

A Landscape Approach to the Rejuvenation of the Cultural Landscape of Barkur through Historical Analysis

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Abstract: *Barkur, which is an ancient port town in Karnataka situated on the banks of the river Sita, has a unique culture that is developed because of its natural setting and that is reflected in the way of life, Architecture, and festivals. It has a rich historical background and this cultural landscape which has evolved over centuries is under threat due to insensitive development and apathy towards their heritage. This paper involves a landscape approach through historical analysis of the primary data and survey method using secondary data to map the topography of this town. Design strategies are proposed for a sustainable rejuvenation of the heritage and cultural landscape to achieve ecological stability, conservation of the monuments and to promote eco-tourism and showcase the glory and growth of this town. It is found that proper watershed management would help to optimize the use of natural resources, improve agriculture productivity and revive the lost interlinks between the streams and tanks. Policies are proposed to protect and conserve rich farmlands and provide for a sustainable development of the historic sites and monuments. The proposals include a sustainable development to promote eco-tourism and provide economic opportunities to the local community.*

Keywords: Cultural landscape, Ecological stability, Eco-tourism, Morphology, Sustainable Rejuvenation

1. Introduction

Barkur is a historic city is located in coastal Karnataka on the banks of the river Sita, 16 km away from Udipi towards its north (see Fig.2). It was the capital of the Alupas, which formed the Tulu Kingdom and were known as Tulu kings. The "Alupas" were one of the most prominent ancient royal families who ruled this region and they were also known as the "Alvas". Their lineage can be traced to the "Soma Vamsa" or the moon like the Pandyas of Tamilnadu as they had "Fish" as their emblem and which belonged to the family of Pandyas. They spoke the Tulu language and most of the districts ruled by them were in coastal Karnataka. In Barkur there are many ancient inscriptions found in the temples and residences which are in Tulu language and give us a lot of information of the past. They established their rule in this region and formed their kingdom known as Alvakheda in the beginning of the common era (200 BCE to 450 CE) [7]. The Sita River that flows through Barkur has a beautiful and broad delta which provided a safe harbor for ships to dock.

This port flourished over time and ships from various countries docked here for trade, making it an important commercial port. Barkur is also known as the "Village of Temples" as it had 365 temples amongst these about 30-40 remain today. According to the legend, the king would visit one temple in the village every day, the last being the Panchalingeshwara temple; on that day, the "Rathotsava" (Car Festival) would begin and be celebrated for a week. This was the town of "Nityatosava" that is "Nithya" meaning daily "Utsava" meaning festival [8]. This place used to be called by

various other names such as Barahkanyapura, Barakuru, Barakanur, Jayanti Pura and Varakula[3]. But when the Kadambas dynasty founded by Mayurasharma became powerful they swore allegiance to them and they continued their rule as subordinates to the dynasties that followed such as the Chalukyas of Badami, Rashtrakutas of Manyakheta, Hoysalas of Dwarasamudra, Vijayanagara Rayas and the Nayakas of Keladi [6]. The Alupa rulers converted this commercial center into a political center by making it their capital during the 10th and 11th centuries AD. It led to further development of socio-economic activities and the growth of this city and it became the core of Tuluva culture. Many stone and copper inscriptions are found in the temples which authenticate that it was a spacious city having many temples, temple tanks, streets and colonies. It is also called as the "Hampe of Tulu Nadu".

2. Aim

This paper aims to understand the historical, cultural significance and the heritage of the town to be able to analyze and map the morphology of this town. To strengthen the ecology of the place through landscape strategies, which is inclusive of the urban growth of the town. It also aims to develop an association between the natural landscape, physical features, heritage and socio-cultural aspect to help people develop a sense of pride and to encourage eco-tourism by strengthening and enhancing the rich culture of the place and promote sustainable development. To develop a design strategy to conserve the monuments, heritage sites and provide

significant economic benefits, employment opportunities and additional income to the local people.

3. Approach

The study area is the Brahmavara watershed consisting of 586 acres and the topography of this region was developed through Geographic Information System and analyzed to propose appropriate watershed management. The paper focuses on the revival of the cultural and heritage landscape of Barkur by addressing the social, cultural and environmental concerns of the people. This would ensure that the traditional social and economic patterns that created the heritage of the place continue. And, to encourage people to visit and stay in this place to boost local economy and to ensure that the inhabitants of the place become the primary beneficiaries of the development through local participations and partnerships. The involvement of institutions to incorporate lessons on local heritage, history and culture of their town to instill an awareness in the young about their rich history and understand the traditional indigenous and sustainable practices. The inclusion of inhabitants in the decision making, rejuvenation and promotion of tourism and to show-case their culture and heritage, and to give them a sense of ownership and belonging to ensure a sustainable link between society and its heritage [1]. Also, to use the expertise and knowledge of the locals in the fields of agriculture, conservation and rejuvenation.

