The spatial narrative of Island Cultural Landscapes: A Case of Lakshadweep Group of Islands, India

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Abstract
Islands are known for their distinctive landscapes, which have greatly influenced the cultures and societies of the people who have lived there. Islands are unique, geographically isolated places with specific physical and cultural traits that are significantly influenced by the environment and the ocean. The cultural landscapes of islands manifest in several ways such as land use, agriculture, and in the form of architecture. It also encompasses intangible heritage such as cultural practices, myths, stories, and rituals. This paper aims to explore the Lakshadweep group of Islands within the existing cultural landscape framework and will also be examining both tangible and intangible resources of these islands. The study will employ a literature review, inventory formats, and in-depth interviews of both key informants and the local community to document the characterizing components of the cultural landscape of Lakshadweep. The study concludes by defining the cultural landscape of the islands from a spatial discourse and community perspective.
Keywords: Islands, Landscape, Cultural Landscape, Lakshadweep.

1. Introduction
Cultural landscapes (CL) are a result of the interaction between humans and their environment, how the environment is shaped by humans over a period, and how the environment also plays a significant role in shaping humans and their way of life (Aziz Amen, 2017; Aziz Amen & Nia, 2018; Amen & Kuzovic, 2018; Amen & Nia, 2021). The world heritage list identifies CL as a unique category to preserve and sustain the interactions between people and their environment. The world heritage convention in 1992 established the first piece of legislation for identifying and safeguarding CLs, and it defines a CL as combined works of man and nature. The study of island communities can give valuable insights into the complex and dynamic relationships between humans and their environment and has the potential to contribute to the existing discourse on CLs.

The national geographic organization defines an island as a piece of land surrounded by water. Islands are one of the regions that possess unique biodiversity in aquatic and terrestrial habitats. It is one of the most vulnerable regions, and the major threat is climate change, global warming, and rising sea levels. These regions are also vulnerable to natural disasters like storms, cyclones, and hurricanes, to name a few. Small islands particularly are one of the most vulnerable areas. Any island is considered to be a small island if the surface area is 10,000 square kilometers or less and has 500,000 or fewer residents according to the UNESCO Man and the Biosphere Programme. (Wong, Marone, Lana, & Fortes, 2005). The islands are isolated environments that lead to distinct customs and traditions heavily influenced by the ocean and environment. Islands have distinct cultures and unique communities due to their isolation from the mainland, which has allowed them to preserve their traditional and ecological systems more than those found on continents (Pungetti, 2012). All these are often shaped by their context, which includes the ocean, landscape, geography, climate, and available natural resources.

Studying island communities can provide valuable insights into further deepening the comprehension of CLs. While numerous studies are conducted on Mediterranean island landscapes and South Asian contexts, research on islands such as the Lakshadweep group of islands is scarce. Therefore, this paper aims to study this island group within the existing framework of CLs, with the aim of defining the characterizing components of island CLs.

1.1 Global Perspective on Cultural Landscape
Cultural Landscape term was used in Germany for the first time around the late 19th century. Since then, it has acquired numerous meanings since it developed in geography and subsequently expanded to other scholarly disciplines. Friedric Ratzel (1895–1896), a geographer from Germany is credited with coining the term CL under the name *Kulturlandschafl*. He described it as a region with human intervention as opposed to the prehistoric natural landscape. Otto Schluter, a German geographer in the year 1903 highlighted the essential role that human intervention and their activity plays in shaping a landscape. Norbert Krebs (1922), an Austrian geographer, referred to Kulturlandschafl as the Okumene, the settled area altered by human activity, as opposed to the Anokumene, the uninhabited area where human life was subordinate to nature (Jones, 2003). Carl O Sauer, an American geographer,

introduced the concept of CL to the rest of the world in 1925. According to him, a CL is an area altered by a particular cultural group of people through their cultural activities in a natural landscape (Jones, 2003).

Additionally, he claimed that a cultural group living in the area created the CL out of the surrounding natural landscape. According to him, the natural environment acts as the medium on which culture plays an important role as the agent resulting in a CL. The landscape changes because of the influence of a group of people from a particular culture, going through various phases before likely coming to an end.
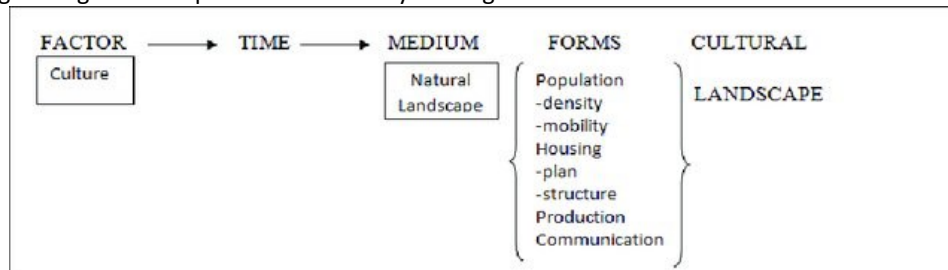

Figure 1: Carl Sauer's (1925) schematic representation of Cultural landscapes

In the 1990s, several international organizations adopted CL as a conservation strategy. The UNESCO world heritage committee designated CLs as a category that ought to be included in the world heritage sites lists in the revised operating guidelines (2008). Under Cultural Landscapes, as on date 22 June 2023 there are 121 properties listed on the World Heritage List, including 1 delisted property and six transboundary properties. Table no. 1 gives an overview of the international perspective on CL.

National/ International Bodies	Document	Term	Concept/Definition	Scope	Observations
UNESCO	Operational Guidelines World Heritage Convention 1992	Cultural Landscape	These are landscapes where one can see combined works of nature and man. They serve as examples of how human society and settlement have changed over time because of physical limitations and/or opportunities given by their environment, as well as various internal and external social, economic, and cultural pressures. Three main categories under CL i. A clearly defined landscape ii. Organically evolved landscape- *Relict landscape and continuing landscape* iii. Associative Cultural Landscape	Global	Generic definition based on OUV, which applies to all heritage resources. No identification and assessment framework exists – CL, born out of different socio-economic-cultural geographic systems. Each nomination for the list is dealt with on a case-by-case basis.
National Park Services (NPS)		Cultural Landscape	an area with both cultural and natural resources, as well as native and domestic animals, that has significance to a historical event, activity, or individual and/or displays other cultural or aesthetic characteristics.	National	Specifically for American National Parks
International Union for Conservation of Nature (IUCN)	International Framework for Protected Area Management Categories, endorsed by IUCN	Category V- Protected Landscapes of Seascapes	A protected landscape or protected seascape (IUCN Category V) covers a large area of land or water with a clear plan for natural protection, but typically also allows for a variety of for-profit industries.	Global	Deals with Natural Heritage. Landscapes of national importance

	General Assembly				
Council of Europe	European Landscape Convention 2000	Landscape	The landscape is part of the land, as perceived by local people or visitors, which evolves through time because of natural forces and human activity.	Regional	It includes a variety of landscapes but is limited to European landscapes
Asian Cultural Landscape Association	2012	Cultural landscape	"Cultural landscape" is not a unique type of landscape. It is a manner of perceiving and experiencing landscapes and the corresponding characteristics that emphasize the connection between people and nature across time. — maintaining existence-continuity-transformation-transferability and transcendentality — all that together make the landscape a cosmic whole and complex heritage.	Regional	To address diverse CLs in Asia. No identification and assessment framework in place.

