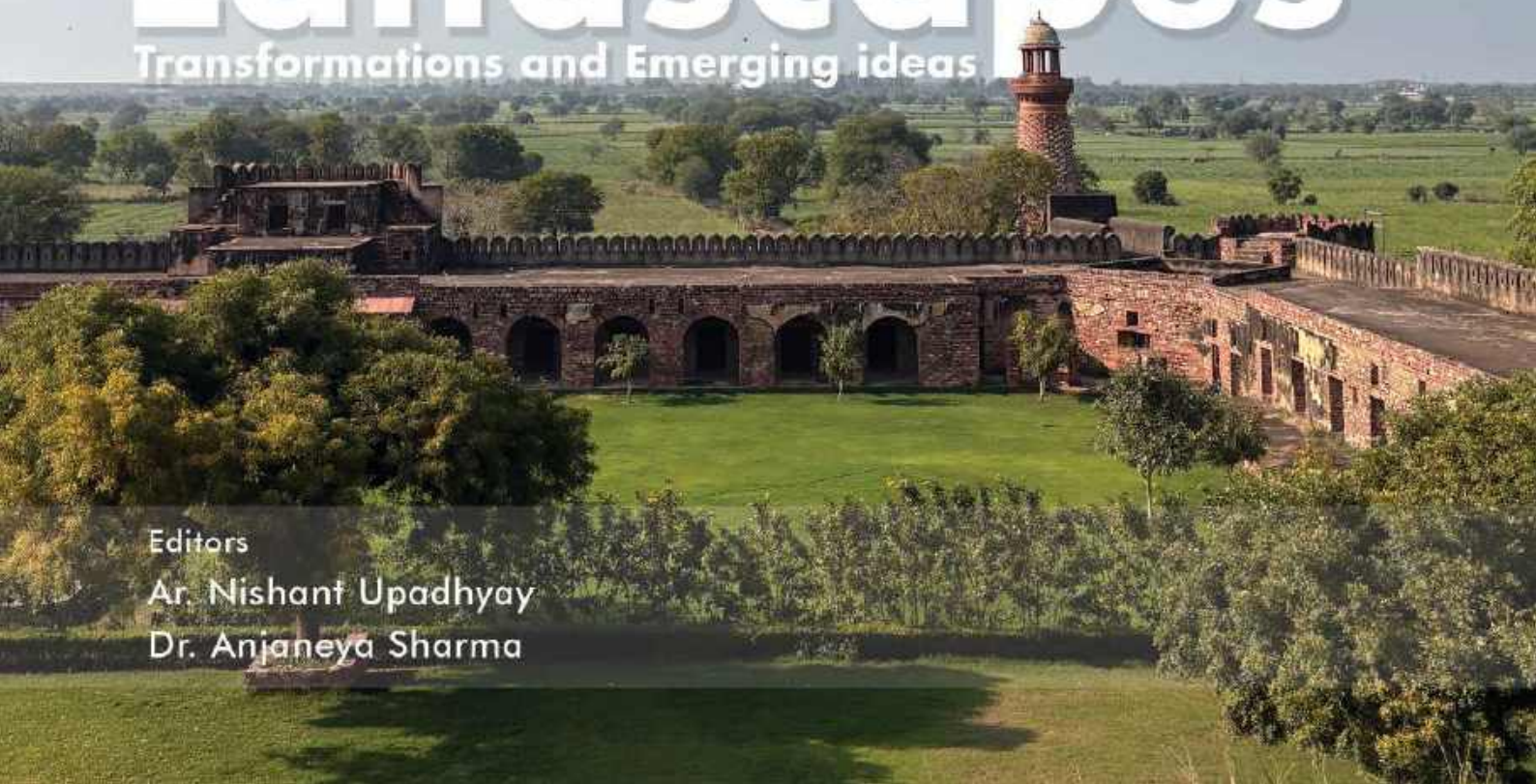
ICOMOS INDIA
Council on Monuments and Sites

Faculty of Architecture & Planning, AKTU

Proceedings of ICOMOS India Scientific Symposium
19 - 20 November 2021

Cultural Landscapes

Transformations and Emerging ideas



Editors
Ar. Nishant Upadhyay
Dr. Anjaneya Sharma

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Skurbuchan, Ladakh; Photo Credit: Nishant Upadhyay

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Brief of the ICOMOS India Scientific Symposium 2021

A cultural landscape can be understood as a spatial fabric spread over a geographic region, reflecting human adaptation and use of natural resources, and is often expressed in the way land is organized and divided, patterns of settlement, land use, systems of circulation, and the types of structures that are built. The process of experiencing this cultural landscape is affected not only by what is seen and sensed, but also by what is experienced emotionally or imagined through social knowledge or collective memory, making it larger than a sensory perception. Therefore, cultures that are entwined by these landscapes are often dynamic in nature. Cultural landscapes evolve over time, the rate and direction of which depends on multiple contingencies of human-environment relationships. Such landscapes transformed by human actions would involve drivers of human-induced processes and activities. These drivers thus form a complex system of dependencies and interactions that operate at several temporal and spatial levels.

To explore the transformations of and the emerging ideas around cultural landscapes the ICOMOS India National Scientific Symposium 2021 was organized by the Central Zone ICOMOS India in collaboration with the Faculty of Architecture and Planning, Abdul Kalam Technical University, Lucknow (FoAP, AKTU) and ICOMOS India Emerging Professional Working Group, during 19-20th November 2021. The event was organized in a hybrid mode (both online and in person presentations & discourses) and was hosted at the campus of FoAP, AKTU in Lucknow. This hybrid mode of the event allowed many notable speakers and participants to join and share their invaluable knowledge with the wider membership.

The scientific symposium delved into the idea of ‘cultural landscapes’, their evolution, present day manifestations, reinforcing the idea of dynamism of cultural landscape, and its future pathways through case studies from India and around the world. A special focus of the symposium was an exploration of this theme in the Indian context, highlighting archaeological, anthropological, ecological, spiritual, mythological and cultural dimensions. In terms of contemporary relevance, the philosophy, practice and management of cultural landscapes were assessed in terms of performance in relation to the impact of climate change, sustainability and development.

Note from the Editors

Cultural landscapes are not static backdrops to our built environment; they are dynamic palimpsests of memory, identity, and interaction. Thus, the process of curating this volume has been deeply engaging. Each contribution echoes a unique voice, reflecting a confluence of traditional knowledge systems, contemporary challenges, and future aspirations. Whether it is the analysis of sacred topographies, explorations of historic urban landscapes, or examinations of indigenous practices and sustainability measures, the research presented here not only informs but also provokes critical reflection.

As we present this volume of selected works from the ICOMOS India Scientific Symposium 2021, it is with both humility and great enthusiasm that we reflect on the richness and depth of the conversations that unfolded during those two days in November 2021 at ICOMOS Scientific Symposium 2021. This publication is not just a collection of papers—it is a testament to the diversity of thought, the urgency of action, and the evolving discourse surrounding the cultural landscapes of India.

In editing this volume, we were struck by how the theme of transformation permeated every session—transformation not merely as a threat, but as a space of negotiation, resilience, and innovation. This shift in perspective is crucial as we collectively navigate the implications of the UN Sustainable Development Goals, climate resilience, and inclusive conservation methodologies.

About the theme

A cultural landscape can be understood as a spatial fabric spread over a geographic region, reflecting human adaptation and the use of natural resources. It is often expressed in the way land is organized and divided, patterns of settlement, land use, systems of circulation, and the types of structures that are built. The process of experiencing this cultural landscape is affected not only by what is seen and sensed, but also by what is experienced emotionally or imagined through social knowledge or collective memory, making it larger than a sensory perception. Therefore, cultures that are entwined by these landscapes are often dynamic in nature.

The ICOMOS India National Scientific Symposium 2021 delved into the idea of ‘cultural landscapes’ - their evolution and manifestations, reinforcing the idea of dynamism of cultural landscape and its future pathways through case studies from India and around the world.
The sub themes were as following:

1. Settlements/Places/Urban/Rural/Regional - Cultural Landscapes - Transformations, concepts, ideas, and approaches.
2. Historic urban landscapes as an approach to heritage-led development.
3. Historic vernacular landscapes as references for indigenous sustainable practices.
4. Sacred landscapes as a source of divine inspiration and community wellbeing.
5. Sustainability (SDGs) and managing cultural landscapes as a measure and methodology for managing transformations.
6. Climate action for building resilience in cultural landscapes.

A special focus of the symposium was the exploration of this theme in the Indian context; highlighting archaeological, anthropological, ecological, spiritual, mythological and cultural dimensions. In terms of contemporary relevance; the philosophy, practice and management of cultural landscapes was assessed in terms of performance in relation to the impact of climate change, sustainability and development.

About the abstracts, articles and presentations

The symposium's call for abstracts received a total of 157 abstracts. The abstracts underwent a meticulous screening process including a double-blind peer review by the scientific committee of the symposium.

The Scientific Committee comprised of:

- Ms. Anuradha Chaturvedi
- Dr. Arun Menon
- Mr. GSV Suryanarayana Murthy
- Mr. Nishant Upadhyay
- Ms. Nupur Prothi Khanna
- Dr. Rima Hooja
- Dr. Ritu Gulati (FOAP, AKTU)
- Dr. Vandana Sehgal (FOAP, AKTU)

Out of the 157 abstracts received, 56 abstracts were shortlisted and were asked to submit the full paper. 32 full papers met the submission deadlines and were presented under 8 sub-categories in the symposium. Presentations by the speakers were done partly online and partly at the FOAP campus which was streamed online for all the attendees.

The full papers were then double peer reviewed by volunteer peer reviewers and finally after a communication of almost four years we have the 17 papers to be finally published in this publication. We thank the following colleagues for their immense time and efforts in undertaking blind peer reviews:

- Ms. Amruta Talawadekar
- Ms. Ananya Bhattacharya
- Ms. Anjali Sagar
- Dr. Anjaneya Sharma
- Ms. Anuradha Chaturvedi
- Mr. Ashish V. Trambadia
- Dr. Bandana Jha
- Ms. Bhawna Dandona
- Dr. Bidisha Chattopadhyay
- Mr. Bikramjit Chakraborty
- Ms. Debalina Ghosh
- Ms. Deepa Rajendra Desai
- Mr. Deval Kumar Rajwanshi
- Ms. Gautami Ghumatkar
- Dr. Harsimran Kaur
- Dr. Indrani Chakraborty
- Ms. Jayashree Bardhan
- Ms. Jivantika Satyarthi
- Dr. Jyoti Pandey Sharma
- Ms. Kuili Suganya
- Mr. Mayank Mishra
- Dr. Meeta Tandon
- Dr. Mrinalini Atrey

- Ms. Nupur Bhatnagar
- Mr. Piyush Pandya
- Dr. Rabi Narayan Mohanty
- Ms. Ritika Khanna
- Dr. Ritu Gulati
- Mr. Saif Siddiqui
- Dr. Sanghamitra Basu
- Dr. Shiva Ji
- Ms. Sneha Borate
- Dr. Subhrajit Banerjee
- Ms. Swapna Kothari
- Ms. Swathy Manohar
- Dr. Vaidehi Lavand
- Dr. Vandana Sehgal
- Mr. Vijay Ramchandani
- Ms. Vinita Srivastava

A total of 121 registered participants engaged very enthusiastically throughout the symposium.

As part of the event, 6 fellowships for the emerging professionals were also announced by ICOMOS India to acknowledge their volunteer support in management, abstract review and communications. The recipients of the Symposium 2021 Fellowships for the Emerging Professionals were:

- Ms. Khushi Shah
- Ms. Nirzary Pujara
- Ms. Nityaa Iyer
- Ms. Richa Mishra
- Mr. Rishabh Sharma
- Ms. Ruchita Belapurkar

The two-day symposium which was moderated by Dr. Anjaneya Sharma, witnessed several interesting discussions on themes related to cultural landscapes, their architectural language, the role of communities in their conservation, their management, sustainable practices associated with them, the role of sacred and historic landscapes in heritage led community development, etc. The presentations provided fascinating insights into the significance and management of these cultural landscapes.

Day 1 (19th November 2021)

On the first day of the symposium, the opening addresses were delivered by Dr. Navin Piplani, President ICOMOS India (2020-2023); Dr. Vandana Sehgal, Dean & Principal, FoAP, AKTU and Ar. Nishant Upadhyay, (Central Zone Representative 2020-2023) and coordinator of the Symposium. The event was inaugurated by Prof. Vineet Kansal, Honorable Vice Chancellor, FoAP, AKTU.

This was followed by a conversation between the recipient of the Padma Bhushan and the Pritzker prize, Prof. Ar. B.V. Doshi, and Dr. Navin Piplani. Dr. Doshi shared his thoughts on how India has witnessed immense change over the last 20-30 years and that we should reflect on these landscape level transformations and their impact on the lives of the local community. He remarked that we should turn to our traditional practices unlike current planning and design practices that are nonchalant about ecology and cultural landscapes, failing to integrate nature within development. The conversation focused on overall urban planning and how community-based knowledge systems can be incorporated in them to work towards a sustainable future.

A keynote by Dr. Jyoti Hosagrahar, Deputy Director, World Heritage Centre, UNESCO followed in the second half of day one, talking about UNESCO's 2011 Recommendation for Historic Urban Landscapes and UNESCO's global efforts to understand and conserve cultural landscapes. The UNESCO global strategy of the recommendation as well as post-covid recovery and resiliency were elaborated upon in great depth. Along with a kind appreciation of ICOMOS India's efforts in organizing such activities that help raise critical questions, Dr. Hosagrahar emphasized the need for acknowledging ground-level findings and later engaged with the audience in the Q&A session as well.

This was followed by the paper presentations, Ar. Saranya Darshini and Ar. Rishabh Sharma presented on behalf of EPWG ICOMOS India and shared findings from the two prequel events of the symposium.

At the end of day one, a cultural evening and networking dinner, 'Mehfil e Tarannum', with a special performance by Mr. Askari Naqvi, a Lucknow based dastango and singer, was organized by the Faculty of Architecture and Planning, AKTU Lucknow at their campus. Askari is a trained vocalist, artist & performer and is the first person in the country to introduce Soz Khwani (songs sung during Moharram gatherings) to a larger audience. Fitting to the local tradition of mehman-nawazi, the evening concluded on a thrilling note of music, Awadhi gastronomy and folktales.

Day 2 (20th November 2021)

The next and the final day of the symposium started with an early morning heritage walk led by Mr. Samir Kher, a local walk leader and history buff. Participants visited the Chattar Manzil, Kothi Farhat Baksh and the British Residency at Lucknow with a very immersive experience of the Awadhi historical landscape. Samir elaborated upon various aspects of regional socioeconomic politics and how it played a role in the global politics of the 18th and 19th century.

After an intense series of paper presentations and discussions, a panel moderated by Prof. A. G. K. Menon with all the session chairs and rapporteurs was organized. The panel discussion revolved around understanding the significance of these symposiums and their contribution to the practice. Prof. Menon along with tremendous contributions from the session chairs summarized what has transpired over the last 50 years in the field of cultural landscapes, their conservation and management, the profession, and most importantly, reflections on the way ahead.

The discourse of the entire symposium was then summarized by Prof. Sanghmitra Basu for the benefit of all the participants. A dialogue was then organized between Dr. Elizabeth Brabec, Secretary-General of the International Scientific Committee on Cultural Landscapes, and Prof. Rana P.B. Singh, coordinator of National Scientific Committee on Cultural Landscapes, moderated by Prof. G.S.V. Suryanarayana Murthy, South Zone Representative & Co-Coordinator: NSC CL. Both the speakers gave a brief presentation on the workings of the respective scientific committees and areas of possible collaborations and exchanges to locate the Indian cultural landscapes within the global paradigm. The symposium concluded with closing remarks by Dr. Rima Hooja, (Vice President ICOMOS India 2020-2023), and congratulatory remarks by Prof. Vandana Sehgal, Dean and Principal, FoAP, AKTU.