4. Selection of Study Area

Barkur has invaluable Monuments and Archeological Sites yet remains forgotten, lost to the present and has little employment opportunities for the present generation. It is located very close to the bustling “Temple town” of Udupi and “Cosmopolitan” Manipal which is very urban in its character. It is also about 5 km east of the Arabian Sea coast and “Hangarkatte” the ancient port is 2.5km away. Barkur has a lot to offer to the young and elderly and can ease the pressure of tourists in the neighboring towns. It had 365 temples in the past and every community has the “Moolastana”(place of

Origin) here. The “Rathotsavas” or Car festivals are celebrated with great pomp and style and there are some rituals that are very unique to this town but is not widely known. These festivals can attract tourists as it is an “Enchanting experience” and thus create revenue for this town.



Figure 1 (a): Map showing the location of the kingdom of Alupas known as “Alvakheda”. Source:[7]

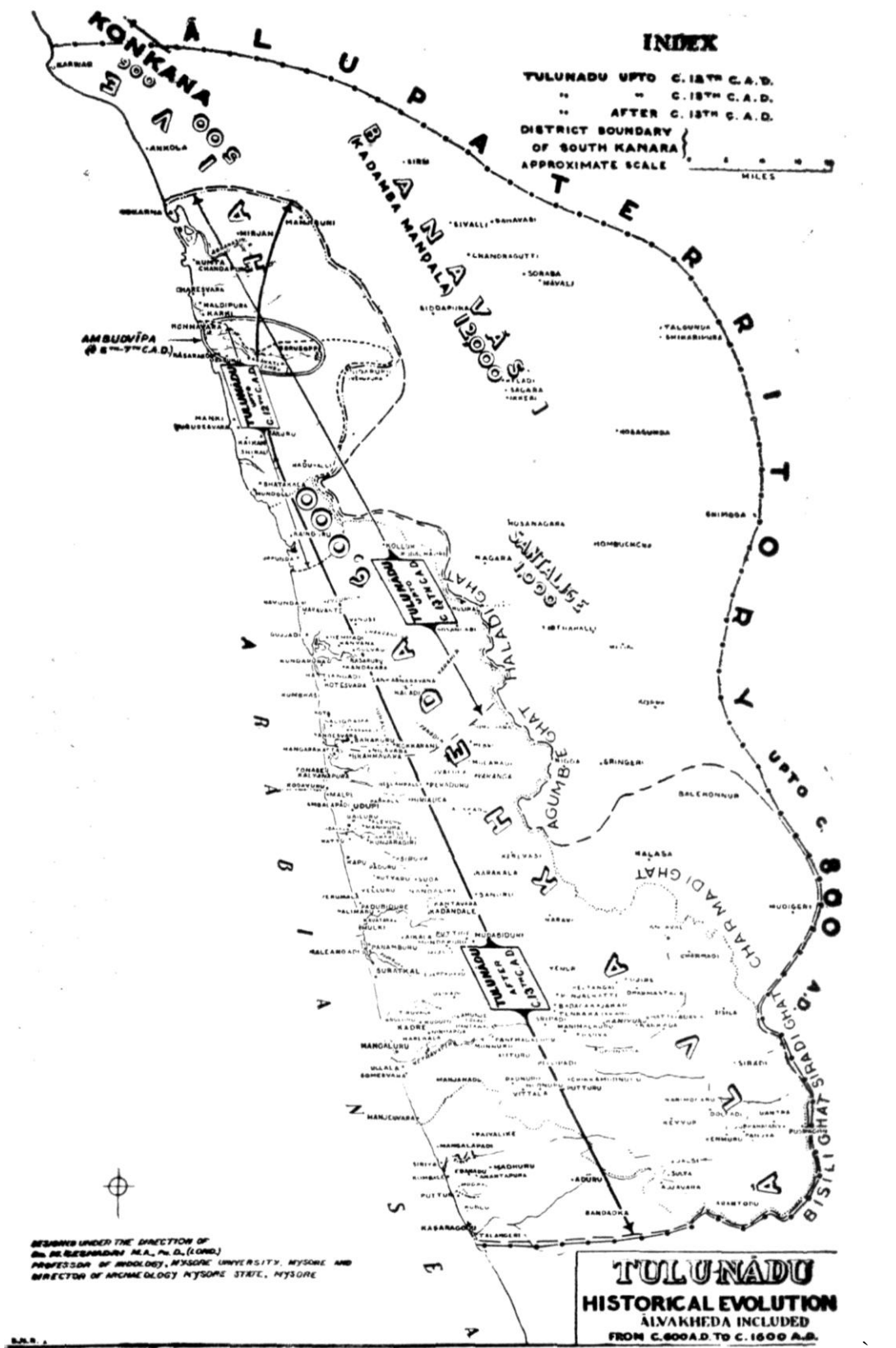


Figure 1 (b): Map showing the extent of the kingdom of Alupas known as “Alvakheda”.Source: [7] (Designed under the leadership of Dr. M. Seshadri, M.A, PhD (London) Professor of Indology,Mysore University,Mysore, and Director of ArchaeologyMysore State,Mysore)



