, were trained. Kaho’olawe Island was a traditional launching point for voyaging canoes sailing back to Tahiti. The island cove name, “Kealaikahiki,” literally translates as “the road to Tahiti.”

This precious island was used for centuries by native Hawaiians to help sustain their people, educate their captains, and worship their gods. Later it was used for bombing by the United States military which decimated many culturally significant archives. Nevertheless, with the right restoration plan, this island can be healed from its past abuse.

Kaho'olawe has over 500 archaeological sites and over 2,000 archaeological features identified on Kaho'olawe Island, as shown in Figures 3 and

DATES	SIGNIFICANT EVENTS
Circa 400 A.D.	Polynesians settle the Hawaiian archipelago including Kaho'olawe
1600	Records indicates a thriving Hawaiian community
1793	Goat farming introduced
1826	Penal colony established for male convicts
1848	Hawaiian Government designated Kaho'olawe as Crown Lands
1858-1941	Cattle, sheep, and goat farming accelerates erosion
1910	Kaho'olawe declared National Forest Reserve and reforestation efforts began
1918	Kaho'olawe withdraws from being a National Forest Reserve and becomes a commercial ranch
1941	U.S. Army signs a lease for use of the island for \$1.00 a year for the purpose of bombing, weapons testing and training
1942-1945	Kaho'olawe is bombed and torpedo
1953	President Eisenhower transfers the island to U.S. Navy to return to Territory of Hawaii
1981	Placed on National Register of Historic Places
1992	Congress ends the military use of Kaho'olawe and provides \$400 million to turn the island into a natural and cultural reserve
2003	U.S. Navy transfers island control to the State of Hawaii
Present	Kaho'olawe Island Reserve Commission under the State of Hawaii controls and manages the island and is cultural heritage.

Table 1: History of Kaho'olawe Island (Source: Kaho'olawe Island Reserve Commission Ecological Report Presentation, June 2018)

4. A significant number of these sites are located either along the shoreline, threatened by increased coastal erosion, or located in the upland slopes of the island in the exposed hardpan regions, making it very prone to increasing weather severity and wind erosion (Barrera 1984).

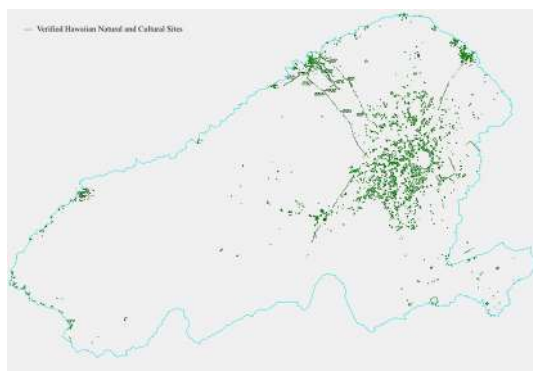


Figure 3: Map of the island's important natural and cultural significance features, provided by Kaho'olawe Island Reserve Commission, 11/3/2019.



Figure 4: Satellite image of the island's important natural and cultural significance features, provided by Kaho'olawe Island Reserve Commission, 11/3/2019.

### 3. Current Management Arrangements

The Kaho'olawe Island Reserve Commission (KIRC) was created in 1994 to manage and restore these lands on behalf of the people of Hawaii and to eventually transfer the management of Kaho'olawe and its surrounding waters to a recognized Sovereign Native Hawaiian Entity (KIRC 2006, 2016, 2018). Emphasis was placed on traditional Native Hawaiian cultural, spiritual and subsistence purposes, rights, and practices, including the preservation of Kaho'olawe's archaeological, historical, and environmental resources, as well



as the rehabilitation, reforestation, and habitat restoration of the island, fishing, and education are top priorities for KIRC (Hawaii Revised Statutes, Chapter 6K, Kaho'olawe Island Reserve).

Commercial uses are strictly prohibited within the Reserve. The prohibition of commercial use of the island stems back to the State of Hawaii and United States Navy's agreements for the terms of the turnover and cleanup of the former military training range. The Navy's concern for introducing third-party interests to the island, through commercial uses, is that it would increase the Navy's potential liability with respect to additional parties that have standing in the long-term use of Kaho'olawe. The prohibition restricts the long-term uses of the island and therefore restricts the ability to generate sustainable funding for the island's long-term restoration.

The KIRC has implemented a series of coastal planting projects in order to expand the native dune plantings so that a coastal dune system can be developed and designed to catch windblown sands and create a natural buffer during the period of higher tides. In the 19<sup>th</sup> century, decades of uncontrolled ungulate and cattle caused damage, resulting in the exposure of the island's basalt rock layer (hardpan). With over a hundred years of wind and rain erosion damage, over 10 feet of topsoil has been lost and the Island's hardpan exposure makes the surface semi-impervious to water, resulting in significant surface water runoff and erosion, that eventually floods the nearshore waters with fine silt deposits and damaging nearshore wildlife. In response, the KIRC has systematically built erosion control devices, such as check dams and swales, to slow down surface water runoff velocities and trapping water to increase water percolation. The KIRC has been building large scale terra native planting projects and rainwater collection irrigation to also increase surface water percolation, reduce surface erosion, and restoration of the native watershed on the island.

The KIRC is committed to becoming an educational entity for the Native Hawaiian culture, where people can learn about Hawaiian heritage and practices. Eventually, Kaho'olawe Island Reserve will be a place to experience the connection to the land, the sea, and their ancestors. The hope is that

the Hawaiian heritage will be preserved and taught to future generations. However, the KIRC needs the assistance and expertise of partners to carry out their current preservation activities as well as learn how to protect the site from potential hazards.

Currently, the KIRC partners with Island Conservation (IC), a not-for-profit conservation organization whose mission is to prevent extinction by removing invasive species from islands. They work where the concentration of both biodiversity and species extinction is greatest. The focus is on removing a primary threat, like invasive species, that threatens native Hawaiian plants and animals and restoring the island's unique ecosystems. Once invasive species are removed, native island species and ecosystems recover with little additional intervention. Over the past 20 years, Island Conservation and partners have deployed teams to protect 994 populations, of 389 species, on 52 islands worldwide<sup>1</sup>. The KIRC also partners with The National Fish and Wildlife Foundation (NFWF), which protects and restores wildlife and habitats in United States territories. Chartered by Congress in 1984, NFWF directs public conservation funds to the most pressing environmental needs and matches those investments with private contributions<sup>2</sup>.

#### ■ 4. Current State of Conservation and Challenges to Ensure the Continuity of the Landscape

Kaho'olawe's cultural and spiritual significance prevents any development of structures and limits the type of activities that can be conducted to support financial viability. Currently, the Board of the Kaho'olawe Island Reserve, who manages the island, has prohibited any type of commercial activity for safety and for preventing potential damage to unexcavated sites. The KIRC implemented rules that restrict all activities to being only for cultural or educational purposes, with economic gains being limited to only cover the activity's cost and not for profit.

Moreover, Kaho'olawe is very vulnerable to disasters, and any form of threats, because it is isolated and uninhabitable due to the lack of fresh water and arable soil. Since the topology is flat with minimal elevation, Kaho'olawe is very vulnerable to wind and water erosion, especially during hurricanes and extreme rainstorms. The Board

<sup>1</sup> IC is headquartered in Santa Cruz, California with field offices in Australia, British Columbia, Chile, Ecuador, Hawaii, New Zealand, and Puerto Rico.

<sup>2</sup> NFWF works with government, nonprofit and corporate partners to find solutions for the most complex conservation challenges. Over the last three decades, NFWF has funded more than 4,500 organizations and committed more than \$3.5 billion to conservation projects.

of the Kaho'olawe Island Reserve has prohibited the construction of infrastructure, resulting in no barriers for preventing coastal erosion. With added concerns of sea level rise due to climate change, Kaho'olawe is very prone to high surf inundation, extreme water erosion, and damage caused by soil runoff into the reefs. With the United States withdrawing from the Paris Agreement, Hawaii has made a legislative pledge by passing a State Resolution to continue the Paris Agreement's principles at a local level. Risk reduction and disaster recovery are not part of the KIRC's current financial long-term plan because they lack the financial resources to maintain current activities. Therefore, the KIRC needs resources and technical assistance to identify strategies to protect this precious heritage site from natural hazards and ongoing impacts caused by climate change.

Currently, the island has been experiencing climate change in two main phenomena: 1) rapid increase in coastal erosion and 2) increase in the severity and frequency of hurricane type storms in the channels between Kaho'olawe Island and the Island of Maui.

Increases in coastal erosion have been confirmed by the decrease in the distance between the shoreline and coastal roads. In recent years, the KIRC has been observing sand and tidal wash covering some of the coastal trails and roads that previously were not impacted by coastal wave flow. The change of the shoreline is affecting the traditional native Hawaiian burial sites and customs, requiring their relocation away from natural occurring coastal sand dune formation. Coastal sand dunes are prevalent in the southwest coastline of Kaho'olawe and several burial sites had to be relocated and re-interred in other safer locations over recent years. The increase in coastal erosion and an increase in storm surges are potentially threatening other undiscovered burial sites.

Kaho'olawe is presently undergoing clean-up and restoration projects. The conservation plan focuses on planting native foliage, including edible and herbal plants used in traditional native medicine. For this purpose, various soil conservation programs, such as social run off collections and netting to capture soil blown by strong gusts, are being implemented, and a catchment system is being created to capture rainwater. Even though the island has a rich ocean ecosystem, there are concerns about unexploded ordinances in the seaside and beaches; thus, minimal research has been undertaken. Since no one resides on the

island and all resources need to be transported by boat there are very limited options for natural resource restoration. All food, water, fuel, and materials must be brought in monthly in order for the island to sustain life. Furthermore, Kaho'olawe has no reinforced harbor facilities or pier system, so all the resources must be ocean-borne cargo and carried by landing craft from the Island of Maui to Kaho'olawe's Honokanai'a beach, located at the southwest end of the island. In the past few years, the KIRC reported an increase in summer storms. This increase in hurricanes and severe thunderstorms have been hindering their efforts to transport people, materials, and supplies to Kaho'olawe, impacting on their logistic operations supporting on-going restoration efforts.

## ■ 5. Recommendations

Kaho'olawe Island is a sacred island, extremely prone to disasters and vulnerable to climate change. The State of Hawaii needs to identify and protect the cultural and natural heritage that this island has, beyond just the ecological and historical values, considering also its cultural and spiritual significance (Yamane 2018). Its restoration could symbolize a re-birth by reestablishing its use for Hawaiian cultural practices and changing this uninhabitable barren place, with no access to groundwater and no economic viability, into a symbol of recovery from neglect and war devastation.

The long-term goal of the KIRC continues to be developing the island as a living heritage site for the perpetuation and continuation of Native Hawaiian traditional practices and cultural heritage. The restoration efforts being undertaken are trying to reverse the ecological damage created from past war ordinance destruction and mismanagement. As the restoration of native vegetation continues, it will restore the surface water retention, reduce the amount of soil silt that enters the nearshore reefs, and limit the damage to the reef ecosystems. The process of restoring the island's natural vegetation will reduce wind and rain erosion, preserving its cultural heritage.

However, Kaho'olawe Island Reserve still needs to complete a thorough SWOT analysis to look at opportunities to build economic resources and partnerships that would support the conservation of its unique cultural values and allow its ecological restoration. This requires the State of Hawaii to fund the development of a viable financial plan, which would allow the island to be used as an environmental education centre of excellence and

help defer the costs for its decontamination.

The Capacity Building Workshop on Nature Culture Linkages in Asia and the Pacific (CBWNCL) emphasizes the link between heritage conservation and disaster resilience. My participation in the CBWNCL program enlightened me on how focusing only on disaster response and increasing public safety can place heritage at risk and forever change the very essence of cultural and natural beauty. CBWNCL's focus on the integrated natural and cultural approaches to heritage conservation helped me to understand how to incorporate heritage protection and the preservation of natural beauty into statewide policy-making. Any future disaster prevention and climate change mitigation and adaptation planning must incorporate the cultural, natural, and spiritual significance of each area and should include the input from a wide breadth of stakeholders. As a Hawaii State Legislative Leader, I conclude that it is important to invest in restoring this once desolated and forgotten island, by making it a symbol of peace and healing, in the fight against climate change. With the knowledge exchanged during the UNESCO Chair on Nature-Culture Linkages in Heritage Conservation's program, I recognize that this devastated island, used as a tool for war, could be re-defined as a beacon of resilience and restoration of culture and heritage.

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# Rapa Nui World Heritage Site – Initiatives and Challenges for the Risk Management

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## ■ Abstract

*Rapa Nui National Park, as a Cultural World Heritage Site, is strongly linked to the natural environment that influences the richness of its attributes. However, some risk factors inherent to these nature-culture linkages have been identified in recent years. Among other threats, natural hazards, such as earthquakes and tsunamis, are the object of greater preventive efforts, in which the local community is playing an increasingly important role: Since 2017, the Rapa Nui National Park administration is carried out by the Polynesian Indigenous Community Ma'u Henua, constituted by members of the Rapa Nui indigenous community. In this article, the author aims to show the linkage between the Rapa Nui and Minami-Sanriku Town, an area affected by the 2011 Great East Japan Earthquake and Tsunami and visited during the Capacity Building Workshop on Nature-Culture Linkages. Although located far away from each other, the Pacific Ocean and the Ring of Fire have created connections between these two communities in withstanding interrelated disasters. At the same time, this experience has created a bond that relates both communities through shared heritage, which supports their recovery and the community's resilience.*

**KEY WORDS:** Rapa Nui, World Heritage, Risk factors, Community, Moai, Resilience, Protection, Minami-Sanriku Town

## ■ 1. Introduction

The Rapa Nui Island, whose official name as part of the Chilean territory is Easter Island (*Isla de Pascua*), is located 3,700 km from Chile's mainland, in the middle of the Pacific Ocean, with a surface of 163.6 km<sup>2</sup>. The island, at a national level, is fully protected by Law No. 17.288 of National Monuments, under the category of Historical Monument. An important portion of its territory, corresponding to the National Park, has been listed on the UNESCO World Heritage List [Fig. 1] since 1995. It was inscribed as a Cultural World Heritage property under criteria (i), (iii) and (v)<sup>1</sup> in which the *Moai* colossal statues take a

central role in its significance. However, the cultural values of Rapa Nui Island and its communities are strongly linked with the natural environment.

Some risk factors, inherent to these nature-culture linkages, have been identified in recent years. Studies have been conducted to monitor coastline erosion caused by climate change, such as sea level rise. Fires are also a threat that is rather well controlled, although recently, and in particular, in 2017, there have been concerning episodes that have alerted and generated studies in order to develop risk control measures<sup>2</sup>.

<sup>1</sup> UNESCO Website, Rapa Nui National Park World Heritage Site (<https://whc.unesco.org/en/list/715>)

<sup>2</sup> Project document "Strengthening Disaster Risk Management at 3 World Heritage Properties in Chile" -Support for the implementation of Pilot Projects inscribed on the sub-regional "Action Plan for World Heritage in South America".

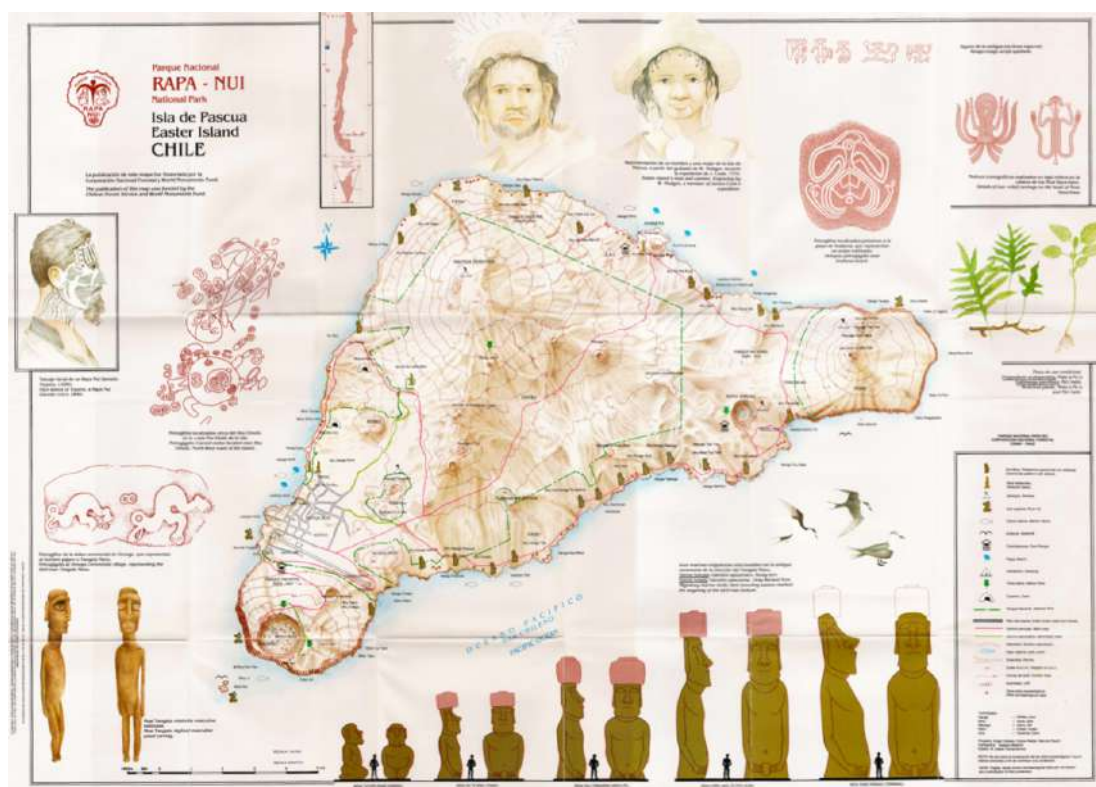


Figure 1: Rapa Nui National Park – Inscribed WHS Property. Source: UNESCO Website. Author: Baldrich, Horacio.



Figure 2: Ahu Tongariki. Source: National Service for Cultural Heritage, Chile. Author: Jorge López.

Natural hazards, such as earthquakes and tsunamis, are still the object of greater preventive efforts. In this article, the author reviews the role that the local community can play in these efforts, especially since the National Park administration is from 2017 carried out by the Polynesian Indigenous Community *Ma'u Henua*. This institution, created in 2016, was constituted by members of the Rapa Nui indigenous community.

Interestingly, the Capacity Building Workshop on Nature-Culture Linkages (the Workshop) brought the author closer to an outstanding example of a recovery process that linked Easter Island and the Minami-Sanriku Town, which was affected by the 2011 Great East Japan Earthquake and Tsunami. In the last section, the author will share her observations and reflections on this experience.

## 2. Management Context

In terms of its management, the area protected as a National Park -coincident with the World Heritage Site- until 2017 was under the responsibility of the National Forestry Corporation (CONAF), an entity that works under the Ministry of Agriculture. However, as a result of a historical process promoted by the local community, since 2017, the National Park management has been transferred to the local entity *Ma'u Henua*, constituted by members of the Rapa Nui indigenous community [Fig. 3]. The main objective of *Ma'u Henua* is to establish a new administration system, which allows guaranteeing the protection and enhancement of the archaeological and scenic richness of the Rapa Nui culture, through the direct management of the local community<sup>3</sup>. Currently, the group has control of 25 official visitation sites and as an operational mechanism, all decision-making in terms of management is validated through its exposure to the entire Rapa Nui indigenous community.

The legal framework that sustains the creation of the new administration carried out by *Ma'u Henua* is linked to the Wills Agreement

(1888)<sup>4</sup> for the right to territory and wealth, as well as to the legislation and international Law of the Indigenous Peoples, the National Indigenous Law, the 169 Convention of the International Labor Organization on Indigenous Peoples (ILO), and to the United Nations Declaration on the Rights of Indigenous Peoples. The institutional organization chart has a board of directors and a transverse ethics committee, under which the activities and initiatives are carried out by different departments (communications, archaeology, planning, administration, finance, and operational), forming a total number of 167 workforces. On the basis of the diagnoses related to the previous management model, one of the main objectives of the new *Ma'u Henua* administration is to work on promoting the integration and the sense of community belonging with the richness of its territory (RAPU 2018)<sup>5</sup>.

## 3. Risk Factors

### 3.1 Main risk factors

Rapa Nui, due to its particular scenery, is strongly related to the natural environment [Fig. 4]. It is



Figure 3: Community Meeting, Ahu Tahai. Source: National Service for Cultural Heritage, Chile. Author: Jorge López.

<sup>3</sup> Ma'u Henua Website (<https://www.mauhenua.com/comunidad-ma-u-henua>).

<sup>4</sup> Easter Island was incorporated in 1888 to the sovereignty of Chile under a "Wills Agreement" between the State and the heads of the Rapa Nui community. This agreement established the session of sovereignty of the island in favor of the Chilean State, the latter committing itself to provide education and development to the islanders, who maintained their property rights on the land, and the heads of the Rapa Nui community

<sup>5</sup> RAPU, Rafael. 2018. Documents of the World Heritage Sites National Center, Site Managers Meeting.



a volcanic island with its last eruption dating to around 2000 years ago. Even though it does not have the same seismic activity as the continent, it does suffer the effects of the earthquakes, especially events related to tsunamis. The strongest tsunami registered in the last century was a result of the 1960 earthquake in southern Chile (the Valdivia earthquake), which devastated the southeast coast of the island, affecting several archaeological sites, an example of this is the damage that caused the fall of several of the colossal *Moai* statues located on *Tongariki's Ahu*. Another threat is fire episodes from anthropic factors, the last of major concern was recent, on September 2017, which resulted in the Rapa Nui National Park being subject to numerous fire foci, with an affected surface of 1160 hectares.

Furthermore, the local community recognizes that the proximity to the sea is one of the main risk factors that is eroding the land surface, due to the island's shore in an area in which a large number of archaeological sites are located, as well as the increase in the annual rate of tourism that today reaches 8% (approximately 100,000 tourists annually). In this respect, the local administration is implementing improvements, especially in matters related to controlling the visits to the sites, with particular focus on those that present a higher level of vulnerability.



Figure 4: View from Tahai area. Source: National Service for Cultural Heritage, Chile. Author: Jorge López.

### 3.2 Initiatives and challenges

As a result of the different risks identified, some studies, initiatives, and reforms at the national and local levels are being implemented to improve the management of the territory in order to ensure the integral protection of the island, considering its nature-culture linkages and its values as an inherent scenario to the territorial condition of the island. These include the "Study of the *Mata Ngarahu Rapa Nui* massif,"<sup>6</sup> National Monuments Council (2014), whose general objective considered an accurate assessment of the geological situation in which the *Mata Ngarahu* area of the *Orongo* ceremonial village is located, as well as taking into consideration the recurrent loss of large portions of land from the volcano's south slope and the need to implement measures to stabilize the rocky massif to achieve the conservation of its petroglyphs. This situation is related to other initiatives and studies for the management and control of visitation of sites carried out by the *Ma'u Henua* community<sup>7</sup>.

Another case is the "Strengthening Disaster Risk Management at 3 World Heritage Properties in Chile" project, which is in full development<sup>8</sup>. The project has as main objective to provide initial support for the future development of Disaster Risk Management Plans for the Rapa Nui National Park, through field reconnaissance missions and a review of available background information, in relation to present risk factors, to facilitate the assessment of property vulnerabilities<sup>9</sup>.

The preliminary findings of these studies were presented at the Workshop. It is expected that the new management carried out by the community will propitiate an analysis of the participatory methodologies undertaken, with the aim to incorporate improvements on all the processes related to risk management, linking them to the community and building resilience. The objective is

<sup>6</sup> National Monuments Council, Chile. 2013. "Study of the Mata Ngarahu Rapanui massif."

<http://www.mercadopublico.cl/Procurement/Modules/RFB/DetailsAcquisition.aspx?qs=PFRB0pcH6QV30UxcFbV1qQ==>

<sup>7</sup> RAPU, Rafael. 2018. Documents of the World Heritage Sites National Center, Site Managers Meeting.

<sup>8</sup> WORLD HERITAGE NATIONAL CENTER Website:

<https://www.sngp.gob.cl/sitio/Contenido/Noticias/90525:Seminario-Taller-Fortalecimiento-de-la-gestion-del-riesgo-de-desastres-en-Sitios-del-Patrimonio-Mundial-en-Chile>.

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<sup>9</sup> Project document "Strengthening Disaster Risk Management at 3 World Heritage Properties in Chile" -Support for the implementation of Pilot Projects inscribed on the sub-regional "Action Plan for World Heritage in South America".



to place local stakeholders as the main protagonists since they are the carriers of the traditional knowledge of their territory and the link between their natural and cultural heritage. Therefore, towards effective conservation, it is positive that conservation measures consider agreements taken on participatory processes based on the experience of the inhabitants.

#### ■ 4. Protection as a linkage between the Rapa Nui and Minami-Sanriku Town.

The Rapa Nui community practices an oral tradition, characterized by the transmission of particular cultural expressions from generation to generation. In doing so, their living experiences are transmitted to future generations with the aim of protecting their culture. Due to this, it is possible to conclude that written perspectives of how the community values the colossal statues, called *Moai*, are scarce or almost non-existent.

The statues correspond to the present representation of the ancestors of the Rapa Nui people, and in that sense, they are worshipped and respected as sacred images (Rapu, personal interview 2018). Some of them are grouped and located on platforms called *Ahu*, under which the

remains of the ancestors that they represent can be found. However, there is significance in the way they were placed and meaning in their orientation.

The aboriginal people from Rapa Nui follow a distinctive cult of death, linked to their worldview and beliefs on *Mana*. *Mana* is a fundamental component which can be defined as a supernatural power or a protective force that comes from the cosmos inhabited by humans and spirits. It is transversal to all areas of life and its absence or loss is the explanation of the internal catastrophes that have hit the island throughout its history (CNCA 2013)<sup>10</sup>.

From the field trip visit to Minami-Sanriku Town, as part of the Workshop, an interlinkage between the two case studies was observed, in which both places are connected by the post-disaster and resilience processes. Minami-Sanriku Town, in Japan, was devastated by the 2011 tsunami and one of the famous *Moai* statues is located in its new commercial area, replicating the characteristics of those found in Rapa Nui [Fig. 5].

It is important to clarify the origin of the statue that is located in Minami-Sanriku Town. This specific statue is not linked to any Rapa Nui ancestor in particular. It was specially sculpted



Figure 5: Moai figure located in Minamisanriku Sun Sun Shopping Village. Margotta M. A. 2018.

<sup>10</sup> NATIONAL COUNCIL FOR CULTURE AND ARTS, CHILE. 2013. Knowing the Rapa Nui Culture. <https://www.cultura.gob.cl/wp-content/uploads/2013/02/Guia-Rapanui.pdf>

for her transfer to Japan, to replace a first figure, which was previously sculpted and transported from Rapa Nui. That initial figure was a gift from the government of Chile, sent as gratitude to Japan, in the context of the UNESCO Japan project<sup>11</sup>. Some of the activities carried out by this programme addressed the restoration of *Moai* statues that were damaged as a result of the 1960 tsunami in Chile, the force of which subsequently reached the coasts of Japan's Tohoku region, where Minami-Sanriku Town is located.

Notwithstanding the foregoing, the new meaning effects visualized in Minami-Sanriku Town are noteworthy. It is possible to appreciate that there have been few, or perhaps insufficient, activities or dissemination links with the aim to transmit to the local community of Minami-Sanriku the original context described above. Nevertheless, it is possible to appreciate a special reappropriation of the figure by the community which collects that original feeling of protection in this very different context. This new meaning had a positive effect and contributed in the reinforcement of the community and the town's hopes in a resilience process after the 2011 tsunami, as one of the few elements still existing and that recalls the image of the town before the disaster.

The statue evolved into an interesting example of how a community's heritage linked to a very specific environmental context, expressed in its materiality (the *Moai* stone figures), and to a specific culture and its practices (rites of death) can be reconverted and transformed into an invaluable resource for a different and very distant community (Minami-Sanriku) in their process of recovery. Particularly in Minami-Sanriku, the author and other Workshop participants could testify of the remarkable role that the local community is taking in the reconstruction of their town, through different participatory projects currently under development.

In conclusion, it can be highlighted that although the *Moai* located in Minami-Sanriku is not placed on the remains of a specific Rapa Nui ancestor, nor does it accurately represent it, the figure commemorates the disaster and the victims who are part of the collective memory of the community and that has been a tool for resilience in the recovery processes, linked to the post-

disaster reconstruction. This link with intangible values and the reinterpretation of the protection feelings, beyond the tangible dimension of the *Moai* figure located in Minami-Sanriku, is what marks this example as a particularly interesting case study. It is this feeling of protection that makes this use of the *Moai* positively evaluated by the members of the Rapa Nui community to whom the author transmitted this story.

<sup>11</sup> Bahamondez M, Sawada M, Inoue S., Araki Y. and Valenzuela P. 2007. Ahu Tongariki: Conservation work of its 15 moai. CONSERVA Journal N° 11: pp. 55 – 64. [http://www.patrimoniocultural.gob.cl/dinamicas/DocAdjunto\\_1203.pdf](http://www.patrimoniocultural.gob.cl/dinamicas/DocAdjunto_1203.pdf)

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# Nature-Culture Mapping in the Trans-Himalayas

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## Abstract

*Tso Moriri-Korzok (Ladakh-India), located in the Ladakh Trans-Himalayas, is a unique bio-diverse wetland 4650m above sea-level (asl). It is locally protected and an international Ramsar site. The Changpa, nomadic pastoralists, who have inhabited this landscape for several centuries display a complex yet eloquent interface with nature that is evident in their way of life. However, the region is highly vulnerable due to climate change, geopolitical conflicts, and irregular policies affecting both ecosystems and breaking the socio-cultural fabric of the Changpa nomads. The project proposed aims to spatially map the Changpa land-use, their movement, and the wetland ecosystem. Documenting cultural, historical, environmental, and other practical data that showcase interdependencies, interactions, and overlaps between nature and cultural systems. The mapping project could support future landscape management and conservation plans.*

**KEY WORDS:** Trans-Himalayas, Nature-culture linkages, Nomadic communities, Community mapping, Traditional knowledge, Climate change, Cold-desert

## 1. Introduction

Tso Moriri is located in the southernmost part of the Changthang plains and the western edge of the Tibetan Plateau in Ladakh-India. This high-altitude brackish lake, at 4650masl, is an extensive, complex wetland ecosystem that spreads over an area of 120 km<sup>2</sup> (Chandan et al. 2007). Characterized by an arid, cold, desert climate, the summer temperature ranges from 0° to 30°C and falls to -10° and -40°C in winter, freezing the lake in the winter months (Mishra et al. 1998).

wild-ass as well as endangered migratory birds, like the black-necked crane and bar-headed goose, and several species of plants, all together creating a unique assemblage of flora and fauna (Namgail et al. 2010).



Figure 2: Black-necked crane (*Grus nigricollis*) (© Kirti Chavan)

## 2. Significance of the heritage place

### 2.1 Natural and cultural values

Despite the harshest conditions, the landscape represents one of the important bio-geographic and eco-regions province within the trans-Himalayas, with several rare species of mammals, including the Snow leopard, Tibetan gazelle, and the Tibetan



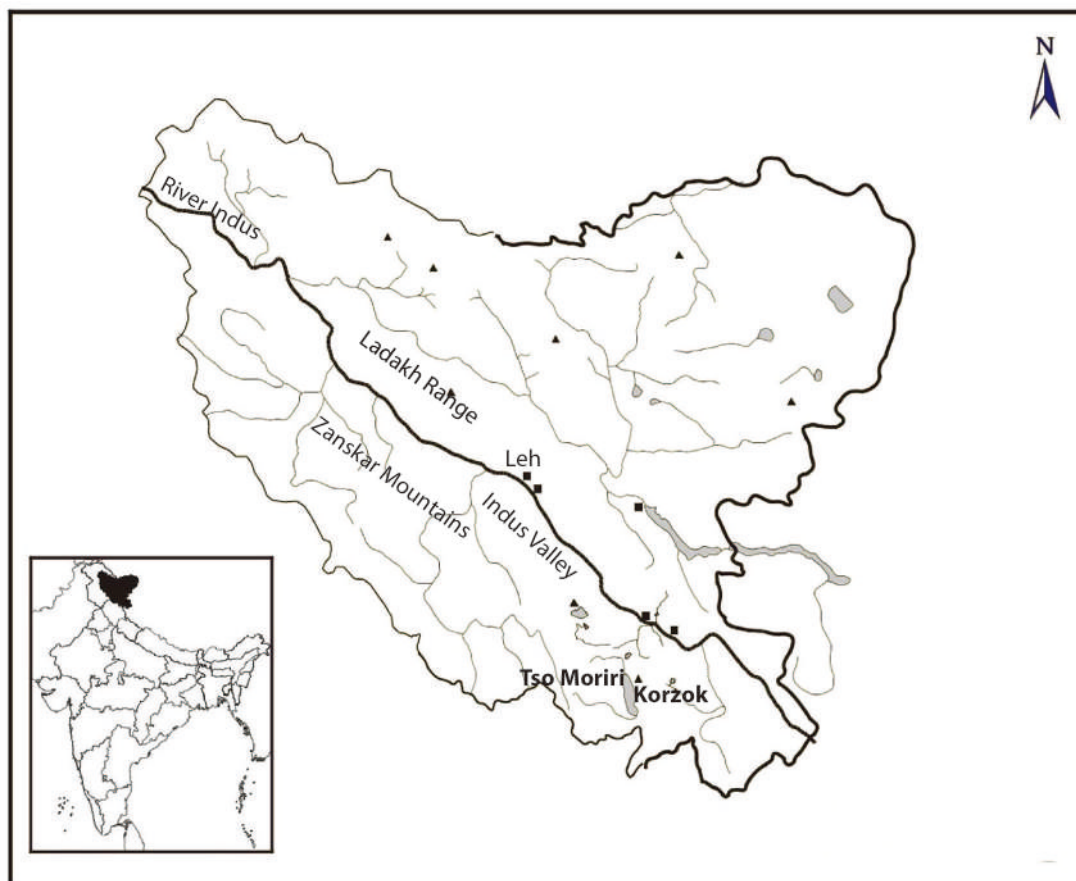


Figure 1: Map of the Tso Moriri-Korzok Wetlands. (Adapted from Management Planning Tso Moriri-Tsokar, a framework 2007; Department of Wildlife Protection, Government of Jammu and Kashmir)



Figure 3: Village of Korzok on the shores of Tso Moriri (© Radhika Kothari)

Known for its rich biodiversity and geological formations, the area is protected under the Changthang Cold Desert Sanctuary. It is also locally protected as the Tso Moriri Wetland Conservation Reserve and is an international Ramsar Site (Gujja et al. 2003).