A vote of thanks was delivered by Ms. Shalini Dasgupta, (Secretary, ICOMOS India 2020-2023) to all the volunteers, session chairs, rapporteurs, secretariat staff, organizers and participants which officially marked the end of a successful symposium.

The full program for the symposium can be found as an annexure in this publication. The symposium had remarkable online presence and the management of registration and website content was very smoothly managed by Ms. Lipika Khanna, Ms. Juwairia Qamruddin and Mr. Karan Joshi under the able guidance of Ar. Priyanka Singh, (Treasurer ICOMOS India 2020-2023).

We would like to thank Dr. Navin Piplani (President, ICOMOS India 2020-2023) and Dr. Vandana Sehgal for their steadfast leadership and vision that made the symposium and its documentation possible. We also express our heartfelt appreciation to all authors, session chairs, rapporteurs, and peer reviewers whose contributions added substance and coherence to this volume. Gratitude is also due to ICOMOS India for their continued commitment to fostering scholarly discourse and to the organizing team whose efforts remain the unseen scaffolding of such academic undertakings.

We would like to specially acknowledge the volunteer contributions of Ms. Jissella Maria in managing the communications with the authors and peer reviewers which was a herculean task. Ms. Shivangi Singh also contributed for the same for which we are much thankful.

This volume stands as both a record and a provocation—a record of thoughtful deliberation and scholarship, and a provocation to continue interrogating, reimagining, and stewarding our cultural landscapes in more equitable, inclusive, and sustainable ways.

May this publication inspire further conversations and collaborations—across disciplines, across geographies, and across generations.

Nishant Upadhyay & Anjaneya Sharma
Editors & Conveners
ICOMOS India Scientific Symposium 2021

About ICOMOS India

Council on Monuments & Sites (COMOS), a non-government organisation, is registered under 'the Societies Registration Act of 1860'. It is acknowledged as the National Committee of International Council on Monuments and Sites (ICOMOS) in India. The Society provides a platform for multidisciplinary experts to dialogue, develop and advocate for appropriate mechanisms, policies, frameworks relating to India's diverse heritage. It strives to establish good benchmarks of professionalism. This organisation is linked at the regional and international level with complementary ICOMOS committees and presents the Indian viewpoints that are rooted in specificities of our context, whilst gaining from international experiences. The primary aim and objects of the Society are for the benefit of the general public, as outlined below:

1. Conservation, Protection, Rehabilitation and Enhancement of historical monuments, groups of buildings and sites on the national level.
2. Forum for Discussion and Exchange on matters of principle, and of technical, legal and administrative practice, affecting the conservation, restoration, rehabilitation and enhancement of monuments, sites and groups of buildings and historic landscapes.
3. Establish National Scientific Committees to promote research in specific themes related to the conservation, rehabilitation and enhancement of cultural heritage sites and disseminate the research to the general public.
4. On World Heritage Matters, advise the Government on nomination, periodic monitoring, including the conservation and management frameworks for World Heritage Sites.
5. Regional Cooperation within the SAARC territories to promote greater understanding and regional exchange in the heritage field and to guarantee the generational renewal of all heritage professionals in the region.
6. Advisory Role to various Government institutions on policy matters in the field of heritage conservation.
7. Awareness and Capacity Building for Young Professionals to facilitate, through its expert members, capacity building and professional training programmes.
8. Organise Seminars, Conferences, Discussions and Exhibitions at the regional and national level to discuss heritage issues relevant to the Society's mandate.
9. Heritage Education to promote a better understanding of the country's diverse multicultural heritage sites among the university and school children through regular awareness workshops and programmes.
10. Promote Traditional Building Crafts Skills to document traditional building crafts skills and knowledge systems as well as promote and preserve such skills through the organization of regular workshops, training programmes.
11. Partnership with Community-based Village Bodies and Institutions at the rural level in developing capacities of community based village bodies and institutions to manage, preserve, rehabilitate and enhance their heritage by providing access to technical expertise and resources. It shall serve to mainstream heritage concerns at the village level with decision making bodies at the district, state and central administration.
12. Collaboration with Urban Civic bodies and Administration at the Urban level, the Society will work with municipalities and urban governance in promoting the preservation, rehabilitation and enhancement of historic centres and monuments by providing technical expertise. It shall work closely with urban civic bodies and administration as well as communities living in and around historic centres on issues of urban heritage conservation.

Note from ICOMOS India

Cultural landscapes are repositories of stories—layered with the rhythms of human life, shaped by centuries of environmental interaction, and embedded with the spirit of place. They remind us that heritage is not limited to the past, but is perpetually redefined through transition, continuity, and resilience.

As the Convener of the ICOMOS India book Sub Committee, I am pleased to present this publication, which is the intellectual product of the ICOMOS India Scientific Symposium 2021, entitled "Cultural Landscapes: Transformations and Emerging Ideas." This symposium was not just an academic gathering; it was a call to transcend boundaries—disciplinary, institutional, and geographic—and participate in substantive discourse on the dynamic link between individuals, location, and legacy.

ICOMOS India has consistently emphasized the need to bring cultural landscapes into the centre of heritage discourse, especially in a country like ours, where landscapes are lived, sacred, productive, and deeply symbolic. These landscapes often lie at the margins of heritage policy and practice, yet they form the very core of how communities relate to their environment. The 2021 symposium attempted to confront this paradox by drawing attention to lesser-known narratives, indigenous knowledge systems, and frameworks of sustainability, governance, and inclusion.

This publication is distinguished by both the academic quality of the pieces and the diversity of themes examined and presented—sacred and spiritual landscapes, evolving urban ecologies, vernacular practices, sustainability goals, and the dynamic processes of cultural transformation. These contributions collectively reveal the layered nature of landscape heritage, its challenges, and its potential as a tool for future-oriented development.

The publication is partnered with our Institutional member, the Faculty of Architecture and Planning at Dr. A.P.J. Abdul Kalam Technical University, Lucknow. The publication is an outcome of the hard work and perseverance of the editorial team of ICOMOS India and AKTU Lucknow who have ensured a thoughtfully curated and presented symposium proceedings. In these pages, we find not only research but a call to action—a recognition that preserving cultural landscapes is not an act of nostalgia, but an investment in sustainability, equity, and cultural continuity. We encourage every reader to approach this document not just as a record of a past event, but as a living resource to guide future inquiry, advocacy, practice and policies.

ICOMOS India is dedicated to creating venues that facilitate the intersection of tradition and innovation, where scholarly rigour aligns with community perspectives, and where heritage is perceived as dynamic and adaptable to contemporary issues.

Shalini Dasgupta
Vice President – ICOMOS India
Convener – Publications Sub - Committee

About FoAP, AKTU Lucknow

The Faculty of Architecture and Planning, being the oldest and the only government institute of its kind in Uttar Pradesh, holds the responsibility of producing quality architects for the state.

Since its inception, the Institute has earned a strong reputation for its studio-based curriculum, fostering a balanced understanding of architecture in an environment that stimulates creativity and critical thinking.

The Institute—Faculty of Architecture and Planning, AKTU—is a constituent faculty of Dr. A.P.J. Abdul Kalam Technical University, Lucknow. Located on a 6-acre campus within walking distance of the city center, Hazratganj, it traces its origins back to 1911, when it was established as a part of the Government College of Arts & Crafts. It is one of the oldest architecture institutions in the country.

In 1976, the institution separated from the Government College of Arts & Crafts and was named the Government School of Architecture. In 1980, it was renamed the Government College of Architecture, Lucknow (popularly known as GCA, Lucknow), and became a constituent college of Lucknow University.

Until the academic session 1999–2000, the college, as the Faculty of Architecture of Lucknow University, offered a 5-year degree course leading to a Bachelor of Architecture (B.Arch). Starting with the academic session 2000–2001, in line with a government decision applicable to all technical institutions in the state, it was affiliated with the newly established U.P. Technical University, Lucknow (now AKTU) for all academic matters.

Note from FoAP, AKTU (Host institution)

It is with immense pride and a sense of fulfilment that I present this publication of the ICOMOS India Scientific Symposium 2021, themed "Cultural Landscapes: Transformations and Emerging Ideas." The symposium brought together a diverse and dynamic body of scholars, professionals, and emerging voices in the field of heritage, architecture, and conservation from across India. Over two days of intense deliberation, our collective focus was on understanding the shifting meanings, values, and challenges associated with cultural landscapes in the face of rapid transformation, climate change, urbanization, and socio-cultural evolution.

At the Faculty of Architecture and Planning, AKTU, we have long believed in the power of dialogue, academic engagement, and critical inquiry. Hosting this symposium in collaboration with ICOMOS India was both a privilege and a responsibility. The symposium served not just as a platform for scholarly exchange, but also as a space where intergenerational and interdisciplinary conversations could unfold—drawing insights from historic wisdom while simultaneously exploring innovative strategies for managing cultural landscapes in contemporary contexts.

The presence of luminaries such as Padma Bhushan Ar. B.V. Doshi and Dr. Jyoti Hosagrahar, Deputy Director, World Heritage Center, UNESCO, alongside other experts and passionate young researchers, added layers of richness and inspiration to our discussions. From sacred geographies and vernacular landscapes to evolving urban ecosystems and water heritage systems, the range of themes addressed in this symposium reflects the vast and intricate tapestry of Indian cultural landscapes.

I extend my sincere gratitude to ICOMOS India for their trust, to all the contributors for their invaluable insights, and to the organizing team—faculty, staff, and student volunteers of FoAP—for their tireless efforts in bringing this vision to life. I also acknowledge the immense dedication of the editors of this publication for curating the knowledge shared in the symposium into this comprehensive volume.

It is my hope that this publication will serve as a lasting resource and a springboard for further research, policy dialogue, and community-centered action in the realm of heritage conservation and sustainable landscape management.

Vandana Sehgal
Dean and Principal
Faculty of Architecture and Planning
Dr. A.P.J. Abdul Kalam Technical University, Lucknow

Full research papers

Badami, Karnataka; Photo Credit: Nishant Upadhyay

01

Assessment of Multi-Dimensional Value for Architectural Heritage using Multi-Objective Optimization on the basis of Ratio Analysis Method

Partha Sarathi Mishra[1] & Soumi Muhuri[2]

1. Associate Professor, Faculty of Architecture, Sri Sri University, India
2. Assistant Professor, National Institute of Technology Rourkela, India

Sub theme: Settlement/ Places/ Urban/ Rural/ Regional - Cultural Landscapes - Transformations, concepts, ideas, and approaches

Keywords: Architectural Heritage (AH), Odishan Temple Architecture (OTA), Multi-Objective Optimization on the basis of Ratio Analysis (MOORA), Multi-Criteria Decision-Making Analysis (MCDM)

Abstract

The assessment of architectural heritage (AH) is essential for long-term management and conservation. The value assessment and choice for AH with a purpose are principally dependent on the judgement of the experts. Focusing on heritage evaluation through multiple parameters (both objective and subjective), multiple stakeholders, and multiple alternatives, this study relies on multi-criteria decision-making (MCDM). Two methodological steps determine the MCDM methods: first, obtaining the weights of the parameters; second, deriving the values of the parameters considering the weights and the index formation for easy assessment by the ranking and grouping process. Here, to diminish the bias that may be associated with the qualitative judgement of the experts and limit the procedural time, this study attempts to utilize the analytical hierarchy process (AHP) along with the multi-objective optimization based on ratio analysis (MOORA) methods to obtain the weights and their aggregation for the value assessment of AH, respectively. AHP provides the relative weights in a pairwise comparison matrix based on expert opinions. At the same time, MOORA is an MCDM method where the mathematical computation is less and less time-consuming to provide the index values of the AH. These methods propose a multi-objective optimization with discrete choices. For the case sample, 39 temples from Odisha were considered. Using the AHP and MOORA methods for the value assessment of Odishan Temple Architecture (OTA), this study provides an objective method for OTA. The methodology can also be implemented in a similar context to AH in India and abroad.

1 Introduction

1.1 Background of the Study

Value assessment is necessary for long-term management and conservation processes to identify, evaluate, and select AH landscapes (Torre 2002). UNESCO and ICOMOS have given ten broad criteria for choosing World Heritage Sites (WHS). The initial six criteria are for selecting cultural sites, and the remaining four are for selecting natural sites (NRA 2009). However, many sites have overlaps- where amalgamation of both natural and cultural features is visible, referred to as mixed cultural and natural sites, and landscape heritage is the prime concern here.

As per WHS's outstanding universal value (OUV), all religions should have access to a monument (Jokiletho 2008). However, in heritage places like living *Hindu* temples, religious sentiments prohibit people from all religions from entering a temple, and thus the temples fail to be nominated in the tentative

list of WHS (Mukherjee 2013). In this context, this study efforts to evaluate the values of Hindu temples through multi-criteria decision-making analysis (MCDM) using a case example of Odishan Temple Architecture (OTA). In the OTA, most temples have performed their daily rituals for centuries. In OTA, *Konark* Sun Temple is the lone temple to have the status of WHS, which does not prohibit people from other religious backgrounds (Mukherjee 2013).

MCDM methods can be helpful for decision making (Stojcic et al. 2019; Akhanova et al. 2020), considering the perspectives of multiple stakeholders (Mardani et al. 2019; Cetinkaya and Oter 2015) and selection of an AH from multiple alternatives (Pavlovskis et al. 2019; Seddiki et al. 2016). The MCDM methods are processed in two steps: identifying the attribute weights and aggregating their weights and values. In this study, the analytical hierarchy process (AHP) along with the multi-objective optimization based on ratio analysis (MOORA) methods were utilized to evaluate the OTA.

1.2 Study Area

From the existing temples of OTA, their architectural features, and their sculptural characteristics, it appears that the region of the old town area of Bhubaneswar was an important center for art and architecture. In this area, all the Odishan architectural developmental phases, i.e., formative, transitional, matured, and phase of decadence, can be easily identified as significant characteristics of OTA. Therefore, when discussing the present OTA, the Bhubaneswar old town area, i.e., the Ekamra-kshetra area, is considered the exhibition place for all OTA characteristics, where living and non-living temples combine to present the glory of OTA.

In the later phases of the evolution stages of OTA, *Lingaraj* Temple at Bhubaneswar, *Jagannath* Temple at Puri, and Sun Temple at *Konark* represent the matured phase of OTA and form the golden triangle for the OTA. The Lingaraj Temple presently exists in the Ekamra-kshetra area, whereas the other two crucial temples are from outside this area. However, considering their relevance, these temples were included in this study.

This research identified a total of 39 temples in which one world heritage site (i.e., the *Konark* Sun temple), 18 central archaeological surveys of India (central- ASI) protected monuments, 14 state archaeological surveys of India (state- ASI) protected monuments, and six unlisted monuments. All the selected monuments are speckled around the backdrop of Bhubaneswar, except the Sun Temple at *Konark* and *Jagannath* Temple at Puri. The temples were selected based on available literature and the opinions of central and state-ASI experts.

The list of temples in Table 1 also presents ritual status as L/NL (living or non-living), T/NT (ticketed or non-ticketed), the probable age of construction to protect these monuments and the sources of these pieces of information.