Figure 2: Location of Barkur. Source: Author generated based on info [9]

The Sita River flows majestically through Barkur and the islands that are seen here are breath taking. A sustainable river front development can be considered only in a certain area with low traffic movement. The archeological sites, temples, lakes and open plazas around these can be unified to create ecological corridors and eco-tourism. The justification to take up Barkur is that it is one of the oldest planned cities with a rich and long history, and this function efficiently as a town even today. It is rich in natural vegetation with agriculture as its main occupation. The old road network is well connected with the new and has helped to improve connectivity and caters to the urban growth. An attempt is made to analyze the evolution of this town, to understand its history, culture and natural resources. There is landscape potential to enrich its heritage and culture, protect and conserve its natural resources and provide with strategies for people to associate themselves with history and past glory of their town.

4.1 Historical Development and the Indigenous Culture of Barkur

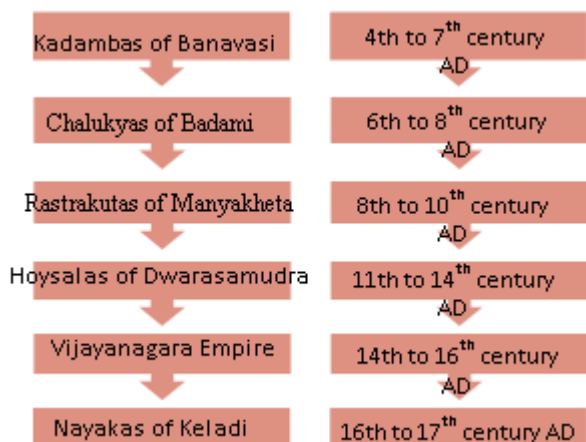


Figure 3: Map showing the Historical Development of Barkur.

4.2 The socio religious condition of Barkur

The society of Barkur consisted of the Nadavas or Bunts who were originally a military class corresponding to the Nayarsof Malabar [4], Billavas were the carpenters, stone cutters and sculptors who were involved in the preparation of the huge wooden chariots, wooden images, sculptures and other structures. Brahmanas were associated with the religious and cultural activities in the temples and provided spiritual guidance and religious leadership, Mogaveeras were the people who were predominantly a fishing community who dominated fishing and marine activities. They were known as Mogera, Marakala, Bestha, Meenagara because earlier fishermen used to live in small islands formed by rivers which are known as “Mogaru”, Pujaris were the worshippers in Daiva sthanas (spirit worship), toddy-tappers, agriculturists and manual laborers under other castes and the Jainas became a prominent community in Barkur as they had the support of the Royals. They built Jaina Basadis and mathas which encouraged cultural activities. Currently, Barkur is a small town with a population of about 7000 with 1236 females per 1000 males. The literacy level is about 99% and the total number of houses is 1200, of which 4% are Muslims, 22% are Christians and 78% are Hindus. All the communities have their main temples located here till today.

4.3 Position of Women in the society in Barkur

A high position was occupied by women in society is another feature of social life in Barkur, Queen Ballamahadevi who was known for her dexterity and diligence is considered as the most illustrious ruler of the Alupa dynasty [5]. Chikkayi Tayi, the Alupa princess who married Hoysala Ballala began to administer the Tuluva province from Barakur and she maintained good relations with the Alupas and the Vijayanagara rulers while exercising Hoysala Authority [3].

4.4 Economic Condition of Barkur

The strategic geographical location of Barkur helped it emerge as an important political and economic hub during the Alupa period. It became an important “Entrepot” for local as well as for foreign trade. “Jami-al-tawarikh” of Rashid-al-Din Hamadani (1310 AD) states that Barkur was a flourishing town in the 10th century and it was well known to Muslim traders [7]. Ibn Battuta, who visited India during the 14th century, also mentioned about trade in Barkur. He described Fakanur (Barkur) as a large town on an inlet, and here he found a large quantity of sugar-canes which were unexcelled in the rest of India. Barkur had connections with the upper Ghat regions. The guilds which regulated the market sent the goods imported from other countries to upper Ghat regions and brought the goods of the upper Ghat regions to Barkur.