Like much of Changthang, the Changpa, known to have arrived from Tibet in the eighth century CE, populate the site (Jina 1995). The Changpa are mainly nomadic pastoralists, who rear the pashmina goats, sheep, and yaks, move at altitudes ranging between 4000m to 5500m asl across the Changthang plains with yak wool tents called 'rebos' (Chaudhari 2000). While less

than 1% of the geographical area in Changthang is cultivated, most of the vegetated zone is used by the Changpa nomads as grazing grounds (Rawat and Adhikari 2002). A small number of the Changpa, known as 'yulpas' (literally translated as village settlers), live in the village of Korzok, located at the northern end of the lake.

## 2.2 Sacred landscape

Tso Moriri holds immense cultural and ecological significance in Changthang. In 2000, the World Wide Fund for Nature (WWF-India), along with the Buddhist Monastery at Korzok and the local community, pledged Tso Moriri as a Sacred Gift to the Earth (WWF 2001). Following which, the local monastery regularly conducts religious ceremonies at the banks of the lake for the well-being of all living creatures and for the sanctity of its waters. It is also considered a gesture of gratitude for the lake and its life-supporting qualities.

The Changpa also revere wildlife as a matter of religious belief and custom; for example, the arrival of the endangered black-necked crane is considered highly auspicious and is seen as a very good omen for the year. These evident, eloquent interfaces between the cold desert ecology and the

Changpa have always defined this scared landscape (Bhasin 2012).



Figure 4: Changpa in traditional attire (© Radhika Kothari)



Figure 5: Stone balance and prayer flags at a mountain pass (© Radhika Kothari)

### 2.3 Outstanding universal value for World Heritage nomination and present limitations

In early 2000, there were plans to nominate Tso Moriri as a World Heritage site (Gujja et al. 2003). While the local community wasn't involved in the process, given the paucity of data and administrative processes, the idea was dropped. Later, in 2015, the entire region of Ladakh was included on India's Tentative List for World Heritage. Named as the 'Cold Desert Cultural Landscape of India,' the proposal highlights the Buddhist roots and Tibetan affiliations of Ladakh.

Nonetheless, given the exceptional natural and cultural values of Tso Moriri, it could well qualify

as a Mixed Cultural and Natural Heritage site under the following criteria:

Criteria (iii), (v) and (vi): The Changpa, who have inhabited the harsh landscape for several centuries, display a complex interface with nature that resonates in their customs, land use, local knowledge, and spiritual beliefs, and are currently threatened by changing socio-economic and anthropogenic climate threats.

Criteria(vii), (viii), and (x): The Trans-Himalayan region represents an important biogeographic zone that, despite its sparse vegetation, supports a number of endangered and threatened species. Apart from climate threats, the lack of calculated strategies and burgeoning tourism could further degrade this fragile ecosystem.

## 3. Management, State of Conservation, Threats, and Vulnerabilities

### 3.1 Management

Tso Moriri is administratively governed under the Nyoma Block in the Leh district of Ladakh. Moreover, being a wetland reserve within the Changthang Cold Desert Sanctuary, the site comes directly under the jurisdiction of the Department of Wildlife Protection, Government of Jammu and Kashmir, India. The Department is responsible for the overall management of the lake and a dedicated ranger officer is present in the village of Korzok. In addition, the local community, along with WWF-India, formed the Tso Moriri Conservation Trust that was envisioned to supervise, conserve, regulate camping, and vehicle movement around the lake. However, there is much left to do in terms of ground-work in the lake catchment areas and in the village of Korzok, which is constantly under threat due to tourism, unplanned development, and the constant onslaught of climate variability with each passing year given the lack of local action.

### 3.2 State of Conservation, threats, and vulnerabilities

#### Ecological and climate change

Despite representing a unique ecosystem in terms of biotic resources (Rawat et al. 2002), there has been little effort to understand the rich biodiversity (Namgail et al. 2005), the impact of climate change, and the associated vulnerabilities in Changthang.

The studies from the Tibetan side of the Changthang Plateau indicates the thinning of

glaciers, erratic precipitation patterns, and the increase in the minimum temperature during winter has been affecting the vegetation and grasslands (Yang et al. 2012; Liu et al. 2000; Wilkes 2008). For Ladakh as a whole, which shares a similar geography and altitude, the impacts of global climate change have been prominent in the form of extreme heat, cold waves, flash floods, and pest invasions. Meteorological data, recorded by the Indian Air Force, shows that the temperature in the region rose by 1o C over the last 35 years (Kumar 2009).

Observations and community perspectives from Changthang also corroborate a substantial decrease in snowfall over the last 20 years, which is directly affecting changes in species composition and the decreasing productivity of grasslands. In the recent past, there have been unprecedented extreme events in Changthang, like the 2013 snowstorm that submerged the region in heavy snow for months, resulting in a loss of uncountable wildlife, particularly the Tibetan wild-asses, Blue sheep, Tibetan wolves, and more than 60,000 pashmina goats – rendering a huge economic loss for the Changpa nomads. Likewise, the shrinkage of smaller islands within the lake area is evidence of the changing climatic conditions and habitat degradation which is directly affecting and impacting the breeding grounds for the Bar-headed geese and other waders (Chandan et al. 2007). Other factors, like increasing tourism and a large number of vehicles moving outside the designated road or tracks, are also causing massive disturbance to the wildlife. Additionally, most tourist campsites around Tso Moriri do not have solid waste disposal and sanitation facilities, further damaging the fragile ecosystem (Chandan et al. 2007).

#### *Socio-economic changes*

Even for the Changpa nomads, who have co-existed for centuries in relative harmony with nature and wildlife, have experienced massive changes due to geopolitical conflicts. The shifting borders have led to a loss of winter pastures, salt trades, changes in livestock holdings, and local governance patterns. Additionally, despite the rich resources, the potential for improving the quality of life for the Changpa has remained largely untapped, forcing younger generations to forsake the traditional way of life to find newer economic opportunities in the city (Bhasin 1999 & 2012; Goodall 2004). The Changpa, who have been known to develop a diverse range of strategies, institutions, and networks to minimize unpredictability and risks, are now amidst times when it may or may not be sufficient (Bhasin 2012).

For example, the rotational traditional pasture management system, wherein certain pastures are left untouched for natural regeneration, could also be under threat due to degradation. More so, the exact impact of climatic change in the region is yet to be fully understood; therefore, it is not easy to evaluate the impact of the rapidly changing conditions on the Changpa pastoralist lifestyle.

Additionally, the local people, who have always revered the natural elements, such as the lakes, mountains, and birds, along with their Buddhist worldviews, are facing cultural incursions with unregulated tourism. Unplanned development activities, the lack of dialogue among development agencies, and inconsistent policies are reducing their adaptive capacity and thereby increasing the overall vulnerability of the Changpa nomads and their natural setting (Chandan et al. 2007; Namgail et al. 2007).

In the face of the increasing accounts of threats to nature, people, and the vast expanse and remoteness of the Changthang, there is a pressing need for appropriate disaster preparedness, aligning strategies, and the convergence of experts, local government authorities, state, and central administrative services.

#### ■ 4. Mapping Nature-Culture Linkages

There is a growing concurrence for the obvious evidence of a co-relationship between biodiversity and human diversity, with some of Earth's last areas of highest biological diversity inhabited by various indigenous people (Posey 1999) additionally, the Declaration of Belem (1988) that calls an 'inextricable link' between biological and cultural diversity. However, there is little in way of policy, practice, action, or evidence that showcases nature and culture linkages within conservation organization, stakeholders, and other dialogues (Maffi et al. 2010).

In the case of India, there is an urgent need to integrate systems, which are inherently interrelated and interdependent, into policies and well within the purview of natural and cultural heritage conservation. Using this premise, the Jungwa Foundation's one-year pilot project re-examines the Ladakh's Tso Moriri-Korzok landscape in Changthang to showcase the interaction of natural-cultural elements. We will be mapping and documenting specific nature-culture elements, such as nomadic migratory routes, summer/winter settlements, tangible cultural sites, sacred sites in

tandem with significant habitats of endangered wildlife and migratory birds, and landscape features, such as lakes, glaciers, mountains, wetland boundaries, rivers, and streams. Thereby, creating a detailed map to create 'hotspots' that showcase interdependencies, interactions, or overlaps between cultural and natural systems.

The mapping exercise is meant to act as a visual element that supports this co-relation between local communities, socio-cultural, and natural ecosystems. Herein, it is a mechanism to demonstrate the movement or interactions of the Changpa nomads in tandem with the natural or biophysical elements in the landscape. It will also establish the mutual co-dependence or influence the landscape has had on the Changpa nomads and their way of life. Given the complexity of overlaps due to the altitudinal gradients, a cartographic map can enable a true representation and forge a better understanding of the nature-culture linkages. As pointed out by Stepp et al. (2004) such maps can serve as an invaluable tool for stakeholders, educators, policy analysts, and decision-makers so that they can adopt appropriate land management policies that can protect and conserve the nature-cultural diversity in different landscapes.

The creation of this cartographic map, which clearly depicts cultural, historical, environmental, and practical data from the Changpa, can be used for planning, management, and other zonation plans around the wetland ecosystem. While this is only a pilot project, the map is not an end in itself (Stewart 2007), but rather an instrument to strengthen management and conservation efforts within the traditional communities that have been previously understated or overlooked for practical application and management. To further support their relationship with the land, the project is also documenting folklores that represent or are in appreciation of the natural beauty of the landscape. For example, the local mythological stories that praise the migratory birds, the lake formation, or the Changpa worldview of harmony of the three realms of life, wherein Gods (*lha-yul*) are at the top, the underworld spirits/deities (*yog-lhu*) below, and Earth, inhabited by humans and animals (*bar-tsan*), is in between.

Additionally, the project includes the development of a comprehensive program designed around the well-being factors, with a specific focus on a livelihood project aimed at bolstering the traditional woolen weaves of the Changpa nomads. This reemphasizes the sheer wisdom of the Changpa

nomads, who have interacted with this harsh landscape for over centuries and are indispensable to the socio-ecological crisis in Changthang. Thus, by combining their traditional knowledge practices and worldly wisdom with modern science, as a means to enhance the adaptive capacity, this will eventually promote resilience of both the people, cultural systems, and their natural surroundings. Ultimately, the project's goal is to develop a model of nature-culture heritage commonality that is more sustainable, resilient, and replicable in other mountain regions, especially in the light of climate change.

## ■ 5. Conclusion

Tso Moriri is one of the most important wetland ecosystems in the Trans-Himalayas. Scientific studies have repetitively highlighted the importance of the breeding grounds near the lake for several species of birds. However, there is much to learn from the Changpa worldviews and their interactions with the landscape. The engagement of the Changpa and their traditional systems, especially in regard to the use of landscape, knowledge of species, and perspectives of belongingness, could greatly add to the present scientific understanding and conservation efforts, thereby giving it a more holistic approach. This mapping project is one such tool to showcase the overlaps and the interactions as well as the movement of the Changpa nomads across the landscape. The map offers planners the opportunity to inculcate the Changpa use of the landscape, their historical considerations, and cultural reverence while developing key zoning or management plans. Furthermore, the management plan for the Tso Moriri wetlands, which calls out for the greater community's participation and multi-stakeholder engagement, could be initiated through such a mapping exercise.

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Part Two:

Report on the Third  
Capacity Building  
Workshop on Nature-  
Culture Linkages in  
Heritage Conservation,  
Asia and the Pacific

**DISASTERS AND RESILIENCE**





# EXECUTIVE SUMMARY

The Third Capacity Building Workshop on Nature-Culture Linkages in Heritage Conservation in Asia and the Pacific (CBWNCL 2018) took place in Tsukuba, Japan, from September 21 to October 1, 2018. The workshop was organized by the UNESCO Chair on Nature-Culture Linkages in Heritage Conservation at the University of Tsukuba, in collaboration with the UNESCO World Heritage Centre, the International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM), the International Union for the Conservation of Nature and Natural Resources (IUCN), and the International Council on Monuments and Sites (ICOMOS).

This workshop, themed Disasters and Resilience, was the third in a series programmed for the period of 2016-2019. The aim is to contribute to the World Heritage Capacity Building Programme in promoting and developing skills of young and mid-career heritage practitioners of the Asia and the Pacific region, enabling them to deal with the interlinkages between nature and culture in heritage sites.

The workshop was divided into four modules:

- **Module 1:** International Symposium
- **Module 2:** Understanding Nature-Culture Linkages in the Context of Disasters and Resilience
- **Module 3:** Management, Implementation and Governance in Disasters and Resilience
- **Module 4:** Reflection on Theory and Practice

CBWNCL 2018 was inaugurated with **Module 1**, which consisted of the 3<sup>rd</sup> International Symposium on Nature-Culture Linkages in Heritage Conservation held on September 21, at the Tsukuba International Congress Centre and in the framework of the Tsukuba Global Science Week 2018, which was organized by the University of Tsukuba with the overall theme of 'Driving Sustainable Development.' In this thematic context, the CBWNCL 2018 symposium contributed with presentations and discussions focused on how to deal with natural and human-led hazards, in order to prevent and recover from disasters by integrating natural and cultural heritage into disaster risk prevention and recovery processes. The symposium gathered international experts, three of whom represented partner organizations: Ms. Radhika Murti from IUCN, Mr. Joseph King from ICCROM, and Dr. Rohit Jigyasu from ICOMOS. A video message was sent from the Director of the UNESCO World Heritage Centre and Division of Heritage, Dr. Mechthild Rössler. Key promoters of the nature-culture approach in the World Heritage system, and close collaborators of the CBWNCL, joined the roundtable as discussants: Dr. Gamini Wijesuriya, former staff at ICCROM, and Ms. Kristal Buckley, a World Heritage Advisor for ICOMOS and lecturer at Deakin University. Representatives of the Japanese Government presented the situation in Japan. First, Mr. Naohisa Okuda, from the Ministry of the Environment, explained the current initiatives and efforts in the recovery process in the Tohoku region, which was affected by the Great East Japan Earthquake and Tsunami. Following, Ms. Kumiko Shimotsuma, from the Agency for Cultural Affairs, talked about the integration of disaster risk management in the protection and conservation of Japan's cultural heritage. Fifteen participants of the CBWNCL 2018, who attended the meeting and took part in the discussion, were heritage practitioners from the culture and nature sectors, coming from Australia, Bangladesh, China, India, Indonesia, Malaysia, Philippines, Sri Lanka, Vietnam, Hawaii (USA), Kenya, Chile, and Russia. Four students of the University of Tsukuba, from four different countries (DR Congo, Ethiopia, Jamaica, and Sudan), took part in the process as observers.

During the panel discussion and roundtable, speakers agreed that nature and culture sectors tend to work separately. Some of them highlighted the need to change the mindset in order to develop comprehensive approaches to heritage conservation and more intersectoral collaboration. It was pointed out that chances

to share ideas, like in the current symposium, have increased and that awareness raising on nature-culture linkages has been effective throughout the last years, with the UNESCO Chair and the CBWNCL as one of its vectors. However, the current challenge lies in finding a way to implement this approach, which methodologies, strategies, and concrete proposals which can make the concept more operational.

The participants also reaffirmed the need to develop synergies and cooperation between sectors, in the heritage conservation context in general, and particularly in the case of disasters prevention, mitigation, response, and post-disasters recovery. It was pointed out that any disaster-related project needs the involvement of different sectors, yet, intersectoral collaboration is complex and the need of immediate response to disasters does not allow further efforts. Moreover, it was explained how during a disaster response, the priority is placed on survivors, and therefore, heritage, both natural and cultural, come in second place. Nevertheless, the discussions clarified the relevance of integrating a nature-culture approach for disaster risk management and for building resilience.

Japan was acknowledged as a champion in this endeavor and as a good example for Asia, the Pacific region, and beyond. The representatives of the Japanese governmental institutions showed how disaster risk management has been integrated into the cultural heritage conservation system as well as how nature is being used as a solution for disaster risk prevention, post-disaster recovery, and building resilience to future disasters. They asserted that working at the local level with municipalities and communities, in context-specific situations, enables collaboration.

It was emphasized that interdisciplinary and crossdisciplinarity partnerships need to be used when looking at disasters and resilience. Additionally, it was pointed out that the importance of natural ecosystems for the resilience of inhabited landscapes, and therefore nature conservation efforts, needs to be integrated as part of urban planning. Landscape conservation and urban planning are essential instruments in the building of resilience and preventing disasters.

Moreover, it was clarified that intangible cultural heritage is also impacted by disasters and that it plays a fundamental role in the post-disaster recovery as an instrument of resilience for communities, since identity and cultural heritage sustain the cohesion of communities when facing disasters. The importance of capacity building and education was highlighted, especially when confronting challenges such as climate change and unpredictable natural hazards. It was mentioned that educational systems may be divorced from reality; therefore, changes need to start in early education systems, as well, to build up awareness and openness to the relationships between nature, culture, and people.

The top-down nature of the implementation processes of the World Heritage Convention was pointed out as a constraint to the implementation of people-centered approaches and sustainable development perspectives. In response to this concern, the need to explore resilience from the bottom-up was highlighted. Speakers agreed that efforts to involve all stakeholders, especially local communities, should be continued. Community-based conservation and management need to be promoted. Traditional knowledge and indigenous peoples need to be respected and integrated into the disaster-prevention strategies.

Main challenges that were noted are climate change and rapid and unplanned urbanization; hence, the importance of adaptation and mitigation were stressed. It was highlighted that World Heritage sites serve as models and should continue their role as test grounds for sustainable development. It was suggested that disaster risk management should be included in management plans, as part of daily maintenance and monitoring. It was noted that more work needs to be done in the collaboration and sharing of experiences between different Conventions and Programs that work with the conservation of natural and cultural heritage, such as the UNESCO Man and the Biosphere Programme, the UNESCO Convention on the Safeguarding of Intangible Cultural Heritage, the Convention on Biological Diversity, and the UNESCO Geoparks network, among others.

Yet, some questions remained open, in particular those regarding the implementation of a cultural perspective cross-cutting the Sustainable Development Goals of the UN Agenda 2030. The need to explore on qualitative data and qualitative indicators for culture was stressed.

**Module 2** consisted of three days of intensive lectures, group discussions, and participants' case study presentations. The first day's lecture dealt with the evolution of the conservation practice, from the nature-culture divide towards a more integrated perspective, considering nature-culture linkages, and people-centered approaches to conservation, as well as a landscape approach to heritage. The second lecture focused on the World Heritage Convention and its processes of implementation. The second day focused on disaster prevention and post-disaster recovery, with lectures from the natural and cultural sectors perspectives, covering the Ecosystems-Based Approach to Disaster Risk Reduction and Disaster Risk Management for Cultural Heritage. During the third day, the focus was on the Japanese experience on disaster risk management and post-disaster recovery, as well as an introduction to the field visit. During the three afternoon sessions, fifteen case studies were presented: Eight World Heritage sites, two sites on the tentative list in their respective countries, one Biosphere Reserve, one UNESCO Geopark, and four landscapes protected at the national level were examined and discussed. The case studies reflected the diversity of overlapping legal systems and designations, landscapes' vulnerabilities to a variety of hazards, mostly natural, and clarified that nature-culture linkages are present and need to be acknowledged for better conservation and disaster risk management.

**Module 3** lasted for four days and the participants visited three sites in the Tohoku Region which were affected by the Great East Japan Earthquake and Tsunami in March 2011: Hiraizumi – Temples, Gardens, and Archaeological sites Representing the Buddhist Pure Land, a World Heritage since 2011, the Sanriku Fukko Reconstruction National Park, the area of Minami-Sanriku Town, and Matsushima, Place of Scenic Beauty. In Hiraizumi participants learned about the conservation of important Japanese cultural heritage properties, such as temples and gardens, as well as how they are prepared for hazards and how reconstruction is undertaken – with an example of a garden rock. In Minami-Sanriku Town, participants learned about the concept and implementation of the Sanriku Fukko Reconstruction National Park and how the municipality is working with the Ministry of Environment to develop strategies for the recovery of natural ecosystems – with the inscription of the Shizugawa Bay as a Ramsar site, as an example – and the development of eco-tourism. The participants also had the chance to listen to testimonies from the local inhabitants who experienced the tsunami and lead initiatives for the recovery of the town using natural and cultural heritage. Finally, in Matsushima, participants learned how the area was affected by the tsunami and how it is recovering. From an archaeological perspective, participants learned about the prehistoric occupation of this area and how prehistoric people living in Japan settled in safer places. Moreover, they learned about the problems of relocating fishermen villages and the conservation of the landscape views, as well as the issues entailed by the construction of concrete walls along the sea side, as an immediate reaction to tsunami. From all these visits, participants were able to have a better understanding of the importance of the local community's involvement in preparation for, and the recovery processes after, disasters. Through the testimonies, workshop participants recognized the role of natural and cultural heritage in the resilience of communities affected by these experiences.

**Module 4** comprised of two days of reflection on the theory and practice gained during the workshop. Workshop participants worked in groups, tasked with mapping the values and interrelations between nature and culture in the sites visited as well as assess the management of the sites, by identifying the lessons learned and elaborating on recommendations. Additionally, participants were asked to reflect on their own case studies and present one lesson learned that they would like to apply in their home country. Participants prepared group presentations from which many interesting discussions arose regarding their different understandings of the same sites. Participants highlighted the role of locals in the recovery process and agreed that the Japanese experience was exemplary for their own countries.

As concluding remarks, participants acknowledged the importance of sharing and working with practitioners from different disciplines and sectors of the heritage practice, which led them to think beyond their knowledge and in a more holistic manner. They recognized that the work in interdisciplinary groups enriched their perspective of heritage and allowed them to learn from other sectors involved in the conservation practice. Most importantly, they understood the need of involving all stakeholders in the decision-making processes, having learned from the Japanese local communities that nature and culture are not divided when facing disasters, such as earthquakes or tsunami. The experiences in Japan clarified that conserving heritage successfully requires coordination beyond sectors and at different levels of governance. It became evident that heritage conservation needs to be integrated with other areas involved in disaster

prevention, post-disaster recovery, and reconstruction efforts, as well as the need for it to be enforced by local management agendas. Moreover, participants came to understand that nature-culture linkages are necessary for a comprehensive conservation of heritage sites.







# MODULE ONE:

## INTERNATIONAL SYMPOSIUM

On September 21, 2018, the Third International Symposium on Nature-Culture Linkages in Heritage Conservation, Asia and the Pacific, Disasters and Resilience took place within the framework of the Tsukuba Global Science Week 2018, which general theme was “Driving Sustainable Development.”

The Chairholder of the UNESCO Chair on Nature-Culture Linkages in Heritage Conservation, University of Tsukuba, Professor Masahito Yoshida and the President of the University of Tsukuba, Professor Kyosuke Nagata, respectively, gave opening addresses and especially welcomed the honored guest speakers Ms. Radhika Murti, Dr. Rohit Jigyasu, Mr. Naohisa Okuda, Ms. Kumiko Shimotsuna and Mr. Joseph King, and the roundtable guests: Ms. Kristal Buckley and Dr. Gamini Wijesuriya. The achievements of the CBWNCL (Capacity Building Workshop on Nature-Culture Linkages in Asia and the Pacific) organized by the UNESCO Chair on Nature-Culture Linkages in Heritage Conservation of the University of Tsukuba were acknowledged. It was pointed out that the University of Tsukuba, through the Certificate Programme on Nature Conservation and the World Heritage Studies Program, is working closely with the UNESCO World Heritage Centre, IUCN, ICOMOS, and ICCROM in the development of this novel curriculum.



*Professor Kyosuke Nagata, President of the University of Tsukuba, inaugurating the International Symposium.*



*Professor Masahito Yoshida, Chairholder of the UNESCO Chair on Nature-Culture Linkages in Heritage Conservation, University of Tsukuba, giving his opening address.*



*Video message from Dr. Mechtild Rössler, Director of the UNESCO World Heritage Centre and the Division of Heritage, during the International Symposium.*

Subsequently, Dr. Mechtild Rössler, Director of the UNESCO World Heritage Centre and the Division of Heritage, gave a speech on the role of UNESCO in disaster risk management and post-disasters recovery through a video message. She welcomed participants and the audience in general to the workshop in Tsukuba, stressing that the theme of this year, disasters and resilience is a critical one. She said that in the face of ongoing conflicts and increasing disasters, UNESCO has recognized that focused actions are required and a *Strategy for the Reinforcement of UNESCO's actions for the Protection of Culture and the Promotion of Cultural Pluralism in the event of Armed Conflict* has been developed by its governing bodies. Dr. Rössler explained that the Strategy has two key objectives: to strengthen the Member States ability to prevent, mitigate, and recover the loss of cultural heritage and diversity as a result of conflicts and disasters, as well as to incorporate the protection of culture into humanitarian action, security strategies, and into peace-

building processes. She explained that in order to address disasters as a result of natural hazards, the UNESCO General Conference adopted an addendum to the Strategy in 2017, which strengthens the overall policy framework underlying UNESCO's role for the protection of culture in emergencies associated with disasters caused by natural and human-induced hazards. She said that this would allow Member States to successfully implement culture and heritage related provisions of the *Sendai Framework for Disaster Risk Reduction*, which was adopted by the United Nations Members States in March 2015. Dr. Rössler continued explaining that an Action Plan for the implementation of the Strategy was also elaborated and endorsed by the Executive Board at its 201<sup>st</sup> session, including in its scope disasters caused by natural hazards. She said that UNESCO's approach for the protection of culture is part of its global vision and it is based on a strong normative framework of the six Culture Conventions, and UNESCO's *Declaration on the Intentional Destruction of Cultural Heritage*, which was adopted in 2003 following the destruction of the Bamiyan Buddhas in Afghanistan. She stated that the protection of cultural and natural heritage has become a security and humanitarian issue in the 21<sup>st</sup> century. She explained that UNESCO mobilizes to respond to this challenge by linking interventions with humanitarian and security operations. Dr. Rössler detailed that the activities of UNESCO range from the implementation of the United Nations' resolutions, such as *United Nations Security Council (UNSC) Resolution 2199*, prohibiting the trade in cultural objects originating in Syria, or *UNSC Council 2347* on the security impact of cultural heritage destruction, including beyond the financing of terrorism, to the Global Coalition for "Unite4Heritage."

Dr. Rössler continued on to explain that UNESCO also aims to include culture into international Post-Disaster Needs Assessments (PDNA) and the Recovery and Peace-Building Assessment processes, through the participation of interagency coordination processes and working groups. She said that in 2013 a specific chapter on Culture was integrated into a PDNA, which implies that a single assessment methodology was defined to cover the social, economic, and government related impacts of a disaster specific to the cultural sector. She mentioned that UNESCO has also developed a training module on coordinating Post-Disaster Needs Assessment for culture in order to foster a more comprehensive understanding and to enable more effective planning and coordination by its key stakeholders and actors. Dr. Rössler continued that in 2019, the new training module will be rolled-out in Africa, Latin America and the Caribbean, as well as in Asia and the Pacific; it will target UNESCO cultural program specialists based in the field as well as key regional players. She added that UNESCO, in collaboration with ICCROM, are jointly organizing the 2018 edition of the First Aid to Cultural Heritage in times of crisis, FAC International Course in Bamako, Mali, from 12 to 30th November 2018. Dr. Rössler said that this three-week training will contribute to establishing national teams for cultural heritage first aid which will be able to work in parallel with emergency responders and humanitarians regardless of the type and scale of emergency. She specified that this training will subsequently be rolled-out in cooperation with ICCROM in other regions of the world.

Dr. Rössler continued explaining that UNESCO has developed, in cooperation with the Advisory Bodies, resource materials in 2010 and 2013, as well as produced an issue of the 2015 World Heritage Review. She also affirmed that UNESCO has enhanced partnerships in disaster management and resilience. She said that first in protecting natural heritage in times of crisis, the Rapid Response Facility (RRF) provides immediate financial assistance to natural World Heritage sites that are facing imminent and acute threats. She added that since 2006, the partnership between the UNESCO World Heritage Centre, Fauna and Flora International, the United Nations Foundation, as well as Foundation Franz Weber, has provided over one million US Dollars of emergency support to 34 Natural World Heritage properties and 8 sites on Tentative Lists. She explained that most of these acute threats are time-sensitive and require immediate response. She gave the example of disasters, including earthquakes and wildfires, which can cause sudden and unpredictable damage to ecosystems, wildlife, and rural livelihoods. She said that human-made crisis can also affect wildlife, such as armed-conflicts and oil-spills and examples related to post-earthquake tsunami recovery, included assistance to Sichuan Giant Pandas Sanctuary in China following the 2008 Earthquake or Galapagos Islands, Ecuador in 2011 Earthquake and Tsunami, which also struck the coast of Japan's Tohoku Region. She stressed that when these types of emergencies occur, it is essential to respond quickly to avoid or minimize devastating consequences. She explained that the Facility makes funding decisions within an of 8-day target, getting resources to the field fast, and making it the world's fastest conservation funding body. She added that to-date, with over 45 grants allocated, the RRF has contributed to the protection of 143 species, supported 27 natural properties, almost ten million hectares of marine-habitat-protected and 15 million hectares terrestrial-habitat-protected, and supported 33 organizations.

Dr. Rössler stated that UNESCO is currently working towards the creation of a rapid response mechanism for the protection of cultural heritage in emergency situations, including civil and military personnel that could be used during UN peace-keeping missions. Dr. Rössler emphasized that since 2016, UNESCO has a partnership agreement with the International Committee of the Red Cross which aims towards the collaboration of information on the ground in conflict zones and helping to support and build capacities in the implementation of the 1954 Hague Convention and its two protocols among humanitarian actors. She added that in cooperation with UNITAR, UNOSAD, and other partners, UNESCO monitors damage to cultural heritage through satellite imagery, allowing remote access to otherwise inaccessible areas. This helps to clarify the situation on the ground, to deploy first cultural aid, wherever it is needed, and to plan for future recovery, all of which are based on a comprehensive record of historic features and the involvement of local communities. Mentioning that the Heritage Emergency Fund, she explained how it is a multi-donor funding mechanism which was established by UNESCO in 2015, to enable the organization to respond quickly and effectively to crises resulting from armed conflicts and disasters caused by natural and human-made hazards all over the world. This Fund finances activities in the area of emergency preparedness and response falling within the domain of UNESCO's cultural conventions.

She added that UNESCO regularly informs the Committee which has led it to make various decisions related to natural disasters, such as a *Strategy for Reducing Risk from Disasters at World Heritage properties*. Dr. Rössler added that UNESCO is also working on a *Policy Compendium* and a specific update on the *Climate Change Policy for World Heritage*. She stressed that the *World Heritage Policy on Sustainable Development* in 2015 specifically calls for strengthening resilience to natural hazards and climate change. It was emphasized that, in the face of increasing disaster risks and the impact of climate change, State Parties should recognize that World Heritage represents both as an asset to the protection as well as a resource to strengthen the ability of communities and the properties to resist, absorb, and recover from the effects of hazards.