Table 1: List of Selected Odishan Temples; **Source:** Partha Sarathi Mishra

TC	Temple Name	L/ NL	T/ NL	Age (in CE)	Sources
T1	Ananta Basudeva Temple	L	NT	13th	(Suresh, Reddy, and Panda 2011; Mohapatra 1986)
T2	Baitala Temple	NL	NT	8th	(Mohapatra 1986; Parida 1999; A. N. Panda 1999)
T3	Bakreswar Temple	NL	NT	10th -11th	(Mohapatra 1986; Pradhan 2009)
T4	Bhaskareswar Temple	L	NT	11th	(Suresh, Reddy, and Panda 2011; Mohapatra 1986)
T5	Bhimeshwar Temple	L	NT	7th -8th	(Pradhan 2009)
T6	Brahmeshwar Temple	L	NT	11th	(Gupta and Vijayakumar 2010; Mohapatra 1986)

T7	Champakeswar Temple	NL	NT	9th	From the ASI experts
T8	Chausathi Jogini Temple	L	NT	9th	From the ASI experts
T9	Chintamaniswar Temple	L	NT	14th	(Pradhan 2009)
T10	Chitra Karini Temple	NL	NT	11th	(Suresh, Reddy, and Panda 2011; Mohapatra 1986)
T11	Dakara Bivisaneswara Temple	L	NT	9th	(Pradhan 2009)
T12	Dhabaleswara Temple	L	NT	14th	(Pradhan 2009)
T13	Ganga Jamuna Temple	L	NT	13th -14th	(Pradhan 2009)
T14	Gauri Shankar Ganesh Temple	L	NT	9th	(Mohapatra 1986; Pradhan 2009)
T15	Jagannath Temple	L	NT	12th	(Gupta and Vijayakumar 2010; A. N. Panda 1999)
T16	Kapileswar Temple	L	NT	11th	(Mohapatra 1986; Pradhan 2009)
T17	Kartikeswar Temple	NL	NT	13th	(Pradhan 2009)
T18	Kedar Gouri Temple	L	NT	9th -10th	(Suresh, Reddy, and Panda 2011; Pradhan 2009)
T19	Konark Sun Temple	NL	T	13th	(N. C. Panda and Suresh 2014)
T20	Kotitirtheswar Temple	L	NT	11th	(Pradhan 2009; N. C. Panda and Suresh 2014)
T21	Lakhamaneswar Group of Temple	NL	NT	7th	(Mohapatra 1986; A. N. Panda 1999)
T22	Lakheswar Temple	L	NT	9th	(Pradhan 2009)
T23	Lingaraj Temple	L	NT	11th	(Gupta and Vijayakumar 2010; Mohapatra 1986)
T24	Maitreswar Temple	NL	NT	12th	(Suresh, Reddy, and Panda 2011; Mohapatra 1986)
T25	Megheswar Temple	L	NT	12th	(Gupta and Vijayakumar 2010; Mohapatra 1986)
T26	Mukteswara Temple	L	NT	10th	(Gupta and Vijayakumar 2010; Mohapatra 1986)
T27	Nageswar Temple	NL	NT	10th	(Pradhan 2009)
T28	Parsurameswara Temple	NL	NT	7th	(Gupta and Vijayakumar 2010; Mohapatra 1986)
T29	Rajarani Temple	NL	T	11th	(Mohapatra 1986; Parida 1999)
T30	Rameshwar Temple	L	NT	12th	(Suresh, Reddy, and Panda 2011; Mohapatra 1986)
T31	Subarna Jaleswar Temple	L	NT	12th	(Pradhan 2009)
T32	Shukhameswar Temple	L	NT	8th	From the ASI experts
T33	Sidheswar Temple	L	NT	9th -10th	(Mohapatra 1986; Parida 1999)
T34	Sisireswar Temple	NL	NT	6th -9th	(Mohapatra 1986; Parida 1999)
T35	Suresvara Temple	NL	NT	10th	(Mohapatra 1986; Pradhan 2009)
T36	Swarnajaleswara Temple	L	NT	7th	(Parida 1999; Mohapatra 1986)
T37	Tirtheswara Temple	L	NT	14th	(Pradhan 2009)
T38	Uttareswara Temple	L	NT	6th -9th	(Mohapatra 1986; Pradhan 2009)
T39	Yameswar Temple	L	NT	12th	(Mohapatra 1986; Suresh, Reddy, and Panda 2011)
TC: Temple Code; L: Living Temple; NL: Non-Living Temple; T: Ticketed Monuments; NT: Non-Ticketed Monuments					

All selected C-ASI-protected monuments were arranged according to the OTA's evolution phases, as shown in Figure 1. From the phase-wise arrangement, it was found that most of the temples were from the matured phase. These eminent temples have high historical significance, ranging from transitional and formative phases, with a significant role in the evolution of the OTA. The Sun Temple at Konark is known as the last matured phase temple where the phase of decadence started.

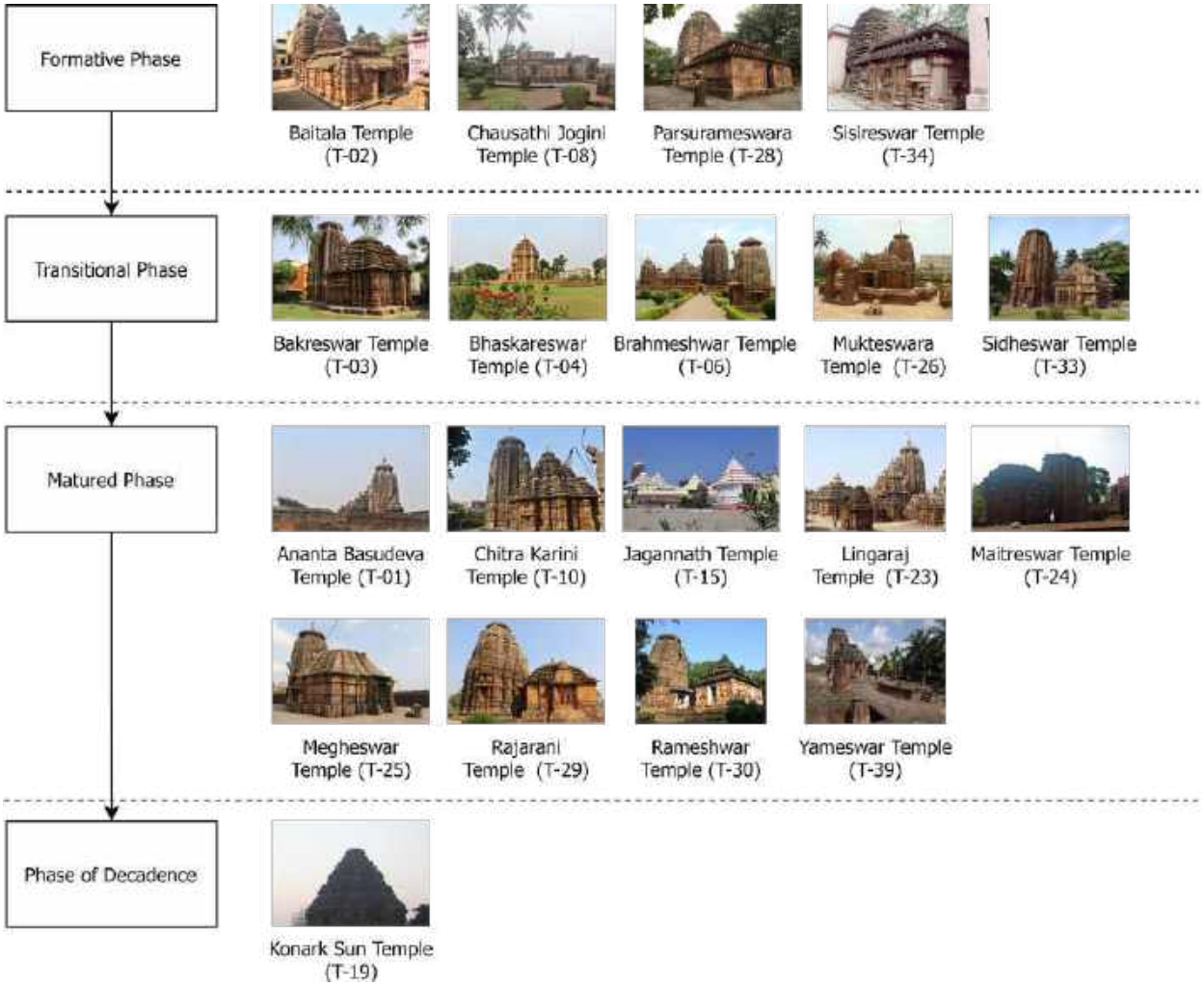

Figure 1: Phase-Wise Central-ASI Protected Odishan Temples; **Source:** Partha Sarathi Mishra

Figure 2: Phase-Wise State-ASI Protected Odishan Temples; **Source:** Partha Sarathi Mishra

The S-ASI identified 218 monuments by the state government of Odisha, India. Of these, 175 monuments represent the OTA. Among them, 20 temples are located in Ekamra Kshetra and Bhubaneswar (Government of Odisha, 2020). For this study, 14 of the 20 temples were selected for the value assessment of the OTA. All the selected S-ASI-protected OTAs were arranged based on the phases of the OTA, as shown in Figure 2. From the phase-wise arrangement, most of the temples were from the transitional phase and the early period of the mature phase. Some temples are dilapidated from the formative and decadence phases, which are now under the protection of the S-ASI.

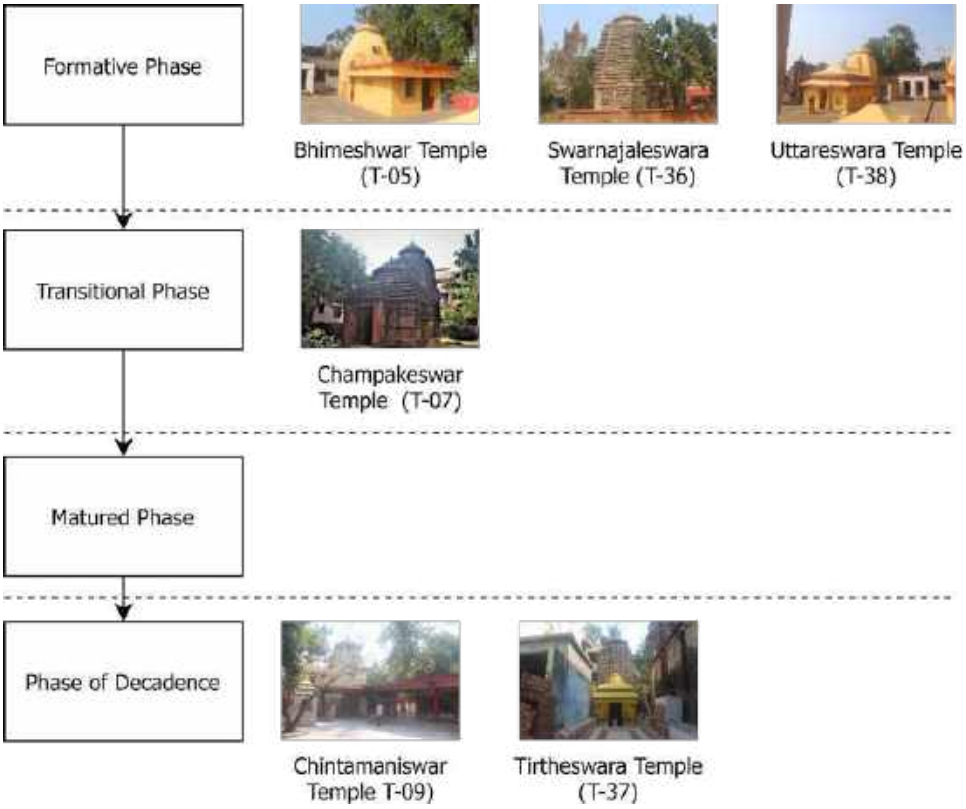

Figure 3: Phase-Wise Unlisted Odishan Temples; **Source:** Partha Sarathi Mishra

Among the unlisted temples in Ekamra Kshetra, it was observed that half belonged either to the formative phase, the early transitional phase of OTA or the late phase of decadence. None of the temples was from the matured phase of OTA, as shown in Figure 3. These temples were located adjacent to the C-ASI, or S-ASI-protected monuments.

Decision-makers can easily group OTAs by age; forming groups based on their construction timeline, such as the 'Formative Phase,' 'Transitional Phase,' 'Matured Phase,' and 'Phase of Decadence.' However, grouping based solely on chronology does not consider their various aesthetic, economic, environmental & ecological, and socio-cultural dimensions. Hence, a new evaluation system for the OTA is needed. Therefore, this study aims to identify a holistic OTA evaluation method.

2 Materials and Methods

Figure 4 illustrates the methodology for the value assessment of the OTA using the AHP and MOORA methods. A review of various charters of international organizations, manuals from governmental agencies, and research conducted by AH scholars helped identify the parameters for evaluation. Specific parameters contributing to the value assessment of the OTA were then selected. Subsequently, the level of importance of the parameters and sub-dimensions were acquired through an analytical hierarchy process. Next, accumulation was executed using the MOORA. Finally, the scores obtained through the MOORA helped rank and group the OTAs. The details of all sections are explained in the following sections.

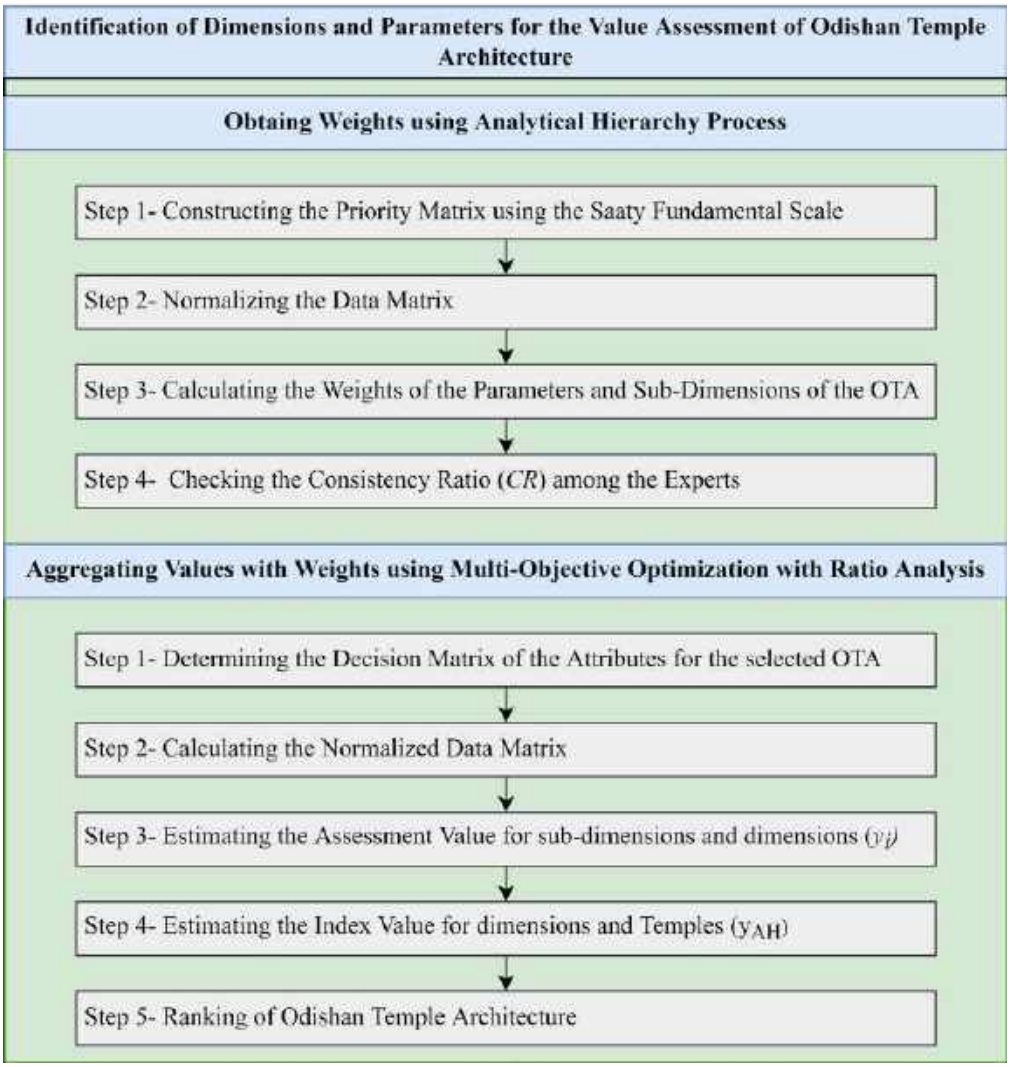

Figure 4: Methodology for the Value Assessment of Odishan Temple Architecture through AHP and MOORA Methods;
Source: Partha Sarathi Mishra

2.1 Identification of Dimensions and Parameters for the Value Assessment of Odishan Temple Architecture

The proposed study identified the parameters based on a literature review specific to Odisha, India, and other parts of the world. An expert opinion survey was also conducted to identify the appropriateness of these parameters in the context. The significant considerations while identifying the parameters for the OTA are as follows:

In this specific instance of OTA, 'Architectural and Aesthetic Value' contributes an important role. OTA signifies the characteristics of both the north and south Indian temple architecture and simultaneously, OTA has specific characteristics that make OTA unique in nature. The higher the values, the greater the significance of these temples.