4.5 Terrain and Hydrology

The topography is rather flat and having gradual slopes, is largely level land with mounds and hillocks. These mounds are largely scattered in the northern and eastern part of the site and in the south close to the river and the vegetation on the rocky outcrops is scrub. The slope is very gradual and shallow with heights varying from 5m to 35m. Except on the steep slopes, the other areas see very little erosion and sedimentation. The flat land or level land forms 40% of the area, hence there a valley region that is fertile, and which is therefore used for agriculture. Slope analysis shows that the flat land or level

land forms 40% of the entire study area. This valley region is fertile and therefore used for crop land and agriculture land. This place largely consists of magmatic rock and laterite deposits which helps in water seepage into the ground and the main watershed which is about 400 acres feeds the Sita River. The streams were tapped to store water in the manmade tanks to irrigate agriculture fields. An indigenous technique is used to release the water with the right amount of pressure to reach a specific distance.

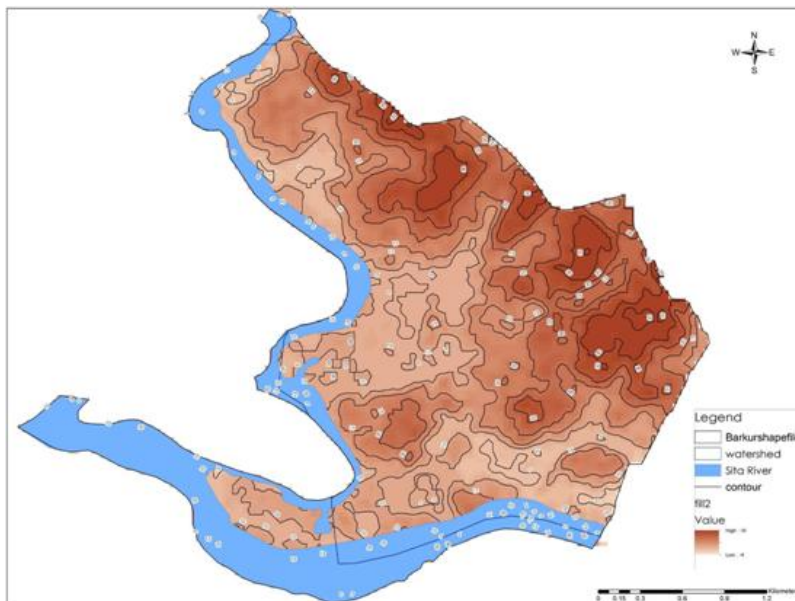


Figure 4: Map showing the Contours of the Brahmavara Watershed.

Source: Author generated

Today, some of the lakes are completely dry and lost to encroachment, urbanization and most have collected silt and are covered with weeds reducing the storage capacity, and the lack of oxygen harms fishes and other local fauna causing habitat loss. Further, the reduction in rainfall and the

increasing demand for water has led to low levels of ground water in the wells. The forests have reduced considerably and are degraded due to human intervention.

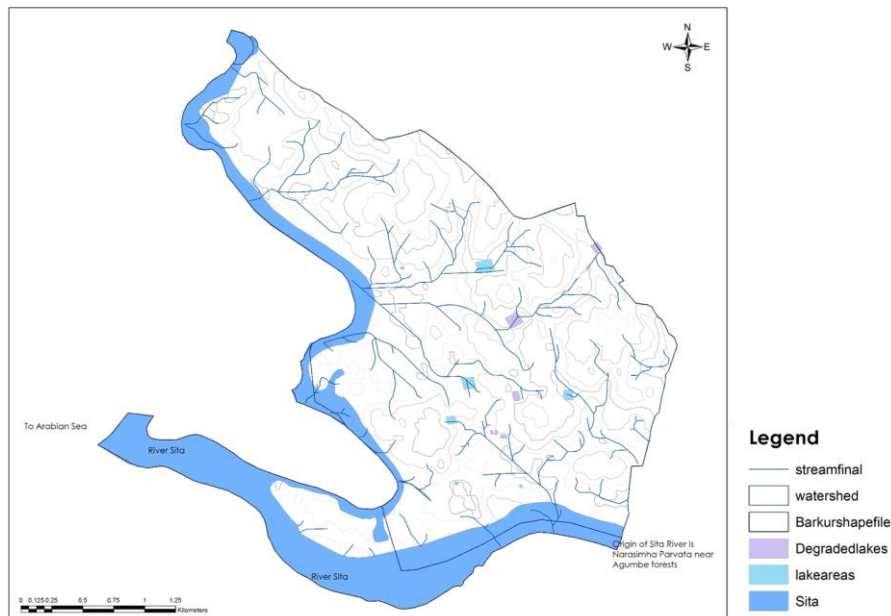


Figure 5: Map showing the Hydrology of the Brahmavara Watershed. Source: Author generated

There are four lakes /keres

- Lake 1 - (Chowli Kere) - 2.75 Acres
- Lake 2 - (Belthi Kere) - 2.01 acres
- Lake 3 - (Mudu Kere) - 1.18 acres
- Lake 4 - (Kote Kere) - 1.04 acres

There are five degraded lakes:

- 1. Rangana Kere - 1.1 acres
- 2. Arasi Kere - 2.4 acres
- 3. Shedi Kere - 0.3 acres
- 4. Hosa Kere (1, 2) - 0.34 acres
- 5. Bhandar Kere - 0.13 acres

Patasali Kere and Manigara Kere are completely lost.