In line with disaster risk and climate change multilateral agreements, Dr. Rössler explained that State Parties (SPs) should first recognize and promote within conservation and management strategies the inherent potential of World Heritage properties for reducing disaster risks and adapting to climate change with associated ecosystem services, traditional knowledge and practices and strengthen social cohesion. Secondly, the SPs should reduce the vulnerability of World Heritage properties and their settings, as well as promote the social and economic resistance and resilience of the local and associated communities to disaster and climate change, through structural and non-structural measures including public awareness-raising, training, and education. She added that structural measures, in particular should not adversely affect the OUV of World Heritage properties. Thirdly, she said that SPs should enhance preparedness for effective response and Building-Back-Better in post-disaster recovery strategies within management systems and conservation practice for World Heritage properties.

At its 42<sup>nd</sup> session in Bahrain in July 2018, the World Heritage Committee urged the State Parties to the World Heritage Convention to prioritize emergency measures within international assistance in order to mitigate significant damages resulting from disasters that are likely to affect the OUV for which the World Heritage properties have been inscribed. Dr. Rössler added that the Committee also encouraged State Parties and other stakeholders to strengthen international cooperation, aiming at mitigating impacts of major natural disasters affecting World Heritage properties and reducing vulnerabilities on lives, properties, and livelihoods. In closing, Dr. Rössler said that this was just a glimpse into UNESCO's work in disaster risk management and response to disasters and in enhancing the resilience of sites and communities. Although expressing her deep regret at not being able to be physically present, due to the workload at the UNESCO World Heritage Centre, she wished the best for the deliberations during the symposium and workshop and looked forward to receiving the results.

Next, Ms. Radhika Murti, Director of the Global Ecosystem Management Programme, IUCN, presented "Natural Heritage – A Nature based Solution for Resilience to Disasters". She started her presentation by introducing the IUCN and their work around the globe on nature conservation issues. Just one month prior to the symposium, the IUCN and the government of Japan signed an MoU to start a new programme for Junior Professional Officers, where Japanese students could be based in their offices in Asia, Africa, Oceania or the headquarters in Switzerland. She explained that the IUCN, integrated with governmental



and non-governmental agents and organized in Regional and National Committees, Commissions and Secretariat, aims to create a big conservation movement that can accelerate action, policy implementation, and capacitation. Throughout the conservation agenda and the design of significant global instruments, the concept of Sustainability has gained a paramount position in the mission of the IUCN, as it contains potentials for fostering the preservation of the integrity and diversity of nature, as well as its sustainable and equitable use, if engrained in the society. More recently, the IUCN has been pushing the concept of *Nature-based Solutions*, establishing a group of seven global programmes, where they are trying to bring nature and people together, looking at how people interact with nature, where do the relationships and co-dependencies exist, and how to reflect these in their conservation work.

Ms. Murti mentioned that the program she leads, the Ecosystem Management Programme, is part of that group and has five key areas of work: Ecosystem-based adaptation, Drylands based in Kenya, Ecosystems-Based Approach to Disaster Risk Reduction (Eco-DRR) and the Island Biodiversity Conservation, both based in Switzerland, and the Red List of Ecosystems, a mirror or a sister of the Red List of Threatened Species. In this programme they look at how a single ecosystem started, keeping the scientific basis and the knowledge robust, and at how to adapt ecosystem management from neglected ecosystems such as islands and drylands, mangroves, and peatlands. Moreover, they look at how to use ecosystem management to benefit people, especially in dealing with climate impacts and disaster risk reduction.

Subsequently, Ms. Murti enumerated the most difficult challenges that nature conservation is facing: decreasing interest of countries for international cooperation, decline in funding, social media critique and climate change. Ms. Murti said that the conservation model is criticized as being based on Western ideals and their ethics of preserving pristine areas without necessarily thinking about their link with people. The intentions of the conservation sector, and especially the IUCN, is changing these ideas by recognizing, celebrating, and optimizing those nature-culture linkages that she considers might have been undermined in the past. Furthermore, she emphasized that the economic perspective represents a major challenge: National governments are not willing to go zero growth or de-growth in the name of sustainability and even though awareness has been raised, there is a lack of change in the business models of the corporate sector. According to Ms. Murti, these are the two challenges of the nature conservation sector: how to bring people back into the picture, and human beings as part of the economic and environmental society.

Ms. Murti also recalled how conservation evolved in its thinking and science from a focus on conserving nature for itself, to a focus on conserving ecosystems and the relationship between nature and people. More recently, nature conservation is developing transdisciplinary and interdisciplinary approaches, linking social and environmental sciences with the concept of socio-ecological systems. The ecosystem approach is the junction where conservation brings people back into the picture, with a strategy for the integrated management of land, water, and living resources that promotes conservation.

The problems they look at solving, according to Ms. Murti, are making conservation relevant to people's needs, to use conservation norms and sciences that have safeguarded species, flora, and fauna all these years, to make it more responsive to safeguarding people. She stressed that, as reported by the Millennium Ecosystem Assessment, in the quest for meeting people's provisioning needs of food, water, fiber, and fuel, the supporting and regulating services have been the most degraded in the last 50 to 60 years. The impacts of disasters and climate change that we are facing are consequences of this degradation. She asserted that if these two services in particular are not preserved and restored, it will be difficult to cope with the magnitude, frequencies, and types of disasters we are seeing, as well as the impacts of climate change.

In 2016 the IUCN launched the concept of *Nature-based Solutions to Societal Challenges (NbS)*, which was a concept grounded in practice. Ms. Murti defined it as actions to three key aspects: protect, sustainably manage, or restore ecosystems -natural or modified- while addressing a societal challenge and provide biodiversity benefits at the same time. She clarified that this is an evolving definition, and the IUCN's conception is not limited but rather focused on climate, food security, water, human health, disasters, and socio-economic development.

Ms. Murti explained some examples of NbS. Some countries, such as Switzerland, United Kingdom, Colombia, and the United States, have been using nature as a solution when dealing with natural hazards.

Investing in nature not only contributes to the conservation of ecosystems, but also gives benefits to the population and savings to the governments, which do not need to invest in expensive infrastructure. She mentioned the importance of Ecosystem-based Disaster Risk Reduction for the discussion at the symposium, emphasizing that this approach goes back to the very essence of the NbS definition: sustainable management, conservation, and restoration of ecosystems that can provide services to reduce risks to disasters and increase livelihood resilience. She explained that degrading ecosystems contribute to ecological and social vulnerability, which is exacerbated by economic, political, or social factors. Thus, by investing in healthy ecosystems through sustainable use, conservation, and restoration, ecological and social resilience can be increased substantially. Ms. Murti remarked that, increasingly, the private sector is showing more interest in this idea, which has been demonstrated to have cost-effective results in the longer term.

Ms. Murti then talked about a project that they worked on with the Keindanren Nature Conservation Fund in Japan, where they looked at eighteen protected areas from sixteen countries which was intended to demonstrate, with scientific evidence, any policy gaps and opportunities as well as any emerging practices on how protected areas can be used to reduce risks to disasters. Three of these cases were World Heritage sites: The Great Barrier Reef area in Australia, the Po Delta in Italy, and Royal Manas National Park in India. The former two protected areas showed the capacity to buffer natural hazards while the third demonstrated how reviving abandoned cultural practices, which use natural materials, can help reduce the impacts of floods and droughts.

Ms. Murti continued on to explain that they are also involved in capacity development. Challenges are becoming so complex that social sciences, governance, environment, and heritage, needs to come together because diversity is needed to solve them. Giving the example of another project funded by the Japan Biodiversity Fund, she explained how people from different ministries and countries were brought together to reflect on how nature can be used as an infrastructure to reduce risks. She mentioned that they have already trained 160 senior policy-makers, in 80 countries, and many of them have initiated new partnerships and actions on how to use the nature-culture links and ecosystem-based adaptation to reduce risks to disasters. The objective is to look at how to use nature for the present climate impacts and for the longer-term climate adaptation. These are some examples that are making the IUCN and conservation leaders re-think and re-do the image of conservation, showing its value to society, how it can benefit people, and how conservation can work to benefit human well-being centered development through ecosystem-based approaches. Ms. Murti concluded that bringing together the nature-culture linkages is absolutely essential in this endeavor and without them conservation and development will not work.



*Ms. Radhika Murti, Director of the Global Ecosystem Management Programme, IUCN, presenting about Natural Heritage – A Nature-based Solution for Resilience to Disasters.*



*Dr. Rohit Jigyasu, UNESCO Chairholder on Cultural Heritage and Disaster Risk Management, Ritsumeikan University, ICOMOS Vice-President and ICORP President, presenting about Disaster Risks Reduction and Resilience for Cultural Heritage.*

Subsequently, Dr. Rohit Jigyasu, UNESCO Chairholder on Cultural Heritage and Disaster Risk Management, Ritsumeikan University, ICOMOS Vice-President and ICORP President, was invited to present “Reducing Disaster Risks and Building Resilience of Cultural Heritage: Challenges and Opportunities.” Dr. Jigyasu started his presentation by thanking the organizers and pointing out that his presentation would approach the issues addressed by Ms. Murti from the opposite angle. He first explained the reasons for the increasing concerns about the ways disasters are threatening cultural heritage by giving examples of recent events: the huge fire that engulfed the National Museum of Brazil, which destroyed almost 80% of the collections; and the unprecedented floods resulting from climate change and unsustainable development. Dr. Jigyasu talked about the floods in the Indian state of Kerala, which damaged nature and livelihoods as well as tangible and intangible cultural heritage; the floods in Paris, where the river waters engulfed the Louvre Museum, causing the largest evacuation of collections, since the World War, as a safety measure; and the floods in the Balkan region in 2014, where many historical settlements were damaged. Finally, he showed the damages to important heritage structures caused by earthquakes, such as the recent ones in Central Mexico and Kathmandu Valley in Nepal.

Dr. Jigyasu stressed that both movable and immovable, tangible and intangible cultural heritage suffer from disasters; therefore, the most important task is to look at the underlying reasons which create their vulnerability in order to take preventive measures. One of the major reasons is increased urbanization. Dr. Jigyasu showed how the urban growth is exponentially increasing and starting to have a strong impact on heritage. This was illustrated with the cases of the historical cities of Kyoto in Japan, Bangalore in India, and Ayutthaya in Thailand. In the case of Kyoto, many important cultural heritage properties have been engulfed by urbanization in the past decades. In Bangalore, an important historical city that evolved around lakes and canals, urban development disconnected the traditional water systems, increasing the risk of fires in the lakes because of toxic water stagnation. In the case of Ayutthaya floods in 2011, the archaeological site was heavily impacted not only by the rain but also because water stagnated and was unable to be drained due to the extensive urbanization surrounding the site which has affected the functioning of the watershed. Therefore, Dr. Jigyasu emphasized the importance of looking at the cultural and the natural heritage elements, at their interactions, and how when one is not respected, the other is impacted. He added that another problem is the transformation of traditional houses, which were originally designed to withstand floods but, due to modifications in the layout, they have increased their vulnerability, when floods frequency is also increasing.

Another example presented was from India, where flash floods occurred in 2013 in the northern state of Uttarakhand, where a World Heritage site that is important for Hindu pilgrimages, is located. The tourism infrastructure that developed along the river and flood plains to serve the pilgrims has increased the vulnerability of the temples and shrines. Dr. Jigyasu stressed that this example shows how development aimed at serving heritage can create its vulnerability to disasters. Moreover, he mentioned that traditionally settlements were located in the mountains and the act of moving them next to the river has also created the vulnerability that caused the disaster. He stressed that what we need to recognize is the interface between disaster risks, climate change, and ill-conceived development, looking at their interconnections in order to advance on resilience. However, Dr. Jigyasu affirmed that while looking at the increase in the vulnerability of heritage, it is also important to look at cultural heritage, not only as the victim of disasters but also as assets for building resilience. We need to recognize the positive knowledge and lessons from heritage itself that can contribute towards building resilience and reducing disaster risks.

Then, Dr. Jigyasu showed some examples of the contributions of heritage systems towards disaster risk reduction and emergency responses. For instance, in the case of the Nepal earthquake, people relied on the traditional water systems' supply in the aftermath of the disaster when the municipality's pipe water supply collapsed. Many important structures reacted very well because they were designed as anti-seismic structures. He also presented the case of the Great East Japan Earthquake and Tsunami that struck Japan in 2011, showing how the tsunami affected the Shizugawa bay. In the post-disaster recovery, the topography was altered by constructing seawalls and raising the line in order to keep the people safe. However, this alternative ignored the relationship between the people, the canal, and the sea, as well as the many cultural practices and festivals connected to this relationship. When research was conducted in this area, they realized that people have a very strong link to the landscape, to islands, to natural features, to where the sun rises, and that all of these elements are very important to keep in consideration during the recovery process; if they are not, these important heritage values might be at risk of being lost.

Another example illustrated the importance of linking culture and nature for disaster risk reduction: the island of Majuli in the Eastern part of India, which is shrinking at a very high rate due to erosion. Dr. Jigyasu explained that vernacular architecture was prepared in order to handle earthquakes and flooding, utilizing a good design, materials, and structure. However, the way that these traditional constructions are being altered and replaced by concrete structures are actually increasing their vulnerability to earthquakes. Traditionally, people would move their houses according to the floods and the slopes change. However, now that constructions are permanent, they face increasing risk from floods. In a similar way, bridges were temporary in nature and monasteries used to be relocated, but because they have become permanent structures, they have become more vulnerable to floods as well.

Dr. Jigyasu stressed that it is important to understand these traditional coping practices, which are adapted to risks, in order to incorporate them into contemporary disaster risk management practices. He emphasized that through these examples the considerable gap existing between conservation and disaster risk management, climate change adaptation, and development can be bridged. Since each of these issues is addressed by a different ministry in many countries, he called for the integration of sustainable development, climate change adaptation, disaster risk reduction, and heritage conservation and management. He added that this implies a critical challenge: To mainstream heritage into climate change adaptation and disaster risk reduction, and to work transversally rather than sectorial, at different levels. He asserted the need to reinforce nature-culture interlinkages to reduce risks, by integrating an ecological perspective in cultural heritage management.

Dr. Jigyasu added that a territorial approach for heritage protection is needed and recalled the UNESCO Recommendation on the Historic Urban Landscape Approach (2011). He stressed that efficient disaster risk reduction measures will depend on reflecting on these new approaches, using different methodologies, learning from traditional management systems, and linking civic defense agencies and the development sector with the heritage sector. One important headway has been made with the *Sendai Framework for Disaster Risk Reduction*, which recognizes cultural heritage for the first time along with other sectors and considers culture and heritage as a priority area of action. Dr. Jigyasu concluded by saying that the title of this course and symposium is critical because we need to look beyond culture or nature in order to bring all aspects together in heritage conservation: disaster risk reduction, climate change, and sustainable



development. His examples have illustrated this urgent endeavor.

After the coffee break, Mr. Naohisa Okuda, representative of the Ministry of the Environment of Japan, gave a keynote speech on “Development of the Sanriku Fukko Reconstruction National Park.” He started by saying that he was very pleased to discuss the topic of resilience in heritage. As an engineer for the preservation of natural resources, Mr. Okuda has thirty years of experience in the Ministry of Environment, previously on Eco-DRR and World Heritage, and is currently the Councilor for the Cybersecurity and Information Technology Management. He said that his current work is to state the position and response of the Ministry in the face of natural disasters. Commenting on disasters he had to deal with in the past two months, Mr. Okuda described a major earthquake that occurred in Hokkaido and torrential rains in Western Japan. He also presented the situation of the Sanriku area after the major earthquake and tsunami in 2011. He explained that in order to reconstruct the area, they were debating proposals at the Ministry of the Environment and the idea of establishing a new National Park was raised with the intention of helping recover the linkage between nature and local people. The Ministry has been engaged in this project for the past seven years.

The 2011 disaster was an enormous shock in the minds of the Japanese people and resulted in the need to reconstruct the relationship between nature and human beings. The *Green Reconstruction Project* was created based on a recommendation by the Central Environmental Council in 2013, with the idea of utilizing the blessings of nature while fostering its value and preservation, but also understanding the threats. Mr. Okuda explained that they placed the idea of accepting the threat of nature at the core of the reconstruction project, while strengthening the connection between the forest, the countryside, the river, and the seas, as well as enhancing the relationship between nature and people and increasing their resilience. He explained that this project consists of seven projects, the first being the establishment of the Sanriku Fukko Reconstruction National Park. This proposal caused surprise in gatherings and international conferences because of the idea that a national park would impose restrictions on the lives of people. However, he explained that National Parks in Japan are not based on only the restrictive protection of wild nature, but that they also include private property and even settlements in order to allow the coexistence of nature and people. Moreover, he affirmed that the protection of the landscape is one of the objectives of the Japanese National Parks, and therefore, they thought that a national park could be helpful in the reconstruction of the area.

He continued, explaining the core projects, such as the establishment of a field museum, the promotion of ecotourism by creating long-distance coastal trails, and ESD -Education for Sustainable Development- to develop human resources. The priority was placed in reviewing the relationship between people and their environment, for which they developed some measures. He clarified that the main objective of the National Park system is to protect the most important areas in Japan, through a community-based approach, stressing that the reconstruction needed a long-term perspective. Illustrating with maps, he showed the area where the new Sanriku Fukko Reconstruction National Park was created, connecting several natural protected areas along the Sanriku Coast of Japan, from Aomori Prefecture to Iwate Prefecture, with the Rikuchu Kaigan National Park. The idea was that it will become a symbol for this area. He described some of the areas and showed the diversity of landscapes, for example, a shrine inside the National Park, the place where the black gull reproduces, the Tanezashi beach, some grazing ground, and another windy forested area used by people. He also showed images of the Rikuchu Kaigan National Park, with the ria coastline, and pointed out the presence of some scenic places and landscapes that have been protected with less strict regulations. He emphasized that their idea was to let people enjoy the landscapes while walking along the National Park and learn about the disaster as well as the nature-culture linkages.

Mr. Okuda explained that the coastal trail of Michinoku could also be used as an evacuation route in the event of a disaster. He mentioned that they have also established a biomass boiler, an environmental-friendly system. Then, the audience was shown a camping ground that was devastated as a result of the disaster however it was left without renovations in order to retain the remains and demonstrate to visitors the threat of nature. He continued by showing the visitors centre where local products and goods are sold by the community as an initiative for the promotion of local tourism and the reconstruction of the industry in the region. Mr. Okuda showed how they created a field museum to promote tourism in relationship with the ocean, including activities such as canoeing, kayak, nature craft, surveys, supporting training, and

capacity building courses. The coastal trail connects the Aomori prefecture to the Fukushima prefecture, giving tourists the possibility to eat local food and purchase local products while enjoying the richness of the culture in these areas.

Furthermore, he explained how this plan involved the participation of local communities and was facilitated by park rangers in order to get a bottom-up proposal for the location of the trail. This proposal would eventually be authorized by the central government, while the management of the trail is carried out by the local people who conduct the ecotourism. The Ministry is providing support to the community for a term of 4 years so that business could become viable. They are promoting people from within the community to act as guides in order for them to make a living. He affirmed that Ministry of the Environment is also providing support to the local government, exchanging views with leaders of communities, learning mutually, reflecting upon their experiences, and highlighted that local people are the key agents in carrying out the activities. They also want to secure the link with the ecosystem and he showed how they are collaborating with local people in restoring and protecting the wetlands and their biodiversity.

Lastly, Mr. Okuda said that since they need to monitor the natural environment, several locations became candidates for the Ramsar Convention on Wetlands. One of those areas, the Shizugawa Bay, was strongly impacted by the disaster but is still keeping values that can satisfy the criteria for its inscription. He summarized that the objective of the project is to protect nature as a tool for contributing to reconstruction by revitalizing the community, starting with ecotourism as a tool for economic development, while reinforcing the linkages between people and nature and creating spaces where they can learn about the threat of nature as well as convey this message to the next generation. Mr. Okuda closed by saying that the threat of nature should not be dealt with through a total restructuring, but rather using the existing and remaining resources to reconstruct, and in that way the local community could be more sustainable.



*Mr. Naohisa Okuda, representative of the Ministry of the Environment of Japan, presenting about the development of the Sanriku Fukko (Reconstruction) National Park.*



*Ms. Kumiko Shimotsu, representative of the Agency of Cultural Affairs of Japan, presenting about Disaster Risk Management for Cultural Heritage in Japan.*

Next, Ms. Kumiko Shimotsu, representative of the Agency for Cultural Affairs of Japan, presented “Disaster Risk Management for Cultural Heritage in Japan.” First thanking the organizers for the invitation, she introduced her talk that focused on some recent disaster risk management efforts in heritage conservation by the Japanese Agency for Cultural Affairs (ACA). Her presentation consisted of three parts: the overview of Japan’s overall national disaster risk management (DRM) policies; the introduction of the DRMs as a part of heritage management; and the challenges and opportunities for the strengthening of the DRMs in heritage management. There is a Disaster Countermeasures Act that functions as a core legal instrument for disaster risk management in Japan. Ms. Shimotsu mentioned that, after the damages of the super typhoon in 1959, the Basic Act was enacted in 1961, leading to the establishment of the Central Disaster Management Council by the Cabinet Office in 1962. Thereafter, the Disaster Management System has been continuously reviewed and revised in order to integrate lessons learned in disasters. The organization of the Central Disaster Management Council consists of the Prime Minister as a Chairperson, all members of the Cabinet, heads of major public corporations, and experts. Ms. Shimotsu explained that the Council officers’ meetings gather the relevant Director General level persons of each ministry and agency, including the ACA as part of the Ministry of Education, Culture, Science, Sports, and Technology (MEXT).

The outline of the Disaster Management System in Japan was shown and framed according to the Basic Disaster Management Plan developed by the Central Disaster Management Council. Ms. Shimotsu said that each Ministry and Agency has developed its own Disaster Management Operation Plan, and that each local government has developed its prefecture and municipal Disaster Management Plan. She explained that residents and enterprises are also invited to develop a Community Disaster Management Plan on a voluntary basis. The ACA also has its own Disaster Management Operation Plan, which has not been amended since 2008. The structure of the Basic Disaster Management Plan establishes the responsibilities of each of the entities involved and the countermeasures for each type of disasters according to the disaster management phases: preparedness, emergency response, and recovery. Ms. Shimotsu noted that before 2016 there were only two provisions that mentioned cultural heritage: the earthquake disaster plan and the large-scale-fire disaster plan. After the *Third World Conference on Disaster Risk Reduction* that year, the Basic Disaster Management Plan was reviewed, and the ACA included the statement about cultural heritage disaster risk management following the inclusion of culture in the *Sendai Framework for Disaster Risk Reduction*. However, in the section of building resilient communities, it was difficult to include cultural heritage because community design is conventionally considered outside of the mandate of the ACA.

Regarding the DRM activities of the ACA, Ms. Shimotsu developed the case of Important Property

Buildings. In heritage conservation in Japan, buildings are part of one of the categories with the longest history and the DRMs have been highlighted since the very beginning. In Japan, heritage protection actions are divided into conservation and utilization. Conservation is defined as a measure to retain the cultural values of the heritage by means of alteration control and restoration. Utilization includes enrichment, or public access to, or interpretation of heritage and promotion of use for social development. Between conservation and utilization, management is divided, by an official document issued in 1984, into three categories: daily or regular maintenance, minor repair and restoration, and the maintenance of facilities and equipment for protection. Ms. Shimotsuma clarified then that the DRM are identified as a part of management in Japan, a concept that has been developed over time, with additions such as diagnosis or development of management plans. According to this classification between conservation, management, and utilization, financial assistance programs are systematized and developed. The measures for the DRM are divided into three areas: fire prevention and crime prevention, environment conservation, and seismic countermeasures, based on which, they developed the necessary records and achievement rates. Ms. Shimotsuma mentioned that the normal framework to promote disaster risk reduction is based on the subsidy rate of 50 to 85% depending on the property owners living scale.

Then, Ms. Shimotsuma talked about the challenges and opportunities. Integration is an important topic and she affirmed that a good DRM treatment comes from a holistic constellation of conservation, management, and utilization, in order to be an efficient tool for heritage management. The ACA developed a guideline for management plans for important property buildings in 2006, and since then, the ACA has encouraged property owners to develop their own plan.

In Japan, the Law for the Protection of Cultural Property defines six classifications for cultural properties and financial assistance programs are prepared, and conducted, according to this classification system. However, some heritage buildings have heritage objects within them, and some heritage buildings are located within historic sites or historic gardens as well as places of scenic beauty. Therefore, the planning and implementation of the financial assistance programmes requires dealing with the different cultural heritage property types from an integrated perspective. She noted that the large earthquake in 2011 called attention to the need for a major dialogue among colleagues and a better coordination among the six categories for the rescue activities of the damaged heritage. Ms. Shimotsuma said that compared to constructed heritage, archaeological sites or places of scenic beauty have a tendency to take more time to develop disaster recovery plans. In Japan, there is a system called buried cultural properties, which are unexcavated subterranean archaeological remains. After the earthquake in 2011, excavation surveys were required before or during the recovery work. Ms. Shimotsuma said that the ACA made efforts in ensuring compatibility between swift recovery work and the excavation survey by improving technologies and increasing excavation staff, in close cooperation with local governments and using the national budget.

In the case of movable heritage, Ms. Shimotsuma said that swift first aid actions to collect them, treatments to prevent deterioration, and appropriate conditions for storage are required. She stated that for the national government, the usual partners in emergencies are local governments, but in 2011, many local governments did not function anymore because of the losses of staff members during the disaster and the focus on activities of rescue. The heritage divisions in the ACA had to use their own existing networks to take the necessary first aid actions, such as the support of architectural institutions and associations for the survey of built heritage; of museum and university networks for the survey of movable heritage; and of local governments in the affected areas for the survey of archaeological sites and buried cultural properties affected during the disaster. Ms. Shimotsuma mentioned that after those experiences, they are currently working on the improvement of the transfer communication for rescuing heritage as much as, and as various as possible, including not only heritage under official protection but also heritage without official protection, as those play an important role in sustaining the local identity. Furthermore, she explained how science museums and libraries -not under control of the ACA- had objects and important books, evidence of human intelligence, in need of rescue together to officially designated heritage. She explained that in the 2011 earthquake, around 15,000 people died, more than 6,000 were injured and still many are missing, and this condition created concern about the damage to intangible cultural heritage, particularly intangible folk cultural heritage. Ms. Shimotsuma added that the damage of important places for culture, such as seashores, drew their attention and made clear that the damage to nature has a strong relation to the damage of culture.



Ms. Shimotsuma explained that since 2007, the ACA has encouraged and supported local governments to develop their Basic Strategy based on history and culture, emphasizing that it should include a comprehensive list of all types of cultural heritage in their territories, both designated and undesignated. It is expected that a wider use of these kinds of strategies will be seen soon to help each local government pay and get adequate attention to history and culture of the place in all sorts of social development activities. In 2018, the Basic Strategy included a Local Master Plan for the Conservation and Utilization of Cultural Properties and the Law was amended to ensure the authority of the local government in the development of their local master plan. The amendment will become effective on the 1<sup>st</sup> of April 2019. It relates to the acceleration of the demographic ageing resulting from the decline in the birth rate as well as the need to strengthen a system to encourage local participation in heritage conservation. Ms. Shimotsuma said that they expect the lists and easy-to-follow strategies developed in the local master plan to be effective in encouraging local residents to build local ownership so that the local initiatives pay sufficient attention to the history and culture of the place in all sorts of activities. She noted that the list is also expected to be used for heritage rescue and recovery in times of emergency.

Since the large-scale earthquake in 1995, a rescue system for movable heritage and a damage investigation system for immovable heritage have both been gradually developed by larger private initiatives by a network of experts and the ACA has also cooperated with these activities. However, the ACA always faces a question of authority into how deep it can be involved in the work with undesignated cultural properties, which makes it difficult to include an official support system for rescue and damage investigation activities in the ACA disaster management operation plan. Ms. Shimotsuma expressed that following the law amendment in 2018 would be also crucial to develop the Disaster Management Operation Plan. She recalled that she gained her experience, initially in heritage buildings fields, then in urban conservation and currently in cultural landscapes, and she notices that a framework of cooperation can be created when heritage covers wider areas, more complex elements, and stakeholders. To ensure good relationships among different heritage categories, stakeholders, between heritage and nature, and between heritage and present infrastructures, it would be useful to give more profound thought into intangible heritage, particularly folk culture. Ms. Shimotsuma closed by saying that it is also crucial to develop heritage utilization in times of peace and heritage disaster risk management in the same framework.

## PANEL DISCUSSION

**Dr. Maya Ishizawa** invited Professor Yoshida to chair the Panel Discussion. **Professor Yoshida** thanked the presenters for their interventions and noticed that both Ms. Murti and Dr. Jigyasu mentioned the existing lack of coordination between sectors in the development of a common disaster management plan and emergency response that would consider both natural and cultural heritage as important aspects. He directed the first question to both Ms. Murti and Dr. Jigyasu about what can be done to integrate the separation existing between disaster risk management, conservation and development sectors.



*Dr. Maya Ishizawa, programme coordinator of the UNESCO Chair on Nature-Culture Linkages in Heritage Conservation, University of Tsukuba, opening the Panel Discussion.*

**Ms. Murti** felt that there are three aspects where professionals could improve on for the better integration of intersectoral actions. The first aspect she mentioned was that currently professionals undermine the need for solution-based language. She suggested that the conservation sector should move away from a “threat-based approach” and turn it into the language of nature-based solutions, pointing out that the right action for nature leads to a solution for everyone. The second aspect she suggested is that we should move from promoting our own agendas, rather we should show how something is mutually beneficial: how one action can actually help different ministries achieve their work plans and objectives. The third aspect she referred to is to move away from the domination of one entity over the others and to the co-creation of knowledge. She affirmed that the co-creation of knowledge leads to a common way of acting and a common change of behavior, which she considers helps in assuring that later all sectors will work and implement together.

**Dr. Jigyasu** added that one of the major problems in the heritage sector is the separation in terms of education, between movable and immovable, cultural, and natural heritage. He said that even though, professionals are always interacting at a decision-making level, it would be beneficial if the interactions would instead start at the educational capacity building level. An example of this model is the course they undertake yearly at Ritsumeikan University where they bring participants with DRM expertise together with cultural heritage professionals, both having dealt with movable and immovable heritage, into a process of mutual capacity building learning exercises, where they can learn from each other’s vocabulary as well as the different tools and the methodologies. He affirmed that this is not an easy-process but if the intersectoral work is promoted at that level there would be more of a comfort zone between sectors at the level of coordination and communication.

Subsequently, **Professor Yoshida** turned to the Japanese authorities, thanking them for their explanation about the government actions in the recovery from the 2011 disaster, remarking that they are valuing nature and culture to solve problems. He was interested to know if, in the case of reconstruction, the Ministry of Environment (MoE) and the ACA were cooperating not only among themselves, but also with the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) as well as what issues they have faced in this process.

**Mr. Okuda** replied that the ACA and the MoE have different management systems, but when discussing a specific site, there can be space for cooperation when the objective is common. He gave the example of how the objective of the MoE in Tohoku was to connect the country side, the sea, and the river in order to bring back the richness for the recovery, while the MLIT, the Ministry of Agriculture, Forestry and Fishery (MAFF), and other entities also had areas in need of protection, therefore there was momentum to cooperate and

work together. He stressed that within a specific site there will be room for collaboration, but his impression is that when talking about concepts or generalities, each entity has different objectives, therefore, there may be some conflicts.

**Ms. Shimotsuma** said that over the past twenty or thirty years, within the government, there has been a collaboration, and, within this collaboration, there is further improvement. She explained that in the case of Japan, they are trying to reconstruct local regions while at the same time they need to reconstruct the vacant houses. For the past one or two years, Ministries have been disclosing their projects on the web, so that local communities can obtain information. She agreed that in order to collaborate, there is the need to target the same large framework, but she added that when one actually goes to the local community, there will be things that will be different. Therefore, one would have to make adjustments and a system is needing to be able to do that. The recent policies aim at making a system at the local level, with local communities, so that projects can be introduced in the local areas, rather than making a formal structure. She stressed that they are trying to create linkages with the local people, so that the projects would be accepted, and the support would be less expensive. She is dedicated to exploring how processes can be improved for intersectoral work and work with the community and would like to continue to the next step.

**Ms. Murti** added that when they started the work on Eco-DRR, they chose Japan as a partner because they always look for champion governments that can work as examples for other governments to follow and help to up-scale strategies. She affirmed that the uniqueness of Japan lies in the continuous presence of nature-culture linkages and that development has happened around the heritage. She thinks that this experience with tangible examples can be taken to other parts of the world and communicated more. She said that they have been working with their IUCN colleagues based in Tokyo on inviting Japanese researchers to communicate Japanese case studies around the world in order to show that it is possible to develop and be a prospering nation, while conserving natural and cultural heritage. She affirmed that there are very useful models that can be picked up from Japan which communicate the messages that the IUCN wants to communicate to countries who have not followed the wrong path yet or are half way down it.