Table 1: Overview of International Perspective on Cultural Landscape

Indian Cultural Landscape

All the landscapes have been affected by humans in one way or another and have cultural associations. Hence CL is a manner that humans view and perceive the surrounding landscape and the interaction between man and nature. Indian Cultural Landscapes (ICL) are illustrated in various forms such as myths, legends, and religious texts, and are also a part of oral traditions. "ICL is an integral form and resultant of long understanding and practice of spatial manifestation of spirit and its exposition into variety of and complex web of mythologies, that further promoted and re-awakened the its genius loci" (Sinha, 2006). "ICL can be termed intellectual landscape, an ensemble of religious, cultural, and natural meanings connected to geographic features through collective memory. These meanings are imprinted on the surface and are created through the generations-long active participation of communities in the landscape, empowering nature and land from the physical to the metaphysical." (Thakur, 2011). ICL is an amalgamation of various things such as visual aspects, mental construction, associated memories, and physical elements such as the landscape, built structures, rituals, and cultural traditions. "The ICL has evolved over time, which includes the natural features and reflects the contemporary requirements of a particular community. To create a unified cultural landscape, man, place, and faith must be connected. This is supported by the distinctive pattern of natural features and forms that are networked with the sacred geography of faith and its secular norms" (Singh, 2013).

Therefore, ICL is complex and has intricate relationships between humans and their surrounding landscape. The ICLs are shaped by many things, such as myths, legends, belief systems, culture, and traditions followed by a particular community. It also comprises visual representations, perceptions, shared memories, and both tangible and intangible heritage resources. This results in a complex and dynamic network of religious, cultural, and physical meanings associated with geographic elements. One of the prominent examples of ICL is the Braj landscape and Vrindavan located in the state of Uttar Pradesh in India. This landscape is associated with Lord Krishna and is a mythical and religious landscape, and it is represented as a circular landscape with the Yamuna River running through it and Vrindavan at its center. It is considered to be one of the sacred ICLs that has shared religious values as well as cultural values. Braj consists of various features ranging from natural and cultural features that include sacred groves, temples, water structures, and settlement patterns.

In addition to the framework by Carl Sauer on CL, further literature study has brought forth a framework that provides insight into the indicators of both tangible and intangible relationships in CLs. Following Table No.2 shows the framework.

Components of Cultural Landscape	Indicators for Delineating CL Boundary	Remarks on the inter-relationship between Intangible and CL
1. Parcels of lands	1. Interdependency 2. Inter-relationship	1. Landscape seem to inspire people to learn and practice intangible traditions.

|		
2. Landform 3. Fauna and Flora (Habitats) 4. Viewpoints 5. Resources and Networks 6. Human Activity 7. Boundary reflecting the combined work of Man-Nature 8. Villages 9. Water systems and other infrastructure 10. Climate and season 11. Visual realms of heavenly bodies 12. Artificial landscapes 13. Built structures 14. Archaeological remains 15. Visible and invisible Natural and Cultural Resources 16. Traditional Knowledge Systems	3. Combined Evolution 4. Appropriate Scale and Distribution 5. Visual and Ecological Harmony 6. Resilience in natural and Cultural Systems 7. Shared Values 8. Multiple or shared Ownership 9. Social Cohesion 10. Clearly demarcated human activity zone 11. Accessibility of Resources to the inhabitant and other Rights 12. Geological boundaries and Natural processes 13. Character and sense of place 14. The boundary of CL should be adequate to maintain the property's Values (OUV in case of World Heritage 15. Adequate material evidence suggesting the continuous process of the landscape. 16. Core and Buffer Zones	2. Intangible cultural expressions are preserved in traditional environments only by putting in place a method or system to transmit from generation to generations 3. Intangible as Cultural expression (as a medium to capture the spectacular aura of Nature and Comprehend to Man 4. Picturesque landscapes seems to attract more artistic, spiritual and intellectual activities. 5. Sentiments such as spiritual or National can only seems to be bonded or attributed to a landscape using intangible cultural tradition 6. Intangible as Bond within human and society interacting with the landscape (promoting social cohesion) 7. Intangible as a Regulatory Mechanism in CL. Eg. Taboos and Cultural Norms 8. Intangible catalyzes resilience 9. Intangible dictated by the landscape (Eg. Materials for musical instruments etc) 10. Gives time Dimesion to Man-Nature Relationship (Rhythm etc) 11. Intangibles create spiritual relationship with land 12. Intangibles used to celebrate landscape 13. Intangibles enable inter-cultural interactions.

Table 2: Indicators of Tangible and intangible relationships in CLs
Source: (Venkatachary & Kawathekar, 2018)

This framework is a valuable toolkit, providing a structured approach to determining the extent and the boundary of a cultural landscape, and it also gives insight into exploring and identifying the characterizing elements of cultural landscapes. This framework and Carl O Sauer's framework to understand the CLs are used as a reference to investigate the case of the islands in the Lakshadweep archipelago.