The 'Economic Value' of OTA deals with the willingness to pay (WTP) and willingness to accept (WTA) by the stakeholders to select them for the conservation and other decision-making processes. Sometimes, these dimensions make a great deal after selecting AH for the conservation process, which shows the feasibility of the economic prospects of the site and its surroundings. However, in the case of the OTA, all the temples were located adjacent to each other. The development of one temple automatically reflected the development of other temples. Therefore, the decision-making process must be specifically assessed during the OTA selection process, such as conservation, heritage management, destination tourism, and other related decisions.

Recently, 'Environmental Value' has provided a special place for the assessment of AH. For this dimension, researchers mainly consider scenario analysis, risk evaluation, environmental impact assessment, cost-benefit analysis, and their integration for the future decision-making process of the AH. Similarly, this study focuses on the environmental and ecological aspects of OTA to determine their present status, influencing the OTA and its stakeholders, and vice versa. Aspects such as the current ecosystem may be prone to the OTA, and similarly, OTAs are prone to the ecosystem. The risks associated with both the environment with OTA and vice versa and their level of eco-friendliness towards OTA is the measuring scale of the parameters for this dimension.

The 'Historical Value' of OTA illustrates significant social, economic, cultural, or military history and has a close historical association with significant people or events in Odishan history. The history of OTA ranged from the 6th to 14th centuries before the Mughals came to India. The OTA came across different phases: the Ashoka, the great through the Mahameghavahana, Kharavela, Satavahanas, Murundas, the Durjayas, Gangas, and Chalukyan, OTA witnessed many kingdoms during the development phases of OTA. Elemental developments and sculptural innovation make the OTA a distinct style of temple architecture.

AH associated with the 'Socio-Cultural Value' is the top priority for indigenous people (Poulios 2010). The criteria have been developed to evaluate OTA for the 'Cultural and Social Value' dimensions, including cultural and religious, functional, and social. This dimension plays a significant role in selecting and accepting OTA to be preserved and conserved for future generations. It is the people who decide what is right for them regarding OTA conservation and their existence. Sacrificing human and animal lives in the name of rituals was abolished due to social awareness. Some rituals continue to benefit society. For continuity of beliefs and practices in society, this dimension needs to be evaluated for their value assessment. Since practices and beliefs change with time, the dimensional value may also change for OTA.

The final list of the hierarchical model for the value assessment of OTA including its parameters, sub-dimensions and dimensions, is shown in Figure 5.

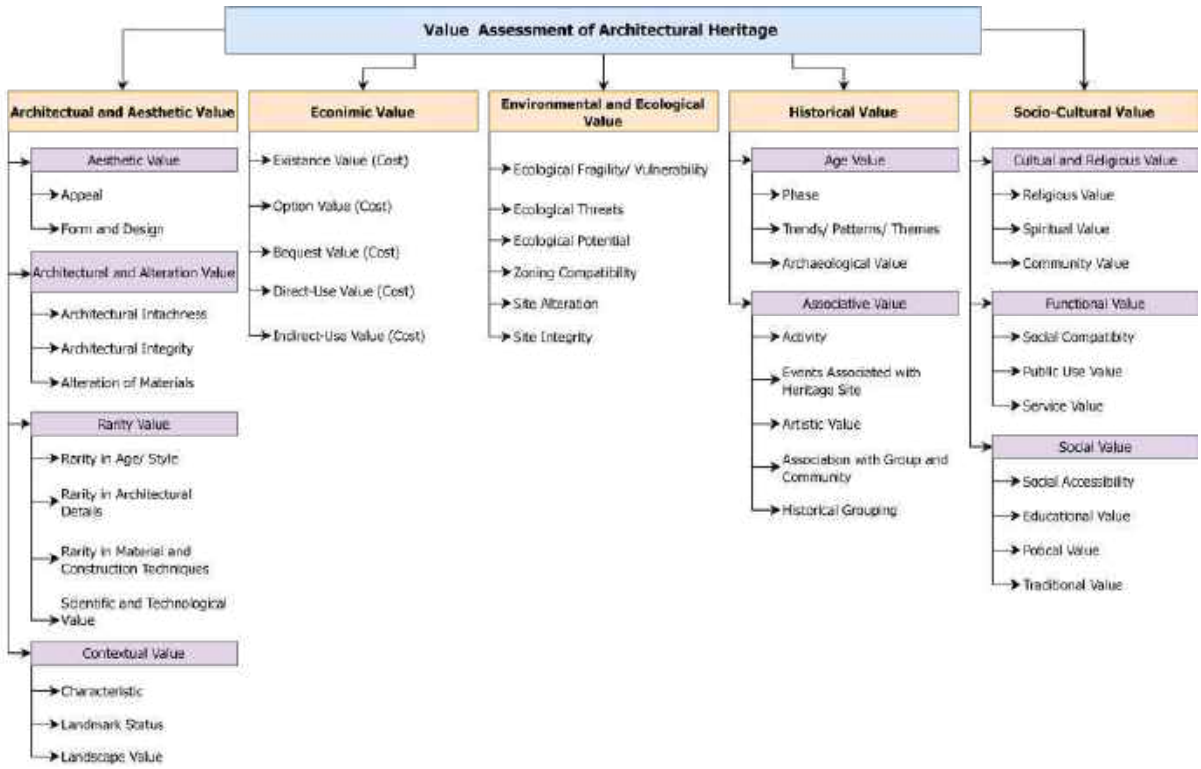

Figure 5: Hierarchical Model for the Value Assessment of Odishan Temple Architecture; **Source:** Partha Sarathi Mishra

2.2 Analytical Hierarchy Process (AHP)

The AHP method was established by Wind and Saaty (1980), and has become a widely used method for evaluating the relative importance of attributes for selecting alternatives. The pairwise comparison between attributes/variables has been used by researchers and has proven to be significant in the field of architectural heritage (Zavadskas et al. 2017). The Saaty fundamental scale was used to obtain the relative importance, as shown in Table 2.

Table 2: Adapted Saaty Fundamental Scale of Measurement (Wind and Saaty 1980); **Source:** Partha Sarathi Mishra

Intensity of Important	Definition	Explanation
1	Equal Importance	Two parameters contribute equally to the sub-dimension
3	Weak importance of one over another	Experience and judgment slightly favour one parameter over another
5	Essential or Strong Importance	Experience and judgment strongly favour one parameter over another
7	Demonstrated importance	A parameter is strongly favoured, and the dominance it demonstrated in practice
9	Absolute Importance	The evidence vector-matrix of one parameter over another is of the highest possible order of affirmation
2,4,6,8	Intermediate values between the two adjacent judgments	
Reciprocals of the above nonzero	If parameter i has one of the above nonzero numbers, parameter j has the reciprocal value compared with i.	
Note: This table is adapted from Wind and Saaty (1980)		

In general, AHP has a major three-step process of constructing the hierarchy, providing prioritization among the attributes, and checking consistency verification among the experts for their consensus (Wind and Saaty 1980), as shown in Figure 5.

The detailed steps for conducting AHP are as follows:

Step 1: Constructing the priority matrix

$$A = \begin{bmatrix} 1 & \frac{a_1}{a_2} & \dots & \frac{a_1}{a_n} \\ \frac{a_2}{a_1} & 1 & \dots & \frac{a_2}{a_n} \\ \vdots & \vdots & \ddots & \vdots \\ \frac{a_n}{a_1} & \frac{a_n}{a_2} & \cdots & 1 \end{bmatrix} \quad (1)$$

Here, a_i/a_j is the relative importance of *i* for parameter *j* provided by the experts' opinions, based on Table 2. where *n* is the number of attributes, and $a_{ij}=1/a_{ji}$ and $a_{ij} \neq 0$. a_{ij} is the *ith* row, depending on column *j*.

Step 2: Normalizing the decision matrix

$$a_{ij}^{*} = \frac{a_{ij}}{\sum_{i=1}^{n} a_{ij}} \quad (2)$$

Step 3: Calculating the weights of the parameters and sub-dimensions of the OTA.

$$W_i = \frac{\sum_{j=1}^{n} a_{ij}^{*}}{n} \quad (3)$$

where W_i is the weight of the ith parameter. For all i =1, 2, …, n and $W = (W_1+W_2+...+W_n)$.

Step 4: Checking the Consistency Ratio (CR) among the experts

$$A_w = \lambda_{max} w \tag{4}$$

$$CI = \frac{\lambda_{max} - n}{n-1} \tag{5}$$

$$CR = \frac{CI}{RI} \tag{6}$$

where *CI* is the consistency index, is the calculated value, and *RI* is the random index, which is the tabulated value provided by Saaty (1987), presented in Table 3.

Table 3: Random Index (RI) (Saaty 2008); **Source:** Partha Sarathi Mishra

n	1	2	3	4	5	6	7	8	9	10
RI	0.00	0.00	0.58	0.90	1.12	1.24	1.32	1.41	1.45	1.49

2.3 Multi-objective Optimization with Ratio Analysis (MOORA)

Brauers and Zavadskas developed this method of privatisation in a transition economy (Brauers and Zavadskas 2006). The detailed steps of the MOORA method are as follows:

Step 1: Forming the decision matrix RmXn by collecting data for each parameter for each temple.

$$R_{mXn} = [r_{11}\ r_{12} \ldots r_{1n}\ r_{12}\ r_{22} \ldots r_{2n} \ldots \ldots \ldots \ldots r_{m1}\ r_{m2} \ldots r_{mn}\ ] \tag{7}$$

Here, r_{iXj} is the response of alternative j to parameters (i = 1,2,…,n) are the parameters, and (j = 1,2,…,n) are the alternatives or the OTA. m is the number of temples, and n is the number of parameters used in this study.

Step 2: Normalizing the parameters to eliminate units of the parameters for the calculation.

$$X_{mXn} = [x_{11}\ x_{12} \ldots x_{1n}\ x_{12}\ x_{22} \ldots x_{2n} \ldots \ldots \ldots \ldots x_{m1}\ x_{m2} \ldots x_{mn}\ ] \tag{8}$$

Where

$$x_{ij}^{*} = r_{ij} \Big/ \left[\sum_{i=1}^{n} r_{ij}^{2}\right]^{1/2} (j = 1, 2, \ldots, m) \tag{9}$$

Here, x_{ij}^{*} is the normalized value for the r_{ij} Value.

Step 3: Estimating the assessment value y_j.

$$y_j = \sum_{j=1}^{g} w_j x_{ij}^{*} - \sum_{j=g+1}^{n} w_j x_{ij}^{*} (j = 1, 2, \ldots, m) \tag{10}$$

Here, g is the number of beneficial criteria, and n - g is the number of non-beneficial attributes, and w_j is the weight of the j parameter. The estimation of w_j is derived from the AHP process. For the value assessment OTA, the questionnaires were prepared so that all the attributes for data collection behaved as beneficial attributes. Therefore, to estimate the assessment value y_j for OTA,

$$y_j = \sum_{j=1}^{n} w_j x_{ij}^{*} (j = 1, 2, \ldots, m) \tag{11}$$

This process is repeated for the parameters for obtaining the values in a hierarchical model for obtaining the index values of the AH.

Step 4: Estimating the index value y_{AH}.

$$y_{AH} = y_{AA} + y_E + y_{EE} + y_H + y_{SC} \quad (12)$$

Here, y_{AA} is the dimensional value of 'Architectural and Aesthetic Value,' y_E is the dimensional value of 'Economic Value,' y_{EE} is the dimensional value of 'Environmental and Ecological Value,' y_H is the dimensional value of 'Historical Value,' and y_{SC} is the dimensional value of 'Socio-Cultural Value.'

Step 5: Ranking of the OTA.

The higher the value y_{AH}, the higher will be the rank of the temple.

2.4 Grouping of Odishan Temple Architecture

A composite index was formed using the five-dimensional values for each temple. The average weight method (AWM) was used for index formation using equal importance for each dimension and to identify one value instead of five for each temple. The number of Odishan temples was then grouped using data distribution techniques. Finally, the groups were derived based on mean (M) and standard deviation (SD) values (Bera et al., 2019). Based on their single-dimensional importance, the Odishan temples were protected and maintained by the C-ASI and S-ASI. In the absence of any other grouping system of OTA, the obtained results were validated by comparing this clustering technique with the existing state of protection.

3 Analysis

The AHP method was performed using Equations 1–6 to obtain the relative weights of the attributes. The hierarchical model shown in Figure 5 was used for the AHP process. In this process, 62 pair-wise questions were asked for parameters, and 10 questions were asked to experts for the sub-dimensions to obtain their weights. The selection of experts was based on their expertise, knowledge, and experience with relevant fields of architecture and its allies. Table 4 shows the weights of the parameters and sub-dimensions for assessing OTA and their consistency index obtained by checking the opinion consistency among the selected experts.

The MOORA method was implemented using the methodological stages shown in Figure 4 and Equations 7 to 12. The overall performance score of each dimension and rank for each selected temple was obtained (Table 5).

After obtaining the index values of each dimension for each temple, the final aggregated values were achieved, from which the overall ranking of the selected temples was calculated. Subsequently, the grouping of OTA was implemented using the data distribution method, based on the mean (M) and standard deviation (SD) values of 0.154, and 0.038 respectively. Here, Group 1 (G_1) is the score obtained more than M+SD, i.e., G_1>0.192; Group 2 (G_2) is in between M + SD and M values, i.e., 0.192<G_2<0.154; Group 3 (G_3) is in between M and M-SD, i.e., 0.154<G_3<0.116; group 4 (G_4) is below M-SD, i.e., G_4<0.116. In this way, four groups were acquired to make decisions either at the individual or group level. In the end, G_1 found five, G_2 found 15, G_3 found 13, and G_4 found six temples in the value assessment process of OTA through AHP and MOORA methods. The dimensional values, their ranks for each temple, and the index value (AHV) for each temple and group are presented in Table 5.