**Mr. King** asserted that the difficulty lies in how people find it hard to get out of the “bubble” they studied in. He referred to his own experience as an architect and urban planner, placing his point of reference in these disciplines. He recalled that when he started working with the IUCN about making the linkage between culture and nature, it forced him to go onto ground that was uncomfortable for him. He said that when the Intangible Cultural Heritage (ICH) Convention was drafted, people working on the other conventions of UNESCO, such as the World Heritage Convention were also uncomfortable. He considers that overcoming that discomfort is really difficult, time consuming, and it takes the willingness to be uncomfortable in ways that one has never been before as well as use language that one has never used before. He feels that they are moving in that direction and he sees a lot of steps have already been taken, although there is a need to keep moving.

**Professor Yoshida** mentioned that the ICH and tangible heritage are under the same Law in Japan and that in Minami-Sanriku Town, a place that the workshop participants will visit, a local fisherman that is involved in the recovery of oyster farming is also involved in the recovery of the ICH, the deer dance, in order to make the community stronger. So, the ICH is very important for the connection between nature and culture.

**Ms. Buckley** thanked everyone for their presentations, which she thinks provided a good basis for the workshop. She mentioned that what challenges her is that in these kinds of forums they find themselves in “furious agreement” about many things, especially the need to work together and agreed with Mr. King’s comments. She recalled the graphs that Dr. Jigyasu showed which illustrated the increase of natural disasters and acknowledged that a lot of work has been done in understanding and facing disasters as well as many lessons have been learned. However, she affirmed that what is done during the immediate aftermath of a disaster tends to be very chaotic. She said that different countries have different systems, some better than others, and she affirmed that this is where the capacities of cooperation become critical among heritage conservation professionals and agencies, inside a national system as well as among the agencies undertaking rescue and emergency services. She mentioned programs that have been instituted by ICCROM, by the Japanese Government in particular, by the IUCN, reaching out and making those connections and reflecting on how to react better. She concluded that the work on resilience and vulnerability factors are meant to

avoid making hasty decisions in the immediate and later aftermath of disasters and have really effective ideas that can be put into play as response to disasters.

**Dr. Jigyasu** said that he often finds that developers have misconceptions, thinking that heritage professionals do not address the basics of survival but rather talk about monuments, something they think it is very elitist, while the developers are more focused on talking about human safety and the lives of people. So, he thinks that there is a lot of effort that needs to be made to communicate to other sectors exactly what the intentions are of heritage professionals. He said that sometimes we should not use the word “heritage” because it may have unwanted connotations. So, he called on heritage professionals to communicate in the language of the other sector because, many times, they are talking about the same things but in their own language. He gave the example of the concept of “sustainable livelihoods” which would correspond to the concept of intangible cultural heritage.

**Professor Yoshida** agreed with Dr. Jigyasu that sometimes there are misunderstandings when talking about the conservation of heritage.

**Dr. Wijesuriya** explained why the project on Nature-Culture Linkages is taking place in Japan. He recalled how Ms. Murti mentioned the existence of nature-culture linkages and high-level disaster response systems, and that Tim Badman, director of the IUCN World Heritage Programme, said that Japan was the place to start this nature-culture conversation when the discussion on starting this course took place in Bonn in 2015. He said that we start in the highest level -this level of sophistication at once cannot be seen in many countries- and this could benefit the others. He stated that what is most important is to change our mindsets, which he finds difficult for his own generation, but he considers it can be achievable for the next generations through these courses. He re-affirmed what Dr. Jigyasu said, that other sectors also want to work together, and we should adapt our language, not be isolated anymore, not working in our own silos, but rather thinking about integration and working together towards solutions, looking at the benefits, it is the right direction to help us working together.

**Ms. Murti** said that conservation people also get the same reaction from other sectors working in disaster response, who state that they are trying to save lives while conservationists are worried about nature. She gave the example of what happened in Haiti, where they spent time, effort, and money on rescuing people from rubbles during the 2010 earthquake; however, a few months later a significant number of people died of cholera because they polluted the waterways during the rescue actions. She stressed how response workers do not see the impacts of what the immediate rescue relief does on the short, medium, and long-term recovery. She continued, saying that this same challenge also exists with people who do not understand the linkages, so she explained that their strategy is to work with champions, like Japan or private companies, that understand that it is about owning your risk, managing your risk, and reducing your risk. She explained that often they have to talk to governments first about risk reduction before they can talk about using Eco-DRR because many countries do not do risk reduction but rather they only focus on relief and recovery. She said that usually relief and recovery are composed of ad hoc teams, so there is nobody to talk to when the disaster is not yet there. She concluded that there is a long way to go before governments understand and do risk management before even bringing nature as a solution to that.

**Mr. King** agreed with Dr. Wijesuriya in that there is a need to change the mindset. He added that we need to get away from the idea of talking about the “other side,” that we need to convince them of doing something. He said that what we need is to find a middle ground, which is what we also need to do with the culture and nature sides. He explained that even in ICCROM, they used to have a clear demarcation between the movable and immovable heritage units, however, they are currently merging those two units into one so that they can work together. They are also working with the IUCN, ICOMOS, and the UNESCO World Heritage Centre and he re-affirms that it is a question of changing the mindset and recognizing that we are all in this together in one way or another.

**Ms. Shimotsuma** commented on the ideas of “filling the gap” and “changing the mindset,” which she says she has heard frequently in the last few years, but that she does not know how to interpret, as the interpretation differs slightly from individual to individual. She explained that in the last 10 to 20 years, they have been trying to figure out how to promote and utilize heritage, but they found that, whether it is



culture or nature, the heritage values vary from the local communities to the government. The government has to select certain assets using certain criteria, and in this process the number of assets originally listed by the communities are reduced, and their values as well. She believes that this causes a gap with the local community because people would not be willing to utilize their time and money if their assets and values are not considered. She affirms that the first step they need to take when thinking about reality and utilization, is to figure out how to include and engage local communities. She says that instead of thinking of “filling the gap” or “changing the mindset,” we should provide the explanation based on our standards and at the same time try to listen to what others have to say.

Mr. Toshikazu Ishino, Vice President and Executive Director for Finance and Facilities at the University of Tsukuba and a session attendee, mentioned that after the 2011 Great East Japan Earthquake, he was the ACA person responsible for the excavation of the land assets. He explained that the locations where they worked on the survey were also the places where people who lost their houses due to the tsunami were trying to build a new house. However, he explained that this survey needed to be conducted before building the houses. He said that at that time, he had a conversation with the locals and the town mayor and they were quite fierce, not understanding why the excavations were needed. He explained to the locals that the ACA was giving priority to ensuring the security of the land to be used for building houses, however, the locals thought that the archaeologists were doing surveys for their own satisfaction. He expressed how they tried to explain to the owners that these assets actually show us how our ancestors had lived and are part of the history of the place, asserting that these things should help young people to build pride in their local community, but they were still told not to take too long time for the surveys. Therefore, he said that they had to put extra effort into mobilizing resources throughout Japan so that they would be able to finish as early as possible. He referred to what Ms. Shimotsuma previously mentioned, that they have introduced forensic technology and partnerships with the private sectors, while intending to include local values. He considers that rather than just changing the mindset, people should try to avoid giving their own opinion and instead have a coordination discussion.

Finally, Professor Yoshida closed the session by thanking the guest speakers and announcing the lunch break.

After the lunch break, Dr. Ishizawa introduced Professor Nobuko Inaba, from the World Heritage Studies Programme. Professor Inaba was in charge of chairing the “Roundtable Discussion on Key Issues on Resilience of Nature-Culture Linkages in the face of Disasters.” Professor Inaba introduced Mr. Joseph King, Director of the Sites Unit of ICCROM, who presented “Key Issues for Disasters and Resilience in line with World Heritage Policy Guidance.” Mr. King thanked the University of Tsukuba and the UNESCO Chair for holding this forum and for allowing ICCROM to be a partner in the workshop. He thanked, on behalf of ICCROM, the Japanese government and institutions for their partnership and described the relationship of ICCROM with them as very strong. He told the audience that in the month of September, ICCROM has three different courses going on in different cities in Japan: one on disaster risk reduction with Ritsumeikan University in Kyoto, one on nature-culture linkages with the University of Tsukuba, and one on archaeological sites management in the Asia-Pacific Cultural Centre for UNESCO (ACCU Nara). He continued saying that his talk would deal with World Heritage Policy and the issues of Disasters and Resilience as it relates to the World Heritage Policy Guidance. However, he explained that the World Heritage Policy, if existing, is done on an ad hoc basis, based on the accumulation of decisions that are made on particular topics. He added that sometimes it would be called a policy, or a strategy, or even a recommendation. He stated that there are a series of documents and decisions which guide the decision-making of the World Heritage Committee and provides guidance for State Parties to the World Heritage Convention, the Advisory Bodies to the World Heritage Convention, the UNESCO World Heritage Centre, and other relevant actors. He said that he chose to focus this particular presentation on four documents: *The Strategy for reducing risk at World Heritage Properties*, the *Policy on Impacts of Climate Change at World Heritage Properties*, the *Policy for the Integration of a Sustainable Development perspective into the processes of the World Heritage Convention* from 2015, and the *World Heritage Capacity Building Strategy*.



*Mr. Joseph King, Director of the Sites Unit of ICCROM, presenting about Key issues for Disasters and Resilience in line with World Heritage Policy Guidance.*

Mr. King said that we should focus on disaster risk because the increase of disaster is correlational to the damages in cultural and natural heritage. It is common to talk about climate change and the consequent vulnerabilities but there are also potential disasters created by humans. Due to the fact that there are more disasters, we need to think on how to create planning frameworks and the necessary disaster risk policies for confronting these problems. Mr. King explained that they recognized this issue for World Heritage more than ten years ago and that together with the UNESCO World Heritage Centre, the IUCN, and ICOMOS they have worked on the development of a policy or strategy for disaster risk reduction. This strategy has five main objectives, which includes strengthening institutional support and governance, increasing our knowledge, increasing our innovation, and increasing our education, to build a culture of disaster prevention. Mr. King added that it included identifying, assessing and monitoring risks, reducing the underlying risk, and strengthening our disaster preparedness at World Heritage properties. He said that eleven years later, there have been some positive outcomes, like the integration of heritage and disaster risk reduction as part of the sustainable development framework. Moreover, at the international level, national levels, and in various global forums, heritage professionals have started working with a number of international partners, such as the UNISDR or the World Bank, to strengthen the links between heritage and disaster risk management. This is an outcome of the *Sendai Framework* of 2015, which recognizes heritage, both cultural and natural, as part of a necessary disaster risk reduction framework. Mr. King continued, saying that this outcome is related to an earlier discussion in 2005, at the *World Conference on Disaster Risk Reduction* in Kobe, where many colleagues in the Disaster Risk Reduction community were unable to understand the importance of integrating culture.

There is also a need to work with civil defense authorities and ICCROM has already started with training and capacity building in different countries. There has been progress in the area of increasing knowledge, in particular with the incorporation of traditional knowledge systems, a very important element that heritage professionals can bring to the disaster risk community. Mr. King added that for long-time heritage professionals would request the help of the disaster risk community in order to preserve important sites; however, now they can support the disaster risk community by sharing knowledge, such as traditional knowledge and systems, which could sustain and build more resilient places, cities, and landscapes. Unfortunately, they did not have success in all aspects of the strategy. Mr. King explained that one part of the strategy was that every World Heritage site would have a Disaster Risk Management Plan as either a part of their Management Plan or separately. A survey on 60 World Heritage sites conducted by UNESCO found that 37% had no identification of risks and no plan in place and that only 10% of those 60 properties had presented an effective risk management plan. Mr. King added that since mapping out disasters at the global

scale is lacking, they are still missing a global risk map, which they have not been able to work out yet at an international level, even though there are a number of countries that are doing it at a national level.

Mr. King then went on to talk about the *Climate Change Policy* from 2008, which identified three areas requiring work: creating synergies with other international conventions and organizations; promoting research needs related to increasing risk factors, socio-economic research, and sources of stress factors; and the third is the issue of legal questions, which he finds interesting because it looks at responsibility. If State Parties are responsible for protecting their World Heritage properties, then the question would be whether it is their responsibility to put in place mechanisms to combat climate change and, if they do not, would that mean that they are not meeting their obligations under the Convention. Unfortunately, there has not been much work and reflection on this issue and Mr. King concluded that the Climate Change Policy has not been successful in regard to World Heritage. Nevertheless, he affirmed that the UNESCO World Heritage Centre, the Advisory Bodies, and a number of State Parties are about to embark on a process to build a stronger policy document specifically in relation to climate change in the next few years.

Mr. King continued with the third policy, which follows the 2015 UN Framework for Sustainable Development and looks at 4 key areas: Environmental Sustainability, Inclusive Economic Development, Inclusive Social Development, and Peace and Security. Since the policy is a very new document, he cannot present whether it has been successful or not. The goal of the policy is to harness the potential of the World Heritage to contribute to Sustainable Development; thus, to ensure that the conservation and management of World Heritage sites are aligned with the Sustainable Development Goals and ensure that OUV, the basis of the World Heritage Convention, is not compromised while looking at the sustainable development and sustainable use of sites. Therefore, Mr. King explained that the idea was to take those four aspects of Sustainable Development and put them through a funnel of conservation and management of the World Heritage properties, with the idea that they would enable more sustainable sites respecting both their cultural and natural values.

One of the general provisions of the policy on Sustainable Development is human rights, an overarching principle that has opened up a whole new discussion within the World Heritage world about interacting with communities, indigenous peoples, and ensuring that sites can promote equality for all of their communities. Moreover, Mr. King said that the Policy also looks at sustainability through a longer-term perspective. He remarked that for the area of Environmental Sustainability, the policy talks about protecting biological and cultural diversity, ecosystems services and benefits, and strengthening the resilience to natural hazards and climate change. In order to achieve this, an entire systematic or ecosystem science perspective is necessary. In relation to social development, the policy talks about inclusion and equality, and enhancing the quality of life and wellbeing of the people, which he finds important when talking about disaster risk reduction and sustainable development. Mr. King noted that cultural or natural heritage professionals may have different concepts of heritage than the communities, so he asserted that we have to make sure that they are consulted and integrated in the common efforts to achieve the Sustainable Development Goals.

On the economic development side, the policy on Sustainable Development talks about the need to ensure growth, employment, incomes, livelihoods, particularly from tourism, and also through capacity building and local entrepreneurship. Tourism is a difficult issue because its massification generally brings economic benefit but also has a tendency to cause problems and may ultimately reduce the resiliency of a community or place. Therefore, we need to be careful in terms of economic development and ensure that it will provide sustainable development, which in addition to the economic benefits promotes environmental, social, and cultural sustainability. Mr. King recalled how during World Heritage Committee Sessions, some State Parties claim the need to put a coal or uranium mine in or next to the World Heritage site as a mean for sustainable development. He affirmed that economic development does not equate sustainable development. This is an argument that should be made by heritage professionals, since the provision of money does not mean sustainability. Moreover, Mr. King remarked that the income that tourism or mining may bring do not necessarily go to local communities but rather to international corporations.

The fourth leg regarding the peace and security of the sustainable development strategy comes back to the issue of disasters. Although, in this case human-made disasters, it looks at conflict prevention and protection of heritage during conflict and at using the heritage as a means for diffusing conflict. Mr. King called attention

to post-conflict recovery, an area requiring major discussion, as he stated, it is a long-term process.

The Sustainable Development Policy from the World Heritage keeps in mind the discussions on the 2030 Agenda for Sustainable Development, which Goal 11 talks about “sustainable cities and communities,” with the target of 11.4 “to strengthen efforts to protect and safeguard the world’s cultural and natural heritage.” Mr. King stressed the important achievement of the inclusion of cultural and natural heritage into the larger UN document for Sustainable Development and that heritage professionals should not only look at Goal 11, but all of the goals in the Agenda 2030 because of the potentials of heritage in the alleviation of poverty, promoting better health and wellbeing of people, and providing quality education. Continuing with his reflection, he said that the World Heritage Sustainable Development Policy also leaves the question of the World Heritage system as being top-down, with decisions based at the World Heritage Committee Sessions. The World Heritage Committee is a decision-making body made-up of 21 State Parties, at any one particular point in time, that ultimately make decisions for the system and the nominations of World Heritage sites. Additionally, at the level of individual countries, it is the State Party that puts nominations forward and there is nothing forcing it to consider Sustainable Development Goals for the nomination; namely, there is nothing that forces a State Party to obtain the consent of its local population before putting a nomination forward. The Advisory Bodies are trying to address this issue; however, the power tends to originate higher up. Mr. King continued that for him, the question then becomes how to ensure the integration of Sustainable Development into the World Heritage system when Sustainable Development ought to be a bottom-up approach, a people-centered approach, and the World Heritage system is designed to be a top-down, State Party approach, an international community approach.

To conclude, Mr. King stated that the way that ICCROM tries to deal with this issue is through training and capacity building. The *World Heritage Capacity Building Strategy* was developed in 2011, with the idea of balancing the top-down approach of the World Heritage system with bottom-up processes, which means working with communities and networks, institutions within State Parties -and not just with the State Parties themselves-, and practitioners. He declared that they have been joined by the IUCN in the World Heritage Leadership Programme (WHLP), which is meant to link together culture and nature. Within the WHLP, the culture side is looking at learning management practices from the nature side while the nature side is learning from the management practices on the culture side. Mr. King asserted that they are also dealing with the issues of resilience and disaster risk management, as well as impact assessment, and they are trying to build more networks related to culture and nature. He concluded that this is the way that they are trying to invert the top-down so that it is more bottom-up.

## ROUNDTABLE DISCUSSION

Professor Inaba thanked Mr. King for his speech and invited the roundtable guests to join the general discussion. She clarified that the forum is public and that all participants of the two-week workshop are also part of this symposium. She said that this symposium is a space for listening to talks from eminent experts and stressed that Mr. King, Mr. Okuda, and Ms. Shimotsuma are only present for this event, emphasizing that these were precious lectures. She explained that Ms. Murti and Dr. Jigyasu would be joining the three days of workshop. She invited two additional resource persons, who would attend the whole workshop and field trip, to join the final discussion, Dr. Wijesuriya and Ms. Buckley. She introduced them as experts who know the purpose and expected outcomes of the course well.

Dr. Gamini Wijesuriya thanked the organizers and introduced himself. He worked for ICCROM for the last 14 years -until December 2017-, under the leadership of Mr. King. He explained that the work on linking nature and culture started in 2014 and that he was able to work on it from the beginning, organizing several activities that he will introduce during his lectures in the workshop. He also recalled that, thanks to the University of Tsukuba, he could participate in the implementation of this workshop series from the beginning. He thanked all of the presenters for their wonderful talks and asserted that there will be many reflections to bring home and discuss during the next two-week workshop. He recalled the definition of resilience, saying that it is the capacity of an entity, individual community, organization, or a natural system to prepare for disruptions, to recover from shocks and stresses, and to adapt and grow from destructive experiences. He said that through the presentations we could learn from the nature sector and the culture sector how we can respond to that and that he wanted to insist on the topic of integration. He said that

as a legacy from the British colonial rule in Asia, “we are good at divide and rule,” and now we must try to integrate. However, he stated that nature, culture, and people were never separated, and he quoted a Veddhic text, from 2,500 years ago, that he found when he started his work on nature-culture:

*“Oh mother Earth! Sacred are the hills, snowy mountains and deep forests. Be kind to us and bestow upon us happiness. May you be fertile, arable, and nourisher of all. May you continue supporting people of all races and nations. May you protect us from your anger. And may no one exploit and subjugate your children.” (Atharva Veda, book XII, hymn 1, verse 11)*

In this text, they are begging nature, recognizing the sacredness of all-natural elements, and praying for protection from disasters. He stressed that the divide was created by people and that now we must try to integrate. He re-affirmed the importance of integration, as we heard the different experiences during the presentations about the benefits of integrating, and that he is trying to promote it as a philosophy. Dr. Wijesuriya said that integration is about shifting organizational and participants’ cultures, that it facilitates coordination between agencies and community groups, and that it can come up with new regulatory and institutional frameworks. He reassured that he has a strong belief in that integration is a good thing. We can celebrate this change of mindset, as we saw in Japan with the best example provided by Ms. Shimotsuma, how the heritage activities of the ACA level are now integrated at national level, as well as how the DRM has been integrated into the entire heritage management system. Dr. Wijesuriya wondered how many countries have a DRM as an integral part of heritage management and said that he was interested in hearing some answers from the workshop participants. He also noted how many Japanese agencies are giving place to people, putting communities at the top of their agendas. Dr. Wijesuriya also discussed how we are working on the integration of nature and culture, which is divided into culture sector and nature sector, through this course as an example, and in that way, the new generation is receiving the message. He added that hopefully, the Sustainable Development paradigm that Mr. King talked about will bring all of us together for better integration, for a better future for people, that is not limited to resilience, but is for everything else.



*Professor Nobuko Inaba, University of Tsukuba, moderating the Roundtable Discussion.*

Ms. Kristal Buckley, from Deakin University in Melbourne, Australia and ICOMOS World Heritage Advisor said that she totally agreed with Dr. Wijesuriya in that we separate heritage conservation concepts and practices between nature and culture, but it is not happening in many cultures. Living in Australia, she has learned this from her own engagement with the indigenous peoples that see landscape as sentient and not separated from themselves or from the past. Most countries have set up their bureaucracies, their laws, and their systems of institutional arrangements to divide nature and culture, even countries where the local beliefs do not follow this divide; she noted that this is an institutional and structural issue as well as



conceptual. We have been grabbing with this year after year in this course, but Ms. Buckley thinks we are at a point where we need to start talking about how to do this. She asserted that good progress has been made in raising awareness and challenging the conceptual and institutional arrangements that we have and are working with. However, the question is how we overcome the challenges that we keep finding. Resilience is a very good concept, but we still struggle on exactly how to find it, how to create it, and how to sustain it. This is due to the fact that resilience has to exist across many different aspects of human and non-human existence, in places which are context-specific. Ms. Buckley continued on to explain three ideas about the issue of resilience, that she hoped could be addressed during the field trip and workshop. The first idea related to the Historic Urban Landscape (HUL) Initiative, which she said is quite holistic in involving natural and cultural processes and looks at the issue of resilience. She said that what is interesting in the HUL Recommendation and the resulting programme, is that it requires cities to look at vulnerability, which is the mirror image of resilience. She continued, explaining her experience working with one city involved in a HUL pilot in Australia, Ballarat in Central Victoria, which used tools provided by the UN Global Compact Cities Programme and helped them to map and assess vulnerability. This is a new tool that we can bring into discussions because, in the case of this particular city, they used it to identify where they were most vulnerable and where they need to prioritize resources for resilience. This exercise has actually changed the way in which they allocate money and people inside the Council structures. The second idea is related to the project that is jointly steered by the IUCN and ICOMOS, called *Connecting Practice*, which is launching Stage III this year and is specifically oriented on resilience in agricultural landscapes. Ms. Buckley added that they are working with the Globally Important Agricultural Heritage Systems (GIAHS) Programme of the UN Food and Agriculture Organization (FAO), a programme well established in Japan. With this programme, they are combining the knowledge that lives strongly in agricultural and food production institutions with ideas of heritage and ecosystem services, an aspect strongly represented through the IUCN's involvement. The third and last idea is related to Intangible Cultural Heritage (ICH) which can be called other names, as some presenters mentioned. Ms. Buckley explained that the transmission of culture is the most important thing in relation to what happens with disruption when disasters occur, it is determinant for the resilience of the place and its communities. The 2003 Convention on Safeguarding of ICH has been working on this and has also developed a Sustainable Development Policy. One issue Ms. Buckley believes will be discussed in the days that come is what Mr. King said about nominations to the World Heritage List requiring a disaster risk management strategy and plan in place. She mentioned that what is generally submitted as management plans within the nominations, is very poorly conceived because the effort of stating the OUV of properties is so enormous for most countries, that all other things they submit are less reflected on. Finally, Ms. Buckley mentioned that big changes are possibly ahead, in regard to World Heritage nominations and how they will be evaluated, because there is a working group thinking on a beneficial change. She closed her intervention saying that we should think about ways of operationalizing some of the ideas that will be talked about during the workshop in order to include them into the nomination process so that better prepared places can be added to the World Heritage List.

Professor Inaba thanked the respondents and then talked about her own experience as an ACA officer before becoming a faculty member at the University of Tsukuba. In 1995, before the 2011 earthquake, there was another big earthquake in Kobe and she was in the ACA working in the section of risk prevention and risk preparedness. At that time, risk preparedness referred to fire risk because Japanese cultural heritage is mostly made of wood. Her task consisted of traveling all over Japan to install water tanks, water guns, and fire alarms. Later, her task was to install safety alarms and other needed devices. Dr. Inaba continued, saying that in the morning of January 17<sup>th</sup>, she saw the news of what happened, and it was the first opportunity to see how the ACA would react in a major disaster. All telephone lines from Kobe to Tokyo were cut and no information was arriving at the central government offices; therefore, officers in the ACA were waiting and thinking about what to do when it was possible that all of the National Designated Buildings were collapsing. She explained that a person from the Kobe prefecture, Mr. Murakami, after making sure that his house and family were safe, went on a bicycle -cars could not circulate- to all the cultural heritage sites he remembered and collect information that was later sent to the ACA. A week or two later, the ACA sent a team to the site and the residents, who were more concerned about people dying under the buildings, shouted at the team because they were measuring the collapsed buildings. Two years later, they organized an international conference on how to prepare for major disasters, which was attended by Herb Stovel. Dr. Inaba explained that they identified three important issues: the first was how to integrate cultural heritage risk management into the management system; the second point was the need for integration between movable and

immovable cultural heritage; and the third issue was how to prepare the resources mapping. These were the three main lessons learned from the Kobe earthquake and some of these aspects have been integrated into the system, as Ms. Shimotsuma presented. However, Dr. Inaba recalled what Mr. King said regarding the memory of disasters and how we tend to forget the lessons. It is a very important issue, to continue the memory.

Dr. Inaba then commented on the points that caught her attention from the lectures presented. People working in other sectors have a very narrow image of heritage, either natural or cultural heritage. Whenever she goes to an international conference, outside of the heritage community, people seem to not understand what heritage is about. The person in charge of the GIAHS Programme at UN FAO is a Japanese professional from the Ministry of Agriculture, who told her that he is still struggling to understand what heritage people are doing. Dr. Inaba asserted that narrow understanding is a basic problem that prevents us from breaking that barrier, and we need to integrate our system into wider frameworks. The second point she raised is that traditional knowledge is being forgotten. In the past, before modern bureaucracy was installed, traditional villages and their communities had to survive by themselves without protection and, therefore, they created their own water management, landslide management, and mountain resources management systems. However, with the modern government, we have forgotten how to work at community levels. In Japan, everyone relies on the modern bureaucratic system and if the bureaucratic system fails then the community accuses the government. Urbanization is another problem in Japan, there were floods and landslides, especially in new development areas, riverbed, flood bed and others just last summer. The final point she raised was the limitation of modern bureaucracy, recalling what Mr. King said about the World Heritage system being top-down. Maybe at an international organization the idea of the integration is very important, however, once we look at the national level, they are embedded in the existing bureaucratic system and the system cannot be bottom-up anymore. The question would be how to solve the bureaucratic systems, at national levels, where each ministry has a separate legal mandate. She then repeated what Mr. Okuda said about possible cooperation at site levels, where bottom-up and collaboration can happen. Finally, Dr. Inaba mentioned that during the first year of the workshop, participants visited one mountain village, where the differences between nature and culture were not seen by the villagers because they do not know what is considered culture or nature since the two are combined within their daily lives. She wonders how to manage and work the bottom-up and the top-down in this context. Dr. Inaba asked speakers and participants for additional comments on the issues she presented, interested in hearing from the participants on how they might solve the top-down and bottom-up discrepancies in different countries.

**Ms. Murti** said that some of these issues are currently being reflected up within their office. It is important to be able to challenge ourselves trying to re-examine the issue and acknowledge that people within the field create divides, as Dr. Inaba mentioned, it is not the villagers who separate. We grow up with the nature-culture-people-environment links in our daily lives, however, we then go through an education system where the focus is to become the best of the best in a specialized field, while there are only a few champions trying to work with transdisciplinary approaches. When one becomes a professional, organizations like the IUCN try to fix that divide, because the formal education system does not support the outside world. Ms. Murti wondered how to change this. It is too late when one is already a policy-maker, or a practitioner in the field. Something should be done before one gets to the professional level. The question is how to not undermine specialties while at the same time do not let them become a problem that professionals have overcome to work with others.

**Dr. Jigyasu** added that even if it is not possible to work things in a holistic way, at the research level there is specialization and not integration and there is a need to look for areas of interface. He clarified that he is not referring to multidisciplinary, but to cross-disciplinary and identifying those areas of interface.

**Professor Inaba** asked if cross-disciplinary research should be done at the university or education level, and **Dr. Jigyasu** replied that he meant at the education level. Professor Inaba asked the roundtable discussants if there were more suggestions on how to integrate, in particular at the international level.

**Professor Yoshida** agreed with Dr. Wijesuriya's comment on resilience, that it is based on nature-culture-people integration and cannot be separated, referring to the experience after the tsunami at Minami-Sanriku Town. He said that people not only recovered from the tsunami by building a big sea wall, but that they also

cooperated with each other to recover their culture and their community through the recovery of fishery, forestry, agriculture, as well as the recovery of culture, ICH of the deer dance or paper craft, which was inherited from the ancestors. He stressed that this kind of educational activity for the younger generation strengthens the community. He added that these are very important elements of resilience; the linkage of nature-culture-people or nature-culture-community is very important for resilience to the next disaster.

**Professor Inaba** asked how they could develop that ability within the community.

**Mr. Okuda** replied that he really supported Professor Yoshida's statement. He recalled what Mr. King said about the World Heritage system being top-down with very strong criteria based on a scientific basis, evidence-based, that may not be relevant for local people. However, he thinks that the most important ways to improve resilience is through the bottom-up approach, community-based management, and community-based decision-making systems. He explained that after the tsunami and earthquake in 2011, they found that some communities are very successful at escaping from disasters, communities that are still very strong, revitalizing, and with community-based communication, and strong relationships among the people. However, some communities have lost this kind of relationships and, he feels, without a scientific basis, that those communities struggle more in the face of a major disaster. He suggested researching more and revisiting what has been happening during the actual disaster in these places. The collected information would be helpful in keeping the conversation going on how the conservation of both natural and cultural heritage support resilience. Mr. Okuda added that those communities can then incorporate certain heritage, not only from the cultural perspective, but also the natural perspective, namely, the linkage between culture and nature.

**Professor Inaba** remarked that even in one country like Japan and in the Tohoku region, each community is different. She added that some could survive but some just died.

**Mr. King** agreed that even within communities there are differences. When we talk about a community, there is not a single community within one community. He clarified that he agreed in the fact that World Heritage is top-down, and that resilience has to be bottom-up. His question is how to reconcile the differences at a World Heritage site between a top-down process with values being decided first by the country, then by the World Heritage Committee, and what people from the bottom-up would want to do with their heritage. He added that just as the World Heritage system is top-down, the Japanese national bureaucratic system is also a top-down system, even at a municipal level. He agreed that real resilience needs to be bottom-up and that it has to come from different communities that live in the specific area, but the difficult question is how to accomplish this.

**Professor Inaba** agreed that the modern system is bureaucratic, even at the municipal level, in Japan and maybe in other Asian countries. We cannot escape from this system, which leads to communities forgetting their own survival instincts.

**Dr. Jigyasu** added that as professionals we also need to see what role we play and if we would approach communities as the persons who will tell them what to do or as facilitators to engage the discussion. He said that he considers that there are some skills that many professionals lack, such as the ability to engage and communicate, and that these softer skills are very critical if we want to get communities on board. He continued, saying that resilience has become jargon and that we should be careful about how we use this term. For example, many politicians have started to use the word 'resilience' very frequently. An example of this are the floods striking Mumbai every second year, where the community has no other way but to deal with them. While some may consider the communities to be resilient, Dr. Jigyasu does not think that this is an adequate example of resilience. He stressed that it is important to get out of the habit of using the term as jargon.

**Dr. Wijesuriya** shared his experience where there has been both bureaucracy and the voice of the people. He said that he was working for the heritage institution in Sri Lanka, where he was Director of Conservation, when the Temple of the Relic, which is a World Heritage site, was bombed. He mentioned that Herb Stovel had also visited Sri Lanka two years prior and that they discussed the need of having a disaster risk management plan for the site. However, they ultimately did not do anything and two years later the site was

bombed and destroyed completely. He highlighted that the people and the communities were so strong and the President of the country, who chaired the working group, gave the instruction that in order to restore and recover the temple the final decision would be made by the Buddhist monks, the religious communities. They were indeed able to recover it quickly by collecting all the money needed. He concluded that there are moments when the community voices are strong, this can happen, but he does not know whether it can actually become a practice.