1.2 Study Area: Lakshadweep Islands
The Lakshadweep archipelago is in the Arabian Sea west of the Indian subcontinent and consists of twenty-seven islands along with islets, sandbanks, and rocky formations. Out of the twenty-seven islands, ten of the islands are inhabited, and one is developed entirely for tourism. The islands cover an area of 32 sq. km and are primarily coralline. The islands' origin is attributed to the accumulation of coralline deposits on the submerged Chagos Laccadive ridge, approximately 800km long and 170km wide, which forms an integral part of the Lakshadweep group of islands. Sir Charles Darwin's theory supports the idea that the origin of coral islands is a result of accumulating coralline deposits on the submerged ridge. The alignment of this submerged ridge is said to be in continuation of the Aravalli strike of Rajasthan (Wagle & Kunte, 1999). Islands are primarily coralline. The Chagos-Laccadive ridge (CLR), a significant aseismic, volcanic ridge in the northern Indian Ocean, is regarded as a volcanic remnant of the Reunion hotspot together with the Southern Mascarene plateau (SMP), to which it is genetically connected. (Ashalatha, Subrahmanyam, & Singh, 1991). The islands are fringed by coral sands and separated from the outer sea by a reef wall made up of live corals and boulders. On the western side of all the islands have a shallow lagoon covering an area of 4200sq.km.
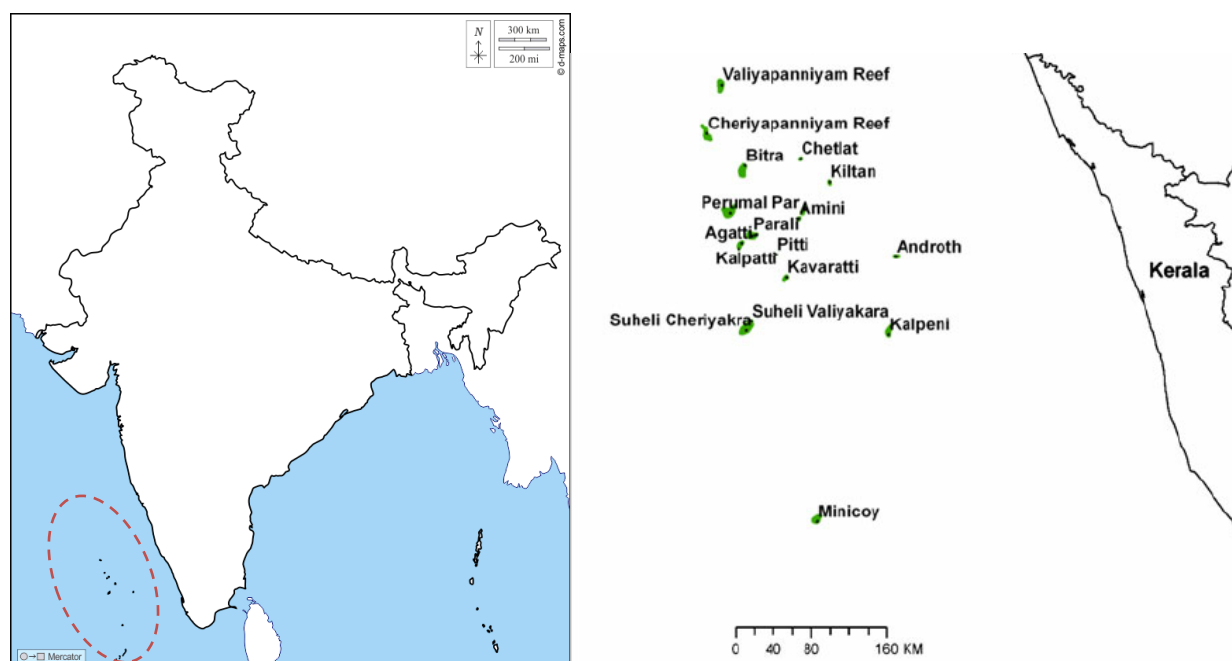
Figures 2 & 3: Location map of Lakshadweep group of islands
Source: https://d-maps.com/carte.php?num_car=284&lang=en & (Reddy, Debnath, Krishna, & Jha, 2013)

2. Materials and Methods

The primary objective of this research is to narrate the Lakshadweep group of Islands within the framework of CLs and to identify the characterizing elements of island cultural landscapes. This study is exploratory in nature and is carried out on one of the islands called Minicoy Island in Lakshadweep. The initial stage of the research involved a literature review of the Lakshadweep group of islands, existing discourse on CLs, and how islands are a unique setting to understand the concept of CLs. The literature helped in identifying various frameworks on CL and is used to understand the island cultural landscape of Lakshadweep.

The research employed a mixed-method approach both in data collection and analysis techniques, namely inventory formats to document the heritage resources, in-depth interviews with key informants and members of the local community, and visual documentation techniques. A total of 14 samples were selected for this study. The key informants include bodukaka and bodudatha (sarpanch/ Village head- male and female) from selected villages, the Chief publicity officer of Minicoy, and a few important elderly people from the community. The samples were chosen based on their experience and knowledge of Minicoy Island's history and cultural heritage.

Inventory formats were used to document the heritage resources. It facilitated a systematic categorization and listing of the cultural heritage resources on Minicoy Island. The format was designed to effectively capture the information and essence of tangible and intangible cultural resources, including vernacular houses, other structures like water structures, colonial heritage, and folk dances and songs. Interviews helped in the systematic recording of intangible heritage resources. Visual documentation techniques like still images were also used to support the previous two techniques to get a holistic comprehension of the heritage resources of the area and how the landscape is modified or shaped as a result of human activity.

3. Brief History: Lakshadweep Islands

Islands played a significant role in ancient maritime trade and commerce as they served as landmarks and refuges for sailors. The Lakshadweep islands in the Arabian Sea were also vital for trade and commerce, with the earliest reference to them dating back to the 1st Century AD in the Periplus of the Erythrean Sea. There is no direct reference, but the text describes the trade on the Malabar coast (Gaur, Vora, Tripati, Gudigar, & Bandodker, 1998). Other classical writers like Ptolemy's Geography (150AD), where he talks about many islands in the Indian Ocean (Gaur, Vora, Tripati, Gudigar, & Bandodker, 1998) and also the islands appear in the accounts of Ibn Batuta, the Arab traveler (Tripati & Gaur, 2012). These islands lie in the trade route of Arab and Soqotran ports to Malabar, and they must have been a resting place for trading vessels, with permanent settlements occurring over time. The original settlers were believed to be Hindus from the Malabar region, who were later converted to Islam under the influence of Arab traders. Archaeological evidence suggests that the islands were occupied by the Buddhist community around the 6th or 7th century. Amini, Kalpeni, Androth, Kavaratti, and Agatti are believed to be the first islands occupied, with the rest occupied later. The settlement of Minicoy, which was a part of the Maldives group until the 16th century,

is different from that of the northern islands. The inhabitants are ethnically different, and their language and customs are also distinct. According to the literary sources, it is postulated that Sinhalese probably colonized the Maldives from Sri Lanka. Due to a lack of historical sources, it is difficult to date exactly when this colonization happened. The colonization must have occurred a date later than Ceylon, presumed to be around the 5th or 6th century BC (Gabriel, 1989).

