

## RESEARCH ARTICLE



# Conservation of Heritage Sites in Disasters: A Geographical Appraisal of Chendamangalam - Kerala

## OPEN ACCESS

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## Abstract

*The paper mainly deals with the advantage of spatial location and cultural characteristics of heritage sites in Chendamangalam near Cochin City, Kerala. Recently the resilience of cultural heritage to natural disasters has been articulated to manage and prepare for disaster risk. Kerala has rich and diverse cultural heritage sites and it is managed by governmental agencies at the national, state and local levels. A large number of cultural heritage sites popularly known as Muziris heritage sites attracting more visitors day by day due to genius creativity and cultural significance. There is a special need to protecting such historical sites and other structures of cultural value for future generation. The aim of the study is conducting based on the objectives of location advantage and spatial distribution of heritage sites in the study area. The paper aims to analyse the chances of occurring natural disasters like flood using Geospatial techniques. Both primary and secondary data including field observation, surveys, interviews and reports have been used for the fulfillment.*

**Keywords:** Geospatial techniques; cultural heritage; location advantage

## Introduction

Heritage sites are considered as worthy conservational objects which are located on the different geographical landscapes. They are mainly seems to be monuments or cultural sites that makes sense to groups of settlements belonging to many generations. Proper maintenance of past records to new generation may helps to the integration and association of new meanings which help to pave the way for bridging traditional and new infor-

mation. Nowadays different types of natural disasters affect heritage sites and caused damages to its virginity, sanctity and beauty. UNESCO, World Heritage Centre and Tourism Industry are mainly concentrated for the promotion of such sites and taking initiation for the preservation. According to (1974) is: "culture is the man-made part of the environment." In Cochin cultural tourism satisfies the visitors to make understand among the old properties, in terms of art, culture, history and architecture.

## Objectives

The present paper is an attempt to examine cultural heritage sites and its spatial distribution in the periphery of Cochin City with special reference to Chendamangalam Panchayath. In Kerala UNESCO designated sites like Jews settlements, SYNAGOGUS, PALACES, and FORTS are generally called as MUZIRIS SITES was a home to a multitude of faiths and cultures. The geographical position of Kerala between Arabian Sea in the west and Western Ghats in the east influenced the development of two natural or cultural sites. The location advantage and spatial distribution of heritage sites in the study area shows the chance of occurring natural disasters like flood using Geospatial techniques.

## Methodology

The present study is based on primary and secondary data. Primary data collection is based on GPS Survey, Field observation, Interviews, and the focus group discussion. Cartographic analysis was done with the help of geospatial techniques using Arc GIS software. The secondary data have been drawn from books, reports, articles, and newspapers.

## Location Aspect of the study area

Chendamangalam Panchayath is situated near the Cochin Metro city . The lat - long extension of the study area is between 10.1797° N and 76.2097° E. It is actually located between Kochi and Kodungallur was a home to a multitude of faiths and cultures. Chendamangalam Panchayath is formed in the year 1914 with a combination of its geography in the form of three branches of river Periyar, seven inlets, hillocks and green plains. There are 6 heritage spots included in the study area are under constant threat from the various natural disasters especially flood in recent years. The total area of the Panchayath is 10.83 km<sup>2</sup> and the population is 29326.

## Previous Empirical Reviews

The concept of cultural heritage invariably differs from one or region to another. In a broad sense, it is perceived as comprising of movable and immovable assets. There are many reviews regarding cultural tourist sites, cultural monuments, its preservation and its management. The article named Disaster Management Guidelines for heritage monuments by Jenee .P (2006) published by Kerala State Archives discussed the guidelines for disaster management of cultural monuments. The paper emphasizes the current scenario of India's cultural heritage, and some key issues in planning and disaster management. Rachel A. Varghese (2017) through the article, "What constitutes Muziris? Past and the production of heritage destinations in the south Indian state of Kerala" examines heritage tourism initiatives and its impact on Muziris heritage. The Asian Journal of Science and Technology by

Jafar Rouhi (2017) "Definition of cultural heritage properties and their values by the past". The objective manifestation of the human mind is specifically evident in the values of cultural heritage, and more specifically is demonstrated in the historical monuments and sites. The aim of this paper is to answer the questions that might come up about the importance of cultural heritage properties and their preservation. Another research article published by Ramanath Jha (2019), Protecting India's built heritage against natural disasters is highlighted with the key challenges of Heritage Conservation in Disasters. He mainly emphasized on heritage grading and documentation for proper management.

## Findings and discussion

1. Location, advantage and spatial distribution of heritage sites

There are seven major cultural sites located the vicinity of the river Periyar and they are distributed in the eastern side of the Chendamangalam Panchayath. Geographically it is a low laying area, having many canals and branches of river Periyar flows through the entire Panchayath with enormous drainage facilities for tourism and trade (Map -1). There are several heritage sites like Paliyam Nalukettu, Paliyam Palace, handloom centre, Church, Vypeekotta seminary, Temple, Mosque, Synagogue and Jews cemetery in Kottayilkovilakam are located in 1 km circumference shows the religious harmony of Chendamangalam. Kottayilkovilakam ferry was the ancient boat jetty located near these sites attracted different immigrant communities like Konkinis, Carpenters, weavers (Chalian), and Moopans etc. have made their own cultural contributions to the study area. As per the historical records these drainage system had a strong link between local and foreign trade due to the proximity of ancient Sea harbor called Muziris. Even today it is attracted by many visitors using the brand name of Muziris Heritage Project.