Currently, Barkur is faced with water depletion, pollution and deterioration in the water quality due to unplanned development, neglect of water bodies and streams, imperceptive interventions, encroachment of lands and lack of employment opportunities for the youth which have resulted in migration of the younger generations looking for employment.

5. Morphology and Town Planning of Barkur

By the 10th century, Barkur had developed as a well-planned city. Initially the settlements started around the river and the forests were cleared for agriculture, once settlements grew, streets were developed and as the population increased colonies called “Keris” were planned based on people’s profession. These settlements contained a group of 10 to 15 houses and each colony or Keri had its own temple and temple tank called “Kere”. The Ratha Beedi forms the central spine of the town with the Kal Chappra at the main junction and Panchalingeshwara temple at a node as important landmarks. They built lakes for the purpose of irrigation and for the temple’s use, wells at houses or community wells catered for drinking and for other household purposes. The rich and the powerful built temples to earn goodwill of the people and the grace of God. The lakes or keres were built to tap the surface runoff and also the ground water which were built to irrigate the agriculture fields and to provide water for the cattle. It is primarily an agrarian culture, although it is rich in natural resources, they are mismanaged and in a state of overuse or neglect. The northern part of Barkur once had thick moist deciduous forest but this has now it is degraded due to human intervention. Also, today some of these colonies or Keris are completely lost. Barkur had 10 Keris in which some were added later as the city grew, and they are as follows: Hosa Keri, Manigara Keri, Chowli Keri, Bhandar Keri, Arasi Keri, Patasali Keri, Balegara Keri, Rangana Keri, Mudu Keri and Kote Keri [3].

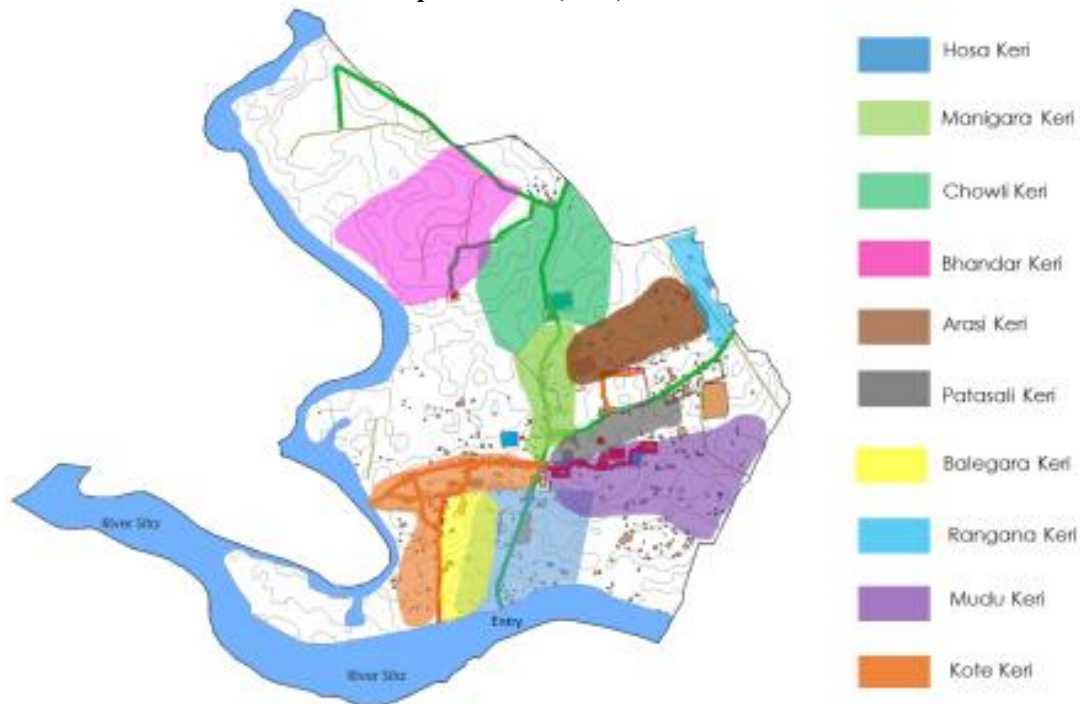


Figure 6: Area showing the mapping of the Keris. Source: Author generated [3],[7]

Hosa Keri

With the expansion of the city, new Keris were formed and this Keri was the last addition to this system of Keris. It comprises of mainly agricultural and crop lands. The Hosa Keri (tank) was split into two when the bridge was constructed connecting Barkur to the highway.