Table 4: Weights of the Parameters and Sub-Dimensions for assessing Odishan Temple Architecture; **Source:** Partha Sarathi Mishra

Dimensions	Sub-Dimensions	Sub Dimension - Local Weight	Parameters	Parameters Local Weight	Parameters Global Weight
Architectural and Aesthetic Value CR=0.041	Aesthetic Value CR=0.000	18.57%	Appeal	20.24%	3.76%
			Form and Design	79.76%	14.81%
	Architectural and Alteration Value CR=0.001	45.79%	Architectural Intactness	36.79%	16.86%
			Architectural Integrity	31.16%	14.27%
			Alteration of Material	32.05%	14.68%
	Rarity Value CR=0.018	22.45%	Rarity in Age/ Style	16.39%	3.68%
			Rarity in Architectural Details	16.45%	3.69%
			Rarity in Material and Construction Techniques	33.16%	7.44%
			Scientific and Technological Value	34.00%	7.63%
	Contextual Value CR=0.045	13.19%	Characteristic	15.82%	2.09%
			Landmark Status	37.74%	4.98%
			Landscape Value	46.44%	6.12%
Economic Value CR=0.051	Existence Value (Cost)			42.38%	42.38%
	Option Value (Cost)			27.24%	27.24%
	Bequest Value (Cost)			13.67%	13.67%
	Direct Use Value (Cost)			10.34%	10.34%
	Indirect Use Value (Cost)			6.37%	6.37%
Environmental and Ecological Value CR=0.013	Ecological Fragility/ Vulnerability			20.78%	20.78%
	Ecological Threats			14.91%	14.91%
	Ecological Potential			10.02%	10.02%
	Zoning Compatibility			18.32%	18.32%
	Site Alteration			15.73%	15.73%
	Site Integrity			20.23%	20.23%
Historical Value CR=0.000	Age Value CR=0.000	25.77%	Phase	34.08%	8.78%
			Trends/ Patterns/ Themes	28.53%	7.35%
			Archaeological Value	37.39%	9.63%
	Associative Value CR=0.019	74.23%	Activity	11.57%	8.59%
			Events associated with Heritage Site	24.27%	18.01%
			Artistic Value	28.59%	21.22%
			Association with Group and Community	18.42%	13.67%
			Historic Grouping	17.16%	12.74%
Socio-Cultural Value CR=0.011	Cultural and Religious Value CR=0.000	14.20%	Religious Value	16.98%	2.41%
			Spiritual Value	29.03%	4.12%
			Community Value	53.99%	7.67%
	Functional Value CR=0.000	33.19%	Social Compatibility	24.16%	8.02%
			Public Use Value	33.40%	11.09%
			Service Value	42.44%	14.09%
	Social Value CR=0.064	52.60%	Social Accessibility	13.38%	7.04%
			Educational Value	41.61%	21.89%
			Political Value	18.01%	9.47%
			Traditional Value	27.01%	14.21%

Table 5: Dimension-Wise Values and Ranks of Odishan Temple Architecture; **Source:** Partha Sarathi Mishra

TC	A	E	EE	H	SC	R_A	R_E	R_EE	R_H	R_SC	AHV	R_AH	G_AH
T1	0.179	0.140	0.150	0.176	0.190	08	21	21	13	07	0.177	10	2
T2	0.150	0.076	0.106	0.139	0.098	25	36	28	24	35	0.127	28	3
T3	0.160	0.210	0.155	0.132	0.114	18	05	18	26	32	0.144	23	3
T4	0.169	0.140	0.216	0.132	0.142	12	21	07	26	25	0.155	19	2
T5	0.115	0.155	0.112	0.107	0.153	33	17	27	30	20	0.125	29	3
T6	0.172	0.162	0.181	0.206	0.194	10	15	10	06	05	0.190	06	2
T7	0.155	0.145	0.172	0.056	0.124	21	20	16	39	30	0.119	32	3
T8	0.143	0.076	0.162	0.165	0.162	27	36	17	16	16	0.153	21	3
T9	0.095	0.090	0.105	0.097	0.164	38	31	29	33	15	0.113	35	4
T10	0.163	0.138	0.181	0.186	0.147	15	23	10	08	23	0.168	13	2
T11	0.114	0.083	0.137	0.097	0.149	34	35	24	32	21	0.118	33	3
T12	0.152	0.138	0.191	0.096	0.148	23	23	09	35	22	0.137	25	3
T13	0.153	0.121	0.105	0.179	0.145	22	26	29	12	24	0.154	20	2
T14	0.113	0.166	0.065	0.120	0.114	35	14	38	29	31	0.115	34	4
T15	0.214	0.180	0.238	0.242	0.222	02	13	01	01	03	0.227	03	1
T16	0.139	0.156	0.142	0.180	0.156	29	16	22	11	19	0.159	18	2
T17	0.151	0.097	0.105	0.157	0.076	24	29	29	20	38	0.129	27	3
T18	0.161	0.097	0.181	0.181	0.135	16	29	10	10	29	0.160	17	2

T19	0.208	0.309	0.200	0.242	0.246	04	01	08	01	01	0.235	01	1
T20	0.156	0.193	0.181	0.198	0.171	20	12	10	07	13	0.179	09	2
T21	0.135	0.278	0.126	0.167	0.176	30	02	26	15	11	0.164	15	2
T22	0.148	0.086	0.181	0.132	0.109	26	34	10	28	33	0.134	26	3
T23	0.224	0.199	0.238	0.242	0.239	01	06	01	01	02	0.235	02	1
T24	0.171	0.138	0.153	0.165	0.107	11	23	19	17	34	0.152	22	3
T25	0.176	0.217	0.220	0.165	0.180	09	03	06	18	10	0.182	08	2
T26	0.195	0.199	0.229	0.227	0.183	05	06	04	04	09	0.208	04	1
T27	0.159	0.199	0.153	0.149	0.166	19	06	19	23	14	0.161	16	2
T28	0.184	0.107	0.141	0.170	0.157	06	27	23	14	18	0.166	14	2
T29	0.210	0.199	0.238	0.182	0.212	03	06	01	09	04	0.205	05	1
T30	0.167	0.213	0.137	0.218	0.184	14	04	24	05	08	0.189	07	2
T31	0.161	0.155	0.086	0.136	0.140	17	17	36	25	27	0.142	24	3
T32	0.127	0.199	0.102	0.093	0.142	31	06	32	36	25	0.123	31	3
T33	0.182	0.090	0.229	0.154	0.191	07	31	04	21	06	0.175	11	2
T34	0.111	0.062	0.086	0.150	0.052	36	39	36	22	39	0.105	38	4
T35	0.067	0.090	0.095	0.061	0.079	39	31	33	38	37	0.073	39	4
T36	0.139	0.105	0.095	0.089	0.084	28	28	33	37	36	0.105	37	4
T37	0.110	0.076	0.057	0.097	0.137	37	36	39	33	28	0.106	36	4
T38	0.119	0.155	0.095	0.101	0.158	32	17	33	31	17	0.123	30	3
T39	0.168	0.199	0.173	0.157	0.171	13	06	15	19	12	0.170	12	2

TC: Temple Code; A: Architectural and Aesthetic Value; E: Economic Value; EE: Environmental and Ecological Value; H: Historical Value; SC: Socio-Cultural Value; R_A: Rank of Architectural and Aesthetic Value; R_E: Rank of Economic Value; R_EE: Rank of Environmental and Ecological Value; R_H: Rank of Historical Value; R_SC: Rank of Socio-Cultural Value; AHV: Architectural Heritage Value; R_AH: Rank of Architectural Heritage Value; G_AH: Group of Architectural Heritage

4 Results and Discussion

For 'Architectural and Aesthetic Value,' *Lingaraj Temple* (T23), *Jagannath Temple* (T15), and *Rajarani Temple* (T29) were found in the top three ranks because of their excellent aesthetic appeal and the form and design of the structure. These three temples were from the matured phase of OTA. The obtained results indicated that these temples have high aesthetic value, low alteration value, concise rarity value, and high contextual value.

For 'Economic Value,' people are willing to pay (WTP) for their present, future, and future generations for management and conservation purposes. It also enquired about their WTP for the direct use and indirect use value of AH. The results show that temples such as *Konark Sun Temple* (T19), *Lakhamaneswar Group Temple* (T21), and *Megheswar Temple* (T25) placed in the top three in their ranking. The stakeholders of these temples were willing to pay for management and conservation.

For 'Environmental and Ecological Value,' the focus was to check the high ecological potential, low environmental fragility, and vulnerability, low ecological threats to the AH, high zoning compatibility, and high level of site integrity with no or low site alteration values among the temples of Odisha. As the results suggest, *Lingaraj Temple* (T23), *Rajarani Temple* (T29), and *Jagannath Temple* (T15) were found in the top three for the reasons mentioned above.

For 'Historical Value,' the objective was to check temples for high historic significance levels and have a specific role in defining OTA phases. *Lingaraj Temple* (T23), *Jagannath Temple* (T15), and *Konark Sun Temple* (T19) obtained the top three ranks for their strong role in the historic associative values, which makes their period the golden phase of OTA.

For 'Socio-Cultural Value,' the objective was to check OTA for their present cultural and religious,

functional, and social values. Temples such as *Konark Sun Temple* (T19), *Lingaraj Temple* (T23), and *Jagannath Temple* (T15) achieved the highest ranks because of their high regard for cultural and religious significance, significant functional service to humankind, and social well-being for the groups of stakeholders.

However, for the architectural heritage index value of OTA, based on AHP+MOORA methods, temples such as *Konark Sun Temple* (T19), *Lingaraj Temple* (T23), and *Jagannath Temple* (T15) obtained the overall top three ranks for the value assessment of OTA. As expected, all three temples formed the golden triangle of the OTA. Further, the AHP+MOORA methods helped other known and unknown temples of OTA to find their respective places in OTA in terms of rank and group. These ranks and groups would help decision-makers decide on the OTA for their management and conservation purposes.

5 Conclusion

For the sustainable conservation and management of OTA considering the heritage landscape as a prime element, this study intends to rank and group Odishan temples. Simultaneously, this study selected five dimensions, nine sub-dimensions, and 41 parameters from the literature of international charters, various governmental agencies, and individual research scholars. The AHP was used for obtaining the weights of the parameters and sub-dimensions. In this AHP process, the higher the global weights of the parameters, the higher the contribution towards the heritage index value of the temple.

Finally, the dimensional values and heritage index values of the OTA were obtained using the MOORA method. By using the data distribution technique with the help of mean and standard deviation values of the heritage index values, groups, and ranks of Odishan temples were obtained. The four groups obtained are represented based on the dimensional importance of the specific temples. The top-ranked temples are the golden triangle of Odishan tourism, i.e., Sun Temple at Konark, Lingaraj Temple at Bhubaneswar, and Jagannath Temple at Puri. Other temples have the potential to be in this category for their sustainable dimensional importance for OTA. The individual dimensional values and the heritage index value of the temples can decide the decision-makers for OTA conservation and management issues.

The strength of this study is that it obtains OTA heritage through sustainable dimensions along with the existing dimensions of OTA. The important parameters and their contributions were identified using the AHP + MOORA method. These contributing parameters can be considered individually taken care of for the sustainable development of OTA. G2 and G3 lack sustainable dimensions, which can be improved by focusing on the development of the parameters.

This study was conducted using one-time data collection from stakeholders and experts. The panel data could have provided better results and understanding of the OTA in a more significant manner, which is a limitation of this study. These AHP + MOORA methods can also be applied to the other heritage sites of Odishan and other Indian states for their management strategies and conversational approaches.

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02

Understanding the Cultural Transformation of Paravur: A Case of Chendamangalam Weaving Community

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Keywords: Cultural Landscape, Cultural Communities, Intangible Cultural Heritage, Weaving Community

Abstract

India is a treasured repository of innumerable cultural heritage of various time periods. The *Paravur* region within the state of Kerala boasts of its amassed tangible and intangible heritage which dates back to 3000 BC. It is known to be one of the ancient towns of South India, enriched with architectural marvels, traditional crafts, artforms and cultural communities – all together contributing to a rich cultural landscape. The extensive diversity of Indian handlooms boasts of originating from 5000 years ago, thereby imbibing rich cultural heritage values, both as a tangible art form and as an intangible heritage, a cultural practice transferred and secured through generations by the communities. In addition, the traditional handloom industry also has a high economic value being the second largest economic activity in the country.

Within the *Paravur* region of Kerala, the *Chendamangalam* hand weaving holds eminence as a cultural heritage, having originated from the 17th century with generations of the weaving community still thriving and practicing the art and production of hand-woven cloth. However, as evident throughout the traditional handloom industry across the country, with the advent and proliferation of the modern machine power-loom industries, this traditional handwoven art form faces a threat of obliteration. The weaving community has been drastically diminishing for the past two decades, numerically and geographically, and the production of the traditional cloth faces a growing shortage of skilled craftsmen.

Through identifying the impact of urbanization on the community and the institutional gaps in the community structure, this research analyses the decline of traditional handloom weaving at *Chendamangalam,* as a livelihood opportunity. In conclusion, the paper suggests an alternative community-oriented management framework which can work in two folds: 1) improve the livelihood of traditional weavers, thus securing the economic sustenance of the art form and 2) proliferate this declining traditional handwoven art form, preserving its inherent cultural heritage value.

1 Introduction – Cultural Landscape of Paravur

According to Carl Suer, Cultural Landscape is defined as 'combination of natural and man-made elements that comprises the essential character of a place' (Hayden 2001). While discerning a cultural landscape in terms of man-made elements, cultural heritage includes the customs, practices, objects, artistic expressions, places of a community, passed on from generation to generation (Brumann 2015). It can thus be noted that the definition of "Cultural Landscape" is an overarching entity that basically encompasses traditional settlements and people's ways in conjunction with the physical and the abstract world of existence.

Paravur in the *Ernakulam* district of Kerala is considered as one of the cultural landscapes in the state with a plethora of monumental marvels, protected under the *Muziris Heritage Project* (Department of Tourism 2019). The ancient city of *Paravur* marked its existence from 52 BC as the capital of the empire of the Tamil tribe of *Cheras*[1]. The city later came under the control of the *Kochi* kingdom and *Travancore* kingdom, partitioned as North and South *Paravur*. After the independence, they were merged again just as the *Travancore* and *Kochi* kingdoms merged to form the Kerala state, yet the name of North *Paravur* is still used (DTPC 2019).

Figure 1: Certain historical sites under the MHP: Paliam Kovilakam (The family for which weavers were brought to the area), Chendamangalam Jew Synagogue and Paravur Jew Synagogue; **Source:** Author

Paravur is not only known for its historical importance, but also for its rich cultural value by hosting different religious and cultural communities (Department of Tourism 2019). Such an association, led to the formation of *Muziris*[2] Heritage Project, an initiative by the Government of Kerala, covering an area of 150 square kilometers to reinstate the cultural significance of the *Paravur – Kodungalloo*r region through the numerous historical and religious monuments, museums, waterways, traditional crafts and art forms of the region (Varghese 2017).

In relation to the *Kochi* kingdom, *Paravur* holds closely the *Paliam* Heritage at *Chendamangalam*, a quaint village along the *Periyar* river which was home to the *Paliathachans*[3]. As the *Paliam* family established a residential complex at *Chendamangalam* epitomizing rich Kerala architecture, *Paliathachans* brought together various artisanal communities for their services (Refer figure 2). Among those, *Chendamangalam* handloom weaving is still practiced in the region sustaining its presence for the past four centuries (Paliam Trust 2021).

Figure 2: Paliyam Nada under MHP showcasing the various communities Paliathachan brought for their residential complex. Listed are mat weaving, pottery, handloom weaving, pappadam making, carpentry, sculptural works, gold works, statue making and iron works. **Source:** Author

1 Cheras: One of the three major kingdoms of Southern India, mostly associated with the now Kerala state.

2 Muziris was a legendary ancient sea port in the Spice Route that existed 3000 years ago which brought Babylonians, Assyrians and Egyptians along with Middle-East groups in search for the spices. This port was engulfed in the flooding of the *Periyar* River in 1341.

3 Paliathachans are the hereditary Prime Ministers to the Cochin Maharajas from 1663 to 1809, with their main adobe located at Chendamangalam. They were seen to be extremely powerful and influential as the political advisors with an old saying states, *"Kochiyil paathi Paliam"* translating as half of the Cochin state belongs to *Paliam*.