2. Flood Affected Heritage spots in Chendamangalam  
Natural disasters represent major threat to cultural heritage in Kerala. In recent floods (2018 & 2019) there have been several challenges faced by most of the heritage sites in Chendamangalam Panchayath. The major damages were occurred in ancient buildings due to inadequate maintenance and proper management. For example Synagogue located in Kottatylkovilakam was the worship centre of Jews in the 17th century as traders.

The major injury faced by synagogue is the removal of plastering on the walls and paintings on the windows and doors. (fig- 1)





Fig. 1. Synagogue

• **Chendamangalam Handloom Industry**

One of the famous handloom industries in Kerala is a Chendamangalam handloom which is affected by flood during the year 2018 and it is the only place where the traditional handloom weaving was carried out in the State. The industry has been associated with the rulers of Paliam family, who have been used handloom cloths in early times. The weavers of Chendamangalam were migrated from Tamil Nadu by the order of Paliath Achans. It is estimated that six hundred weavers spread across in the societies are engaged in traditional handloom weaving. At the time of flood around 255 looms of seven cooperative societies had totally damaged due to the water level of 6ft. Stock worth of 75lakh to 1 Crore including the finished the products like dothis, sarees etc. were lost during the flooding.

• **Paliam Palace & Nalukettu**

They are located North Eastern part of the study area and the palace was the official seat of Paliath Achans, who were resided at Chendamangalam in the period of 1662 to 1809. Paliath Achans, who were the prime ministers of the Kochi kings. The special attraction of this heritage site is with its architecture, includes Kerala style as well as Dutch. The ground floor of the palace was totally affected by flood (2018) with the water level of 5ft. and most of the valuable things like manuscripts, artifacts were spoiled. It is estimated that about 50lakh loss occurred at the time of flood and it is the heavy loss for the future generation. Nalukettu is a traditional home where several generations of a joint family lived together. It was built in 1786 and consists of a main house along with four blocks-Northern, Southern, Eastern and Western. Due to the proximity of Paliam ferry and the adjacent canals were paved the way for occurring flood in 2018 with the water level of 3 ft. (figure :1)

• **Mosque and premises**

It is the only site which is repeatedly affected by flood during 2018 and 2019. During the time water was raised at the level of 9 ft. and 3 ft. respectively due to the presence of nearby River Periyar. Both boat jetty and office of Tourism Promotion Council (Nakshathra Holidays & Resorts) were severely affected. Mosque is another important religious place located here but because of the management of construction in the elevated spot is not affected much during flood. Even though the premises of mosque especially on the slope is much affected by river water during 2018 & 19 repeatedly.

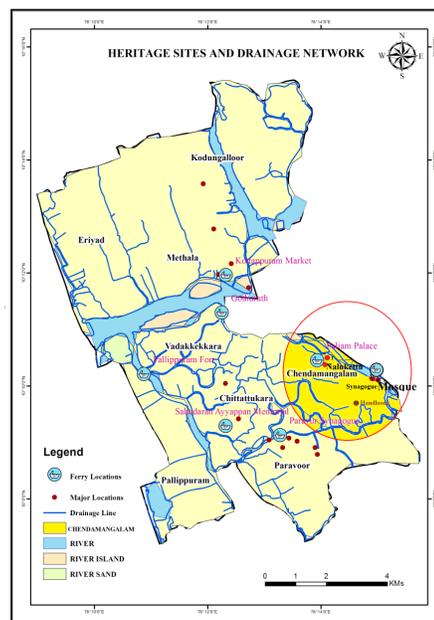


Fig. 2. Map

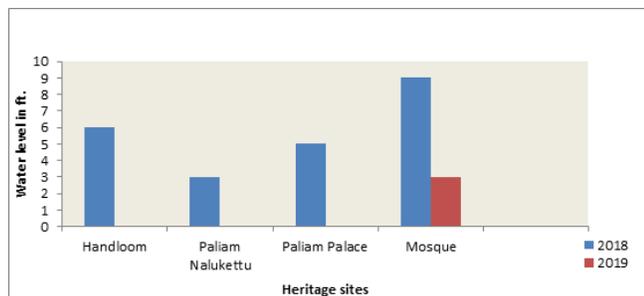


Fig. 3. Periodical changes in water level (in ft.)

### Conclusion & Suggestions

The study concluded that proper identification is needed for protecting heritage monuments and sites from all possible disasters. In the study area water logging and flooding by heavy rainfall caused threat to life and cultural wealth due to climate change. Flooding would be devastated for cultural institutions, historical monuments and manuscripts and there is a possibility of flood soon after monsoon rains in Kerala. It is necessary to introduce basic tactics for saving life and property protection mission in the wake of a disaster in the study area. The major challenges are Lack of understanding and appreciation of cultural monuments and buildings. Identifying worst affected cultural heritage centers, sites and monuments needs preparedness in advance to limit the damages. The well preserved heritage sites like synagogues, palaces, Nalukettu are the sources of repository

genetic materials needs more conservation in the study area.

The major suggestions are to protect drainage channels blocked due to sea wages in all streams in the study area. Flooding would promote the growth of fungi and affects artifacts of organic origin needs more conservation measures scientifically. Advices should be taken from conservators and conserving agencies in order to save flood affected painting on the external walls and doors. Moreover water proofing walls and roofs helps to prevent damage from floods and heavy rain falls. Water level indicators to forewarn of floods should be needed. Maintaining micro film copies of manuscripts and cultural reports in a separate location may be recommended. It is necessary to develop a mitigation plan for repairing and restoring process through major strategies and tactics for immediate evacuation. Finally it can be achieved by communication of plans to all employees in the related institution using model posters and banners. Educating the visitors towards disaster mitigation and giving train to employees.

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