Profession: Agriculturists, Farmers

Status: Largely retains its character and is in a fairly good condition, the tank needs rejuvenation.

Status: This Keri has a distinct character but is in neglect and needs rejuvenation.

Manigara Keri

This Keri gets its name from businessmen called Manikarasresti dealing with gems and precious stones. This Keri was situated in the central part of the city. This Keri has paddy fields to its west.

Profession: Businessmen, Merchants

Status: This Keri is in a dilapidated condition and new buildings have come up, the tank is completely lost, needs rejuvenation.

Rangana Keri

This Keri got its name from “Ranganna Settis”. It is situated in the north eastern part of Barkur with Chauli Keri on the west, Arasi Keri on the west and south-west with hillocks on the sides. The basket weavers reside here even today.

Profession: Basket Weavers

Status: Is in bad condition, but has fifteen houses and these families need economic rejuvenation.

Chowli Keri

The origin of the name of this Keri is in ambiguity, some associate it with the Cholas occupying this region and some claim it was based on a place here called Chaulibettu. This was a region where the “javali” cloth was woven, hence the name Chowli. This was a center of hectic religious activity in the Vijayanagara period. It was a center of Jainism too. The goods brought to Barkur from the upper Ghat regions were stored here.

Profession: Textile merchants

Mudu Keri

This Keri had the presence of three roads hence was called Muru Keri and starts from the Kal chappara with paddy fields in the east. It was one of the biggest Keris. This Keri was situated in the central part of the city and consisted of priests and oil extractors.

Profession: Brahmins, Ganigas (oil extractors)

Status: This Keri is in an average condition and new buildings have come up, needs rejuvenation.

Kote Keri

This Keri got its name from the Alupa Fort. The port existed here and the Santhe (market) of yester years is still seen and used here, and hence, this Keri was an important commercial center of Barkur. It was a flourishing harbor and the Alupas built their fort and castle to monitor the harbor. This is called “Hale Bagilu”. The goods brought to Barkur here from upper Ghat regions and other parts of the world. The temples started being built after the 9th century.

Profession: Royalty, people involved with fort activities.

Status: This Keri has some portions that are still in good condition but the fort and palace lay in complete neglect.

Bhandar Keri

This Keri is situated to the north-west of Chowli Keri and was an important center of religion and culture.

It was a Vaishnava center and has a Matha called Bhandarakeri Matha established by Madhvacharya's Guru, hence is significant. This entire area seems to have been a "Bhandarasthala" (Treasure), hence the name.

Profession: Religious activity

Status: Lost, only the Matha exists.

Arasi Keri

The name suggests that this Keri was developed by or in the name of some queen. Some religious activities were held here.

Profession: Unknown

Status: Keri is in a very poor condition, dilapidated colony, most of the features are lost and is in need of rejuvenation.

Patasali Keri: This Keri gets its name from the term "Patta" or fine cloth, and the settlement refers to the "Pattasaligas" that is silk weavers who wove fine cloth here. This Keri was situated to the west and north-west of Mudu Keri. Their only Shiva's temple continues to exist here. Here there is an annual festival with unique rituals such as "Tula Bhara" and the "Darshana".

Profession: Silk Weavers

Status: This Keri is completely lost, although a temple (Mahishandaya) was rejuvenated, which belongs to the Bunt community, the Vishwanath temple lies in neglect.

Natural setting of Barkur

The natural setting of Barkur consists of agricultural plantation and croplands. The agricultural plantations include the arecanut, coconut, teak and Jackfruit. The arecanut and coconut are mostly found along with crop lands, while coconut groves largely dominate these lands.