**Professor Inaba** agreed that the sense of commitment is a very strong point.

**Ms. Shimotsuma** commented that, as the World Heritage tends to be top-down, there is a gap between World Heritage and the local community. However, in the case of Japan, she clarified that the system to protect cities is different from the system to protect individual buildings. She said that in the case of individual buildings there is a basic role to be played by the owners or stewards. Alternatively, in the case of protecting cities, this approach is not sustainable. Rather than one party evaluating, the local community would have to recognize the value and, based on that, the plan would have to be created. In that way, the process follows a bottom-up approach. This model is serving as a basis for the conservation of the landscapes. Ms. Shimotsuma talked about the law for the protection of cultural landscapes that was started in 2004, where the ministry in charge struggled to figure out who was supposed to evaluate the landscape. When the regulation was stipulated, they decided that the local community should be in charge of evaluating the landscapes so that an appropriate way to protect them could be developed and made this regulation viable. In the case of Japan, when certain places, like a landscape or a town, have been designated with this bottom-up logic and intend to become a World Heritage location, they have to work on the understanding of the OUV, and a totally different logic comes into play, namely, that a different plan which is dedicated to the World Heritage would be necessary. This creates a double standard, the local logic crumbles when a comparative analysis against the world is completed, which is a requirement of the nomination. Therefore, she stressed that, in the context of World Heritage, these problems would have to be addressed when trying to involve the local community because the different logics create a conflict.

**Professor Yoshida** mentioned that the founders of the World Heritage Convention understand that the World Heritage lists sites with OUV, but that they also understand the cultural and natural heritage at the national or local level. He recalled that UNESCO General Assembly in its 17th session adopted a recommendation for the protection of the natural heritage and cultural heritage at national level, but people tend to forget about that. He said that in the criteria of the cultural and natural properties at the national level, it is stated that these should have a special value, not OUV, and that the combined works of man and nature appeared both in natural and cultural criteria. He suggested that the drafters of this recommendation, probably the founders of the World Heritage Convention, understand that at the national or local level we cannot separate nature from culture.

**Professor Inaba** said that even in 1962, the UNESCO system did not divide nature and culture. The recommendation in 1962 (Recommendation concerning the safeguarding of Beauty and Character of Landscapes and Sites) covers both, which, means that the division does not come from UNESCO but from each national system that already had these divisions established. She stressed that this is a major issue because, when looking at earlier drafts of the World Heritage Convention, there was no OUV mentioned and nature and culture were equally combined. She suggested that Professor Yoshida might think that the law for the protection of cultural properties and the National Parks law should be combined.

**Mr. Okuda** added that the existence of OUV is important. He recalled Article 12 of the Convention, which he considers to be one of the most important provisions, where it is stated that just because a property is not on the list does not mean that the property does not have OUV. He stressed that this is a very important point to be remembered at the local level. When we have discussions in the context of the World Heritage, we are talking about properties with OUV, even when these are not yet on the list. Furthermore, even in the absence of OUV, there could be cultural heritage and natural heritage that is valued locally, so we need to make these distinctions. He continued, saying that when we talk about natural properties, the World Heritage has a set of criteria and we have our set of criteria for designating a national park, although these criteria might differ. He said that it would be ideal if these criteria could be combined. In terms of regulations, national parks in Japan are quite strict in some areas and weak in others. However, in terms of the cultural

properties, the ACA is more advanced in the nature-culture and bottom-up approach and he hopes that there will be a conversion into a single system in the future.

**Ms. Shimotsuma** commented that there are top-down systems, like the World Heritage, but there are also bottom-up systems that focus more on the protection of towns and landscapes, like in Japan. She thinks that both of these elements can work together quite well. In the case of Japan, they work on the survey in collaboration with communities, identifying the features of the town or landscape, and develop a plan based on those features. By applying this system, there would automatically be agreement, engagement, and participation. When changes are made, they would have to listen to the voices of the various parties in order to find a solution. Through that problem-solving process, they can grow with the community and establish a system, because, when it comes to the protection of towns or landscapes, not everything is always going to go smoothly. She gave the example of how in Japan, at the time of the bubble economy, there were major development projects and now the population is shrinking because of the lower birth rate, causing the community to weaken. In the case of the evaluation, it can be conducted by everybody and this would encourage and support the local communities. She believes that the World Heritage system has a role to play in these processes. In the case of settlements and villages, we should try to think about development and preservation that fits the uniqueness of each site. Ms. Shimotsuma recalled the time when she was a student and her proposal for research on the preservation of landscapes was not accepted, as she was in the architecture department and only architectural history would be accepted, emphasizing that things evolved and are changing.

**Mr. King** went back to the issue of criteria and the definition of OUV. He agreed in that the Convention clearly says that the fact that a site is not on the list does not mean that it does not have OUV. He recalled how there was a missed opportunity in 2005, when the Operational Guidelines were revised, taking cultural criteria (i), (ii), (iii), (iv), (v), (vi), and natural criteria (i), (ii), (iii), (iv) and integrate them into one set, from (i) through (x). He said that instead of having cultural and natural, it became just (i) to (x) and that was a great opportunity to examine the criteria themselves and look at how these could have been better integrated. It would have been a lot of work to do it, but that it would have been interesting work that could have created a more integrated approach to culture and nature. Instead what happened was that they took the cultural criteria and made them (i) to (vi) and the nature criteria were labeled (vii) to (x), simply changing the order of one of the natural criteria to make it number (vii). Mr. King stressed that it was basically the exact same text and even though he advocated at the time to examine the criteria, the response was that it would be too hard, confusing, and complicate the situation of the sites already inscribed under those criteria. He thought that this was not a problem and that if a site was inscribed with the old criteria they could keep them, but that in future sites this would be a way to create a more integrated process. Mr. King recalled that three to four weeks before this symposium, he was attending the IUCN 40<sup>th</sup> anniversary in Fontainebleau, and Adrian Phillips, from the IUCN, asked the question of why, when there is one set of criteria, we still refer to cultural sites and natural sites rather than just World Heritage properties. Mr. King concluded that what Mr. Phillips pointed out refers to the need of change in the mindset that Dr. Wijesuriya was talking about. He reiterated that we cannot change our mindsets and that this is the first mindset that needs to change in the World Heritage system.

He raised one last point on management and management plans. He argued that the fact that the World Heritage Management Plans only focus on the OUV and the criteria for which they were inscribed in the World Heritage List is another mistake. No site exists that does not have natural aspects, in one way or another, and conversely, he thinks that it is possible that there are not many natural sites that do not have some cultural aspects. He gave the example of the city of Rome, which is a cultural site but also has a river running through it which, although not in its natural state, is still natural heritage, with forests, gardens, and landscapes around. In this way, there are always natural elements to cultural heritage sites. He stated that we need to incorporate all those values into management plans, which would also solve the problem of the top-down vs. bottom-up approaches. Namely, even if OUV is decided at the level of the State Party and then at the level of the Committee, that is top-down, if the management plan deals with all the values of the site, whether is the OUV, or whether is the value of a particular community or a particular person or a particular family, then it could be a tool for managing both natural and cultural heritage, with OUV, or valued at national level, or at the local level. Mr. King asserted that this is the key and also holds true for disaster risk planning.



**Professor Inaba** mentioned that the World Heritage is a best model for local heritage systems and therefore, it should not separate so strictly. Currently the evaluation system is too complicated and, therefore, when the municipalities in Japan try to navigate the system it becomes a burden for the local communities. However, she said that the World Heritage is very important. Each country or each local municipality is developing their systems, influenced by international inputs, which represent a catalyst power. She stated that, in order to utilize this catalyst power more effectively, the system needs to be less complicated and the question is how.

**Professor Yoshida** agreed with Mr. King, saying that in 1993, when the first Japanese natural heritage was inscribed on the World Heritage List: Shirakami Sanchi Mountains and Yakushima Island, experts of the national parks systems, the national monuments, and the local people did not understand the World Heritage system. He said that after the evaluation and the recommendation of the World Heritage Committee, in the case of Yakushima, local people located the OUV on the big cedar trees, which are visited each year by more than 90,000 people. However, recently, people and the community have recognized that there are other values which are not part of the OUV but that have special values for the people of the island. For example, the local community recognized the traditional custom of climbing up to the top of the mountain to bring the sea water to a very small shrine and pray for the safety of fishery. This custom is being revived again and recently, in 2016, the Biosphere Reserve (BR) was expanded to the whole island, considering the World Heritage as the core area. The BR was used as a transition area in order to recognize both the OUV and the special values for the local community. He stressed that this re-evaluation of the universal value and the local value is very important for the local community.

**Professor Inaba** remarked that the issue of local values is a very important point of the World Heritage nomination process, at least in the case of cultural heritage. The designation of World Heritage sites is divided by typologies, such as historical buildings, archaeological sites, gardens, and others, which reflects in the unit divisions between officers and researchers who focus on each one of these typologies. She noted that in order to nominate a site for the World Heritage, all these existing values need to be combined in order to become one story or one narrative, affirming that this process was very useful in breaking the divisions between archaeologists, architects, and others. She noted this as a positive point because she is involved in facilitating the discussions among experts, local governments and communities. She wondered if such divisions exist within the natural heritage sector, which depends on a typology or similar kind of categorization.

Professor Inaba recalled that two officers of the Ministries are present in the roundtable, so she proposed to develop the discussion about the system in Japan. In Japan, the management of the land is divided into two large ministries and she noted that neither of the guest speakers worked for the Ministry of Agriculture, Forestry and Fisheries (MAFF) or for the Ministry of Land, Infrastructure, Transport and Tourism (MLIT). Those are the two Ministries that have the power to control the land and budget and that this may be the reason behind why the Disaster Risk Plan was controlled by their officers at the national level. She asked the speakers how much those ministries perceive the importance of natural and cultural resources.

**Mr. Okuda** has noticed that since he now works on disaster related matters, when he participates at the National Government related conferences and they talk about disaster prevention, the focus is placed on the protection of assets and people's safety. He said that there has been a gap and that he hopes that they will be able to have a discussion on the matter of cultural and natural heritage inside the government. One important development is that the MLIT, which is in charge of the infrastructure, has started to focus interest on green infrastructure for the purpose of disaster prevention. He mentioned the importance of realizing that the budget for the maintenance of green infrastructure does not exceed the budget for the development of concrete infrastructure. About three years ago, he recalled that they were working on the National Land Management Plan, which incorporated the concept of Eco-DRR; however, there is still a need to think about how to put it into practice. He noted that this is a big challenge, since people tend to focus on having their assets and lives protected, but there is a need to avoid sticking to the concept that everything must be protected. He stressed that if a new way of thinking can be spread, then perhaps the concept of heritage could be integrated as well.

**Professor Inaba** made the remark that no matter how high the concrete rampant is, there will always be a tsunami that is higher.

Ms. Shimotsuma mentioned a system called the *Historical City Building Law*, which is in charge of the MLIT, the MAFF, and the ACA. The logic behind it is that when the government designates a cultural treasure, particularly regarding architecture and its surroundings, there are relevant historical buildings that may remain. At the same time, within that area, there are some historical activities; therefore, they would try to develop by protecting the cultural heritage and the historical buildings and activities connected to it. She said that the area would be zoned and that the government would also provide support to the efforts of the municipalities. Before this law was enforced, there was a major change in the land policy by the government. The policy became quite significant as it was the work of the national government more than that of the local community. She noted that this is a very good example of inter-ministerial collaboration. At the time it was established, the Great East Japan Earthquake occurred, and the MLIT had a larger budget than the ACA and were therefore able to conduct the post-disaster needs assessment. Ms. Shimotsuma said that, when working on the policy, they consulted the ACA, which suggested that they do research on the historical suburbs. The MLIT carried out the survey within that framework and because of this, there were areas that were considerably helped. Therefore, she stressed that with this new relationship with the MLIT, the ACA is able to do many things that were not possible before. Previously, there was a UNDRR conference where the ACA was not able to position cultural heritage conservation into disaster prevention frameworks within the national disaster prevention policy and that this was due to the fact that ACA officers were reluctant to work with the MLIT. However, she noted, that if a new UNDRR conference would be held at present, more progress and collaboration could be accomplished between the ACA and the MLIT.

Professor Inaba mentioned that, in Japan, land management was divided by old classmates from agriculture departments and architecture departments. She said that Mr. Okuda is a graduate from the agriculture department, and that she and Ms. Shimotsuma came from the architecture departments. She explained that their classmates and friends are scattered among different ministries, the MLIT, the MAFF, and the ACA, so they can work together and make changes.

Mr. King asked if this would make it easier to integrate in Japan.

Professor Inaba replied that, indeed, it is good because they already know each other and that they have friends in the different ministries, in the MLIT, the MAFF, or in the MoE. She stressed that they are trained to work together on planning, but that politicians come from a different field, therefore, there is a need to connect them. She wondered if it is the same case for other countries and opened the discussion to the participants of the workshop and the audience, asking if they could share any community problems.

Mr. Xavier Benedict from Chennai, India, introduced himself as a grass-root level worker and an architect, advocating for the conservation of a large lagoon in the south of India. He expressed that he had seen two major disasters in India which appeared on the international news, the tsunami in 2004 and the Chennai floods in 2015, noting that in between there had been many other floods. He raised four points. First, he stated that 99% of the heritage belongs to the local people and that there is no financial model for heritage or financial products that could assist people in conserving their heritage. He gave the example of damaged heritage structures that still need to be reconstructed. He stressed that there is no loan which grants the owners the amount needed to reconstruct it. As a consequence, he has seen how heritage has been demolished and reconstructed with concrete. The second point he referred to was language in a highly diverse country like India. He mentioned that the government works using a top-down system and that, in Chennai, they do not speak the same language as the government, which is the Tamil language. An example he gave was how a policy might say to “plant a mangrove forest.” However, he explained that fishermen do not know what the term “mangrove” is, rather, if it was explained in the local language then they would quickly understand the importance of environmental management. He stressed how language is important in communicating heritage issues and that laws and regulations need to be written in the local languages. The third point he mentioned was the problem of the globalized education system, stating the need for a vernacular education system. He emphasized the need of including regionalism within the education system as well as vernacular thinking in order to understand nature. The fourth point referred to climate. He explained that in India there are 29 states and, out of these, 28 are considered to be the Southwest monsoon region and the one remaining region, where he comes from, is the Northeast monsoon region. All of the national policies relating to disasters prevention, as well as other policies and laws, are written for the Southwest monsoon region; he added that the Northeast monsoon region is the least debated in their

parliament. In the example of the 2015 floods in Chennai, the response from the government took four days. This was due to the fact that the government was unable to understand that the rainfall started in Chennai when the rainfall stopped in other parts of India. Therefore, because the rest of the country was dry, they were not able to understand the flood-levels in Chennai. Thus, he remarked, there is the need to have policy created for different climates.

**Professor Inaba** emphasized that financial support is one of the major problems facing heritage conservation in the majority of countries. She agreed that it is another major problem if the national system does not support the local thinking. In Japan there is support from the government to assist in the conservation of natural and cultural heritage; however, she said that this support is declining. She added that the redistribution of the tax money is an issue and invited other participants to share their countries' situations.

**Ms. Irina Pavlova**, from Russia working in the Natural Science Sector in Disaster Risk Reduction at UNESCO, mostly focused on the UNESCO Global Geoparks and Biosphere Reserves, said that in this course she is learning about World Heritage. She recalled some of the keywords mentioned during the day, like local community engagement, and problems with top-down approaches. She said that the Geoparks network was already established in 2015 under the concept of Sustainable Development. An example she gave was of the definition of Geopark, where the concept of Sustainable Development is included, under the idea of the protection of ecosystem services and use of these ecosystem services for the protection of the site. She asked how the World Heritage works with these two labels (Biosphere Reserves and Global Geoparks) and how much more cooperation could be foreseen.

**Mr. Okuda** said that the Biosphere Reserve was the first designation from the UNESCO system that was used in Japan, while the World Heritage was adopted later. He explained that the MoE has been acting as the responsible agency for these two labels. The geopark concept has since been established and in the last ten years, within the MoE, they have started to understand the importance of the concept of the geopark. He added that it has been the Ministry of Education (MEXT) which has overseen the Ecoparks because of their scientific interest and there has not been sufficient coordination with the MoE. He said that inside one site, it is important to utilize the different systems for the preservation of the different values and it would be important to deepen on the understanding of the locals. He mentioned that these three UNESCO systems are being used in order to improve and incorporate them into the management of the national parks in Japan. He added that the SDGs issues have not yet been reflected enough at the Japanese level. He said that the SDGs, rather than being integrated in the policy by the government, are being promoted in many of the activities conducted by the private sector.

**Professor Inaba** added that in the World Heritage and ICH fields, these designations are useful because Japanese people like a lot the international brands. Therefore, with those brands, it is possible to encourage communities to get together and gather the power, taking the chance to advance the heritage concept.

**Mr. King** added that from the ICCROM's point of view, the collaboration with other UNESCO Programs does not exist. Just like in the case of ICCROM and how the immovable and movable units were not collaborating, from his UNESCO experience, he also sees that it is not easy to bridge the gaps between the various programs. If there were more possibilities to collaborate in a more substantial way, the work would be much stronger. He recalled the Nara+20 meeting in Japan, in 2004, that was held at the moment when the ICH Convention was signed, and how they were trying to link World Heritage and ICH. However, the outcome was that the UNESCO people dealing with the ICH were not very interested in creating links and stronger collaboration with the World Heritage people, possibly because the ICH people wanted to stand in their own two feet and establish their own frameworks. He added that currently ICCROM is in discussions with the ICH unit at UNESCO in order to develop work on capacity building. He affirmed that there will be possibilities for collaborating in that way. He also mentioned that in 2005, in the ISDR (International Strategy for Disaster Risk Reduction) meeting in Kobe, there were also people from UNESCO's culture and science sectors, but there was little collaboration. Nevertheless, it is much better now, and the next step is to sit down and look at the various normative instruments, the various UNESCO instruments, and see how these can work more together. He added that the IUCN may actually be better at this working with the CBD.

**Ms. Murti** replied that for IUCN is still a work in progress.

**Professor Yoshida** added that when the first BR was designated in the 1980s in Japan, it overlapped with the National Park, so the impact was not clear, and no special plan was prepared. However, after 2011 a new nomination in Aya town, in the Miyazaki prefecture in Kyushu, came up from the local government and the local community. He clarified that the World Heritage nomination is controlled by the MoE and the Forestry Agency, but the nomination of the BR can come from the local government and communities. In Tsukuba city, the local government is involved in the nomination of Mount Tsukuba to the international Geoparks network since it is already recognized as a national geopark. He stressed that, recently, local municipalities are very interested in the nomination of geoparks and BRs.

**Dr. Ishizawa** recalled that during the previous year's symposium, Dr. Thomas Schaaf explained the Multi-International Designated Areas (MIDAS), a study conducted by the IUCN and funded by the Korean government. They looked at different case studies of places that have several international designations: BR, Ramsar sites, World Heritage, and Geopark. She said that one of the sites that has these characteristics is Jeju island. This is a document that can be looked at, regarding the management of places that have these different designations, which could also bring together people working with these different brands or systems.

**Mr. King** added that one of the issues of the MIDAS is reporting. This is because there are a lot of complaints from the State Parties about having to write State of Conservation reports for World Heritage and for others as well. One of the things that is heard from State Parties is that it would be very useful to have one standardized reporting system, where additional information could be added, referring to particular issues.

**Professor Inaba** agreed that these are the same complains that the Central Government of Japan is receiving from municipalities, that they have to submit reports to the different ministries.

**Mr. Wijerathne**, from Sri Lanka, commented that he is reading a document, prepared by the presidential task force in Sri Lanka in line with the SDGs of the Agenda 2030, that is the policy framework related to Balanced-Inclusive-Green Growth. He said that, interestingly, the document does not mention anything about culture and cultural property conservation. There are countries, like Sri Lanka, that are struggling with economic development; therefore, their priority is focused on development rather than sustainable development and culture, or cultural heritage management. He asked if there were any plans in place to deal specifically with developing countries where they are still forced to concentrate on development. He affirmed that there are plans and heritage management systems in Sri Lanka, but these are not given equal importance and he wondered if ICCROM or UNESCO had a special approach for developing countries.

**Professor Inaba** mentioned that even the United States is changing its policy and asked Mr. Wijerathne to hold the question, as she invited the audience to take a coffee break.

After the break, **Dr. Wijesuriya** clarified that the last question could be separated into two further questions. The first question was about understanding how different countries are integrating the Agenda 2030 into their national contexts. He recalled that after Agenda 2030 was adopted and the SDGs were developed - with one in particular dealing with cultural and natural heritage (SDG 11)- these were then translated into national policies. He explained that Mr. Wijerathne has not seen culture integrated into the national policy of his country and wonders if other countries have integrated the target 11.4. The second question was about UNESCO adopting the policy and if any country is pushing this, in the World Heritage context, in their World Heritage management plans and so on. He mentioned that this is something that has been discussed at all of the ICCROM courses since 2015. In terms of World Heritage, some of these things are integrated into the periodic reporting questionnaires that the State Parties respond to. Dr. Wijesuriya emphasized that the question was if there are any countries or examples where the SDGs have been converted into policy and culture has been integrated and then whether the UNESCO policy has been integrated.

**Ms. Buckley** said that it is important to acknowledge that these are the early days of this important shift. She recalled that the old Millennium Development Goals, which ended in 2015, did not mention culture or heritage at all, and certainly there was no linkage even hinted between nature and culture. She added that when the UN was moving towards the renewal of those goals, there was a great campaign between many different organizations involved in natural and cultural heritage and led by UNESCO, called "the future we

want includes culture.” However, this campaign was not very effective, and they made many suggestions throughout all the SDGs, a few changes were incorporated but many were not. She insisted that this is a very slowly evolving recognition of knitting the goals and it is not surprising that at a national or institutional level, and subnational levels, this is not yet reflected. Nevertheless, she acknowledged the power of multilateral agreements, asserting that the top-down method can work very well at the level of policy rhetoric and that it takes time, especially since these are new ideas in the global system. She added that a lot of work is taking place within every organization to try to grasp the SDGs and make concrete and measurable progress. She said that everyone has to push and that we all push in the institutions where we work.

**Professor Inaba** mentioned that while preparing a World Heritage nomination dossier in Japan, they have to prepare the management plan. The local authorities are not unwilling to include the SDGs, but rather, their question is always how and what kinds of things need to be included; therefore, some break down is very useful.

**Dr. Wijesuriya** added that ICOMOS has a group working on developing indicators for the integration of the SDGs into all processes. Already in the nomination dossier, one is required to think about including the SDGs in the management plan.

**Professor Inaba** consented that this requirement is already in the nomination dossier and local authorities are trying to understand what that means and how to develop it.

**Mr. Hoseah Wanderi**, from Kenya, referred to Mr. Wijerathne’s (Sri Lanka) question. He stated that the Kenyan experience is that once the World Heritage policy was developed in 2015, they took it up very fast and domesticated it in order to fit the Kenyan situation. He added that what remains is the official adoption by the relevant ministry, the Ministry of Heritage. They submitted the document in April last year but are still waiting for it to be adopted as a legal document for use in Kenya. He also asked about the case of the reconstruction of the Tohoku region, if they were planning to leave the landscape as it is now after the disaster or if they are planning to do any kind of reconstruction. Also, he wondered whether, when we are talking about resilience, we are talking about resilience from the point of view of the living communities or the heritage itself.

**Professor Inaba** said that many people that were relocated after the disaster are now going back to the places where they used to live, and therefore, some reconstruction is needed. However, others have not decided to go back, and hence, not every area needs to be rebuilt. She asked Mr. Okuda about the general tendency.

**Mr. Okuda** responded that he did not present the actual implementation of the rehabilitation project, but rather gave an example of places where local residents used to be settled very close to the sea and have now decided to move to higher places outside of the National Park. He said that there were communities settled within the National Park, who wished to restore the areas more naturally as wetlands, therefore, the focus is placed on restoring nature and special landscapes. However, he mentioned, there are other places where the local people have decided to stay, living very close to the coast, and in those places the local government has requested creating big walls on the seashore. He added that, according to the national law, the MoE must allow those safety constructions for local residents. He concluded that there is still conflict about how to rebuild or reconstruct these areas and the MoE is focusing on incorporating the idea of living in harmony with nature as a vision, by creating the National Park.

**Ms. Irina Pavlova** commented on Mr. King’s presentation and how, on the survey on World Heritage and Disaster Risk Management (DRM), only 10% of site managers responded that they have elements of DRM at their sites. She asked what tools would be used for the other 90%. She also recalled how, in the periodic reporting exercise, some site managers responded that their sites are vulnerable to all types of hazards, and therefore, they are unable to understand the specific risks and vulnerabilities of their sites.

**Mr. King** said that there are different requirements for site managers and for countries, in relation to the World Heritage sites, one of which is a management plan. However, a lot of sites do not have a management plan, much less a disaster risk management plan, and many sites do not even have a visitor or tourism



management plan. He stressed that there are a lot of things that a site should have, some of the sites have them and some do not. He clarified that part of it is related to their immediate and evident needs. He then gave the example of a site in Uganda, called Kasubi tombs, which had a management plan. ICCROM worked on it with the Ugandans when the site was inscribed and then they updated the plan 8 years later. In both plans it was clear that a DRM plan was needed, however, it was never developed. He said that two years later, the tombs, a large structure made of thatch, went up in flames because they had not enforced the plan and they had not put the fire pressure system into place. He insisted that there are many requirements, but it is hard to follow-up and go to every one of the 1092 sites. Therefore, he affirmed, that it is the responsibility of the State Party to ultimately ensure that it complies with those requirements. He reiterated that the best that they can do is capacity building with site managers, with focal points in the countries, and with experts within the countries and try to do that as much as possible. He added they now do an international course every year in Kyoto, the first aid course (FAC) and other activities; however, he insisted that to reach all 1092 sites, they would need more resources and financial support.

**Dr. Jigyasu** added that although the DRM plan seems to be an additional document to be prepared, an additional task for site managers, there is a misperception among people. It is more important to not think of it as one DRM plan, but to slowly try to do small things, little things which are part of the day-to-day management practice. He added that risks are reduced if the daily maintenance and monitoring are well performed. The DRM and the management plan have many aspects in common, and he recommended making site managers more comfortable by doing small things that they will know are helping to reduce risks in the long term.

**Professor Inaba** commented that when a World Heritage site manager in a mountain village of wooden structures requested that they install an automatic fire alarm and water extinguisher, they asked him to be alert himself about a fire and extinguish it. She mentioned that it is not so much about the machines but people's daily care. She invited the audience to comment before closing the session.

**Mr. Kevin Macarius Florentin**, a student from the University of Tokyo's Sustainability Science Department, said that in his department they try to approach Sustainable Development problems and that he advocates for heritage in the disaster field. He commented that one of his research preliminary findings was that there are difficulties in the SDG Agenda regarding the integration of culture because of the difficulty of quantifying heritage and the unavailability of indicators to measure the progress in heritage preservation. He asked about how to better explain the values of heritage to people who do not have the heritage educational background.

**Mr. King** responded that there are some things that can be quantified and many that cannot. He remarked that the indicators set up for the SDG 11.4 are not useful. He added that there is a need to go beyond, to figure out ways of telling the stories and to give quality, not quantity, indicators, that will actually be able to convey what needs to be expressed. He mentioned that there needs to be more work with statisticians and economists to try to figure out how to do that. He added that he refuses to turn everything into money because one cannot quantify in that sense and we need to figure out ways to do that qualitatively.

**Ms. Buckley** answered that besides the quantitative issue, there is another problem with data. It is that indicators need to be found which could be applied across the whole world and across natural and cultural heritage, which is vast. She clarified that what happened to the 11.4 indicators are that the UN Statistical Commission oversaw what went in these indicators and it was based on where the data could be collected from. She added that the problem with quantitative data in these big exercises is that we end up measuring the things that we can measure rather than measuring the things we want to know about. She urged everyone to give more attention to qualitative data collection methods, which she thinks would work better for heritage matters. She mentioned that there are countries that have tried using both qualitative and quantitative measures, particularly in state of the environment reporting. For example, she said that Australia includes cultural heritage in their state of environment reporting, as well as some other countries, and she said that they are looking for evidence of a trend, which she thinks it is not impossible to get. She added that evidence of trends is what we often need to prioritize policy and resourcing of important programs. She concluded that there is more work to be done on this issue.

Professor Inaba noted that in order to persuade top politicians, one has only one minute to speak. She emphasized that the question is how to explain what to do, in one minute, to Shinzo Abe (Prime Minister of Japan). She explained that this is how they can get a budget from the ministry, so Mr. Okuda and Ms. Shimotsuma are trained to do that one-minute-speech in front of ministers. She finally thanked everyone and closed the roundtable discussion, inviting Professor Yoshida to give his final remarks.

Professor Yoshida concluded from the symposium that in order to strengthen resilience to disasters, we have to overcome the nature-culture divide, the tangible-intangible divide, as well as the institutional divides, and he asserted that the discussion was very fruitful in reflecting on these problems. She thanked the guest speakers, Ms. Murti, Dr. Jigyasu, Mr. Okuda, Ms. Shimotsuma, and Mr. King, as well as Dr. Wijesuriya and Ms. Buckley for joining the discussion.



*Group photo of the Third International Symposium on Nature-Culture Linkages in Heritage Conservation during the Tsukuba Global Science Week 2018.*



# MODULE TWO:

## UNDERSTANDING NATURE-CULTURE LINKAGES IN THE CONTEXT OF DISASTERS AND RESILIENCE



Module Two consisted of three days of intensive lectures, group discussions, and participants' case study presentations, from September 22 to 24 at the University of Tsukuba. The lecturers shared theoretical and technical knowledge regarding heritage conservation, disasters, and resilience, from both the natural heritage practice and the cultural heritage practice. They also talked about practical examples where they have worked. The participants presented a total of fifteen case studies in the three sessions: seven UNESCO World Heritage sites, three on the tentative lists of their respective countries, one UNESCO Biosphere Reserve, three sites protected at the national level, and one UNESCO Geopark.

The first day **Dr. Gamini Wijesuriya**, former Project Manager at ICCROM – Sites Unit, presented a lecture on the evolution of heritage conservation into people-centered and nature-culture linkages approaches. Dr. Wijesuriya first described his work at ICCROM and the role of the organization in the training of heritage practitioners and specialists in conservation techniques and management. He emphasized that heritage is an evolving practice where exchange is instrumental. He then explained how the conservation of nature moved from the concept of isolation of natural areas to ecosystems-based approaches, where the interrelations of humans and nature are now valued as positive for biodiversity conservation. The conservation of cultural heritage has also shifted from a monument-based approach, that was criticized for the idea of “freezing monuments,” to people-centered approaches, where heritage becomes an instrument for the sustainable development of communities by recovering functions at the core of communities' everyday lives. Dr. Wijesuriya described how the implementation of the World Heritage Convention accompanied this evolution. It was a pioneering instrument in advancing the conservation of heritage which involves and contributes to a community's well-being. Moreover, including both the conservation of nature and culture, Dr. Wijesuriya explained how the World Heritage Convention has allowed a nature-culture approach to heritage conservation to emerge. Initially, with the inclusion of cultural landscapes as a category within the Operation Guidelines, and increasingly, with the common work being developed by the Advisory Bodies to the Convention, the practice is moving towards a new paradigm, where nature, culture, and people would be integrated into a single concept of conservation, with no boundaries. He emphasized the importance of traditional knowledge and, other than Western traditions where the nature-culture divide is not present, and how these traditions are now being reexamined. He also recalled the different international instruments that have been developed and how heritage conservation is now embedded in the UN Agenda 2030. He mentioned the *UNESCO Policy for Integrating a Sustainable Development Perspective into the processes of the World Heritage Convention*, adopted in 2015, and emphasized that it is an important instrument that needs to be adapted by practitioners at their sites. Dr. Wijesuriya insisted on the importance of the paradigm shift “from care of heritage to that of pursuing the wellbeing of both heritage and society as a whole” and recalled the 2017 Delhi Declaration on Heritage and Democracy by the 19<sup>th</sup> ICOMOS General Assembly, where the organization commits to a “people-centric culture specific approach” for heritage conservation and sustainable development.