The history of the islands is not well documented, but the Cola king Imayavaramban is recorded to have attacked an island called Kadambinve said to be the stronghold of pirates, sometime in 175 AD, which is believed to be Kadmath Island according to the author of a short history Kerala, K.V Krishna Iyer (as mentioned in the book *Lakshadweep: History, religion and society by Theodore PC Gabriel)*. The Cola king Rajarajan (985-1014 AD) is mentioned as having conquered the islands, along with Sri Lanka, the Cera Pandya kingdoms, and the Maldives. They assigned the governance of these conquered lands to native Rajahs under their overlordship. When it declined, the local viceroys declared themselves independent from the Cola kingdom and established their reign over these lands, known as the Kolathiris, who controlled the northern Malabar region and the Laccadives. Few literary sources suggest that before Kolathiris, another principality was the ruler of the Laccadives, Pusiyakotan Rajah of the Pusinad. The Esi Mala kings dominated the region until the 12th century AD and belonged to the Musaka dynasty. As the Musaka dynasty declined, the kingdom reverted to a small principality in north Malabar known as Kolattunad. The administration of the islands was under the principality known as the Ali Rajahs, the Arakkal kingdom of Cannanore, from the late 11th century.

In 1498, the Portuguese arrived on the Malabar coast, disrupting the maritime supremacy of the Arakkal kings. The Portuguese conquered the Laccadive Islands in 1509 and allowed the Arakkal kings to trade with them, as long as they paid tribute. The Portuguese ruled the islands until 1543 and stationed themselves on various islands, including Amini, Chetlat, Kavaratti, Kiltan, and Kadmath. The islands were then handed over to the Arakkal Raja, who administered them until the East India Company seized them in 1908. Minicoy Island became part of the Laccadives after the Arakkal Raja received it as a gift for helping to end the Portuguese reign in the Maldives around 1573.

4. Results
4.1 Heritage Resources in Lakshadweep
4.1.1   Natural Heritage

Lakshadweep group of islands is rich in both natural and cultural heritage. The group of islands is of coral origin. Coral sands fringe the islands and have a shallow lagoon on the island's western side, forming an atoll. Andrott is the only exception in terms of the shallow lagoon. The landmass, coastline, lagoon, reefs, and the surrounding ocean form a continuum of biodiversity (Velmurugan, Gafoor, Jaisankar, Swarnam, & Mathai, 2008). Considering these islands are of coral origin, coral reefs form an essential part of the natural heritage found around these islands and are quite rich in terms of their marine diversity due to coral reefs. Different species of corals, fish, ornamental fishes, echinoderms, sponges, seaweeds, seagrass, and sea turtles are found in the waters of Lakshadweep. Aside from that, Minicoy Island is the only island with mangroves, forming a significant ecosystem. Pitti, one of the uninhabited islands, has been designated a bird sanctuary. Pitti Island is locally known as Pakshi Pitti meaning 'Island for Birds.' It is located 24 km northwest of Kavaratti Island, the capital of Lakshadweep. It is a breeding ground for four species of Terns. These islands are also home to many medicinal plants. There are roughly 400 plant species documented from these islands, even though the lack of hills or river systems significantly restricts the variety of plants that can flourish there. There are around 1680 different bird, reptile, fish, crustacean, and coral species in this archipelago, 172 of which are terrestrial (birds, reptiles), while the rest are marine (LAPCC, 2012).

4.1.2   Archaeological evidence: On-shore and Off-shore

Archaeological exploration, both onshore and marine exploration, was carried out on these islands by the Archaeological Survey of India (ASI). On-shore investigations were carried out at Androth, Agatti, Amini, Cheriyam, Kalpeni, Kavaratti, and Minicoy. The evidence showed two phases of occupation on these islands. The habitational mounds on these islands are locally known as 'Kalikatta' and 'Kunthathupalli' (Tripati & Gaur, 2012). On Androth island, the excavation revealed potsherds at a depth of 2.5m above coral sand, which indicates the island was occupied for some time after coral formation (Tripati & Gaur, 2012). Further investigations carried out on the site brought three levels of human occupation, Potsherds, black ashy deposits, and fragments of animals found from the occupation levels (Tripati & Gaur, 2012). Redware shards, which appeared to be imported from the mainland, were excavated from many islands, namely Androth, Amini, and Kalpeni.

Apart from pottery and coins, the archaeological excavation unearthed different figurines and miniature sculptures like a demon face made of coral block, mythical animals, lions, circular stone finials carved with lotus foliage, etc. (Tripati & Gaur, 2012). On the islands of Kadmath and Androth, the excavation unearthed more than 400 Roman

coins that dates to 119-138ce. This evidence suggests that Romans had direct or indirect trade contacts with these islands in the early periods of the Christian era (Tripati & Gaur, 2012).

Buddhist jataka stories also mention the Lakshadweep group and the Maldive group of islands. In 1971, a Buddha's head was recovered near the General Hospital on Kavaratti Island when the team carried out a trial digging. ASI then explored islands, namely Minicoy, Kavaratti, Andrott, and Kalpeni islands (Tripati & Gaur, 2012). They were able to unearth multiple Buddha heads, and it further revealed that the mosques of Kalpeni Kavaratti were constructed on pre-Islamic structural remains (Tripati & Gaur, 2012). On Minicoy Island, remains of a Buddhist Vihara or stupa were unearthed while digging the foundation for a house in one of the villages (Tripati & Gaur, 2012).

The Indo-Arabian stone anchors were also found in Minicoy. This evidence suggests that there was trade relation with the Arab traders. One of the stone anchors located in Minicoy was used as a lintel at the Jama Masjid entrance built in 1344 CE. The stone anchor was removed and kept aside during the renovation.