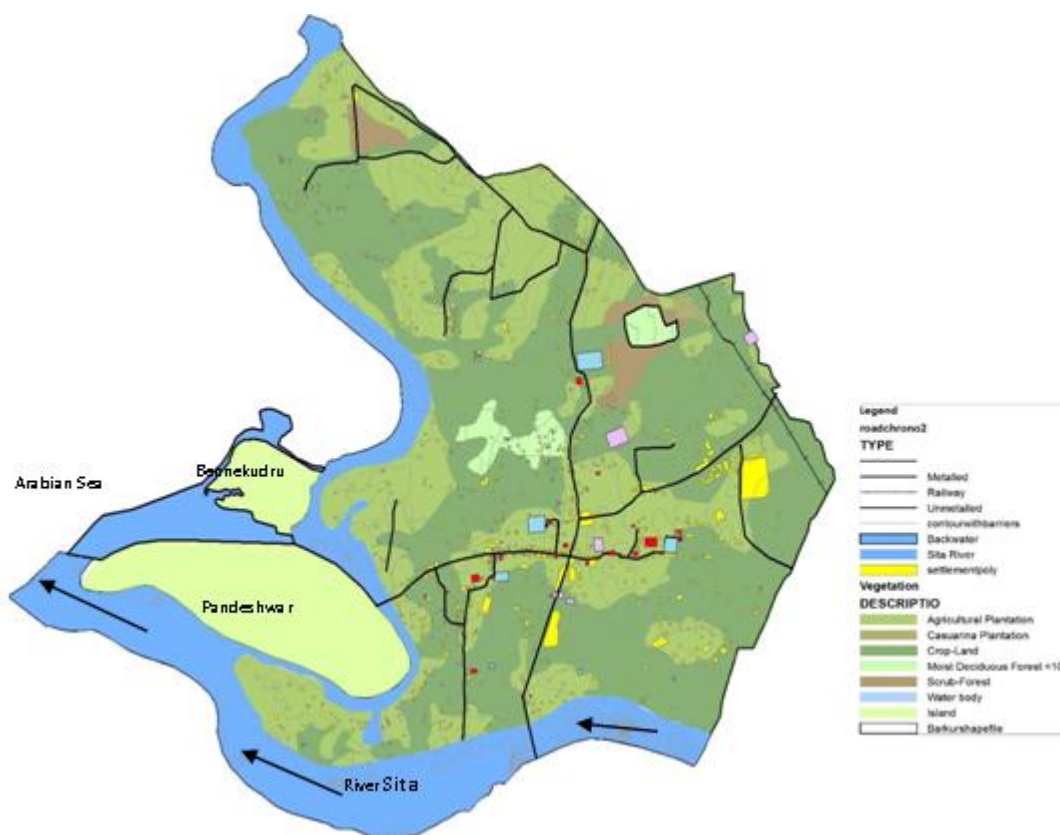


Figure 7: Map showing the Natural Setting of Barkur. Source: Author Generated

There are also farms which have a mix of coconut and arecanut plantations. Pepper is grown along with these plantations. Cropland includes paddy as the primary crop and pulses like green gram, black gram and cowpeas as the second crop. Vegetables and fruits are grown on a smaller scale mostly for self-sufficiency and also a portion of land is used for floriculture. Paddy is cultivated under rain-fed conditions during monsoon/Kharif season and during Rabi/summer crops are grown under irrigated/semi-irrigated condition. In areas

where water availability is limited, one crop of paddy is grown and pulses, oilseeds or vegetable crops are grown as a second crop. In the ancient times, the river was the only means to connect to other towns, and it also provides food and livelihood for the fishermen community. Today, the rich heritage of Barkur is forgotten and its grandeur is completely lost as the landscape is subjected to neglect, illegal encroachments, vandalism, misplaced sense of religious community and unplanned development. Monuments lie in

ruin, some buried, and some vandalized and pillaged, theft of statues, relics, the stones and columns from heritage sites were taken away to be used as a washing stone and to tie cattle. These sites are being misused by unwanted elements and will be a social nuisance if left unchecked. Its rich heritage is long forgotten by most of its people, although some local citizens have formed groups and are trying to revive the lakes, but in vain, and they also make an attempt to create awareness by retelling the stories of the past orally. There is a loss of collective memory and the current generation has very limited knowledge of the rich history of Barkur and the valuable monuments.

6. Issues

- Unplanned and uncontrolled human activity.
- Change in land use caused by converting agricultural lands into construction activity.
- Depleting water table due to increase in demand and decrease in rainfall.
- Increasing levels of pollution in the water bodies like wells, tanks and river.
- Urbanization has led to degeneration and loss of most of the streams.
- The tanks lie in neglect and have collected silt and weeds leading to anaerobic conditions.
- Apathy towards their rich heritage including the pillage and destruction of monuments.
- The remains of monuments are carted away or cleared in order to occupy the site.
- Heritage sites are being misused by anti-social elements for illegal activities.
- Most of the colonies (Keris) in this place are lost.
- Lack of economic resources leading to migration.

7. Methodology

Data collection through:

7.1 Observation and Study: To understand the cultural, historical, social and religious fabric of the place. To experience the day-to-day activities and the functioning of the town through multiple site visits.

7.2 Photographs: The photographs of the past helped to identify the natural resources, built form, landscape and infrastructure to understand the present condition of the monuments, heritage sites, epigraphs, victory towers, the missing relics and statues, etc.

7.3 Interview: This method helped to learn about the evolution of this town from its people. To learn of its historical background and rich heritage, the descriptions given by people helped to understand their requirements and expectations from their town. The questionnaire helped to understand the requirements of the different age groups.