2 Handloom Weaving: Its reported decline in India and Kerala State

Handloom is the largest economic activity after agriculture in the country, providing direct and indirect employment to more than 3.55 million weavers and allied workers (National Handloom Census 2019). Also, it has to be noted that 95% (Ministry of Textiles, 2014) of the world's handwoven fabrics are from India with over 125 countries purchasing them globally. It can also be noted that the 15% of cloth production in India is handloom and contributed to an export earning with a value of US $353.9 M in 2017-18 with a production of 7990 million sq meters (FICCI 2019).

In 2015, August 7th was declared as National Handloom Day to create awareness and acceptance to this traditional craft. Several programs as '*Atmanirbhar Bharat*'[4], '*Vocal for Local*' (The Indian Express 2020) and '*Make in India*'[5] have all been instrumental in promoting these handloom products. From a sustainable perspective, the handloom industry is particularly recognized for its low energy production and materials, thus promoting sustainable and slow fashion.

In recent times, the handloom industry in India has been declining as it is under various threats for its existence. As of the National Handloom Census 2019-20, the number of handloom workers have fallen to 35 lakh workers from 43 lakhs in 2010. Similar trend can be observed in the state of Kerala as well, where around 5 lakh traditional weavers have declined to 13,789 in 2019 (Kerala Economic State Review 2019). From the existing literature, the major issues identified are 1) competition from power loom, 2) rising prices of yarn and dyes (Varghese & Salim 2015), 3) poor remunerations (Sarkar 2019), 4) marketing issues, 5) lack of credit for the industry (Ajithan 2006), 6) intense physical labor without adequate modernization of the production, 7) health issues (Amaravathi & Raj 2019), 8) lack of contemporary designs, and 9) dilapidated work sheds with old aged looms (Kerala State Planning Board 2014).

Therefore, as aforementioned, an inevitable threat to the traditional handloom industry is observed, making the safeguarding of this traditional art form and cultural practice imperative. Owing to its nature of being sustained through generations as a socio-economic cultural practice, the *Chendamangalam* hand-weave is an eminent part of the cultural landscape of the region. The traditional hand-weaving has not only historically supported livelihoods but is embodied into the cultural landscape, through the engagement of the *Chendamangalam* handloom communities. While each handloom art form and its associated community practices, across the nation require active documentation and efforts to safeguard their imminence, however, this research focuses solely on the *Chendamangalam* weaving community of *Paravur* region of Kerala. This focus is due to the community's livelihood being an intrinsic element of traditional practices which lays the foundation for defining *Paravur's* cultural landscape.

3 Objectives of the Research:

This research study is oriented to understand the cultural transformation of the *Chendamangalam* weaving community and proposes its strengthening through a revamped community-led management framework. Through the identification of the cultural significance of *Chendamangalam* handloom weaving, the research further estimates the performance of the traditional handloom industries and likely causes for the shift to the modern power-loom.

The study majorly focuses on understanding the current organizational/management structure of the handloom industry in Kerala, attempting to identify the major issues highlighting the causes of decline of the traditional handloom. At last, this research proposes a revamped community-led management framework for the overall development of the *Chendamangalam* handloom industry.

4 Atmanirbhar Bharat: https://aatmanirbharbharat.mygov.in/

5 Make in India: https://pib.gov.in/PressReleasePage.aspx?PRID=1657693#:~:text=Handloom%20weaving%2Fproduction%20is%20inherently,and%20making%20India%20self%2Dreliant.

4 Methodology Adopted:

For undertaking this research, the cultural study related to *Chendamangalam* weaving was identified through a literature review and structured personal interviews with the weaving community (Gera, 2019). In analyzing the shift from the traditional industries, category of workers and work force participation rates have been identified from the Census of India. The urbanization trend in the region was analyzed by the land use-land cover change using ArcGIS. To assess the performance of the handloom industry, primary data was collected from the handloom co-operative societies under *Chendamangalam* handloom and the associated government agencies.

Later, the major issues of the handloom industry were identified from the weavers and the office bearers of these co-operative societies through personal surveys. The collected data was later analyzed using chi-square tests to understand the significant associations. These associations and causes were recorded as findings and inferences to assist in developing a proposed revamped community structure, to sustain this traditional craft of *Chendamangalam* handloom.

5 Cultural Mapping of the Chendamangalam Handloom Weaving Community:

Figure 3: Origin of Chendamangalam Handloom: Devanga Chettiyar weavers from Andhra Pradesh and Tamil Nadu brought by the Paliam family, in the 17th century, to weave for the Paliam women. This traditional craft of weaving is still practised in the region, termed as Chendamangalam weaving. The compiled images depict the overall history of Chendamangalam handloom weaving. **Compiled by:** Author

5.1 Cultural Significance of Chendamangalam Weaving

Chendamangalam weaving is a style of Kerala handloom weaving, originated in the 17th century from the village of *Chendamangalam* in the *Paravur* taluk. It is considered as an intangible cultural heritage as a traditional craftsmanship passed on between generations (UNESCO 2014). This weaving is a variation of the typical Kerala handloom in slight heavy cloth of superior quality adorned with colored or zari borders. (Refer figure 4)

With the arrival of the *Paliyathachan* at *Chendamangalam*, the weaving community of *Devanga Chettiyar* was invited to *Chendamangalam* to weave for the *Paliam* family. *Chendamangalam* handloom were originally handwoven for the ladies of the *Paliam* family as a sign of their dignity for wearing the '*Puliyilakara Neriathu*'. Weaving was perceived as a respectable occupation by the 1900s and as the demand for *Chendamangalam* weaves grew, weaving became a major livelihood throughout the region. Hence, large weaving industrial units were set up as private limited companies, but to much dismay, it failed miserably. This resulted in the origin of handloom co-operatives resulting in the formation of thirty two handloom societies in the district which were functioning till the 1990s (Ajithan 2006). Currently, *Chendamangalam* weaving style is practiced in seven handloom co-operative societies, which are distributed across the *Paravur* and *Kochi* taluks of the *Ernakulam* district in Kerala (Shaji, 2021).

Figure 4: Weaving process and its products. **Source:** Author

Based on the records of the Intellectual Property of India, Government of India approved Geographical Indication Tag for *Chendamangalam* handloom set mundu[6] and dhotis[7] in the year of 2011. The signature handloom products of the *Chendamangalam* handloom are its Kerala set *mundu, dhotis, kasavu saree*[8], *towels*, running fabrics, bed sheets, etc.

5.2 Geographical Distribution of the Handloom Community

The *Chendamangalam* weaving community organises themselves into seven handloom societies in this region. These co-operative societies are *Kuriapilly H3476, Chendamangalam H47, Karimpadam H191, Paravoor H3428, Paravur Town E1, Pallipuram Kuzhupilly 128 and Cherai 648*[9] functioning in the *Paravur* and *Kochi* taluks of the *Ernakulam* district (Refer Figure 5). Currently there are 598 looms which are actively involved in *Chendamangalam* handloom weaving and functioning under these handloom co-operative societies. 92% of the looms are positioned in the *Paravur* taluk while the remaining 8% looms weave from the panchayats of *Pallipuram* and *Kuzhupilly* from the neighboring *Kochi* taluk (Shaji 2021).

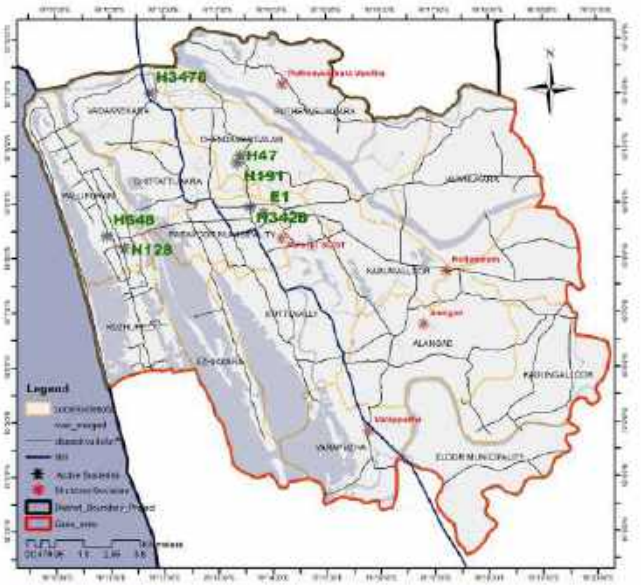

Figure 5: Mapping of the seven active societies and five shut down societies of Chendamangalam Handloom Weaving in Paravur and Kochi taluks; **Source:** Author

6 Set Mundu: Traditional wear of women in Kerala consisting of two pieces of cloth.
7 Dhotis: Traditional garment worn by men, tied around the waist and covering legs.
8 Kasavu Saree: Traditional handloom saree with a zari border which is called as kasavu, worn for cultural events.
9 Kuriapilly H3476, Chendamangalam H47, Karimpadam H191, Paravoor H3428, Paravur Town E1, Pallipuram Kuzhupilly 128 and Cherai 648: Handloom co-operative societies of Paravur which practice Chendamangalam weaving style.

Even though this particular weaving style originated at *Chendamangalam* in the *Paravur* taluk, gradually over time, the weavers have spread across the taluk and to the neighboring *Kochi* taluk. Hence, it can be seen in Figure 5, the community mostly belonged to the 15 local bodies of the *Ernakulam* district with 11 panchayats such as *Vadakkekara, Chendamangalam, Chittattukara, Kottuvally, Ezhikkara, Puthenvelikara, Kunnukara, Karumallur, Kadungallur, Alangad, Varapuzha* and 2 municipalities such as *Eloor* and *Paravur* from the *Paravur* taluk and 2 Panchayats of *Pallipuram* and *Kuzhupilly* in Kochi taluk (Shaji 2021). This reflects the vast expanse of area distribution of the *Chendamangalam* community population and hence the socio-geographical impact of the cultural identity.

5.3 Existing administrative and management structure of the Chendamangalam Handloom Industry:

As reflected in Figure 6, there is a complex hierarchical administrative and management system for the *Chendamangalam* handloom industry within the state of Kerala. The handloom industry in the district is managed administratively by the Directorate of Handloom and Textiles under the Government of Kerala. Each district has a General Manager and a Deputy Registrar at the District Industries Center, under which local circles of co-operative societies belong. These circles of co-operative societies are supervised by the Handloom Taluk Officers (Source: Primary survey by author with the society office bearers).

Each handloom co-operative society is equipped with a directorate board, comprising of 9 to 11 members, along with a president and secretary. The president acts as the administrative head, while the secretary is responsible for the implementation of the various works within the society. Within the administrative structure, the president and the directorate board are elected from the registered weavers within the society such that the concerns and the voices of the weavers are heard (Source: Primary survey by author with the society office bearers). (Refer figure 6)

Figure 6: Organisational structure of the Chendamangalam Handloom; **Source:** Author

5.4 Functioning of the Handloom Industry within the existing Administrative and Management Structure:

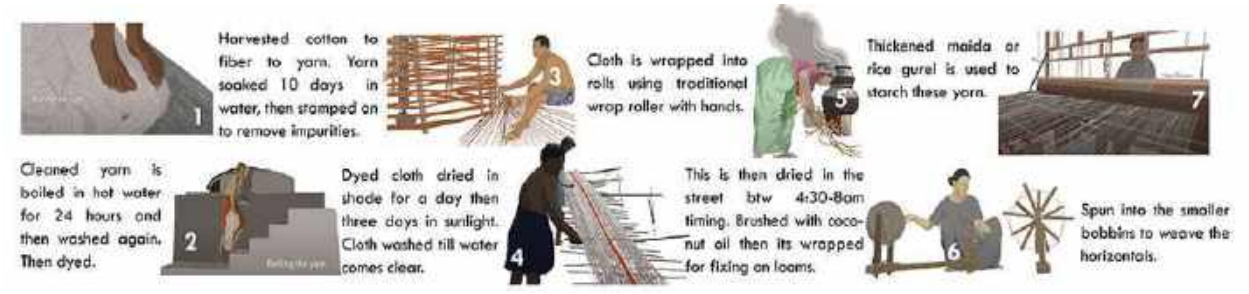

Figure 7: Process behind Chendamangalam Handloom Weaving; **Sketch Source:** Chendamangalam Handloom: Design Intervention in Craft Revival by Anoodha Kunnath; **Compiled by:** Author

The uniqueness of *Chendamangalam* is by the virtue of their manufacturing process which involves the societies, weavers and allied workers working unanimously. It is important to understand the linkages between these three groups and the processes within this organisational structure.

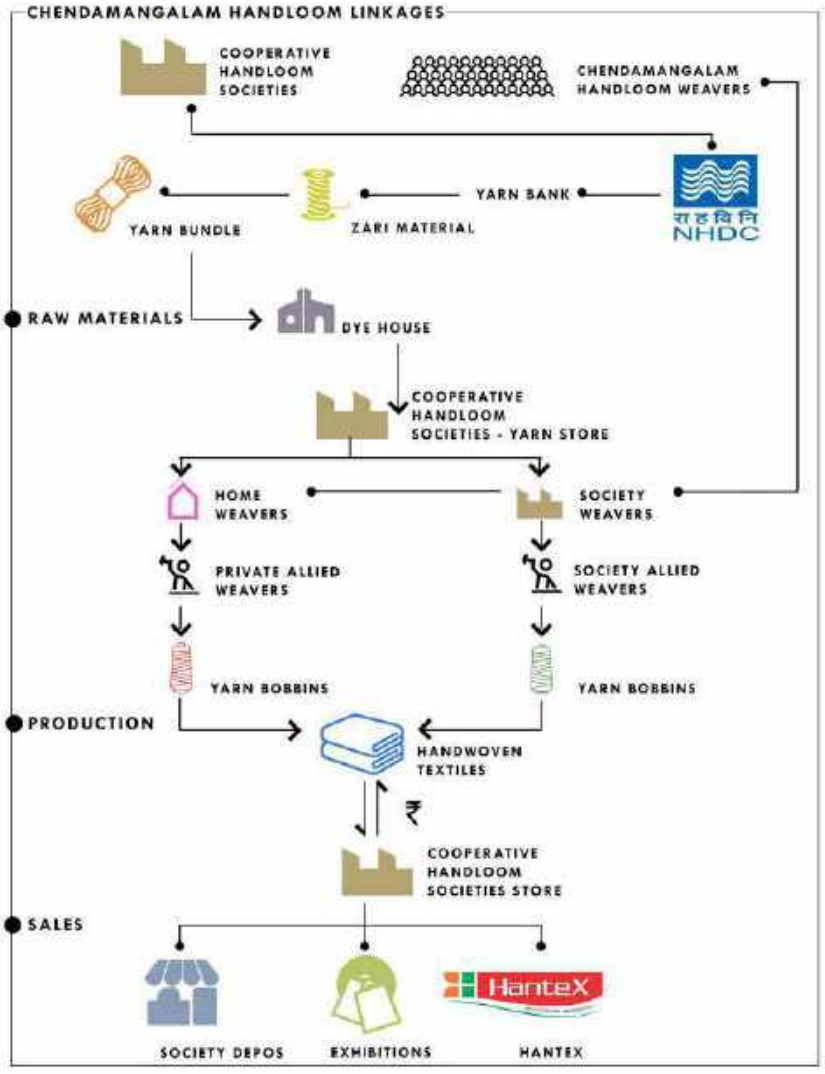

Figure 8: Functioning of the Chendamangalam Handloom; **Source:** Author

Under *Chendamangalam* weaving, all the weavers work under seven handloom cooperative societies. To understand the functioning of the industry, the linkages can be identified in three stages with respect to the manufacturing process (Shaji 2021) (Refer figure 9-11):

Figure 9: Yarn Bank Godown; Yarn dying, Drying of the Dyed Yarn; Yarn Store at a society; **Source:** Author

Stage 1: Procurement and Treatment of Raw Materials: The raw materials such as yarn and *zari*[10] materials are supplied through yarn bank which is sourced by the NHDC[11]. The yarn is then dyed (Refer figure 9) at each society dye houses, which are distributed through their yarn store to its respective weavers. (Refer figure 9)

Figure 10: Various stages in the dying and spinning process at different societies; **Source:** Author

Stage 2: Pre-production and Production processes: This dyed yarn is then processed into spinning threads undergoing various processes. The society weavers get their yarn pre-processed through the society allied weavers while the home weavers pre-process it through private allied workers. Once the yarn is made into bobbins, they are woven into textiles which are returned to the societies for which they receive their remuneration. (Refer figure 10)

Figure 11: Handloom Society Store, Society Office Store, Store at Paliyam Nada under MHP; **Source:** Author

Stage 3: Sales: The handwoven products are sold by the societies through their society office and shopping outlets distributed in and around *Paravur*. Majority of the sales are through the society facilities. About 15% of the products are sold through *Hantex*[12], which is an apex organisation of Kerala government for handloom. Occasionally, the products are sold through exhibitions as well.