Because of the location of this group of islands, Lakshadweep served as a significant milestone for South Asia and the far east on the one hand and West Asia and North Africa on the other. Before the Second World War, many steam engine shipwrecks happened because of the absence of lighthouses, submerged reefs, and low-lying islands.
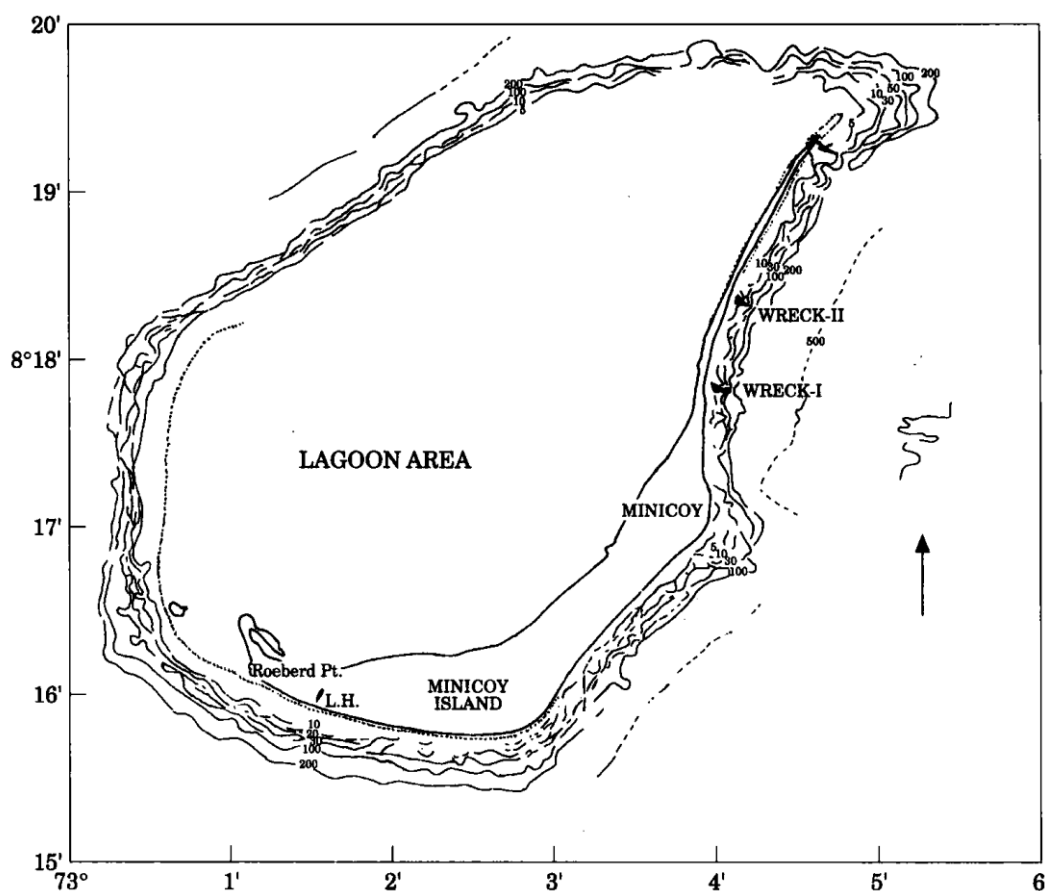

Figure 6: Location of Shipwrecks, Minicoy. Source: (GAUR et al., 1998)

4.1.3 Cultural Heritage

Minicoy island consists of tangible and intangible heritage resources. Tangible heritage resources mainly consists of the local vernacular settlements. Besides vernacular settlements, some of the islands consist of colonial heritage and archaeological remains both on-shore as well as off-shore. The intangible heritage of these islands includes indigenous knowledge of medicinal plants, the art of boat making, navigational knowledge, building materials, construction techniques, and folk songs and dances that forms a part of their way of life.

The following maps (figure 4&5) show both the natural features and the cultural heritage resources, primarily the vernacular settlement.
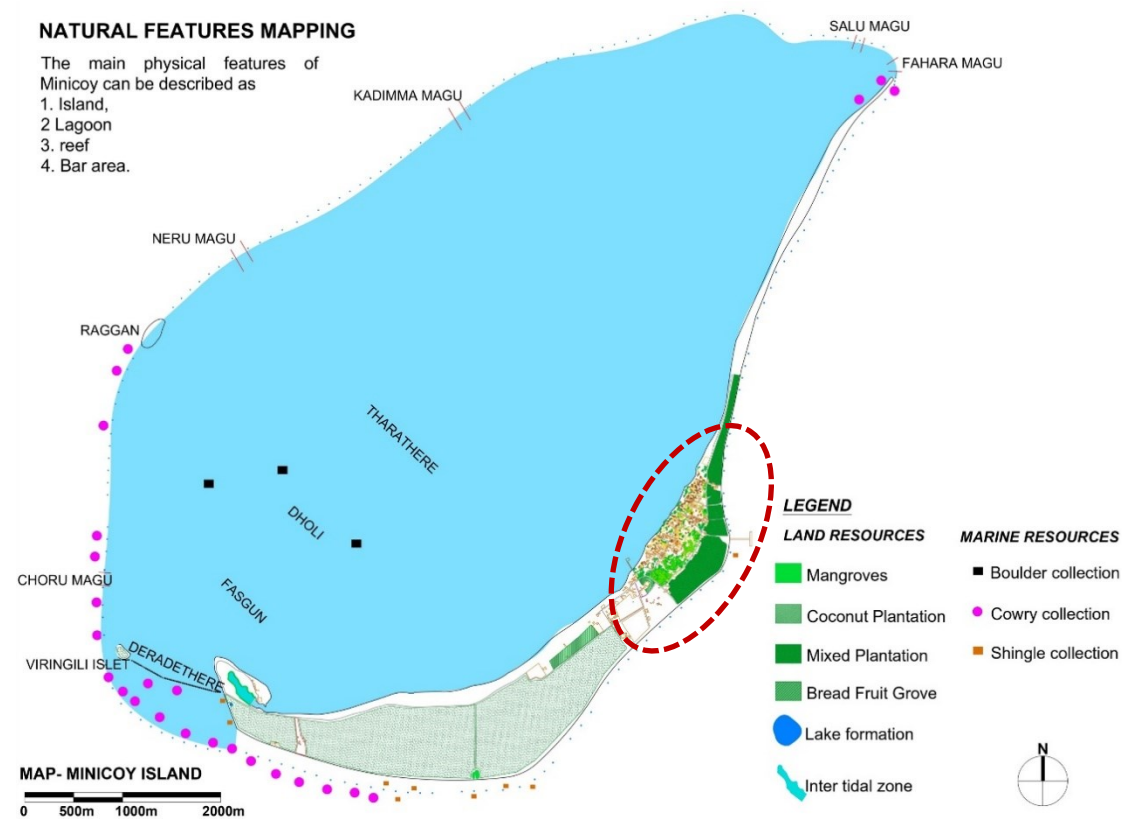
Figure 4: Map of Minicoy,
Map generated from google earth and field work by author.
Information source: (Centre for Action Research on Environment Science and Society (CARESS), 2003)
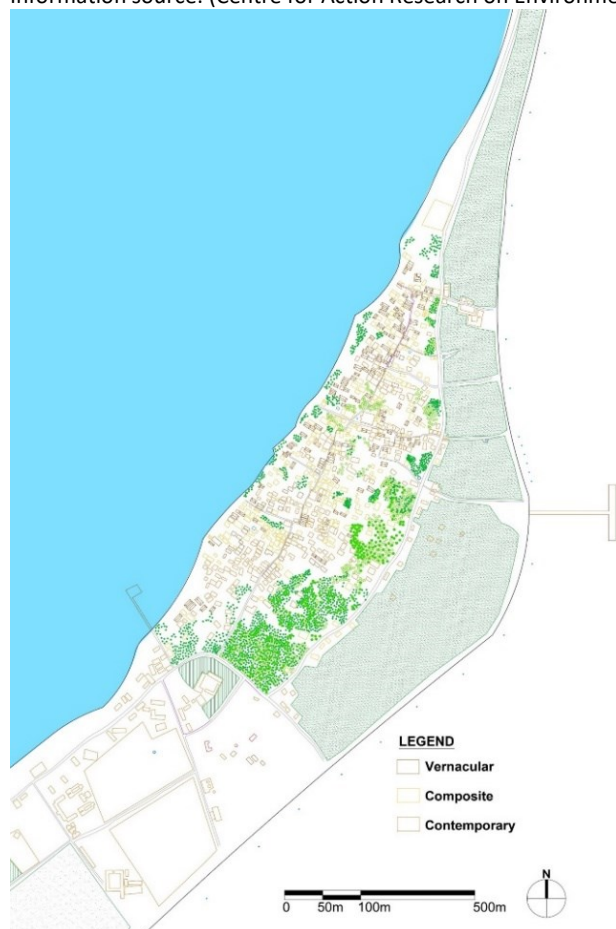

Figure 5: Settlement Plan of Minicoy, Source: Author

The following table No. 3 shows a sample of the inventoried list of tangible cultural heritage resources of the island Minicoy. Different typologies identified through this are vernacular houses, Village houses, religious structures, burial grounds, water structures and colonial heritage.