Subsequently, **Ms. Kristal Buckley**, a lecturer at Deakin University and an ICOMOS World Heritage Advisor, introduced the concepts, processes, and critical issues of the implementation of the World Heritage Convention. She talked about the work of ICOMOS in this context, explaining the basic concepts of the Convention, the process of nomination, and the concept of outstanding universal value (OUV), putting special emphasis on the clarification of the latter's core concepts: criteria, integrity, authenticity, and management plans. She also talked about the listing system as well as the monitoring and reporting systems. She continued, explaining what is new in the World Heritage system and mentioned some recent initiatives, such as the World Heritage Leadership Programme, a joint endeavor of the IUCN and ICCROM which is funded by the Ministry of Climate and Environment of Norway as well as the Connecting Practice Project,

another shared venture of ICOMOS and the IUCN, funded by the Christensen Fund, both of which have led to the development of the Nature/Culture and Culture/Nature Journeys. Moreover, she mentioned the recent rise in conflicts and how these affect heritage conservation and procedures, recalling some emblematic cases where political differences impacted the World Heritage system, such as the Mostar Bridge in Bosnia, the Preah Vihear Temple on the border of Cambodia and Thailand, and the damages to the cultural heritage in the Middle East. She talked about the development of right-based approaches to heritage, the evolving notions of authenticity, the direct engagement of civil society during the World Heritage Committee Sessions, the initiatives to tackle climate change, and the importance of the sustainable tourism programme. She commented on the 2011 UNESCO Historic Urban Landscape Recommendation, that was also a result of the work of World Heritage professionals, describing how this recommendation has been used in the planning of Ballarat city in Australia, an emblematic case study of the HUL approach.



*Ms. Kristal Buckley (Deakin University/ICOMOS) and Dr. Gamini Wijesuriya (former ICCROM) wrapping up after their lectures.*

After the lectures, the participants were able to ask questions and continue the conversation with both lecturers. There were questions regarding OUV, authenticity, buffer zones, and other terminologies of the Convention. Moreover, participants requested clarification regarding the relationships between Ramsar sites and World Heritage. Other controversial topics included funding and political issues, the imbalance of the list and the issue of gentrification within World Heritage sites due to mass tourism.

During the afternoon session, five participants presented their case studies and received feedback from the resource persons:

- 1) **Rohayah Che Amat**, a Senior Lecturer at Razak Faculty of Technology and Informatics from the Universiti Teknologi Malaysia, Kuala Lumpur, presented “**Historic Cities of the Straits of Malacca UNESCO World Heritage Site: Threats and Challenges.**” She described the OUV of the historic cities in Malaysia, Georgetown and Melaka, which have been inscribed on the World Heritage List since 2008 under criteria (ii), (iii) and (iv). She talked about the problems arising due to development projects, especially in the seaside of these port-towns. She further made clear how these projects would increase the vulnerability of these cities, mainly to flooding. She suggested that disaster risk management plans need to take into consideration a landscape approach for the conservation of this World Heritage property.

- 2) **Hoseah Wanderi**, a researcher at the Directorate of Antiquities Sites and Monuments of the National Museums of Kenya, presented **“Lamu Old Town: Balancing economic development with conservation of heritage,”** a World Heritage site since 2001 under criteria (ii), (iv) and (v). He described the values of this site, both cultural and natural, as well as related the intangible cultural heritage of the Swahili local communities. These communities maintain certain traditional practices for fishing as well as for holding festivals, which shows the strong interactions between nature and culture in the area. On the island of Lamu, mangrove forests and sand dunes provide a habitat for a diversity of flora and fauna. He stated that development projects are menacing the cultural and biological diversity of the Lamu historical coastal town and the island. Furthermore, he said that climate change is threatening the island, where the town is located, because of the expected rise in sea-level. He detailed the threats to the World Heritage site and suggested that a disaster risk management plan and the preparation of local communities are necessary to confront the challenges that Lamu Old Town will face in the future.
  
- 3) **Huaiyun Kou**, an Associate Researcher at the Tongji University, China, presented **“Post-earthquake Redevelopment of Dujiangyan Ancient Town in Sichuan Province, China.”** She explained that the Dujiangyan Ancient Town is a “National Famous Historic and Cultural City” in China, it was designated in 1994 and is located in the buffer zone of the World Heritage site, Dujiangyan Irrigation System, which was inscribed in 2000. She described how the area has been affected by the rapid urban development since the 1980s as well as the 2008 Earthquake. The challenge of the reconstruction project was that it confronted heritage conservation with the upgrading of the infrastructure. She added that the redevelopment project resulted in the transformation of the function of the area from residence and commerce to tourism services, decreasing the population of the town from 15,000 to 2,000. The town is vulnerable to several natural hazards, such as earthquakes, mudslides, humidity, and insect pests. She suggested that to include a nature-culture approach to the management of the World Heritage sites and their buffer zones, academic research should be interdisciplinary and contribute with both qualitative and quantitative data that can support the local management and comply with international organizations standards.
  
- 4) **Bohingamuwa Wijerathne**, a Senior Lecturer in the Department of History and Archaeology at the University of Ruhuna, presented **“Matara and Galle Forts: Coastal Cultural Heritage Conservation from Matara Fort to Galle Fort in Southern Sri Lanka.”** He described coastal heritage sites in Southern Sri Lanka: the Old Town of Galle and its Fortifications that has been a World Heritage site since 1988 under criteria (iv), and the Matara Fort which is protected under national legislation. He explained that both sites were built by the Portuguese and are characterized by the juxtaposition of historical layers due to the occupation of different European colonial powers. He showed that the Southern Coastal belt, the area where these sites are located, is rich in natural and cultural values but is also vulnerable to natural hazards. Moreover, he said that vulnerability is increased by the tourism infrastructure development. These heritage sites were affected by the tsunami in 2004 and his research was focused on the impacts on the cultural heritage. He emphasized the importance of living traditions and the interrelations between nature and culture which need to be considered for disaster risk prevention and post-disaster recovery. He stated that even if cultural heritage conservation has been well established in Sri Lanka, there is the need for the integration of disaster risk management approaches and culture perspectives into urban planning. He concluded that more capacity building is needed.
  
- 5) **Mohammad Sazzad**, an Associate Professor in the Department of Architecture, at MIST, Bangladesh, presented **“Integrated approach for disaster resilience & management at Mahasthan heritage site.”** He explained this archaeological site which has been on the Tentative List of Bangladesh since 1999, as Mahansthagarh and its Environs. He showed how the archaeological site is exposed to natural phenomena that may damage the structures. He explained that the site could be protected by recovering the ancient waterways and involving local communities in its protection.

During the first day of the workshop, the case studies dealt with urban areas and archaeological sites that are connected to the sea, rivers, and irrigation systems, showing the interrelations of the cultural heritage with the natural environment. Challenges discussed were the rising sea levels and regular floods as well as earthquakes and the lack of disaster risk management plans at the sites.



After the presentations, participants discussed the following questions in groups:

- Why are nature-culture linkages important to heritage conservation?
- How do the existing international and national frameworks either enable or constrain holistic approaches that link nature, culture, and people?

Answering the first question, all of the participants' groups presented that they agreed that heritage itself represents linkages between nature and culture. Some stated that cultural heritage is found in natural settings, that nature is the context for cultural evolution, and that nature is constantly influencing culture and, therefore, these are closely linked. Moreover, they recalled the importance of ecosystem services and nature-based solutions in order to protect cultural heritage from disasters. Participants understood that culture evolves along with nature and that heritage is also evolving and, therefore, consider these linkages as necessary for heritage conservation. Furthermore, they mentioned that traditional knowledge is the representation of the relationship between culture and nature, which also implies that spiritual and religious aspects connect nature and culture. Therefore, all participants coincided in their agreement that combination and integration in conservation is important, especially because at local levels distinctions between nature and culture are not present. They considered that while the separation becomes necessary when analyzing and conducting academic research, heritage itself is the representation of a place with humans and non-humans, and thus, the division does not make sense.

Regarding the second question, participants also agreed that it is important that the international discourse is changing. This is especially true in the development of the SDGs, and the progress of linking the work of different sectors as well as in the inclusion of traditional knowledge, though further exploration is needed regarding traditional and local knowledge. Nevertheless, they found that in the international level legal frameworks there are discrepancies, and in the conventions, there are clear distinctions.

Furthermore, some participants stated that there are constraints at the conceptual level, due to the different disciplines and languages used to address the same conservation problems. They added that political issues, such as confrontations between environmental conservation and economic growth, are limiting the promotion of nature-culture linkages. In academic research there is a clear division or even disconnection and there is a need to look for a base of common understanding.

However, they also recalled the example of the Sanriku Fukko Reconstruction National Park and how the Japanese authorities collaborated in the recovery of the Tohoku region after the Great East Japan Tsunami and Earthquake in 2011. Yet, not all countries demonstrate such collaborative approaches at the national government level.

They mentioned the need for a simplification of frameworks, but at the same time that these can be contextualized and site specific. They added that nature-culture guidelines at international levels could be useful.

All groups noticed the big challenge in communicating conservation ideas with the local people and the difficulties of using a top-down approach. There was a general agreement that there is a need to empower people and local communities. This is so that the seeds of understanding nature-culture linkages grow from the bottom up because the concepts of nature and culture are so integrated at the local level.

Resource persons summarized the findings, noting that at local levels there is not a divide and that the limitation lies in the legal systems and the institutions in charge of heritage conservation. However, they also remarked that it is necessary to identify specific components that can help address the gap, taking little steps, because we cannot wait for all systems to be perfect. Proactiveness in looking for ways to implement this approach is key.

On the second day of the workshop, **Dr. Rohit Jigyasu**, the UNESCO Chairholder on Cultural Heritage and Disaster Risk Management, Ritsumeikan University, ICOMOS Vice-President and ICORP President, presented **"Disaster Risk Management for Cultural Heritage."** He focused his presentation on key concepts and principles in the context of disaster risk management. He illustrated these concepts and principles with several examples of disasters, explaining the underlying reasons for the damage to the cultural heritage.

He recalled the definition of disaster, which occurs when the coping capacity is exceeded and, therefore, there is a need for help because the event gets out of control. In disasters losses are very large and their consequences are as well. He clarified that the time frames of disasters may range from hours to months and that it is difficult to establish its starting and ending points. He focused on the different types of vulnerabilities and how these are increased. Physical vulnerability can be increased through exposure due to location, the sensitivity of materials, and constructions, as well as the ineffectiveness and lack of management (maintenance and monitoring). He noted that physical vulnerability may actually be increased by restoration and conservation works and other interventions. He added that in some cases, physical vulnerability is not caused by infrastructural problems but rather that the design and nature of a site. He explained that at some sites, there is a combination of hazards and the impacts are larger. He noted that restoration work is the major cause of fire in historic buildings and that vulnerability can be created by technology. He clarified that there are other inherent vulnerabilities in cultural heritage related to the nature of their location and materials sensitivity. As well, there are vulnerabilities that go beyond the physical, such as socio-economic conditions, institutional, and policy frameworks, and he added that the problem of people's attitudes, such as perceptions and religious beliefs, can prevent them from following policies and guidelines. He gave some definitions of resilience (Holling, 1973: environment bouncing back; Folke et al. 2002: related to society; Mileti, 1999: moving to disasters; Pelling 2003: ability to cope and adapt; and the UNISDR 2003: ability to recover). He concluded that the different phases in disaster risk management need to be interconnected: before a disaster there is need for prevention, mitigation, preparedness, and adaptation; however, during a disaster, emergency response and first aid are key; after the disaster the focus shifts to recovery and rehabilitation.



*Left: Ms. Radhika Murti presenting about Ecosystem based DRR. Right: Dr. Rohit Jigyasu presents about Disaster Risk Management for Cultural Heritage.*

The second presenter of the day, **Ms. Radhika Murti**, Director of the IUCN Global Ecosystem Management Programme, gave a lecture on “Ecosystem-based Disaster Risk Reduction: definitions, implementation and gaps.” She started her presentation by explaining the potential of using the Eco-DRR approach in the conservation and management of World Heritage sites. She mentioned the restoration of slopes, the revitalization of historical water systems, and the conservation of wetlands as examples of Nature-based Solutions for protecting landscapes and preventing disasters. Furthermore, she demonstrated how the investment in ecosystem services is more efficient, effective, and economical than investing in grey infrastructure. She remarked that heritage has been created in relation to the natural conditions of their locations and using the natural events as part of the design. Therefore, she pointed out that in order to conserve heritage, it is essential to go back and analyze how it was used, designed, and re-use. After this, she gave examples where the damage in the ecosystem, ecosystem services, and green infrastructure, have increased the damages by disasters. As well, she gave examples where forests, wetlands, and islands worked as protective natural structures against hurricanes and tsunamis. She explained how disasters have been used to leverage attention from governments, encouraging them to invest in the conservation of nature, in order to prevent and reduce the impact of disasters. She mentioned the case of the Sanriku Fukko Reconstruction National Park as an example of how to use Nature as a solution to both promote economic development through eco-tourism and conserve nature and the natural protection of the coast of Tohoku. She defined Eco-DRR as: “Sustainable management, conservation and restoration of ecosystems to provide services that reduce disaster risk by mitigating hazards and by increasing livelihood resilience” (PEDRR, 2013). She explained that Eco-DRR can support disaster risk management in all its phases, by taking

ecosystems into consideration in risk and vulnerability assessments, by conserving, revitalizing, and restoring ecosystems in the disaster risk reduction and preparedness period, and focusing on the restoration and recovery of ecosystems, like wetlands or forests, in the relief, early recovery, and reconstruction processes. She highlighted the need for hazards and vulnerability assessments, both for social and ecological aspects, especially in a context of climate change, and recommended some existing tools, such as the *Climate Resilience Evaluation for Adaptation Through Empowerment (CREATE)* and the *IUCN Red List of Ecosystems (RLE)*. She gave some examples of the use of CREATE in African countries, like Senegal and Burkina Faso. She also explained how they use the RLE to evaluate the role of ecosystems in disaster risk reduction, such as forests as stabilizers for slopes, the wetlands and floodplains as controlling floods, or the mangroves, saltmarshes, and sand uses as buffers for wind, sandstorms, or storm surges. She referred to two existing guides, published by the IUCN: “Protected Areas as Tools for Disaster Risk Reduction” and the “Safe Havens: Protected Areas for Disaster Risk Reduction and Climate Adaptation.” After giving several examples of how Eco-DRR is being used for recovery and reconstruction, she emphasized the need of including traditional and scientific knowledge to create policy frameworks for disaster risk reduction. She finalized by saying that there is the need to make exchanges with the culture sector, explore more on how nature-based solutions can contribute to cultural heritage, and look at how cultural practices can help nature.

After the lectures, five participants presented their case studies:

- 1) **Jefferson Chua**, the Project Coordinator for the World Heritage nomination for Mayon Volcano Natural Park, Philippines, presented **“The Mixed Heritage Values of Mayon Volcano Natural Park and the Place of Narrative in Disaster Response.”** His study focused on the 2006 disaster brought about by the effects of Typhoon Reming/Durian on the communities surrounding the Mayon Volcano, the government’s response, and the possibilities of making cultural and natural heritage protection an essential resource in disaster mitigation. He explained that the typhoon, the ensuing lahars, and landslides claimed 1,266 lives when the dikes designed to mitigate the effects of flooding were not able to withstand the volume of the displaced volcanic material which had built up because of the recent volcanic activity. He said that the measures taken, and the subsequent government response, showed that, while there were adequate mechanisms in place to address individual disaster scenarios, the 2006 disaster demonstrated the need for a more holistic understanding of vulnerability, disaster response, and mitigation. He suggested that this can be achieved by incorporating heritage values into disaster mitigation policies, especially for a site like Mayon where cultural and natural values are inextricably linked to each other.
- 2) **Petrayuna Omega**, a lecturer and researcher at Krida Wacana Christian University, Indonesia, presented **“Disaster Risk at Permanent Residence in Siosar Protected Forest: A Preliminary Study.”** He explained that the Indonesian government used around 416 hectares of the Siosar Protected Forest, owned by the Forestry Ministry, for residential and farming area in order to relocate three villages affected by the 2016 eruption of Mount Sinabung. He said that problems have emerged as this protected area is being used as the relocation centre for the Mount Sinabung refugees. He said that even though the government has already developed some disaster risk reduction plans, it needs to take a new step in order to involve all the stakeholders, including the community. He suggested that “gotong royong,” a traditional practice used for communal work, could be used to implement the disaster risk reduction plans. Moreover, he considers that awareness needs to be raised and that more inclusion of the diverse stakeholders in elaborating and implementing disaster risk reduction plans is instrumental to conserve both nature and culture in this area.
- 3) **Hongtao Liu**, the Director of World Heritage Research Center in Southwest Jiaotong University, China, presented **“Recovery of Traditional Tibetan Villages Post Earthquake in World Natural Heritage Site Jiuzhaigou Valley.”** He based his presentation on his survey of the damage and recovery status of Tibetan traditional villages in Jiuzhaigou World Natural Heritage after the earthquake in 2017. He explained the situation of the Tibetan villages following the earthquake as well as the problems caused in the process of recovery. Moreover, he stressed the importance of the conservation and development of the villages which show the features of traditional Tibetan architecture, observing that some of these are located in the vicinities of natural protected areas. He emphasized the relationship between the cultural and the natural heritage as well as the development problems heritage communities face. Finally, he stressed the requirements for disaster prevention and mitigation in these traditional villages and in the Natural World Heritage site, as well.

4) **Thao Le**, head of the secretariat of the Cu Lao Cham-Hoi An Biosphere Reserve in Vietnam, presented “**Nature-Culture Linkages in the Cu Lao Cham – Hoi An World Biosphere Reserve.**” He said that the Cu Lao Cham – Hoi An World Biosphere Reserve (CBR) was recognized by UNESCO in 2009 based on natural and cultural values. He added that, at present, these values are facing challenges from disaster threats and social-economic development. For instance, he explained that this area is prone to heavy typhoons and floods, which are impacting the ancient town- a World Heritage site since 1999 and part of the buffer zone of the CBR. These disasters have provoked the collapse of river banks and also eroded beaches. He said that the sediment and pollution from the mainland are attacking and killing coral-reefs and sea-grass beds. Furthermore, he mentioned that there are many development and investment plans in the coastal areas, which are provoking changes to the natural morphology and fragmenting the aquatic habitat, altering the wildlife cycle. However, he explained that the CBR management has been innovative in harmonizing the natural and the human ecology, as was seen with the Marine Protected Area which connected the Hoi An ancient town through effective zoning and management.

5) **Irina Pavlova**, a consultant at the Geohazard Risk Reduction Programme at UNESCO, presented “**Natural UNESCO designated sites as platforms for disaster risk reduction.**” She explained how UNESCO-designated sites (World Heritage sites, Biosphere Reserves, and UNESCO Global Geoparks) promote sustainable development and focus on the protection of natural and cultural heritage or the conservation and sustainable use of biodiversity and geological resources. She said that more than 2000 UNESCO-designated sites may be partly or entirely exposed to natural hazards and extreme weather events, with potential impacts on the communities living in or near the sites, and on their livelihoods. She emphasized that, because of their high cultural and symbolic value, the impact of the loss or damage of a UNESCO-designated site can resonate across the world and she added that these iconic sites have tremendous potential as platforms to share knowledge on Disaster Risk Reduction. She said that many UNESCO-designated sites have community and tourism-oriented programmes that can help to raise awareness about the source of natural hazards, associated risks, and ways to reduce their impact.



*Left: Mr. Jefferson Chua, Philippine National Commission for UNESCO, presenting a case study of Mayon volcano, a site preparing its nomination for the World Heritage List. Right: Mr. Omega, Petrayuna, Krida Wacana Christian University, presenting the case of Siosar Protected Forest in Indonesia.*

The case studies presented on the second day clarified how the interrelations between cultural and natural heritage can be useful for disaster risk reduction. It was emphasized that having a territorial and ecosystem view of the landscape is needed in order to understand the natural phenomena and their connections to the tangible and intangible cultural heritage. It was also explored how the nature-culture linkages could be useful in the context of a potential Mixed Cultural and Natural Heritage site, prone to hazards. Furthermore, the importance of intangible cultural heritage for disaster risk management was pointed out as well as how this could be important for nature conservation. Furthermore, other systems for the conservation of culture and nature were presented, such as Biosphere Reserves and Geoparks.

Participants discussed the following questions in groups:

- How does nature-culture linkages relate to resilience to disasters?
- What makes a landscape vulnerable?
- How can heritage contribute to resilience?

The groups expressed that cultural heritage is a product of adaptation to the environment and that both cultural and natural heritage are products of an evolution together. In that sense, they said that nature-culture linkages relate to resilience because people's resilience consists in their adaptation to their natural setting, which allowed them to accumulate knowledge of nature and to develop coping mechanisms. It was found that the stronger the connection between nature and culture, the stronger the level of resilience. However, they remarked that some events can be so catastrophic that they can compromise the community's and landscapes ability to rebuild. It was also noticed that resilience is context-dependent, as in some places where nature-culture linkages are strong, there may be less capacity or less connectivity, affecting the level of resilience. Furthermore, participants said that nature and culture are supposed to be combined, in that way they can help decrease the vulnerability of particular places. They insisted in that traditional knowledge needs to be considered because people know what to do and have adapted to the recurrent events and hazards in the particular areas they inhabit.

In discussing the vulnerability of landscapes, some participants mentioned that the lack of understanding nature and its connection to the people can increase the vulnerability of a landscape. Moreover, infrastructure development can affect nature, making a landscape vulnerable. They asserted that if nature is respected, the culture can adapt, and people can have sustainable livelihoods. However, some insisted that humans are responsible for making a landscape vulnerable, in that they give differentiated value to landscapes and, therefore, only care if a valuable landscape is vulnerable. Another group added that there are three aspects that can affect a landscape's vulnerability: the lack of management and governance; tourism, because some historic places or natural protected areas are open to tourism and their carrying capacity is not properly controlled; and finally, the lack of maintenance.

Regarding how heritage can contribute to resilience, participants agreed that cultural heritage is a product of adapting to the natural environment, a product of long-term evolution, so heritage can assist people in disasters, through collective memory. Moreover, heritage helps people understand the history of a location's adaptation, for instance, in understanding the ways things were built, so that resources can be better managed and used, and at the same time, survive disasters. Some participants said that heritage is knowledge. What we have learned from the past and how it can be used in a similar event, makes us more resilient. Experience makes people more resilient as well as gives them an identity which can help people rebuild and bounce back better.

Dr. Jigyasu commented on the day of lectures, noting that it was very informative and highlighted some important findings to keep in mind during the workshop. First, he underlined the importance of a territorial approach and said that sometimes, in the cultural heritage sector practitioners tend to look at cultural boundaries, forgetting the larger natural setting. He added that in preparing for disasters, natural boundaries and jurisdictions need to be considered by both sectors, whose ministries have to cooperate. Secondly, he said that even though we need nature-based solutions to protect cultural heritage, and vice versa, we should not look at these as binary but together at their interlinkages. Nevertheless, he added, we need to merge but also keep in mind that each type of heritage needs their own protection and conservation systems because cultural heritage and natural heritage have their specific needs. Thirdly, he insisted that throughout the process, we should not forget the importance of improving the quality of life of the people. Fourthly, he pointed out the need to connect both levels, bottom-up and top-down, and not to forget that these are also important at their own level. Fifth, he said that the discussion on traditional knowledge systems is very relevant, in the context of disasters and resilience, and that it needs to be recognized but also adapted to the current situations. Especially, he noted, we can see how nature and culture have interacted through time by looking at traditional knowledge. Sixth, he said that resilience can be looked at from different perspectives and understandings, like from the people's or nature's point of view, and he insisted that all these perspectives need to be considered. Finally, he said that during the recovery processes there is a need to look at the interlinkages between recovery and the people's livelihoods. He added that beauty cannot be the only criteria for reconstruction, but that the larger set of issues, where nature and culture interact with each other, needs to be considered. Moreover, he insisted that recovery takes its own time and that we need to look at the "in between" periods to help and support the recovery process while it takes place.





*Dr. Maya Ishizawa, CBWNCL Programme Coordinator, explaining the questions for the group discussions.*



*Mr. Hoseah Wanderi, National Museums of Kenya, presenting the results of the group discussion of the second day.*

During the third day of lectures, **Professor Masahito Yoshida**, Chair of the World Heritage Studies Program at the University of Tsukuba, presented the “**Japanese experience on Disaster and Resilience - case studies of Minami-Sanriku and the Historic Town of Sawara.**” He explained that the Japanese archipelago is located at the intersection of multiple tectonic plates and that the people who live on the Japanese archipelago are exposed to natural hazards, such as volcanic eruptions, earthquakes, tsunamis, typhoons, and floods. He said that there are frequent disasters in Japan, some examples being the 2011 Tohoku Earthquake and

Tsunami, as well as other recent events, such as torrential rains in Western Japan and the Great Earthquake in Hokkaido. He focused on the Tohoku Earthquake and Tsunami since this was the main theme of the field work, explaining that the 9.0 magnitude earthquake provoked a tsunami that took the life of more than 20,000 people. Additionally, this event was followed by the nuclear accident at the Fukushima Nuclear Power Plant. He presented how there have been different strategies in different prefectures to build resilience in the affected coastal regions; for instance, some prefectures chose to build big walls to protect settlements and others use the Eco-DRR, leaving the natural sand beach to recover. He presented some of the strategies undertaken in the Minami-Sanriku Town in the Miyagi Prefecture, where cultural and natural heritage have been used as a fundamental resource for the reconstruction and recovery processes. He focused on the establishment of the Sanriku Fukko Reconstruction National Park and explained which of the protected areas have been incorporated into this coastal national park. He pointed out the use of nature and natural heritage conservation for building resilience by promoting eco-tourism. He mentioned the concept of Reconstruction Tourism, which focuses on learning from the disaster and recovery process in Tohoku by sharing the experience of the local community's disaster response and reconstruction. After this, he explained the recovery process of his hometown, the historic town of Sawara in the Chiba Prefecture, which was designated as an Important Preservation District in 1996 for a group of traditional buildings. He explained how the town was affected by the earthquake in 2011, showing images of historic houses and important buildings, and how the community, through the NPO for Ono River and the Sawara Historic Town, had worked since 1991 towards the recognition of Sawara as a historical place. He highlighted that this same organization was in charge of the recovery process of the cultural heritage in Sawara after the disaster, making a survey of the areas affected, and raising funds for their restoration as well as publishing the report of the recovery process. He added that, in 2016, Sawara Town became part of the Japan Heritage Program of the ACA and the Sawara Traditional Festival became part of the Representative List of Intangible Cultural Heritage of UNESCO. Professor Yoshida concluded that resilience is fostered by continuous cooperation among community members through agricultural activities and cultural traditions and that communities are the custodians and stewards of cultural and natural heritage.

Next, **Professor Nobuko Inaba**, from the World Heritage Studies Program, explained the **“Japanese Experience on Disaster and Resilience – Local Governance and Neighborhood Resident Groups.”** She started her presentation by recalling the myths in Japan where people think that earthquakes are caused by a catfish moving under the earth. She added that her presentation would focus on her experience as a staff member of the ACA, in charge of hazard mitigation for architectural heritage, and the role of communities in both heritage conservation and risk preparedness. She showed images of different disasters that occurred in Japan and how these affected historical buildings. She said that when the ACA staff would survey the state of the historical buildings damaged, local people would always ask “What are you doing here while people are struggling to live or die?” She pointed out that this represents their lack of understanding of heritage and its value. She then explained the lessons learned for cultural heritage practitioners through her experience with the disaster response in Japan. She said that the first lesson learned is that no distinctions should be made among the heritage types for an effective rescue during the disaster response. The second lesson is to prepare databases for a quick response to disasters. The third lesson learned is that it is necessary to consider historic landscapes and cultural resources carefully since large-scale recovery and redevelopment works must start at once on a scale that is unusual. A fourth lesson is the need to integrate heritage with wider disaster preparedness and emergency management systems. The fifth lesson is that disaster relief agreements need to be established between local governments and municipalities. She cited an excerpt from a statement issued by ICOMOS Sri Lanka, after the tsunami in 2005, where it was recognized that conservation and restoration are very important for preserving the memory of the past and building the future. She emphasized how important the conservation of cultural heritage is for the socio-psychological and socio-cultural needs of local communities in the event of disasters. She then explained the concepts of *machinami hozon* and *machi-zukuri*, as community-based systems for the conservation of cultural heritage. She explained the history of each of these systems, how they work, and their evolution. She highlighted the importance of the role of neighborhood associations that are the result of a matured local governance, the support of comprehensive and autonomous local governance by the national legal framework, and the recognition of neighborhood associations by the national system. She also explained the Disaster Countermeasures Basic Act of 1961, revised in 2018, where heritage was integrated. She pointed out that a more integrated approach to heritage is needed where tangible and intangible manifestations of our culture are linked to the surrounding nature. She added that heritage has an important role in local sustainable

development. In Japan, new laws and national programs for territorial/landscape conservation and local community revitalization, jointly implemented both by heritage and spatial/land-use control authorities, are being undertaken. She finalized her presentation, explaining that the last revision to the Law for the Protection of Cultural Properties, integrates a provision for municipal-level master plans for the recognition (heritage resource mapping), conservation, and utilization of heritage aiming at their incorporation into the wider local plans.

Finally, Dr. Maya Ishizawa, the CBWNCL Programme Coordinator, explained the itinerary and content for the field trip to the Tohoku region. She presented information about the general area and the different sites that were going to be visited as well as the layers of protection that converge in each one. The first site to be visited was Hiraizumi, World Heritage 2004, inscribed onto the World Heritage List under criteria (ii) (iii) (iv) (vi). The second site to be visited was Sanriku Fukko Reconstruction National Park, basically the area of Minami-Sanriku Town, and the Shizugawa Bay, a tentative Ramsar site, also part of the National Park. The last site to visit was Matsushima, Place of Scenic Beauty. Besides explaining the program for the site visit, she explained the content of Module 4, which was focused on the working groups reflections on theory and practice.



*Left: Professor Masahito Yoshida, Chair of World Heritage Studies at the University of Tsukuba, explains the Japanese Experience in Disasters and Resilience with two case studies. Right: Professor Nobuko Inaba, from World Heritage Studies at the University of Tsukuba, explains the Japanese Experience on Disasters and Resilience from the perspective of Local Governance and Neighborhood Resident Groups.*

Participants' questions were focused on better understanding the Japanese system for the conservation of natural and cultural heritage. It was remarked that the heritage conservation and governance systems in Japan involved local communities in protection, conservation, and post-disasters recovery, which was highlighted as an important lesson for other Asia and Pacific countries.

Following the lectures, five participants presented their case studies:

- 1) **Xavier Benedict**, a professor at MIDAS Architecture College in India, presented **"The Confluence of Environment, History and Cultural Landscape of Pulicat Lagoon."** He explained that Pulicat Lagoon is the second largest body of water in India, located in Northern Chennai. He affirmed that it is a testimony of living heritage, integrating monsoon heritage and the cultural values of South India. He emphasized that this old lagoon is one of the five wetlands which attracts monsoon clouds, bringing rain to the South-East Coast. It has an important place in the world maritime history, as it linked transnational shared heritage. He brought attention to the values of this wetland, such as the traditional fishing practice called padu-system. Moreover, he said that Pulicat absorbs shock during natural disasters with the support of the Buckingham Canal, that works as a lifeline for this Coast. However, he stressed that the sustainable living and the lagoon biodiversity are endangered due to development and climate change, suggesting that holistic strategies should be used for the lagoon's cultural landscape restoration, including the establishment of an independent authority in charge of the management and conservation of this area.
- 2) **Ryan Yamane**, a representative of Hawaii State Legislature in the US, presented **"Kaho'olawe Island Reserve."** His presentation described the history of Kaho'olawe and options to support this island's long-term restoration and resource management. He explained that Kaho'olawe faces significant natural and man-made threats, for instance, bomb ordinances still remain on land and in the sea and, due

to significant wind and rain erosion, there is very little top soil for vegetation growth. He added that Kaho'olawe is directly impacted by climate change and has no fresh water access. With temperatures rising, he explained that it is becoming much more difficult to plant native Hawaiian vegetation for reforestation. He proposed the use of cultural heritage conservation as a means to increase the resilience in Kaho'olawe Island.