10 Zari: Golden threads typically used to weave borders.
11 NHDC: National Handloom Development Corporation Limited
12 Hantex: Apex body of the handloom weavers co-operative societies in the state.

6 Identifying the Existing Shift from the Traditional Industries:

6.1 Change in land use depicting shift

As this region is well connected to the major urban centers such as *Kochi* and *Thrissur*, there have been significant transformations in the case area. *Paravur* was known to be a countryside, famous for its coir, handlooms, agriculture and backwater. However now it is changing as a major residential suburb for the Cochin city (DTPC 2019). It can also be identified with respect to the occupational structure of the region.

Over the years from 1991 to 2011, the growth rate of marginal workers and non-workers have been depicting negative growth rates in the local bodies of the case area. Similar trends can be noticed in the category of workers from 1991 to 2011, where cultivators, agricultural and household industry workers have been depicting negative growth rates (Census of India 2011).

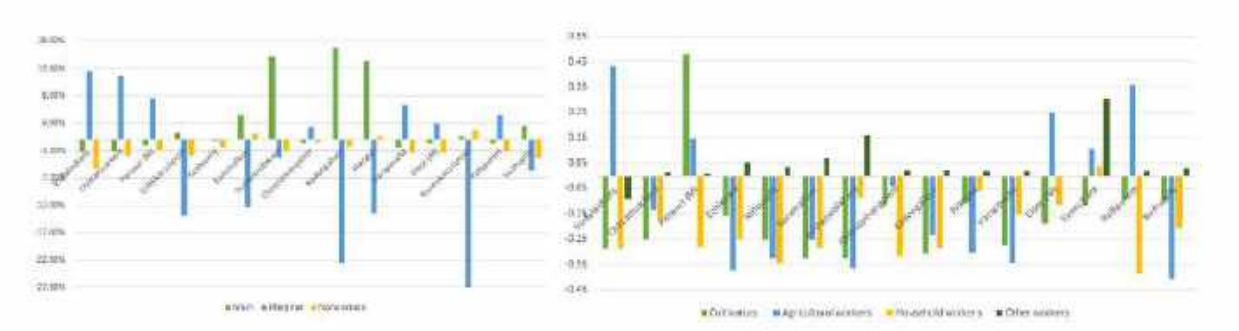

Figure 12: Growth rate of WPR and Category of Workers from 1991 - 2011; **Data Source:** Census of India (1991-2011)

Similar trends can be analyzed with regard to the traditional industries of coir and handloom, prominent in the region. In the past three decades, the number of coir societies have reduced from 27 to 12 along with the handloom societies of the district reducing from 32 to 13 active societies (Ajithan 2006). This is supported by the registration of new industrial units in the case area, indicating an increase in the overall built-up in the area (Refer Figure 13).

With regard to this, the Land Use-Land Cover Change analysis was carried out between 2015 and 2020 to understand the overall shift in the built-up area. Using the Landsat 8 imagery from USGS, supervised classification was employed using ArcGIS to understand the change in land use-land cover. In the year 2015, it can be noted that the majority of the region belonged under vegetation, including agricultural lands and fallow land and followed by built-up area. While in 2020, it can be observed that the majority of the case area falls under built-up area. In comparison, the largest increase is seen in the built-up class with a percentage of 9.24% while a decrease in vegetation by 0.2%. This is followed by a decrease in water bodies and barren by 0.2% and 0.63% respectively. The increase in built-up area in 2020 can be justified with the increase in the industrial, commercial and residential built-up in the case area.

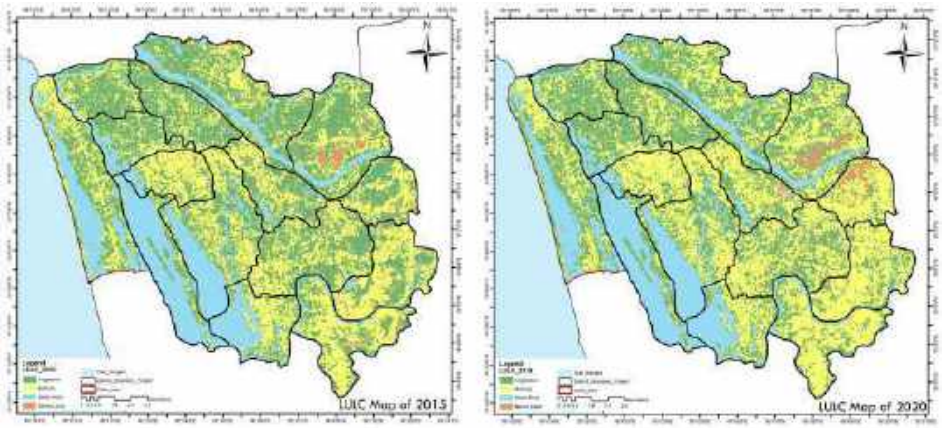

Figure 13: LULC map of 2015 and 2020; **Source:** Author

Based on the data received from the State Land Use Board, the built-up area in terms of residential, industrial, commercial, built-up with mixed crops and others (recreational, religious, services) were compared for the years 2015 and 2020. It can be concluded that the *industrial, commercial, residential* and other land use classes have increased by 1.7%, 1.3%, 2.3% and 0.7% respectively in 2020, with only *built-up* with mixed crops showing a decrease in its area.

6.2 Performance of the Handloom Industry

Even though handloom was one of the major traditional industries in the district, the number of people involved in the handloom industry started reducing by the beginning of the 21st century. It is visible by the fact that the *Ernakulam* district which had 32 registered handloom societies, only has 13 actively functioning societies currently (Source: Primary survey by author with DIC 2021).

For analyzing the performance of the handloom industry in the district, the parameters chosen for the research are under the three categories. Firstly, the production aspect is analyzed through the production of the handloom cloth in meters, value of production and the total turnover. Secondly, the work force is studied through the number of active weavers and the number of women employed in the handloom industry. Lastly, the number of actively weaving looms in the district are considered.

Figure 14: Trends in the Performance parameters; **Data Source:** Directorate of Handloom and Textiles, 2021

From 2013 to 2020, these line graphs represent that the number of active looms, number of active weavers and the number of women employed have exhibited a negative average growth rate of -8.6%, -1.1% and -4.0% respectively. However, the quantity of production, value of production and total turnover from the industry showcase a marginal increase with average growth rates of 0.4%, 11.1% and 0.5% respectively. Hence, it is clear that the performance of the handloom industry has been specifically diminishing while there is minimal growth in the local business providing minimum benefits and thus might be causing an induced reduction in the technical, financial or cultural interest in the craft.

6.3 Mapping of the Active Societies: Signifying decline in geographical presence of the industry and induced change in cultural landscape

The significance of this mapping illustrates how the cultural landscape is under swift transformation over a span of 30 years in the geographical sense through mapping the societies. Here, in comparison with the spread of the handloom societies, it is clearly visible how the area has reduced within the span of three decades. The societies at *Alangad, Varapuzha, Puthenvelikkara* and *Karumalloor* have shut down with the currently existing societies concentrated in the local bodies of *Paravur* Municipality, *Pallipuram, Vadakkekara* and *Chendamangalam* (Shaji 2021).

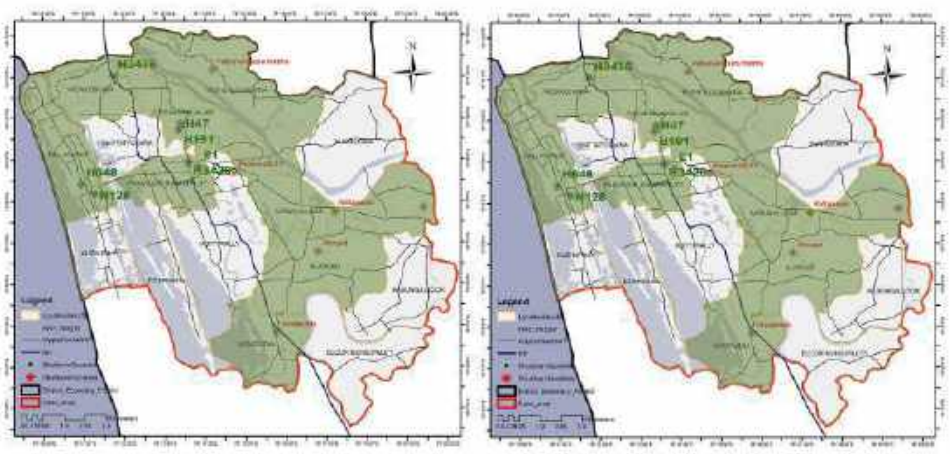

Figure 15: Mapping of the local bodies (marked in green) with active handloom societies in 1990s & in 2020; **Source:** Author

7 Major Issues Faced by the Handloom Industry

The issue mapping of the handloom industry was identified through extensive field survey of the two main groups – weavers and the society office bearers. Structured personal interviews of the handloom community along with telephonic interviews were conducted following questionnaires. Stratified random sampling and snowball sampling techniques were employed with the weavers and the society office bearers respectively. The results of the survey were then compiled separately for the two user groups to be compared using chi-square tests and the p-values to identify the difference as significant or not (Gera 2019). The identified issues can be categorized into four categories as:

7.1 Production Issues:

The major issue regarding production is the high cost of production majorly influenced by the high costs of yarn. It was mentioned that the yarn prices have increased by at least 50% in the past few years. Another factor that adds to the cost of production is the physical labor that is involved, coupled with intense attention and patience that is required at each and every step of the production. One of the other aspects with production is the lack of open spaces for the pre and post loom activities, based on the feedback from the interviews with the weaving community. As the open areas used for the street warping[13] and other processes started reducing, these activities are now mostly limited to the constrained lands of the society facilities.

Production Costs

User Group	Strongly Agree	Agree	Moderate	Disagree	Strongly Disagree	Total
Society Officer	19	2	2	1	1	25
Weaver	96	27	8	2	1	134
Total - Count	115	29	10	3	2	159
Total - %	72.33%	18.24%	6.29%	1.89%	1.26%	100.00%

Chi Square= 4.374, df= 4, p Value = .36, Non Significant Difference

Figure 16: Production Costs; **Source:** Author

7.1.1 Production costs: With regard to production costs, a majority of 72% strongly agree that the high costs of production as a major drawback of the industry with a p-value of 0.36, hence the difference of responses is found to be statistically non-significant.

13 Street warping is a step in the production where the warped yarn is laid out while starch is applied and left to dry in the morning sunlight between the time of 4:30-8:00 am.

Physical Labour Involved

User Group	Strongly Agree	Agree	Moderate	Disagree	Strongly Disagree	Total
Society Officer	21	2	2	0	0	25
Weaver	110	17	5	1	1	134
Total - Count	131	19	7	1	1	159
Total - %	82.39%	11.95%	4.40%	0.63%	0.63%	100.00%

Chi Square= 1.642, df= 4, p Value = .8, Non Significant Difference

Figure 17: Physical Labour Involved; **Source:** Author

7.1.2 Physical Labor Involved: With regard to the physical labor, a majority of 82% strongly agree that the need for intense physical labor involved in production is a major concern influencing the productivity of the industry and with a p-value of 0.80, hence the difference of responses is found to be statistically non-significant.

7.2 Workforce based Issues:

Skilled and experienced weavers are the most important asset of the industry. The ageing weavers' population is to be addressed as majority of the weavers of the *Chendamangalam* belong to the age group of 40-60. The number of weavers below the age of 40 are very less indicating how the younger generation is not interested in weaving as a livelihood choice, because of the intense physical work and poor remuneration.

Aging Weaving Population

User Group	Strongly Agree	Agree	Moderate	Disagree	Strongly Disagree	Total
Society Officer	15	5	2	2	1	25
Weaver	78	29	15	8	4	134
Total - Count	93	34	17	10	5	159
Total - %	58.49%	21.38%	10.69%	6.29%	3.14%	100.00%

Chi Square= .446, df= 4, p Value = .98, Non Significant Difference

Figure 18: Ageing Weaving population; **Source:** Author

7.2.1 Ageing population: With regard to ageing population, a majority of 59% strongly agree that the ageing weavers' population signifies that the craft is under the threat of extinction and with a p-value of 0.98, hence the difference of responses is found to be statistically non-significant.

Younger generation not coming into profession

User Group	Strongly Agree	Agree	Moderate	Disagree	Strongly Disagree	Total
Society Officer	14	7	2	1	1	25
Weaver	91	27	8	6	2	134
Total - Count	105	34	10	7	3	159
Total - %	66.04%	21.38%	6.29%	4.40%	1.89%	100.00%

Chi Square= 7.759, df= 4, p Value = .1, Non Significant Difference

Figure 19: Younger Generation not coming into weaving; **Source:** Author

7.2.2 Younger Generation's disregard for weaving as a professional choice: With regard to the younger generation in weaving, a majority of 66% strongly agree that younger generation having a disregard for weaving is also an issue in the sustenance of the industry and with a p-value of 0.1, hence the difference of responses is found to be statistically non-significant, in support of the declining workforce in the state.

7.3 Infrastructure Issues:

Infrastructure at each society for the *Chendamangalam* weaving as a whole becomes a prominent feature for the upliftment of this industry. As combined infrastructure, yarn godown, common facility center, dyeing house with flood resistant adaptations are to be considered. While, for societies, the infrastructure for providing an adequate work environment for the weavers such as well-lit dressing rooms, toilets, cafeteria facilities, ventilated hygienic work sheds are important.

Working Environment Facilities

User Group	Strongly Agree	Agree	Moderate	Disagree	Strongly Disagree	Total
Society Officer	1	12	7	3	2	25
Weaver	12	50	49	17	6	134
Total - Count	13	62	56	20	8	159
Total - %	8.18%	38.99%	35.22%	12.58%	5.03%	100.00%

Chi Square= 2.216, df= 4, p Value = .70, Non Significant Difference

Figure 20: Working Environment Facilities; **Source:** Author

7.3.1 Working Environment Facilities: With regard to the working environment facilities, a majority of 39% agree that the inadequate working conditions is an issue contributing to the outlook about the industry and with a p-value of 0.70, hence the difference of responses is found to be statistically non-significant.

Need for Flood Resistant Buidling Adaptations

User Group	Strongly Agree	Agree	Moderate	Disagree	Strongly Disagree	Total
Society Officer	17	7	0	0	1	25
Weaver	101	23	9	1	0	134
Total - Count	118	30	9	1	1	159
Total - %	74.21%	18.87%	5.66%	0.63%	0.63%	100.00%

Chi Square= 5.65, df= 4, p Value = .23, Non Significant Difference

Figure 21: Need for Floor Resistant Building Adaptations; **Source:** Author

7.3.2 Flood Resistant Infrastructure: With regard to the infrastructure, a majority of 74% strongly agree to the need for flood resistant building adaptations for the sustenance of the industry and with a p-value of 0.15, hence the difference of responses is found to be statistically non-significant.