Sl No	Name	Village	Ownership	Period/ Time	Historic/ Contemporary use	Spatial Organization	Status	Photo
VILLAGE HOUSE								
1	Kendiparty Village house	Kendiparty Village	Village		Village gathering space, seat of village administration	U Shaped plan, consists of a central courtyard that is used for village gatherings. A verandah runs all along the plan. The interior space consists of a rectangular space with a multipurpose platform called Arifai Roof- Pitched roof	Retains the vernacular character of the structure.	
RELIGIOUS STRUCTURES								
2	Juma Masjid/ Ma Miskui	Funhilol Village	Community		Used for prayers. The oldest mosque on the island and is the main mosque as well.	Not accessible.	Renovated over the old structure in 2011.	
3	Ziyaray	Kodikolu	Community		Durgah	It is defined by a structure neatly arranged with the help of stones. Approached by a pathway and the stone structure faces towards the Eastern side	Very well maintained	
BURIAL GROUND								
4	Kammahana	Kodikolu	Community		Burial Ground	Open ground on the part of the island called Kodi. It is one of the two burial grounds on the island		
VERNACULAR HOUSES								
5	Aouge	Funhilol Village	Privately owned		Residential Use	Rectangular Plan: Two-roomed structure. Kitchen is a separate structure connected by the verandah running all along the plan. Tiled pitched roof	Retains the vernacular character of the structure. Well maintained structure	
WATER STRUCTURES								
6	Fen Valu	Fallesseri Village	Community		Community purpose, Not for drinking purpose	A water tank, hexagonal in plan and approached by a flight of steps from two of the sides.		
COLONIAL HERITAGE								
7	Light House	Thundi- Southern part of the island	Dept of Light houses and Light ships, GOI	1885	Navigational Purpose	A circular structure in plan, tapering towards the top. The interior consists of circular stairs which lead to the top of the structure	Well maintained	

Table No 3: Sample of the inventory formats of tangible cultural heritage resources. Image source: Author

The following table No. 4 shows a sample of intangible heritage documented on the island of Minicoy. It is important to note that this is not an exclusive list as it only gives a glimpse of the kind of intangible resources present on the island. Further documentation is required to understand and list all the intangible resources, including traditional knowledge-based activities.

SI No	Name	Description	Occasion	Photo
1	Lava/ Beru jahan	The folk dance was performed by toddy tappers known as "Raaverin" during Eid Festivals. They from avah (village) to avah through the Maemagu (main road) and performed in front of the "Avashuge" (Avah House). After the performance, the troupe moved to Avashuge, where they were served Maliku delicacies and a local drink called "Kekkifani" by the "Anhenvili" (women groups) during the intervals.	Eid festivals mostly. But it is also performed on other occasions as well. (Eg: Circumcision of boys is celebrated as an event by the family members, and these troupes are also invited to entertain the boys and the guests.	
2	Bandiya Lava	Performed by women of the island to the tune of a "lava"(song) carrying a "Bandiya" (pot), which is a part of the social set up and the tradition followed in Minicoy. As per the traditional custom the young women carry drinking water in such Bandiya (pots) to the houses of their bridegrooms and their close relatives. This custom is still existing in Minicoy.	It is performed for entertainment purposes. At present it is also performed as a welcome dance to the dignitaries.	
3	Thaara	It is performed in a temporary hall called 'Mureeduge'. It is performed by a group of men carrying a Thaara/Dhuff/Dholi to the tune of Leng (songs) by a group of singers called Lengverin (singers). The songs are also of religious theme	Religious festival called Mureedu	
4	Arhimathi Beru	Performed by both women and men on the island. It is performed using a beru (drum) in a seated position. It is performed in Avzhuge (village house) and it is performed to the local song called Thaevaru	On the eve of Eid. It is performed throughout the night	

Table No 4: Sample of the inventory formats of tangible cultural heritage resources. Image Source: Photographed by FG Mohammed

5. Discussion

There are multiple international and regional organizations working on cultural landscapes. One of the prominent being the UNESCO which deals with the identification and management of CL. In its operational guidelines, UNESCO defines three types of CL, and further subdivisions. UNESCO has a separate category that deals with the CL with Outstanding Universal Value (OUV), which is evaluated using the 10 criteria for selection of a property in the World Heritage List, which also apply to all heritage resources with OUV. There are no identification and assessment frameworks for the CL born out of different socio-economic and cultural geographic systems. Every nomination for the list is dealt with on a case-by-case basis. Other organizations like NPS, IUCN, and European Convention deal specifically with American National Parks, with natural heritage and European landscapes respectively. Asian Cultural Landscape Association (ACLA) deals with the diversity of CLs in the Asian region but there are no frameworks in place to deal with such CLs.

Indian Cultural landscapes (ICL) are borne out of the intricate relationship between human societies and their surrounding environment. These landscapes are influenced by a varied range of factors that include legends, myths, belief systems, and religious and spiritual understanding of a particular community. It consists of an array of tangible and intangible cultural resources that are essentially interwoven with the associated cultural traditions. ICLs are diverse and these variations can be found in different geographical settings across the Indian subcontinent.

Lakshadweep Group of Islands
The isolation inherent to these island communities has given rise to unique cultural characteristics. These island communities have developed knowledge and practices which are based on the available resources such as water, food, medicinal plants, and other resources. As the sea forms an integral part of the island, these communities have developed specialized knowledge in various domains, such as fishing techniques and navigational skills.

The Lakshadweep archipelago consists of 27 islands, apart from islets, sandbanks, and rocky formations. Out of these, 10 islands are inhabited by the local people, and one island is exclusively developed for tourism purposes. In addition to that, there are about 16 islands within the archipelago that are uninhabited by the local communities. Furthermore, there are three reefs, six submerged banks, two rocky formations, and one sandbank within the archipelago. Pitti Island, one of the islands within the archipelago, is designated as a bird sanctuary, and public access is restricted to this island to ensure the conservation of bird species and is not disturbed by anthropogenic activities.