- 3) **Andrea Margotta**, a technical specialist at the Cultural Heritage National Service of the Ministry of Culture of Chile, presented **"Rapa Nui World Heritage Site – Initiatives and Challenges for the Risk Management."** She explained that the Rapa Nui National Park, on Easter Island, is a World Cultural Heritage site strongly related to the natural environment and with important risk factors. For instance, she mentioned that some studies have been conducted in recent years to monitor coastline erosion and the effects of climate change on the island. Moreover, she added that fires are also a threat and disaster prevention related to earthquakes and tsunamis is being worked on. She said that since 2017, the National Park administration is carried out by the Polynesian Indigenous Community Ma'u Henua, created in 2016 and constituted by members of the Rapa Nui indigenous community, and suggested that the role that the local community can play in disaster risk management, based on their local knowledge, is an interesting aspect to explore.
- 4) **Radhika Kotari**, the director of the Jungwa Foundation in India, presented **"Nature-Culture Mapping in the Trans-Himalayas."** She introduced Tso Moriri-Korzok (Ladakh-India), located in the Trans-Himalayas at the edge of the Tibetan plateau, as a unique biodiverse wetland above 4500 masl. She explained that it is a locally protected area, an international Ramsar site, and on the Tentative list for World Heritage. She added that the Changpa, nomadic pastoralists, have inhabited this landscape for several centuries and display a complex and strong relationship with nature that is evident in their way of life. She emphasized that the region is highly vulnerable to climate change with a decrease in snowfall, extreme climatic events, warming trends, and changes in the productivity of grasslands which affects both wildlife and herding practices. Moreover, she said that mass tourism, geopolitical conflicts, and the lack of coping or adaptation strategies are further increasing the vulnerability of ecosystems and breaking the social-cultural fabric of the Changpa nomads. She presented her project that aims at reexamining Tso Moriri-Korzok in order to map spatial overlaps between Changpa and the wetland ecosystem to showcase interdependencies and interactions between nature and cultural systems. She proposed to use this mapping as a guide for landscape management and conservation with the onset of these socio-ecological changes.
- 5) **Lance Syme**, the principal of Kayandel Archaeological Services, presented **"The Greater Blue Mountain World Heritage Area."** He said that the Greater Blue Mountains World Heritage Area (GBMWH) is managed as a wilderness area and is subject to frequent incidents of bush fire or wild fires. He added that wild fires have the potential to impact large tracts of land within the GBMWH and once started there are very hard, if not impossible, to stop. He emphasized that these fires have a catastrophic effect on the natural environment and also on the Aboriginal rock art. He added that recently the GBMWH has also been subject to proposals for an increase to the dam wall height of the major water supply dam for Sydney. He warned that this increase will result in thousands of kilometers of additional land being subject to inundation by the dam waters.

The presentations of the day focused on sites that showed clear interrelations between natural and cultural values. Moreover, most of the sites presented showed the critical role of local communities. The importance of identifying and respecting traditional and local knowledge systems was emphasized by several presenters. Nature-culture linkages were considered an important approach for all of the sites and was already embedded in the community-based management of the environment and their resources.

At the end of the day, participants reflected on the following question:

- How does this relate to the specific context of the Asia Pacific region?

Participants concluded that the Asia Pacific region can work together on sharing the knowledge on how to relieve disasters. They said that the region is a confluence of hazards and vulnerabilities. As part of the "Ring of fire" there are seismic hazards, but also a high frequency of meteorological hazards. In terms

of vulnerabilities, they noted that most of Asia and the Pacific countries are developing states, with high population density, and difficult socio-economic conditions. Furthermore, they mentioned that settlements are established along the coastlines, as seen in several case studies, and that island states must deal with inaccessibility. Thus, they considered that the Asia Pacific, as a region, shares a hazard-prone context and vulnerability at physical, social, and economic levels.

Nevertheless, as a very diverse region, they agreed that each country has to explore how the nature-culture linkages are expressed in their heritage in order to use this as a basis for developing policy at different levels, in particular, for disaster risk management. Asia Pacific is rich in natural and cultural heritage and holds a large multicultural diversity, which has potentials for building resilience. They emphasized that each participant has to bring these concepts to the field and look for the support of their governments to implement plans where they can apply lessons from the region in their policy-making processes. Moreover, they highlighted the need of capacity building, raising awareness of disasters, and the need to strengthen nature-culture linkages for risk management.

Furthermore, they considered that heritage has an important place in the life of the people in Asia and the Pacific and that there are no clear distinctions between nature and culture. They agreed that governments should explore more on the use of natural and cultural resources, considering their interrelations for development and resilience.

However, they also pointed out that there are differences in political systems and sometimes there is a disconnect between national and local levels. Nevertheless, they suggested that traditional knowledge systems should be incorporated into institutional level strategies. They considered that the concept of resilience exists in local communities and in diverse community practices in the region. They recalled the people-centered approach and insisted that disaster risk management could benefit from important traditional and local knowledge, adding that people move as a collective and that this is what makes them resilient.

Finally, Ms. Buckley summarized the three intensive days of lectures, highlighting the progressive learning and friendly environment built among the workshop participants and resource persons. She added that participants' case studies gave a very diverse and comprehensive vision of the situation in Asia and the Pacific and beyond and that this exchange has made everyone richer. She insisted that we need to look at applying this learning on the ground. She said that we need to build our own models, stretching how nature-culture co-create the landscapes we work on. Moreover, she mentioned that we need to answer, through our work, what it means to think holistically across the conventional nature-culture divide. She acknowledged Dr. Jigyasu's and Ms. Murti's expertise on disaster risk management from both perspectives, the cultural and the natural heritage, and how this knowledge can be combined to provide us with a good framework. She also said that we need to focus on local co-management and governance and that we need resilience all the time, whether or not there is a disaster. She added that we need to explore the components of resilience more. After thanking the resource persons for their participation and the organizing team, she stated that practice leads to change and practitioners can change what governments do through their practice, thus, she encouraged participants to be agents of change, as they work with communities, landscapes, and sites. They can make a change by bringing nature and culture into a single frame and bring resilience into every part of effective management.





*Working groups during the third day.*



*Mr. Xavier Benedict, MIDAS Architecture College, presenting the results of the group discussion of the third day.*



# MODULE THREE:

MANAGEMENT, IMPLEMENTATION,  
AND GOVERNANCE IN DISASTERS AND RESILIENCE



Module 3 lasted for four days, during which the participants visited the Tohoku region, located in the North-East of Japan. This region was strongly affected by the Great East Japan Earthquake and Tsunami, in March 2011, and the group visited several sites that had been damaged as well as the projects related to the post-disaster recovery that were under way.

The first stop of the field visit was **Hiraizumi – Temple, Gardens and Archaeological sites representing the Buddhist Pure Land**, cultural property inscribed on to the World Heritage List in 2011, in the aftermath of the disaster, under criteria (ii) and (vi). Participants visited the Buddhist Temple of Chūson-ji and Motsu-ji, temple and gardens. They had the opportunity to see a very important National Treasure of Japan, Konjikido, the Golden Hall, that used to be located outdoors and, currently, is protected under a concrete structure. They also visited the Hiraizumi World Cultural Heritage Center, where they attended a lecture by its Director, **Mr. Tsukasa Oikawa**.

During the lecture, Mr. Oikawa explained the values of Hiraizumi and its different components. He detailed the recovery of one of the stones in the garden of Motsuji. He explained how this stone's position was affected by the 2011 earthquake and that they had to study and follow, with precision, its original inclination in order to re-establish it.



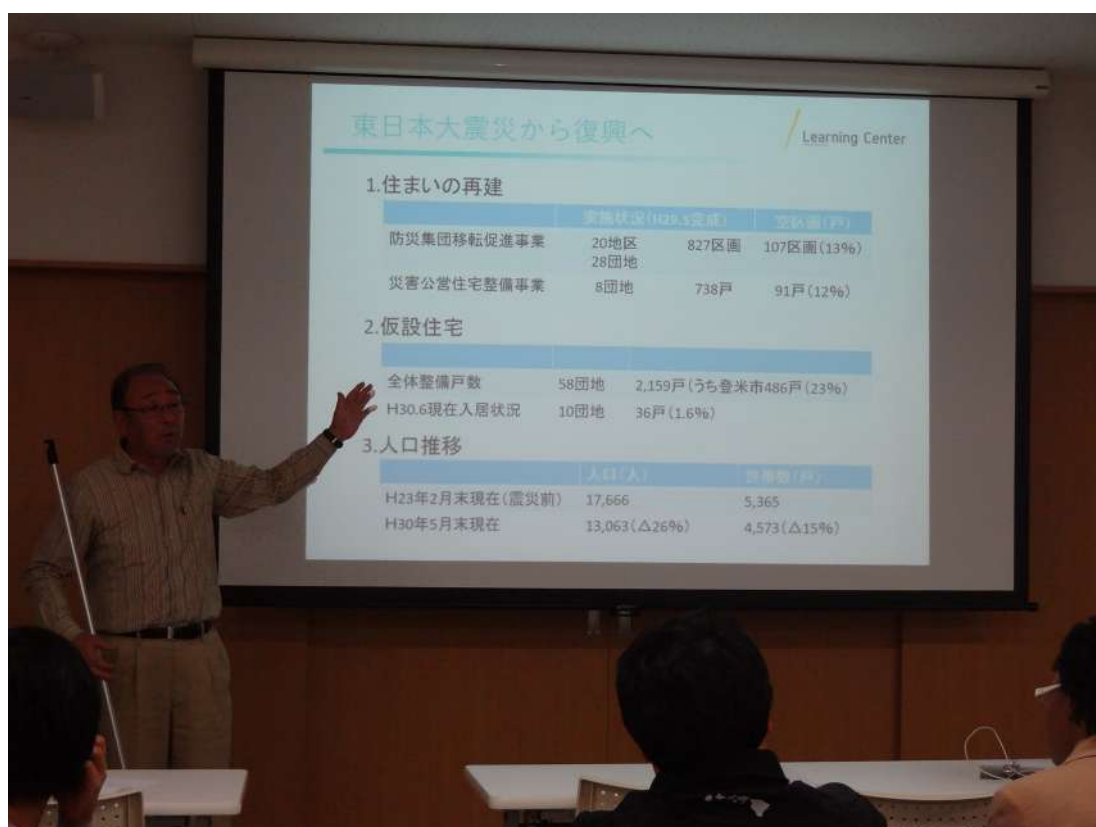
*Group photo at Hiraizumi World Heritage Site.*





*Lecture by Mr. Tsukasa Oikawa, Director of Hiraizumi World Cultural Heritage Center. Interpretation was in charge of Professor Nobuko Inaba, University of Tsukuba.*

After the visit, the group arrived at the accommodations in the Iriyado Learning Center in Minami-Sanriku town. Here, Mr. Kenji Endo, Director of the Iriyado Learning Center, explained to the participants the impacts of the disaster in Minami-Sanriku Town and the process of post-disaster recovery, from which Taisho University created Iriyado Learning Center as a space for researchers, visitors, and people interested in learning about disaster risk management and the specific experience of post-disaster recovery in Tohoku.



*Mr. Kenji Endo explaining the impacts of the disaster and the process of post-disaster recovery of Minami-Sanriku town.*

Participants learned that Minami-Sanriku was a very lively town, where many cultural events were performed throughout the year, and where the relationship between people and the sea was very positive. The sea coast was frequented by fishermen and its beaches were popular in the summer. After the earthquake and tsunami in March 2011, life in Minami-Sanriku changed drastically. A large percentage of the population perished or disappeared because of the tsunami. The relationship with the sea was greatly affected. Nevertheless, Mr. Endo explained how the post-disaster recovery process has involved local

communities and their needs, both material and spiritual. Several projects for recovering areas devastated by the tsunami are underway. There are initiatives to restore natural areas, creating more green public spaces in between the coastline and the settlements, as well as reconstructing the local market, which used to be a core of community life in Minami-Sanriku. The new design and vision serve to revitalize the community, recovering their traditional space of exchange, and boosting local businesses.

On the second day of the field trip, participants started the day with a discussion led by **Dr. Gamini Wijesuriya** and **Professor Masahito Yoshida** in order to clarify the situation in Minami-Sanriku Town and to understand how to look at this experience through the lens of integrating nature and culture in heritage conservation, applied in a post-disaster recovery strategy. Furthermore, they gave elements to the participants to reflect on during the working groups discussions.



*Dr. Gamini Wijesuriya, former Project Manager of ICCROM – Sites Unit, and Professor Masahito Yoshida, Chairholder of the UNESCO Chair in Nature-Culture Linkages at the University of Tsukuba, leading the discussions on learning from the experience in Minami-Sanriku town.*

The group visited the Minami-Sanriku Town Hall, where they attended lectures by municipality officers. First, **Dr. Takuzo Abe**, a Researcher of the Division of Agriculture and Fishery of Minami-Sanriku town, talked about the natural values in the area and the initiative to inscribe the Shizugawa Bay under the Ramsar Convention for Wetlands. Second, **Mr. Akihiro Dazai**, the Director of Sustainability Centre of Minami-Sanriku town, presented the town's reconstruction vision after the 2011 Great East Japan Earthquake and Tsunami.



*Left: Mr. Takuzo Abe, Researcher of the Division of Agriculture and Fishery of Minami-Sanriku town. Right: Mr. Akihiro Dazai, Director of Sustainability Centre of Minami-Sanriku town, answering questions from the participants at the end of their lectures at the Town Hall.*

During lunch time, participants visited **Keimei Maru**, a farmer and fisherman restaurant owned by **Ms. Sakiko Miura**. There, participants listened to her testimony detailing her experience of the tsunami and how she lost her house and restaurant. Ms. Miura shared her particular anecdote: her restaurant had a couple of fisherman floats hanging in the entrance. These were used by his husband, a fisherman in Minami-Sanriku, and the ideograms of his name were written on them. These floats were washed away by the tsunami, however, a few months later some friends told her that her floats had appeared on the news. They had been found in Alaska, were brought back to Japan by airplane and delivered to her in a special ceremony. She said that after being affected by the loss, this event gave her strength to recover her restaurant and continue with her life, in the same place. Ms. Miura is one of the examples of resilience that participants had the chance to listen to.

After lunch, participants visited the **Kaminoyama Hachimangu Shrine**, where they received a lecture from **Ms. Mayumi Kudo**, a priestess of the shrine. Ms. Kudo explained to the participants how the tsunami affected her community and how she used her role as a priestess to organize the community and involve community members in the participative processes of the reconstruction of their town. She explained how they worked with Japanese universities' professors, researchers, and students, as well as with foreign universities, like the Massachusetts Institute of Technology or Harvard University from the United States, in re-designing the coastline and the main public areas affected by the tsunami. She also explained how she regenerated the traditions of the *Kiriko*, which are paper handicrafts that are used for communicating with the Gods. Furthermore, she talked about the illustrations and books she is writing in order to communicate disaster risk preparedness to children.





*Group photo at the Kaminoyama Hachimangu Shrine, where participants received a lecture from Ms. Mayumi Kudo, priestess of the shrine.*

On the third day, participants went to the Marine Visitors Centre. **Mr. Yasushi Niimura**, a Park Ranger at Sanriku Fukko Reconstruction National Park, gave a lecture about the reconstruction project after the tsunami. Then, **Mr. Takuya Hirai**, Director of the Marine Learning Institute, presented the role of ecotourism in the recovery after the tsunami.

After the lunch break, **Mr. Ken'ichi Muraoka**, a fisherman, member of the Council of Minami-Sanriku town, and chairman of the Association for the preservation of Gyozanryu Mitobe Shishiodori (Deer dance), shared his testimony on how the life of fishermen was affected by the tsunami in 2011. He explained his experience and his work on promoting different activities to recover the livelihoods within Minami-Sanriku, such as the regeneration of oyster farming and the recovery of the local intangible heritage of the deer dance.

Finally, the delegation visited the **Togura Shrine**, located on a hill that the tsunami did not reach and where some people's lives were saved. On this hill, participants could see the memorial stones that serve as reminders of previous tsunamis. On one of the stones it is possible to read: "Beware that when there is a big earthquake, tsunami may follow." The role of these stones was discussed, and their utility questioned, as tsunamis keep affecting this coastal region and people have still been doubtful to look for shelter.



*Left: Mr. Yasushi Niimura, Park Ranger of Sanriku Fukko Reconstruction National Park. Right: Takuya Hirai, Director of the Marine Learning Institute.*



*Mr. Ken'ichi Muraoka explaining about the role of intangible cultural heritage in the process of post-disaster recovery.*



*Discussion sessions assisted by resource persons at Iriyado Learning Center.*

On the fourth day, participants left the Minami-Sanriku town and visited the **Historical Museum of Jomon Village**, in Oku-Matsushima. They received a lecture from **Mr. Hiroki Sugawara**, curator of the Museum, who took an archaeological approach in explaining the lessons gained since the prehistoric past, in the process of disasters response and recovery. Participants learned that areas that were affected by the tsunami in 2011 were not occupied in the past by the Jomon people, who used to live on the top of the hills and the islands. Settlements were not developed next to the sea, as there was local knowledge on the sea level changes, tidal movements, and possible tsunamis. It was concluded that we need to look more at history to learn about landscapes and about where to settle to prevent disasters. Moreover, Mr. Sugawara explained how the scenic landscape of Matsushima had to be protected when new settlements were being constructed in the area, after many coastal settlements were completely washed out by the tsunami. The group visited some of the new settlements and some of the walls that were constructed in certain villages along the coast, to protect them from a potential tsunami. Discussions arose on how useful those walls may be and how they affect the relationship between the people and the sea.





*Mr. Hiroki Sugawara, Director of the Historical Museum of Jomon Village, Oku-Matsushima presenting the legacies of the Jomon people in regards to the process of response and recovery after tsunamis. Professor Nobuko Inaba, University of Tsukuba was in charge of interpretation.*



*Group photo at Matsushima, Place of Scenic Beauty. (Photo: Namiko Yamauchi)*





# MODULE FOUR:

## REFLECTION ON THEORY AND PRACTICE

Module 4 comprised of two days of reflection on the theory and practice gained during the workshop. Participants were divided into interdisciplinary working groups to identify the key issues for disasters and resilience, reflecting on both natural and cultural values of the places visited during the field trip (See Box). Finally, each of the groups gave a presentation. Additionally, it was requested that each participant complete an individual reflection on what lessons were learned from the workshop and from the Japanese experience, that they can bring back to their home countries and, especially, to their sites.

### WORKING GROUPS ASSIGNMENT

#### Group reflection

1. Mapping values and the interrelations of nature-culture within the sites
2. Assessment of the sites: proposals/lessons learned and recommendations

#### Individual reflection

3. Lesson that can be applied to your country or site

#### Presentation

20 minutes group reflection  
+ 3 minutes for individual reflections

Below, the outcomes of the exercise are reported by the students of the University of Tsukuba that joined the workshop and formed part of the working groups. Excerpts of their written reports, where they explained their working groups process of analysis and results, are reproduced. In the case of Group 2, two reports are included as two students formed part of this group. In addition, individual reflections of each of the group members are summarized as general lessons learned for each group.

### Group 1<sup>1</sup>

**Members:** Xavier Benedict (India), Sazzad Hossain (Bangladesh), Hongtao Liu (China), Yllah Okin (DR Congo), Irina Pavlova (Russia), Ryan Yamane (Hawaii-US)

#### Points of discussion/Questions

After discussing theoretical notions and sharing experience about nature-culture linkages in disasters and resilience, we had an experience in the field which consisted of meeting quite a large number of people that were affected by the 2011 Tsunami in Shizugawa region, in the North-East part of Japan. The results of both lectures and field practice were summarized into group work. My group work discussion points are concerned with mapping values and the interrelations of nature-culture in the visited sites of the Shizugawa region, assess the sites by bringing out some proposals, lessons learned, and recommendations. We had to see how the people we consulted with in the affected communities could be resilient after the Tsunami by relying on nature-culture linkages, how effective this was, what we can learn from their experience, and what we think should be the correct choice or attitude in facing the same issues.

<sup>1</sup> Report by Yllah Okin, Master Student of Life and Environmental Sciences, University of Tsukuba

### Focus of analysis

My group and I focused on analyzing and mapping the values of some sites and people we met, seeing the role of those sites and people in terms of nature-culture linkages and resilience to disasters.

For sites analysis, we pointed out the Chusonji temple, the Kaminoya Hachimagu shrine, the Togura shrine and Matsushima, place of scenic beauty. For people met (that we categorized as intangible heritages) we highlighted the strengths, weaknesses, and challenges they faced through building up disaster resilience and strengthening their communities. The three people we focused on were: Ms. Mayumi Kudo, a priestess of the Kaminoya Hachimagu shrine, Mr. Kenichi Muraoka, a fisherman who played an important role in psychological, financial, and social recovery of his community after the 2011 Tsunami, and Ms. Sakiko Miura, a lady who owned a restaurant that was strongly destroyed by the same Tsunami.

### Analysis

From the shock of ideas comes out the light. Our group was such a diverse one, according to people's backgrounds and experiences, but we could figure out how to combine our points of views and learn from one another. Analyzing step by step, we learned that:

- The Chusonji temple was in a high landscape that kept it unaffected by the Tsunami;
- The Kaminoyama Hachimangu shrine was not affected by the 2011 Tsunami;
- The Togura shrine survived 3 consecutive Tsunamis and only the lower part was affected by the 2011 one. It was a secure place for people in previous events and they left instructions and messages on stones;
- Matsushima, place of scenic beauty, is exposed to many natural hazards though it is among the most beautiful landscapes in Japan and known for tourism, agriculture, and fishing. It has a natural protection to natural hazards due to the topography and orographic effect and it contains a cohesive community with a considerable level of preparedness to natural hazards;
- The priestess, Ms. Mayumi Kudo, as a spiritual leader could use old and new relationships within her community to communicate and make up strategies to build back her community after the 2011 Tsunami. She could use nature and culture to share her ideas and help her people to psychologically recover, though she had time and resource limitations sometimes;
- The brave fisherman, Mr. Kenichi Muraoka, was a councilman and respected by his community. Using that, he believed and shared his vision with his community. Moreover, he used traditional dance and songs to help his people recover from and remember the 2011 Tsunami. He also able to incorporate the younger generation into the recovery process.
- Ms. Sakiko Miura, the owner of the restaurant that was destroyed by the 2011 Tsunami, had the courage to build it back in the same place. She wanted a sad moment to go away by building a new life. Luckily, a piece of her restaurant on what its name was written, was brought back to her from Alaska and she used it as a symbol of resilience to 2011 Tsunami.

### Outcomes

There are so many lessons to learn from those experiences. We summarized the most of them as followed:

- Resilience is not taken for granted, it is learned, enhanced, strengthened, and refreshed in everyday life;
- Traditional knowledge is a key part of disaster resilience, people should not neglect their culture and identity because they play a golden role. The example of the Jomon ancient people, in Matsushima bay, is proof that, in general, ancient people knew better about the issues we are currently facing and knew how to mitigate and prevent them;
- The use of nature-based solutions regarding natural hazards and cultural sites protection is effective, but much more effective when it is combined with cultural aspects. This to say that nature-culture linkages are effective to increase disaster resilience (as in the example of the priestess and the fisherman mentioned above);
- Community cohesiveness is a key element in disaster resilience. It is difficult to act individually but easier when all voices and all stakeholders are considered;
- Overconfidence to push back nature boundaries may be dangerous and decrease disaster resilience;
- Sometimes policymakers consider safety before social aspects. For instance, in the case of wall construction along the beach in Matsushima bay, it did not please the community and affected their relationship with the ocean. We did think the wall construction was not a good decision.



We recommended to ourselves that we should encourage the transmission of traditional knowledge in our communities by storytelling and organizing cultural activities. This would increase disaster resilience and contribute to protecting cultural sites. We should reinforce Eco-DRR approaches in ecosystem restorations. And most importantly, we should stay open-minded when it comes to decision making, community participation, disaster resilience, nature-culture linkages, and not see things only by our background, but more widely.

At the beginning of the workshop, it was personally heterogenous to link nature-culture with disaster resilience. Theoretical lectures, field practice, and group work made everything clear to me. I see a bright future in connections between cultural heritage and nature conservation institutions, especially in increasing people's disaster resilience around the world and I am glad to notice that I can think more holistically when addressing natural hazards and disasters' issues.



*Irina Pavlova (Russia), Yllah Okin (DR Congo), Sazzad Hossain (Bangladesh), Hongtao Liu (China), Ryan Yamane (Hawaii) and Xavier Benedict (India) preparing their presentation during the working groups session*

#### Summary of lessons learned:

- There is no real divide between nature and culture when observing the field experience.
- Education and schools need to bring nature-culture-people together to reinforce community values and to support the maintenance of linkages.
- There is a need of linking policies with different ecologies and developing local frameworks that are context-specific.
- There is a need of integrating cultural values into the natural sciences work.
- Nature-culture linkages can help in decreasing vulnerability to hazards by connecting communities to their memory, their identity, their relationship to nature, and their traditional knowledge.
- People can use their cultural and natural heritage for rebuilding processes by promoting cultural practices that support community cohesiveness and by using nature-based solutions to protect communities from hazards while restoring nature.
- Community leaders can be vehicles for using nature-culture linkages in post-disaster recovery and conserving natural and cultural heritage as they are important voices of the community and can convey the messages to larger audiences and provoke change at the local level.
- There is a need to listening to local communities', their experience, and local knowledge in order to learn from resilience.
- Traditional knowledge is very important for the regeneration processes as it collects memories from previous experiences and historical understandings of the local environment, as well as it conveys the cyclical nature of hazards.
- Quick responses to disasters are not necessarily a sustainable solution when they do not incorporate

reflections on nature-culture linkages and the relationship between people, communities, and their environment (e.g. the large concrete walls constructed to protect people from tsunamis along the Tohoku coast).

## Group 2<sup>2</sup>

**Members:** Rohayah Che Amat (Malaysia), Jefferson Chua (Philippines), Thao Le Ngoc (Vietnam), Ola Mamoun (Sudan), Andrea Margotta (Chile), Lance Syme (Australia), Alula Tesfay (Ethiopia)

### REPORT 1.

To come up with the analysis and reflection on the sites we visited in Tohoku area, we first listed out the question we needed to answer as a group. The questions were as follows:

1. Which sites should we focus on?
2. What are the attributes of each site?
3. To whom are the values important?
4. Who the decision-makers are/ who manages those values?
5. How does this relate to resilience?
6. What are the recommendations from our observation?

Later, we listed out the main sites and projects on our visit and the main clusters were Hiraizumi, Minami-Sanriku Resilience Landscape (name assigned by the group), and Sanriku Fukko Reconstruction National Park. These sites were split into three subgroups and the ideas were brainstormed. The outcomes were later added together again in the following table:

	Culture	Nature	Resilience
Hiraizumi	1. Sacred places on the top of mountain Mount Kinkeisan which represent Buddhism theology; 2. Emphasis on purification and aesthetics; 3. Physical and spiritual elements in the garden	1. Surrounded by a natural Japanese setting and landscape; 2. Harmony with nature derived from Shinto beliefs; 3. Scenic beauty represented in the garden	Religious and spiritual values of Shintoism and Pure Land Buddhism
Minami-Sanriku Resilience Landscape (Ramsar site, Town, Shrine)	1. Social capital as a Shinto priestess; 2. Traditional fishing culture and practices; 3. Maintenance and transmission of the community's collective memories through generations	1. Shinto beliefs and traditions; 2. Environmental diversity; 3. Natural hazards	Memorialization and trauma recovery through oral traditions increases the capacity for resilience
Sanriku Fukko Reconstruction National Park	1. Traditional settlement in line with rich cultural folks, cuisine, and architecture; 2. Intangible heritage of the community	1. Scenic beauty of the greater landscape; 2. Nature as inspiration; 3. Wildlife diversity	Integration of traditional and contemporary community participation models

<sup>2</sup> Report 1 by Alula Tesfay, Doctoral student of World Heritage Studies, University of Tsukuba; and Report 2 by Ola Mamoun, Master Student of Life and Environmental Sciences, University of Tsukuba

Our recommendations for each site were as follows:

1. Hiraizumi: More comprehensive interpretative facilities demonstrating the links between natural and cultural heritage;
2. Minami-Sanriku Resilience Landscape:
  - (1) to integrate nature-based solutions to hard infrastructure, similar to the priestess' efforts;
  - (2) further dialogue on issues of intercultural exchange;
  - (3) for the Ramsar site: bird-watching and other ecotourism facilities, protection of the spawning and nursery area for fish and other animal species by integrating these into the management plan;
3. Sanriku Fukko Reconstruction National Park:
  - (1) Carrying capacity evaluation;
  - (2) Create a platform for different sectors to meet, discuss, and share different kinds of knowledge (traditional fishery knowledge, scientific knowledge, community responses, and government plan);
  - (3) Create avenues of co-management of the natural resources (water, biodiversity and the culture for building the linkage of natural and culture).

## REPORT 2.

The main outcomes were focused on how the natural-culture linkages are reflected in the resilience as a contributor to strengthen the different listed sites.

For Hiraizumi, the group saw the cultural values represented in the sacred places on the top of Mount Kinkeisan (Buddhism theology), surrounded by the natural Japanese setting and landscape in harmonic existence of all the elements derived from Shinto beliefs. In addition, the scenic beauty represented in the garden and the emphasis on purification and aesthetics and the physical and spiritual elements in the garden. Therefore, the group agreed that the religious and spiritual values of Shintoism and Pure Land Buddhism are the core of the Hiraizumi site.

The group used the same way to analyze what we called the Minami-Sanriku Resilience Landscape (which included the Shizugawa bay, proposed as Ramsar site, the Minami-Sanriku Town, and the Kaminoyama Hachimangu Shrine) finding out that the memorialization and recovery from trauma through oral traditions increases the capacity for resilience.

Sanriku Fukko Reconstruction National Park represented a clear integration of traditional and contemporary community participation models as a successful story and an adaptive model for resilience.

The group recommendations focused on building and strengthen the existing resilience based on nature-culture linkages that each site has by addressing questions, issues, or concerns about the different properties and practices.

For Hiraizumi, the group saw that the development of more comprehensive interpretation facilities to demonstrate the links between natural and cultural heritage will enhance the existing recovery capacity. While Minami-Sanriku needed more focus on integrating nature-based solutions instead of hard infrastructure, similar to the priestess' efforts; moreover, further dialogue on issues of intercultural exchange were needed; and bird-watching and other ecotourism facilities for the Ramsar site could be developed, as well as protection of the spawning and nursery area for fish and other animal species by integrating these into the management plan. Sanriku Fukko Reconstruction National Park analysis showed the need for carrying capacity evaluation, creating a platform for different sectors to meet, discuss, and share different kinds of knowledge (traditional fishery knowledge, scientific knowledge, community responses, and government plan) and creating avenues of natural resources co-management (water, biodiversity and the culture for building on linkages between nature and culture).

## Summary of lessons learned:

- There is a need for a holistic approach to landscape and resilience analysis.

- Under time pressure, such as in the case of disasters, it is important to work together and collaborate among different sectors, stakeholders and disciplines.
- Nature-based solutions can be used in other countries of Asia and the Pacific, and beyond.
- Cultural sites are linked to the landscape they are embedded in and its natural elements.
- The nature-culture and people-centered approaches are more difficult to apply in urban spaces.
- There is a need to invest in resilience, in knowledge, and in raising-awareness.
- Importance to work in interdisciplinary teams with members of different age and different types and level of experience.
- Nature-culture linkages are needed in the thinking and approaches of the government and its institutions.
- Ecosystem approach is fundamental for reducing disasters because it is necessary to think beyond elements but about relationships, especially, relationships to nature and natural hazards.
- Traditional knowledge has a fundamental role during recovery processes (e.g. Japanese communities use of their traditions)
- Experts, planners, managers have to involve people from communities in preparedness and recovery processes.
- There is a need to learning to communicate from the side of heritage professionals for developing a mutual understanding with communities and with the government.
- There is a need of using comprehensive approaches in risk preparedness plans.
- Holistic and people-centered approaches go together and need to be applied when thinking about landscapes, heritage and resilience to disasters.
- There is a need of integrating nature-culture linkages at policy level.
- There is a need to reinforce local-based management.

### Group 3<sup>3</sup>

**Members:** Kou Huaiyun (China), Radhika Kothari (India), Petrayuna Omega (Indonesia), Delmaria Richards (Jamaica), Hoseah Mwangi Wanderi (Kenya), Bohingamuwa Wijerathne (Sri Lanka)

#### Points of discussion and focus of analysis

The objective of Group 3 sessions was to discuss and try to gain a complete understanding of nature-culture linkages from the sites visited. The examination of the sites and sessions with relevant stakeholders enhanced our practical experiences for better heritage management conservation. The group was able to fully understand vulnerabilities in Japan and, in particular, the sites within the region studied. We understood that post-tsunami disaster rebuilding and resilience response is a difficult but necessary undertaking. When natural hazards occur, it is important to act quickly and carefully considering people, property, plus natural and cultural heritage. Community members as well as practitioners within nature-culture arenas should utilize the nature-culture linkage in both pre and post disaster times as a response mechanism to strengthen communities.

#### Analysis

The sites visited included: Hiraizumi World Heritage Site (Chusonji – Buddhist temple and Motsuji-Buddhist temple and garden), Sanriku Fukko Reconstruction National Park (Kamiyama Hachimangu Shrine, Marine Visitors Center and Togura Shrine) and Mastushima, place of scenic beauty (Historical Museum of Jomon Village in Oku-Matsushima). All sites were examined separately on the basis of their natural and cultural values then specific issues as well as treats to each site were examined. Lessons learned were discussed then recorded, finally some recommendations were made for group inference.