7.4 GIS Mapping: mapped the topography, natural setting, and the morphology showing the planned colonies called “Keris”, which helped to understand the physical features of the area, as well as the topography, terrain, hydrology, soil, geomorphology and vegetation

7.5 Inference: It has a very distinct and strong character with its numerous temples, temple tanks, archeological sites, monuments, farm lands, Naga Banas, Buta Kolas, cattle races, and temple festivals, as well as its natural landscape, etc., which make natural tourist sites, and which need to be preserved. The old roads connect into the new ones forming a well-connected town [2].

8. Observations and Proposed Policies

A watershed management program is recommended to ensure the optimal use of natural resources while improving agricultural productivity. To rejuvenate the seasonal streams that are destroyed due to urbanization and reestablish the interlink between them.

To protect and conserve natural resources such as farmlands, forests and water bodies and preserve the rich heritage. Sustainable development for historic sites and the surrounding area, and integration and adaptation of renewable energy land survey to establish appropriate ownership.

9. Design Strategies

- 9.1 A green belt of 100 m is proposed along the river consisting of a no development zone, sacred groves, existing vegetation (to be protected) and bamboo groves (to provide economy to the locals).
- 9.2 Retention ponds are proposed where there are streams to allow percolation of water and increase the ground water level and help to decrease salinity in the river.
- 9.3 Agriculture through best practices to help carry on farming and to protect the fertile lands under cultivation.
- 9.4 To provide financial aid to farmers and educate the younger generation about cultivation methods and the staple crops of the region.
- 9.5 To protect the forests by controlling the felling of trees and using the land for agriculture.
- 9.6 Heritage monuments to be restored and protected under state archeology direction and through proper site management.
- 9.7 Proposed trails such as a cultural, historic and sacred to promote eco-tourism and provide economic opportunities to the locals.
- 9.8 Proposed paddy fields trail to enable people to understand how this crop is cultivated and stored.
- 9.9 Sustainable riverfront development and restoration of the moist deciduous forest.

10. Conclusion

Watershed management will help to harmonize the use of water, soil and forests and conserve these resources. Best practices of agriculture using scientific methods and the native knowledge will help increase productivity, increase soil moisture, safeguard indigenous species and seeds. The forest cover will help in conservation of soil, reduce surface evaporation, and increase precipitation. The rejuvenated water bodies will help ground water recharge and increase soil moisture. Afforestation and a green belt along the bank of the

river and lakes will help to create a habitat for the local flora and fauna. The retention ponds will help to harvest the surface runoff while the subsurface runoff would recharge groundwater aquifers. A sense of pride and awareness about the rich history and past glory will help to spread knowledge and in turn contribute to tourism. It is important to create a group of individuals, like guides, who would help the tourists and inform them of the rich history of Barkur. Revenue generation is also important for people to re-associate with their rich heritage, value and to conserve it and also prevent migration.



Figure 8: Map showing the Design Strategies. Source: Author Generated

11. Future Scope

There is scope to study the larger port “Hangar katte” which is across the Highway about 2-3 km away to understand the trade route that existed. A survey of the ownership of the town would help to distinguish between public and private land and this would help to avoid illegal occupying of land. An excavation program that was undertaken in 2013 on of the historic sites needs to be catalogued .The articles found there would help to understand the era and the life style of the Royals.

References

- [1] Bandarin, F., & Oers, R. V. (2012). *The Historic Urban Landscape: Managing Heritage in an Urban Century*. West Sussex, UK: John Wiley & Sons.
- [2] Bhat, N. (1998). *A study in Colonial Administration and Regional Response*. New Delhi, Uttar Pradesh: Mittal Publications.
- [3] Bhat, P. G. (1975). *Studies in Tuluva history and culture: (from the pre-historic times up to the modern)*. Manipal: Manipal Power Pr.
- [4] Gaonkar, R. N. (n.d.). Origin of the Nadavara clan. Retrieved from

[http://www.academia.edu/8353455/Origin_of_the_Nadava
ra_clan](http://www.academia.edu/8353455/Origin_of_the_Nadava_ra_clan)

- [5] M. B. (n.d.). *Barakurina Gata Vaibhava (Kannada) South Kanara*
- [6] Ramesh, K. V. (1970). *A History of South Kanara*. Karnataka: Karnataka University.
- [7] Shetty, B. V. (2016). *Barakuru a Metropolitan City of Antiquity its History & Culture* (Doctoral thesis, Mysore University, 1984). Mangaluru: Karnataka Tulu Sahitya Academy.
- [8] Shetty, D. (2015). *Morphological study of a small town Barkur in coastal Karnataka India* (Unpublished master's thesis). Manipal University.
- [9] Siraj, S. (Ed.). (2012). *Udupi District Gazetteer*. Bangalore, Karnataka.