Tourism activities are prevalent on most of the islands (Bangaram Island), but all these activities are subject to tourism regulations. Tourists are expected to get permission from the authorities to visit the Lakshadweep group of islands, The infrastructure required for tourism purposes is situated away from the local settlements. Tourism forms an important economic activity for the islanders apart from other traditional occupations like fishing, toddy tapping, sailing, and employment opportunities in the government sector. However, because of their small size, the Lakshadweep group of Islands is vulnerable to various challenges and threats that endanger their very existence.

Due to climate change and related rising sea levels, they are particularly at risk. Additionally, due to their small size, they have an ecologically fragile ecosystem. With the rise in global temperature, there is a threat to the marine ecosystem as it will have irreversible damage to the coral reefs and thereby disturb the entire ecosystem of these islands. They are also prone to many natural hazards due to the changing global temperature. Furthermore, tourism has become one of the important economic activities for the islanders. Due to this, there is an increase in the development of infrastructure to accommodate the need. However, the development of the tourist infrastructure is usually located away from the local settlements creating a spatial segregation between the local communities and the infrastructure. There is a changing trend in urbanization and tourism activities that have both positive and negative impacts on these islands. These activities provide economic opportunities, but at the same time, they also pose some challenges in terms of environmental sustainability, cultural preservation, and traditional knowledge systems.

Characterizing components of Island Cultural Landscape: Minicoy Island, Lakshadweep
The heritage resources of the island of Minicoy consist of natural and cultural heritage resources. The island boasts a rich natural heritage that includes both terrestrial and aquatic resources. The islands are of coral origin, coral reefs form a major part of the natural heritage, and it contributes to the formation of rich and ecologically significant marine ecosystems. Coral reefs are very significant, complex, and fragile ecosystems, that support various marine systems. This forms the basis for these islands' existence, and they also hold cultural and economic importance. They provide opportunities for recreation, education, and scientific exploration. Protecting and conserving these resources is important because it not only safeguards the biodiversity of the place but also it has economic and cultural benefits for the communities inhabiting the island.
The island of Minicoy is also rich in cultural heritage resources. The tangible cultural resources include onshore and offshore archaeological evidence, vernacular architecture, and colonial heritage. The settlement is primarily situated in the central part of the island due to the presence of accessible drinking water sources. Initially, the entire settlement had five villages, each corresponding to the occupational activities and the class of different communities on the island. At present, there are 10 villages which got further divided over time. Moreover, the settlement is concentrated on the western side of the island near the lagoon area. This can be attributed to the topography of that region, which is characterized by flat land. The eastern part of the island has a more uneven landform, making it less suitable for the purpose of habitation. All community-related areas (Avazhuge/Village houses, miskui/mosques, etc) are located along the main road locally known as Maemagu. The whole settlement has grown from this main road. The maemagu forms an important part of the tradition as well. One of the cases where this road is used is the folk dance by the males in the community. They move from one village to another on maemagu, the dance is performed in front of the village houses, after which snacks are served to the performers in the village houses.
The intangible heritage resources encompass a diverse range of elements that include folk dances, folk songs, and traditional knowledge which are rooted in the craftsmanship of boat making, coir making, navigational skills, fishing techniques, food sources, and medicinal plants. Furthermore, local inhabitants possess knowledge of the locally

available materials and techniques employed in construction activities. Minicoy islanders are also known for their proficiency in carpentry and artistic skills. This craftsmanship is evident in multiple household items such as tables, chairs, and coconut graters as well as on boats and buildings.

Spatially vernacular houses result from the traditions followed by the community and the occupation (in this case-Fishing). The materials are locally available resources (Fathi gua are essentially coral stones extracted from the sea and are used as the main building material, lime is extracted for use as mortar and plastering, and timber is also used for both vertical and horizontal support, and for doors and windows, a pitched roof usually covered with thatch or more recently with tiles). The construction techniques evolved from a trial-and-error process. The trends are changing now because of the introduction of new materials and associated techniques.

Relevance of CL Framework in Understanding the Island Setting

The frameworks employed in this study to explore the Islands of Lakshadweep have shed some light on a comprehensive understanding of the Islands as CLs by means of its spatial narrative that reflects various spatial scales and temporal dimensions. This study has revealed distinct scales namely.

- Group of islands – The collective group of islands in the Archipelago of Lakshadweep forms a larger unit for analysis. It also forms a part of a much larger group of islands namely Maldives and Chagos as they are formed over the same submerged ridge Chagos Laccadive Ridge. Islands in Lakshadweep, particularly Minicoy Island shares similar attributes with the Maldives group of Islands.
- Island- Each island has its own unique spatial identity within the archipelago of Lakshadweep, like Minicoy Island which is the case selected for this exploratory study. This allows for a more specific examination and characterization of different islands in the group.
- Settlement – This is the settlement area within each island. These serve as localized spatial units, that contribute to the overall cultural landscape of the island.
- Unit level- This is the different types of built and unbuilt components of the island landscape.

Furthermore, it is important to note that the different layers of history have also played a critical role in the evolution of the CL. These are essentially different groups of people or communities who have occupied these islands over time and how they have shaped the island landscapes over time. Some of the built structures like the water tanks on Minicoy Island reflect the influence of Buddhist architecture.

Using the frameworks mentioned above, this study has allowed us to explore the Islands of Lakshadweep, revealing their cultural and spatial attributes at various scales, and historic layers on these islands that have contributed to enhancing our understanding of these distinctive island landscapes. In the case of Minicoy Island, the culture of the island communities plays a vital role in shaping the landscape, and the resource availability, particularly those associated with the sea, has also influenced the way of life on these islands. An intricate relationship between the island communities and their environment can be seen in the case of Minicoy Island.

6. Conclusion

This study highlights the concept of CLs and the various international and regional organizations working towards protecting and conserving cultural landscapes. UNESCO plays an important role in dealing with CLs but there is a need for identification and assessment frameworks for the cultural landscapes born out of different socio-economic cultural geographic systems. ICLs are diverse, and understanding this can help contribute to the global discourse on cultural landscapes.

The Lakshadweep group of small islands faces ecological fragility and vulnerability to climate change and associated events. Understanding these island communities and their intricate relationship between humans and nature can contribute to the existing discourse of ICL. These communities have developed a way of living that is based on the availability of resources and traditional knowledge, particularly those associated with the sea. The case of Minicoy Island is selected to explore the concept of the CL and it showcases distinct cultural traits and heritage resources. The factors that have influenced the settlement pattern, vernacular architecture, its spatial organization, and the construction technique rooted in its natural setting, local materials, and traditions are also discussed.