In consideration of the natural aspects close attention was placed on aesthetic values, biodiversity, ecosystems services, and geological processes. For cultural evaluation historical, cultural, spiritual, religious, and social values were underscored. The group noted all sites involved are susceptible to natural hazards because of their location. Japan sits on top of four tectonic plates. Additionally, developmental, social, cultural, and climatic changes added to their vulnerability.

<sup>3</sup> Report by Delmaria Richards, Master Student of Life and Environmental Sciences, University of Tsukuba



Hiraizumi World Heritage Site has strong cultural values and meanings reflective in its history, spiritual setting and natural landscape. The Buddhist cosmology of pure land incorporated with Shintoism is seen in the design of garden and temple. It was evident that the archeological and historical information provided understanding to create a beautiful cultural landscape aimed at reinforcing traditional values and meanings in nature. It provides a venue for sustainable conservation of heritage.

Sanriku Fukko Reconstruction National Park was established in 2013. The inclusion of the Sun Shopping Street and Kaminoyama Hachimangu Shrine provide bases for people to find meanings in nature through the use of mythologies. It acts as an interface between the local community and the government during the recovery and reconstruction processes. The structures provide spaces for the community members to connect. These spaces are also seen as memorial sites. Also, the Moai statue (a present from Easter Island, Chile) provides spiritual inspiration during the town's recuperation. The use of intangible cultural heritage in post-disaster healing is reinforced by the use of <sup>Kiriko</sup> art, local belief systems were strengthened, increasing the town's resilience.

Mastushima is widely known as a place of scenic beauty and historical value. The unique woody islands represent continuation of Jomon culture since pre-historic times. We saw how people used traditional knowledge to co-exist with nature. The Jomon people knew locating settlements on higher grounds were safer. It was noted that use of archeological data to understand earthquake and tsunami history was essential for relocation of settlements. The involvement of younger generations in redesigning the town was applauded.

### Conclusion

People find meaning in their environment and create values based on these meanings, so both natural and cultural systems must be considered for the forging of strong communities. The strength of societies is reinforced through the use of traditional knowledge, which are valuable in times of disasters. They are often used to aid development of long-term sustainable strategies. Finally, collective memory is necessary to build awareness among citizens and to transfer natural and cultural heritage.

### Summary of lessons learned:

- The workshop widened the disciplinary perspective.
- Importance of situating cultural heritage in its natural context.
- There is a need of integrating nature-culture-people perspective into university studies.
- Nature conservation needs to learn from the culture sector.
- Importance of people-centered approaches for the conservation of heritage, for disaster risk management, and building resilience.
- There is a need to learning from local people and involve them in processes of post-disaster recovery.
- Resilience is in the capacity of people and institutions.
- Importance of community knowledge and experience in building resilience.
- Value of historical knowledge for building resilience.
- Japanese values and society are resilient to cope with disasters.
- Particularity of rural values system that incorporate nature-culture linkages and understandings of resilience.



*Radhika Kothari (India), Wijerathne Bohingamuwa (Sri Lanka), Petra Omega (Indonesia), Huaiyun Kou (China), Hoseah Wanderi (Kenya) and Delmaria Richards (Jamaica) discussing ideas for the group presentation.*



*Group photo of participants and resource persons after they received their Certificate of Completion of the Workshop.*



# Annexes

# Annex 1: CBWNCL 2018

## Participants Abstracts

### The confluence of environment and history in the cultural landscape of Pulicat Lagoon by Xavier Benedict

Pulicat Lagoon is the second largest water body in India, covering an area of 757 sq.km. Located in the North of Chennai, it is a testimony of living heritage, integrating monsoon heritage and cultural values of South India. This several-million-years-old lagoon is one of the five wetlands which attract monsoon clouds to bring rain to the South-East Coast, and has scripted strong maritime history, as well as bridged transnational shared heritage links. This paper will bring forth the attention to the values of this wetland which brings to this region of India a very characteristic cultural landscape, and ecological biodiversity. The traditional fishing practice called *paadu*-system, and its character to absorb shock during natural disasters with the support of Buckingham Canal stretching 796 km proves as a lifeline of this Coast. The sustainable living and development which was the way of life for several thousand years is endangered. The paper attempts to bring forth holistic strategies for a sustainably shared landscape restoration.

### Historic Cities of The Straits of Malacca UNESCO World Heritage Site: Threats And Challenges by Rohayah Che Amat

There is an increasing number of threats in the UNESCO World Heritage Sites that are threatening their Outstanding Universal Value (OUV). This paper presents the cultural impacts of the new development projects in the UNESCO World Heritage Site of the Straits of Malacca, composed of two cities: Melaka and George Town. Apart from potentially lose their World Heritage status, the interventions would erode the character of the heritage sites due to the inadequate urban planning, that lacks of a proper zoning for urban development that would respect the boundaries of the protected cultural heritage properties. There are legal instruments for the conservation of both cities, but the absence of a proper management plan and effective enforcement is causing the erosion of their values. Moreover, there is no specific model or management system for controlling the vulnerabilities to hazards in both cities, that would increase due to the new development projects. An integrated disaster risk management plan needs to be developed, which would take into consideration the threats and challenges that will aid the decision-making process in the future.

### The Mixed Heritage Values of Mayon Volcano Natural Park and the Place of Narrative in Disaster Response by Jefferson Chua

This study focuses on the 2006 disaster brought about by the effects of Typhoon Reming/Durian on the communities surrounding Mayon Volcano, the government's response, and possibilities for making cultural and natural heritage protection an essential resource in disaster mitigation. The typhoon and the ensuing lahars and landslides claimed 1,266 lives when dikes designed to mitigate the effects of flooding were not able to withstand the volume of the displaced volcanic material which had built up because of Mayon's recent volcanic activity. The measures taken and the subsequent government response show that while there were adequate mechanisms in place to address individual disaster scenarios, the 2006 disaster demonstrated the need for a more holistic understanding of vulnerability and disaster response and mitigation. This can be achieved by incorporating heritage values into disaster mitigation policy, especially in a site like Mayon where cultural and natural values are inextricably linked to each other.



### **Integrated approach for disaster resilience & management at Mahasthan heritage site by Mohammad Sazzad Hossain**

The archaeological remains of Mahasthan and its surroundings exhibit significant interchange of human values through cultural practices, religious beliefs, social norms, etc., since the 4<sup>th</sup> century B.C until the 18<sup>th</sup> century A.D, in Bengal. On developments in its township, the site evolved as overlapping layers of intervention, sometimes superimposed and sometimes juxtaposed on the fabric in different phases of development. Heavy rainfall is a serious threat to the ancient brick structures. In 2004-2005 a large portion of the Eastern rampart wall collapsed due to heavy rainfall. Moreover, archaeological structures in situ were not exposed due to lack of any comprehensive approach for disaster resilience and management. This study will explore the archaeological layers in order to introduce an integrated drainage system for the heritage site.

### **Dujiangyan Ancient Town in Sichuan Province, China by Huaiyun Kou**

Dujiangyan ancient town is the entrance of an ancient Tea-Horse trade route adjacents to the World Heritage Site Dujiangyan Irrigation System. The existing built environment shaped from 1522 to 1566 AD, includes the city wall, mosques, and traditional wooden houses, surrounded by mountains and rivers. The area suffered the Wenchuan earthquake (magnitude 8.0) in 2008, where over 80% of buildings were damaged. The local government launched three years reconstruction with multiple objectives of heritage conservation, housing improvement, and tourism development. The reconstruction enhanced the seismic performance of the buildings, improved the infrastructures, enforced the traditional spatial features, and stimulated the tourism. While the residents have reduced sharply from 15,000 to 2,000 with the functional transition from residential to commercial, earthquakes and mudslides still threaten the ancient town. How to assess the reconstruction impact on the resilience and how to improve it are urgent issues that need to be addressed.

### **Nature-Culture Mapping in the Trans-Himalayas by Radhika Kothari**

Tso Moriri-Korzok (Ladakh-India), located in the Trans-Himalayas and at the edge of the Tibetan plateau is a unique bio-diverse wetland above 4500m (asl). It is locally protected, an international Ramsar site and on the Tentative list for World Heritage. The Changpa, nomadic pastoralists, who have inhabited this landscape for several centuries display a complex yet an eloquent interface with nature evident in their way of life. The region is highly vulnerable to climate change with a decrease in snowfall, extreme climatic events, warming trends, changes in productivity of grasslands affecting both wildlife and herding practices. Additionally, mass tourism, geopolitical conflicts, irregular policies void of coping or adaptation strategies are further increasing the vulnerability of ecosystems and breaking the social-cultural fabric of the Changpa nomads. The project purpose aims to relook Tso Moriri-Korzok to map spatial overlaps between Changpa and the wetland ecosystem to showcase interdependencies, interactions or overlaps between nature and cultural systems that can guide future landscape management and conservation with the onset of these socio-ecological changes.

### **Nature-Culture Linkages in the Cu Lao Cham – Hoi An World Biosphere Reserve by Thao Le Ngoc**

The Cu Lao Cham – Hoi An World Biosphere Reserve (CBR) was recognized by UNESCO in 2009 based on natural and cultural values. Currently, these values are facing challenges from disaster threats and social-economic development. Heavy typhoons and floods are impacting the ancient town- a World Heritage site since 1999 and part of the buffer zone of the CBR, collapsing riverbanks and eroding beaches. Sediment and pollution from the mainland are attacking and killing coral-reefs and sea-grass beds. On the other hand, there are many development and investment plans on the river sand-dunes and beaches. These are making changes to the natural morphology, fragmenting the aquatic habitat and altering the wildlife cycle. The most important characteristic of the CBR compared to other protected areas in Vietnam is the need of a harmonization between the natural and the human ecology. The Marine Protected Area connected to Hoi An ancient town has a zoning with effective implementation and management. This innovation has created a large space for stakeholders to work together through system-thinking, developing landscape planning, inter-sectoral coordination and economic development.

### **Recovery Of Traditional Tibetan Villages Post Earthquake In World Natural Heritage Site Jiuzhaigou Valley by Hongtao Liu**

This presentation is based on the survey of the damage and recovery status of Tibetan traditional villages in Jiuzhaigou World Natural Heritage post-earthquake, to understand the basic situation of Tibetan village after the earthquake, as well as the problems caused in the process of recovery. Moreover, in this presentation the author reflects on the conservation and development of traditional villages with cultural heritage value in natural heritage sites from the features of Tibetan architecture, the problems of community development, and the requirements for disaster prevention and mitigation.

### **Rapa Nui World Heritage Site - Initiatives and Challenges for the Risk Management by María Andrea Margotta Ruiz**

Rapa Nui National Park, as a World Cultural Heritage Site is strongly related to the natural environment and the risk factors related to this condition. Some studies have been conducted in recent years to monitor the involvement of coastline erosion caused of changes to oceanic waters related to the effects of climate change as well as others risk factors. Since 2017, the National Park administration is carried out by the Polynesian Indigenous Community Ma'u Henua, created on 2016 and constituted by members of the Rapa Nui indigenous community. In terms of risk factors, fires are also a threat that is rather well controlled, although recently and in particular last year there have been worrying episodes that have alerted and generated studies to develop risk control measures in that sense. Natural disasters related to earthquakes and tsunamis are to this day the object of a greater preventive efforts, in this sense, it is interesting to review the role that the local community can play.

### **Disaster Risk at Permanent Residence in Siosar Protected Forest: A Preliminary Study by Petrayuna Omega**

The Indonesian government used around 416 hectares of Siosar Protected Forest owned by the Forestry Ministry for residential and farming area in 2016 for the relocation of three villages in 2016 affected by the eruption of Mount Sinabung. The aim of this case study is to explore the existing problems in the Siosar Protected Tropical Rainforest which is being used as a permanent residence for Mount Sinabung refugees through observation and interviews to the head of local board for disaster and several people in Siosar area. This article reports the findings related to the efforts for disaster risk reduction of the permanent residence in the conservation area based on the 2030 Agenda for Sustainable Development. The government has already developed some disaster risk reduction plans but it needs to take a new step in order to involve all the stakeholders including the community with its cultural value of "gotong royong" and work together to implement the disaster risk reduction plans. This report aims at increasing awareness of the need to include all stakeholders in elaborating and implementing disaster risk reduction plans.

### **Natural UNESCO designated sites as platforms for disaster risk reduction by Irina Pavlova**

UNESCO-designated sites (World Heritage sites, Biosphere Reserves and UNESCO Global Geoparks) promote sustainable development and focus on the protection of natural and cultural heritage or the conservation and sustainable use of biodiversity and geological resources. More than 2000 UNESCO-designated sites may be partly or entirely exposed to natural hazards and extreme weather events, with potential impacts on the communities living in or near the sites, and on their livelihoods. Because of their high cultural and symbolic value, the impact of the loss or damage of a UNESCO-designated site can resonate across the world. At the same time, these iconic sites have tremendous potential as platforms to share knowledge on Disaster Risk Reduction. Many UNESCO-designated sites have community and tourism-oriented programmes to raise awareness about the source of natural hazards, associated risks and ways to reduce their impact.

### **The Greater Blue Mountains World Heritage Area by Lance Syme**

The Greater Blue Mountains World Heritage Area (GBMWH) is managed as a wilderness and is subject to frequent incidents of bush fire or wildfires. These fires have a catastrophic effect on the natural environment and also on the Aboriginal rock art. Wild fires have the potential to impact large tracts of land

within the GBMWhA and once started there are very hard if not impossible to stop. Fire reach such an intense level of heat that they burn through the canopy of the gum trees not just the understory of shrubs and bushes. Many Australian natives need to be exposed to bush fire for their overall health but wildfires burn too strongly and seeds affected by wild fires do not germinate. Aboriginal rock art sites suffer greatly during periods of fire. The sandstone upon which the rock art is drawn heats up and causes the surface to dry out and separate away, this is called spalling. As this occurs pieces of the rock art fall off and get trampled into the earth. Recently the GBMWhA has also been subject to proposals for an increase to dam wall height of the major water supply dam for Sydney. This increase will result in thousands of kilometers of additional land being subject to inundation by the dam waters.

#### Kaho'olawe Island Reserve by Ryan Yamane

This presentation will describe the history of Kahoolawe and investigate options to support their long-term restoration and resource management. "Kaho'olawe represents both the end result of human influenced environmental degradation and the beginning of collaborative healing as a force to mend our planet's damaged environments while restoring its people" (Kaho'olawe Island Reserve Commission Financial Self-Sufficiency and Sustainability Plan, December 2016.) Kahoolawe faces significant natural and man-made threats. Currently, bomb ordinances both still remain on land and sea and due to significant wind and rain erosion, there is very little top soil for vegetation growth. Kahoolawe is directly impacted by climate change and has no fresh water access. As temperatures rise, it becomes much more difficult to plant native Hawaiian vegetation for reforestation. I will describe the unique history of Kahoolawe in Hawaii, then I will discuss the challenges it faces. Finally, I will propose some options to assist with stability and the promotion of Cultural Heritage conservation resiliency.

#### Lamu Old Town: balancing economic development with conservation of heritage by Hoseah Wanderi

Kenya is rich in heritage enhanced by its many cultures interacting with a wide diversity of ecological zones. Although biodiversity in those ecological zones remains highly protected through the various Kenyan legislative frameworks, there are still conservation challenges that negatively affect it. These challenges mainly emanate from economic development and climatic change. Even though the development chiefly impact on nature, research indicates that there is a direct correlation of threats on biodiversity to the livelihoods of communities. Lamu Old Town is a classic example of a predominant *Swahili* culture that thrived on marine resources which now face an unfavorable future as a result of LAPSET development project whose final result is expected to change Lamu's biodiversity and culture. This paper evaluates the two variables; conservation of biodiversity and livelihoods in the Lamu World Heritage Site, a historical coastal town with over 700 hundred years of continuous occupation.

#### Matara and Galle Forts: Coastal Cultural Heritage Conservation from Matara Fort to Galle Fort in Southern Sri Lanka by Bohingamuwa Wijerathne

The southern coastal belt of Sri Lanka is unique for its natural and cultural setting. It has a rich biodiversity that comprises diverse maritime species, mangroves and forest covers that provided the lifeline of coastal communities for centuries. The cultural evolution in this region, therefore, is a result of human interaction with its environment. The cultural heritage in this region is also unique for its multicultural character, as it was occupied by the Portuguese, Dutch and English colonials from 1505 to 1948. This paper, based on Galle and Matara Forts, examines issues related to coastal cultural heritage conservation in Southern Sri Lanka. Coastal heritage sites are constantly open to sea breeze, sea erosion and also to Tsunami. The heritage in the region was severely affected by tsunami in 2004. Many heritage sites were completely destroyed by sea waves or during post-tsunami reconstruction. Others have been left unattended or renovated with minimal consideration of heritage conservation. Meanwhile, development activities are damaging the coastal ecosystem that reduced the effect of tsunami in some places. This paper highlights the need for immediate recording and preparing risk assessments of heritage sites and making and implementing integrated policies involving all stakeholders. It concludes that the link between natural, human and cultural landscapes should be given due consideration in all heritage interventions.

# Annex 2: List of participants<sup>\*</sup>

## International Participants

- **Benedict, Xavier** (Culture), Professor, MIDAS Architecture College, India
- **Che Amat, Rohayah** (Culture), Senior Lecturer, Razak Faculty of Technology and Informatics, Universiti Teknologi Malaysia, Kuala Lumpur, Malaysia
- **Chua, Jefferson** (Culture), Project Coordinator, Philippine National Commission for UNESCO, Philippines
- **Hossain, Mohammad Sazzad** (Culture), Associate Professor, Department of Architecture, Military Institute of Science & Technology, MIST, Bangladesh
- **Kothari, Radhika Vijay** (Nature), Director, Jungwa Foundation, India
- **Kou, Huaiyun** (Culture), Associate Researcher, College of Architecture and Urban Planning, Tongji University, China
- **Le Ngoc, Thao** (Nature), Head of Secretariat, Cham Islands Biosphere Reserve, Vietnam
- **Liu, Hongtao** (Culture), Associate Professor, Southwest Jiaotong University, China
- **Margotta Ruiz, María Andrea** (Culture), Technical Specialist, Cultural Heritage National Service, Ministry of Culture, Chile
- **Omega, Petrayuna Dian** (Culture), Lecturer and Researcher, Krida Wacana Christian University, Indonesia
- **Pavlova, Irina Olegovna** (Nature), Consultant, UNESCO, Natural Sciences Sector, Section on Earth Sciences and Geo-Hazards Risk Reduction, Russia
- **Syme, Lance** (Culture), Principal, Kayandel Archaeological Services, Australia
- **Yamane, Ryan** (Nature), Representative, Hawaii State Legislature, US
- **Wanderi, Hoseah** (Culture), Focal Point of the World Heritage Convention, National Museums of Kenya, Kenya
- **Wijerathne, Bohingamuwa** (Culture), Senior Lecturer, Department of History and Archaeology at the University of Ruhuna, Sri Lanka

Nature Sector: 4 (26,7%) – Culture Sector: 11 (73,3%) - Total: 15 (100%)

## Students from the University of Tsukuba

- **Tesfay Asfha, Alula** (Culture), Doctoral student, World Heritage Studies
- **Mamoun, Ola** (Nature), Master student, Life and Environmental Sciences
- **Okin, Yllah** (Nature), Master student, Life and Environmental Sciences
- **Richards, Delmaria** (Nature), Master student, Life and Environmental Sciences

Nature Sector: 3 (75%) – Culture Sector: 1 (25%) - Total: 4 (100%)

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<sup>\*</sup> By alphabetical order

## Guest speakers and resource persons

- Abe, Takuzo, Researcher, Division of Agriculture and Fishery of Minami-Sanriku town
- Buckley, Kristal, Lecturer, Deakin University and World Heritage Advisor, ICOMOS
- Dazai, Akihiro, Director, Sustainability Centre of Minami-Sanriku town
- Endo, Kenji, Representative, NPO Minami-Sanriku Learning Center
- Hirai, Takuya, Director, Marine Learning Institute
- Jigyasu, Rohit, UNESCO Chairholder, Ritsumeikan University and Vice-President, ICOMOS
- King, Joseph, Unit Director, ICCROM – Sites Unit
- Kudo, Mayumi, Priestess, Kaminoyama Hachimangu Shrine
- Murti, Radhika, Director, IUCN Global Ecosystem Management Programme
- Muraoka, Kenichi, Representative, Council of Minami-Sanriku town
- Niimura, Yasushi, Park Ranger, Sanriku Fukko (Reconstruction) National Park
- Oikawa, Tsukasa, Director, Hiraizumi World Cultural Heritage Center
- Okuda, Naohisa, Representative, Ministry of the Environment of Japan
- Shimotsuma, Kumiko, Representative, Agency of Cultural Affairs, Japan
- Sugawara, Hiroki, Director, Historical Museum of Jomon Village, Oku-Matsushima
- Wijesuriya, Gamini, Former Project Manager, ICCROM – Sites Unit
- Yamauchi, Namiko, Lecturer, Keisen Jogakuen University

## Organizing Team

- Inaba, Nobuko, Professor World Heritage Studies and Certificate Programme on Nature Conservation, CBWNCL Programme co-Director
- Ishizawa, Maya, Researcher World Heritage Studies and Certificate Programme on Nature Conservation, CBWNCL Programme Coordinator
- Yoshida, Masahito, Chair World Heritage Studies and Certificate Programme on Nature Conservation, CBWNCL Programme co-Director

### Staff of the World Heritage Studies/Certificate Programme on Nature Conservation

- Nakasendo, Miyuki, Administrative Assistant, World Heritage Studies
- Suda, Maiko, Research Coordinator, Certificate Programme on Nature Conservation
- Uribe Chinen, Claudia, Research Assistant, World Heritage Studies
- Yasojima, Chitose, Administrative Assistant, Certificate Programme on Nature Conservation



# Annex 3:

## Program of the CBWNCL 2018

<b>MODULE 1: International Symposium</b>
Venue: Tsukuba International Congress Center
Friday, 21 September
<b>THEME: III INTERNATIONAL SYMPOSIUM ON NATURE-CULTURE LINKAGES IN HERITAGE CONSERVATION IN ASIA AND THE PACIFIC. DISASTERS AND RESILIENCE</b>

09:30 - 10:00	Open doors
10:00 - 10:10	<b>Opening Address</b> by Professor Masahito Yoshida, UNESCO Chair on Nature-Culture Linkages in Heritage Conservation, University of Tsukuba
	<b>Opening Address</b> by Professor Kyosuke Nagata, President of the University of Tsukuba
10:10 - 10:25	<b>The role of UNESCO in post-disasters recovery</b> By Mechthild Rössler, Director UNESCO World Heritage Centre and the Division of Heritage (Video message from Paris)
10:25 - 10:50	<b>Natural Heritage – A Nature-based Solution for Resilience to Disasters</b> by Radhika Murti, Director Global Ecosystem Management Programme, IUCN
10:50 – 11:15	<b>Reducing Disaster Risks and Building Resilience of Cultural Heritage: Challenges and Opportunities</b> by Rohit Jigyasu, UNESCO Chairholder on Cultural Heritage and Disaster Risk Management, Ritsumeikan University/ICOMOS Vice-President, ICORP President
11:15 - 11:30	Coffee Break
11:30 - 11:55	<b>Development of the Sanriku Fukko (Reconstruction) National Park</b> by Naohisa Okuda, Ministry of the Environment of Japan
11:55 - 12:20	<b>Disaster Risk Management for Cultural Heritage in Japan</b> by Kumiko Shimotsuma, Agency for Cultural Affairs, Japan
12:20 - 12:50	<b>Panel Discussion</b> Chaired by Professor Masahito Yoshida, University of Tsukuba
12:50 - 13:50	Lunch Break
13:50 - 14:15	<b>Key Issues for Disasters and Resilience in line with World Heritage Policy Guidance</b> by Joseph King, Director, Sites Unit, ICCOM
14:15 – 16:00	<b>Roundtable Discussion with</b> Kristal Buckley, Deakin University/ICOMOS Rohit Jigyasu, Ritsumeikan University/ICOMOS/ICORP Joseph King, ICCROM Radhika Murti, IUCN Naohisa Okuda, Ministry of the Environment of Japan Kumiko Shimotsuma, Agency for Cultural Affairs, Japan Gamini Wijesuriya, former ICCROM Chaired by Professor Nobuko Inaba, University of Tsukuba
16:00 - 16:20	Coffee Break
16:20 - 17:00	<b>Q&amp;A/Conclusions and Closing Remarks</b> Chairs: Masahito Yoshida, University of Tsukuba Nobuko Inaba, University of Tsukuba Maya Ishizawa, University of Tsukuba

**MODULE 2: Understanding Nature-Culture Linkages in the Context of Disasters and Resilience**

Venue: Humanities and Social Sciences Building Seminar Room B218

Saturday, 22 September

THEME: GENERAL CONCEPTS

- 10:00 - 10:30 Introduction
- 10:30 - 11:30 **LECTURE 1: The World Heritage System Part 1**  
Lecturer: Dr. Gamini Wijesuriya, former ICCROM
- 11:30 - 12:30 **LECTURE 2: The World Heritage System Part 2**  
Lecturer: Ms. Kristal Buckley, Deakin University/ICOMOS
- 12:30 - 13:00 Q&A + Discussion
- 13:00 - 14:00 Lunch Break
- 14:00 - 16:45 Presentations by participants
- 14:00 - 14:30 **Historic Cities of the Straits of Malacca UNESCO World Heritage Site: Threats and Challenges** by Rohayah Che Amat, Malaysia
- 14:30 - 15:00 **Lamu Old Town: balancing economic development with conservation of heritage** by Hoseah Wanderi, Kenya
- 15:00 - 15:30 **Dujiangyan Ancient Town in Sichuan Province, China** by Huaiyun Kou, China
- 15:30 - 15:45 Break
- 15:45 - 16:15 **Matara and Galle Forts: Coastal Cultural Heritage Conservation from Matara Fort to Galle Fort in Southern Sri Lanka** by Bohingamuwa Wijerathne, Sri Lanka
- 16:15 - 16:45 **Integrated approach for disaster resilience & management at Mahasthan heritage site** by Mohammad Sazzad, Bangladesh
- 16:45 - 17:30 **Participant's report and Wrap-up**

Sunday, 23 September

THEME: DISASTER RISK REDUCTION FOR CULTURAL AND NATURAL HERITAGE

- 10:00 - 11:00 **LECTURE 3: Cultural Heritage and Disaster Risk Reduction**  
Lecturer: Dr. Rohit Jigyasu, Ritsumeikan University/ICOMOS
- 11:00 - 11:30 Q&A + Discussion
- 11:30 - 12:30 **LECTURE 4: Ecosystems-based Disaster Risk Reduction**  
Lecturer: Ms. Radhika Murti, IUCN
- 12:30 - 13:00 Q&A + Discussion
- 13:00 - 14:00 Lunch Break
- 14:00 - 16:45 Presentations by participants
- 14:00 - 14:30 **The Mixed Heritage Values of Mayon Volcano Natural Park and the Place of Narrative in Disaster Response** by Jefferson Chua, Philippines
- 14:30 - 15:00 **Disaster Risk at Permanent Residence in Siosar Protected Forest: A Preliminary Study** by Petrayuna Omega, Indonesia
- 15:00 - 15:30 **Recovery of Traditional Tibetan Villages Post Earthquake in World Natural Heritage Site Jiuzhaigou Valley** by Hongtao Liu, China
- 15:30 - 15:45 Break
- 15:45 - 16:15 **Nature-Culture Linkages in the Cu Lao Cham – Hoi An World Biosphere Reserve** by Thao Le, Vietnam
- 16:15 - 16:45 **Natural UNESCO designated sites as platforms for disaster risk reduction** by Irina Pavlova, Russia
- 16:45 - 17:30 **Participant's report and Wrap-up**

Monday, 24 September

THEME: JAPANESE EXPERIENCE

- 10:00 - 11:00 **LECTURE 5: Japanese experience on Disaster and Resilience – A case study of Sawara Historic Town**  
Lecturer: Professor Masahito Yoshida and Professor Nobuko Inaba, University of Tsukuba

11:00 - 11:30	Q&A + Discussion
12:30 - 13:00	<b>LECTURE 6: Introduction to the Field Trip</b> Lecturer: Dr. Maya Ishizawa, University of Tsukuba
13:00 - 14:00	Lunch Break
14:00 - 16:45	Presentations by participants
14:00 - 14:30	<b>The Confluence of Environment, History, and Cultural Landscape of Pulicat Lagoon</b> by Xavier Benedict, India
14:30 - 15:00	<b>Kaho'olawe Island Reserve</b> by Ryan Yamane, Hawaii, US
15:00 - 15:30	<b>Rapa Nui World Heritage Site – Initiatives and Challenges for the Risk Management</b> by Andrea Margotta, Chile
15:30 - 15:45	Break
15:45 - 16:15	<b>Nature-Culture Mapping in the Trans-Himalayas</b> by Radhika Kothari, India
16:15 - 16:45	<b>The Greater Blue Mountains World Heritage Area</b> by Lance Syme, Australia
16:45 - 17:30	Participant's report and Wrap-up

**MODULE 3: Management, Implementation and Governance - Disasters and Resilience**

Venue: Tohoku region

Tuesday, 25 September

THEME: HIRAIZUMI WORLD HERITAGE SITE

06:50 - 08:30	Departure from Tsukuba to Omiya by bus
09:06 - 10:15	Omiya to Sendai by Shinkansen (Bullet train)
10:30 - 12:00	Sendai to Hiraizumi by bus
12:00 - 13:00	Lunch Break
13:00 - 14:15	Visit to Chusonji (Buddhist Temple)
14:30 - 15:30	Visit to Hiraizumi World Cultural Heritage Centre Lecture by Mr. Tsukasa Oikawa, Director, Hiraizumi World Cultural Heritage Centre
15:30 - 16:10	Visit to Motsuji (Buddhist Temple and gardens)
16:20	Leave Hiraizumi to Minami-Sanriku Town

Wednesday, 26 September

THEME: SANRIKU RECONSTRUCTION NATIONAL PARK

09:00 - 09:30	Lecture about the impact of the Great East Earthquake and Tsunami in Minami-Sanriku Town Lecture by Mr. Kenji Endo, Representative, NPO Minami-Sanriku Learning Center
09:30 - 10:00	Departure from Iriyado to Minami-Sanriku Town Hall
10:00 - 12:00	Visit to Minami-Sanriku Town Hall Lecture by Dr. Takuzo Abe, Researcher, Division of Agriculture and Fishery, Minami-Sanriku Town Lecture by Mr. Akihiro Dazai, Director, Sustainability Centre, Minami-Sanriku Town
12:00 - 13:00	Lunch
13:00 - 16:45	Visit to Kaminoyama Hachimangu Shrine Lecture by Ms. Mayumi Kudo, Priestess, Kaminoyama Hachimangu Shrine
	Stay at Iriyado

Thursday, 27 September

THEME: SANRIKU RECONSTRUCTION NATIONAL PARK

09:30 - 10:00	Departure from Iriyado to the Marine Visitor Centre
10:00 - 12:30	Visit to Marine Visitor Centre Lecture by Mr. Takuya Hirai, Director, Marine Learning Institute Lecture by Mr. Yasushi Niimura, Park Ranger, Sanriku Fukko Reconstruction National Park, Ministry of the Environment

12:00 - 13:00	Lunch Break
13:00 - 16:45	Visit to Marine Visitor Centre Lecture by Mr. Kenichi Muraoka, Fisherman and Member of the Council of Minami-Sanriku Town, Chairman, Association for Preservation of Gyozanryu Mitobe Shishiodori (Deer Dance)
16:45 - 17:15	Visit to Togura Shrine

Stay at Iriyado

Friday, 28 September

THEME: MATSUSHIMA, PLACE OF SCENIC BEAUTY

08:30 - 11:00	Departure from Iriyado to the Historical Museum of Jomon Village, Oku-Matsushima
09:30 - 11:30	Visit to the Historical Museum of Jomon Village, Oku-Matsushima Lecture by Mr. Hiroki Sugawara, Curator, Director of Historical Museum of Jomon Village Okumatsuyama
11:30 - 12:30	Lunch Break
12:30 - 14:30	Visit to Zuiganji Temple
14:40 - 16:00	Departure from Matsushima to Sendai by bus
16:34 - 18:10	Sendai to Omiya by Shinkansen
18:30 - 20:00	Omiya to Tsukuba by bus

Saturday, 29 September

Free Day

#### MODULE 4: Reflection on Theory and Practice

Venue: Humanities and Social Sciences Building Seminar Room B218

Sunday, 30 September

10:00 - 13:00	Working groups
13:00 - 14:00	Lunch
14:00 - 17:00	Working groups

Monday, 1 October

10:00 - 13:00	Working groups
13:00 - 14:00	Lunch Break
14:00 - 17:00	Presentation of Participants Q&A + Discussion Feedback from Resource Persons
17:00 - 18:00	Delivery of Certificates and Farewell