In conclusion, this paper emphasizes the intrinsic spatiotemporal dimensions of island environments. As a result, various scale and temporal dimensions have been established and defined, including the group of islands, individual islands, settlements, and at the unit level. This study has provided insight into the intricate interplay between spatial organization and temporal dimension within the environment of the islands of Lakshadweep by applying these frameworks to comprehend CLs.

References

Ashalatha, B., Subrahmanyam, C., & Singh, R. N. (1991). Origin and compensation of Chagos-Laccadive ridge, Indian ocean, from admittance analysis of gravity and bathymetry data. *Earth and Planetary science letters,* 105(1-3), 47-54.

Aziz Amen, M., & Nia, H. A. (2018). The dichotomy of society and urban space configuration in producing the semiotic structure of the modernism urban fabric. Semiotica, 2018(222), 203–223. HYPERLINK "https://doi.org/10.1515/sem-2016-0141" https://doi.org/10.1515/sem-2016-0141

Amen, M. A., & Kuzovic, D. (2018). The effect of the binary space and social interaction in creating an actual context of understanding the traditional urban space. Journal of Contemporary Urban Affairs, 2(2), 71–77. HYPERLINK "https://doi.org/10.25034/ijcua.2018.3672" https://doi.org/10.25034/ijcua.2018.3672

Amen, M. A., & Nia, H. A. (2021). The Effect of Cognitive Semiotics on The Interpretation of Urban Space Configuration. HYPERLINK "https://doi.org/doi:10.38027/iccaua2021227n9" https://doi.org/doi:10.38027/iccaua2021227n9

Aziz Amen, M. (2017). The inspiration of Bauhaus principles on the modern housing in Cyprus. Journal of Contemporary Urban Affairs, 1(2), 21–32. HYPERLINK "https://doi.org/10.25034/ijcua.2017.3645" https://doi.org/10.25034/ijcua.2017.3645

Brumann, C., & Gfeller, A. É. (2022). Cultural landscapes and the UNESCO World Heritage List: perpetuating European dominance. International Journal of Heritage Studies, 28(2), 147-162.

Centre for Action Research on Environment Science and Society (CARESS). (2003). Socio_Economic Dimensions and *Action Plan For Conservation of Coastal Resources Based on an Understanding of Anthropogenic Threats.* Chennai.

Cultural Landscapes. (n.d.). Retrieved from UNESCO World Heritage Centre: https://whc.unesco.org/en/culturallandscape/

Cultural Landscapes 101. . (n.d.). Retrieved from U S National Parks Service: https://www.nps.gov/articles/cultural-landscapes-101.htm

Ellis, R. H. (1992). *A short Account of the Laccadive Islands and Minicoy.* Asian Educational Services.

Gabriel, T. (1989). *Lakshadweep: History, religion and society.* Books & Books.

Gaur, A. S., Vora, K. H., Tripati, S. S., Gudigar, P., & Bandodker, S. N. (1998). Exploration of steam engine wrecks off Minicoy Island, Laksadsweep, India. *International Journal of Nautical Archaeology, 27(3),* 225-236.

Jones, M. (2003). The Concept of Cultural Landscape: Discourse and Narratives. In *Landscape interfaces: cultural heritage in changing landscapes* (pp. 21-51).

Kattner, E. (2007). Bodu Valu–Big Ponds. Traditional Water Management and its Socio-cosmic Implications in Minicoy/Maliku, an Indian Ocean Island. In *Antike Zisternen* (pp. 145-172).

LAPCC. (2012). *Lakshadweep Action Plan on Climate Change.*

Planning Commision Government of India. (n.d.). *Report on Lakshadweep wetlands, coral reefs of Planning*. Retrieved from yumpu.com: https://www.yumpu.com/en/document/read/42930341/report-on-lakshadweep-wetlands-coral-reefs-of-planning-

Pungetti, G. (2012). Islands, culture, landscape and seascape. *Journal of Marine and Island Cultures, 1(2)*, 51-54.

Reddy, C. S., Debnath, B., Krishna, P. H., & Jha, C. S. (2013). Landscape level assessment of critically endangered vegetation of Lakshadweep islands using geo-spatial techniques. *Journal of Earth System Science, 122*, 271-281.

Signh, R. P. (2017). Appraising the Indian cultural landscape: Envisioning ecological cosmology in the 21st Century. *North Eastern Geographer 39(1-2),* 3-28.

Singh, R. P. (2013). Indian Cultural Landscape vis-à-vis Ecological Cosmology: A Vision for the 21st Century. *Annals, National Association of Geographers of India, Annals-NAGI, 33(2)*, 36-62.

Sinha, A. (2006). *Landscapes in India: forms and meanings (Vol. 16, p. 232).* University Press of Colorado.

Thakur, N. (2011). Indian cultural landscapes: Religious pluralism, tolerance and ground reality. *Journal of SPA: New Dimensions in Research of Environments for Living" The Sacred", (3, Monsoon)*.

Thakur, N. (2012). The Indian Cultural Landscape: Protecting and Managing the Physical to the Metaphysical Values. In K. Taylor, & J. L. Lennon, *Managing Cultural Landscapes* (pp. 154-172). Routeledge.

The European Landscape Convention. (n.d.). Retrieved from Council of Europe: https://www.coe.int/en/web/landscape/the-european-landscape-convention

Tripati, S., & Gaur, A. S. (2012). Maritime Archaeology of lakshadweep Islands, India. *Journal of Indian Ocean Archaeology No, 7(8)*, 2-12.

Understand Cultural Landscapes. (n.d.). Retrieved from U S National Parks Service: https://www.nps.gov/subjects/culturallandscapes/understand-cl.htm

Velmurugan, A., Gafoor, V. A., Jaisankar, L., Swarnam, T. P., & Mathai, J. (2008). Biodiversity and climate change impacts on the Lakshadweep Islands. In *Biodiversity and Climate Change Adaptation in Tropical Islands* (pp. 503-522). Academic Press.

Venkatachary, B., & Kawathekar, V. (2018). Understanding the Relationship between Component and Attribute of Cultural Landscapes: Case of Indian Music and Cultural Landscapes. *Journal of Heritage Management, 3(1)*, 112-121.

Wagle, B. G., & Kunte, P. D. (1999). Photo-geomorphologic study of representative islands of Lakshadweep.

Wong, P. P., Marone, E., Lana, P., & Fortes, M. (2005). Island Systems. In *Millenium ecosystem assessment:ecosystems and human well being:current state and trends. 1* (pp. 663-680).

yumpu.com. (n.d.). Retrieved from yumpu.com: https://www.yumpu.com/en/document/read/42930341/report-on-lakshadweep-wetlands-coral-reefs-of-planning-