7.4 Marketing Issues:

Even though *Chendamangalam* handloom has been credited with a GI tag, there is no brand as such to promote their products. Currently, these seven handloom cooperative societies market their products separately and compete with each other. But such a separate system is weakening them with very poor competition and no coordination. Also, the societies have no customer relations nor advertising techniques for the promotion of their products and lack in-house textile designers and fashion experts to guide the design process according to the market demand.

Customer Preferences

User Group	Strongly Agree	Agree	Moderate	Disagree	Strongly Disagree	Total
Society Officer	12	3	5	3	2	25
Weaver	82	30	13	7	2	134
Total - Count	94	33	18	10	4	159
Total - %	59.12%	20.75%	11.32%	6.29%	2.52%	100.00%

Chi Square= 8.774, df= 4, p Value = .07, Non Significant Difference

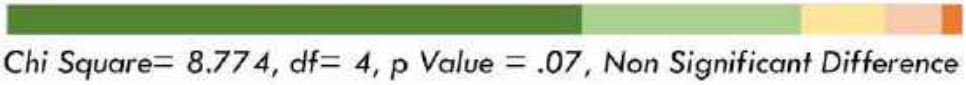

Figure 22: Customer Preference; **Source:** Author

7.4.1 Customer Preferences: With regard to the market demand, a majority of 59% strongly agree that the absence of customer preferences is setting the handloom industry back from young consumers and with a p-value of 0.07, hence the difference of responses is found to be statistically non-significant.

Marketing of the Handloom Products

User Group	Strongly Agree	Agree	Moderate	Disagree	Strongly Disagree	Total
Society Officer	18	4	1	1	1	25
Weaver	71	52	8	1	2	134
Total - Count	89	56	9	2	3	159
Total - %	55.97%	35.22%	5.66%	1.26%	1.89%	100.00%

Chi Square= 7.902, df= 4, p Value = .13, Non Significant Difference

Figure 23: Marketing of the Handloom Products; **Source:** Author

7.4.2 Marketing of the Handloom Products: With regard to the marketing, a majority of 55% strongly agree to the inadequate advertising of the products and the competition from power looms is a concerning element and with a p-value of 0.13, hence the difference of responses is found to be statistically non-significant.

8 Findings

Based on the above analyses as illustrated in sections 6-7, it can be identified that the industry is subsiding because of the identified issues, acting as stressors, which can be quantified by its performance and the diminishing geographical spread of the community. It can be concluded that the major impacts are seen with regard to the workforce and the active looms weaving in the region, which proportionally corresponds with the overall spread of the community. While analyzing the issues relating to the industry, production related issues in terms of the production costs and the intense manual labor required at every step of the production seems to be of top priority. This is further aggravated by the workforce related issues with regard to the ageing population of the skilled weavers and the younger generation's disregard in weaving as an occupational choice. Further the marketing of this craft is inept, as the industry has no exposure to the current market trends and customer preferences along with the poor marketing and awareness building of their woven products.

9 Recommendations: Proposed *Community-led Management* Framework to promote Chendamangalam Weaving

In order to revive the weavers of *Paravur* region, the *Chendamangalam* weaving can benefit from an integrated platform to sustain itself by promoting research for technological innovations and for the marketing of its indigenous products. The authors hereby intend to propose a revamped organizational framework that can aid this industry and safeguard the cultural landscape rooted through this craft subsequently. The regional brand will be based on these seven societies practicing *Chendamangalam* weaving, supported by Indian Institute of Handloom Technology (IIHT), Kannur (New Indian Express, 2012).

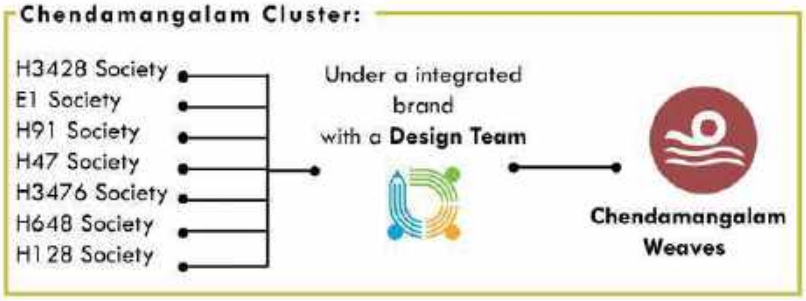

Figure 24: Proposed for the Integrated regional brand for all the seven societies practicing Chendamangalam Handloom – 'Chendamangalam Weaves'; **Source:** Author

To propose, this initiative of an integrated *Chendamangalam* brand is to be established as a consortium between the societies of *Chendamangalam* weaving with Public-Private Partnership, with a design team. Following the Kara Weaves of Kerala model (Kara Weaves, 2021), it is recommended that the organisation be registered under the World Fair Trade Organisation, to ensure fair trade practices are followed (WTFO, 2021).

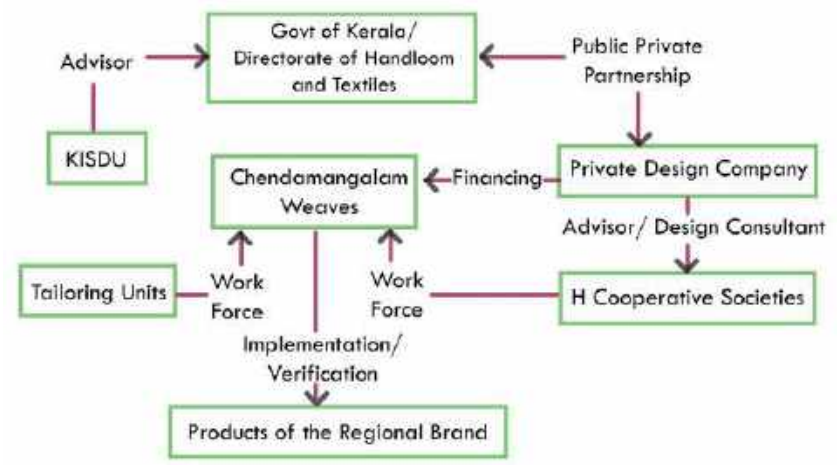

Figure 25: Conceptual framework of the Regional Brand; **Source:** Author

The societies under the Directorate of Handloom and Textiles will function in collaboration with the selected design company. The design company shall appoint the design staff required for the production aspects of the brand. The staff force required can include design coordinators, textile designers, textile colourists, trend forecasters, fashion designers, marketing advisors, growth consultants, graphic designers and technical staff. This can be promoted under the development of a Common Facility Centre for the brand under the Handloom Development Programme and Comprehensive Handloom Cluster Development Scheme. (Development Commissioner Handlooms, 2021)

Figure 26: Traditional Production Process followed; **Source:** Author

This regional brand will have to be promoted in such a way that the yarn and materials remain being supplied through the cooperative societies but the design for the fabric to be woven will be under the discretion of the design team. With the implementation of the regional brand with a design team, the production process can be updated so that not only traditional designs are woven but also newer designs from the trend prediction and customer preferences formulated by the design team. The design team will also be directed to form or co-ordinate with tailoring co-operatives for converting these fabrics into wearable clothing or home furnishings. These finished products of handloom are to be marketed through an online *Chendamangalam* weaves platform in the global market. Hence, expanding the global reach of these indigenous handwoven products which can improve the earnings of each weaver.

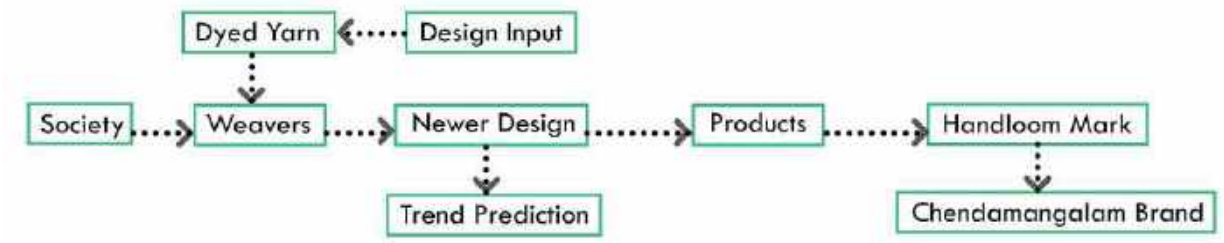

Figure 22: Customer Preference; **Source:** Author

Through this step, the infrastructural requirements of these societies combined and of individual societies can be monitored under the brand and taken care of periodically, aiming at creating a better work environment for the community. This can be combined with the India Handloom Brand, along with the Weavers Service Centre focusing on quality maintenance, awareness and publicity campaigns, etc (Development Commissioner Handlooms, 2021). Alongside, it can function as a learning platform where the students of national design institutes of NIFT, NID and the state design institute, KSID, can be allotted to the co-operative societies to work with the weavers to explore and work with sustainable fashion and also for the technological innovations required for the weaving.

Hence, while incorporating the establishment of a regional brand into the current organisational structure, the functional organisation of the industry will be altered as depicted in Figure 28:

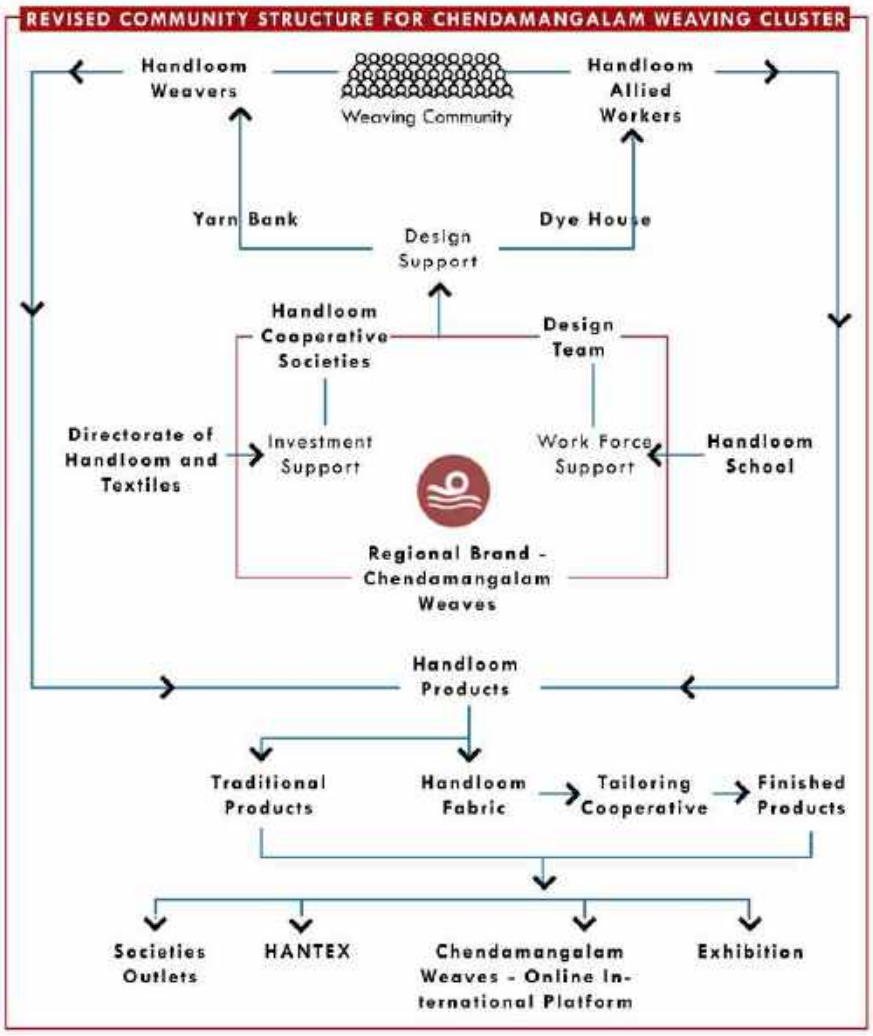

Figure 28: Revamped Community Structure; **Source:** Author

10 Conclusion

The *Chendamangalam* weaving community, identified as one of the most important cultural attributes in local history, is under the threat of extinction. The issues identified through close interactions with the community for the decline are in aspects of production, declining workforce, infrastructure and marketing with each factor aggravating the scenario simultaneously. These issues can only be addressed through a holistic approach of an integrated platform. A regional brand can be an appropriate solution for the monitoring and evaluation of the *Chendamangalam* cluster and its requirements. Such an intervention will be instrumental for the sustenance of the industry and in turn safeguarding the intangible culture of handloom weaving which plays an essential character in the cultural landscape of *Paravur*.

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03

Spice as an Agent: Mapping and Reinterpreting the Cultural landscape of Kozhikode through the lens of Critical Vernacularism

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Sub theme: Settlement/ Places/ Urban/ Rural/ Regional - Cultural Landscapes - Transformations, concepts, ideas, and approaches

Keywords: transoceanic trade , cultural landscape , cosmopolitan expression, critical vernacular, responsive approach

The concepts of place and city are not merely physical terms, they are understood more profoundly, in cultural terms that express the determined confluence of social, economic, scientific and technological factors that call for an architecture specific to the place. An architecture that is sustainable , in technological , social and geographical terms. And that the architect should discover "what the building wants to be". The concept of specificity is implicit in these ideas. (Aiello 2000)

Abstract

As Raymond Williams argued "*landscapes are material productions within which were coded particular ideologies*". To interpret these material expressions and the ideologies of the demographics who lived in a region, its imperative to decode the distinct associations, both physical and cultural, to their historical geographies. From translating the diagrams of power & influence to comprehending the relationship between land, life, people and place, these are few key markers to **Responsible** and **Responsive** approaches to future urban developments.

The urban landscape of the distinctive cultural region of Kozhikode, positioned on India's Malabar Coast, upholds a testimony of its transoceanic history and its interlaced 'spice roots' (networks), which outlined the historic growth trajectory of the city and subsequent cultural processes. The city fabric demonstrates the heterogeneous evidence of its maritime global trade relations - by means of inter-diasporic exchanges, dichotomy of essentialized geographies/ neighborhoods, evolution of market streets, the socio-cultural institutions with multifaith networks produced over centuries of commerce and cross cultural interactions.

This paper examines the transformations of the cultural landscape of one of the historic city cores (setting of trade and commerce) of Kozhikode through "making and experiencing" the city of spices. The reflections are gathered from an ongoing academic investigation, assessing a unique/explorative tool with an overarching theme of "architecture and city". The presence of tangible and intangible heritage, traces rare expressions of these transfusions resulting in the medieval splendor of the port city and reflects the essence of this cosmopolitan urban space with its multiple inter regional and trans local communities, folklore, indigenous building processes, rituals, symbolic references, culinary culture and hospitality (customary) which exist in symbiosis.

This multiscale pedagogical approach investigates on how to decipher the expressions of hybridity and cosmopolitanism of the historic landscapes of Kozhikode. How can the inferences be drawn to evolve architectural gestures that help maintain the continuity of the city's transformation? What could be a

developing tool and design drivers for the sites/contexts of heterogeneity/ hybridity? Thus offers a chance to contest and re-familiarize students with the city using twinned interventions at distinct precincts (colonized & decolonised) of this historical confluence.

The aim of this academic inquiry is to find a responsive alternative design approach that can address the current challenges addressing lost language of Indian urbanism in design. The city of Kozhikode is subjected to powerful influences and transformations, and losing much of its historic plurality. The homogenizing effect on the built environment is evident throughout the delineated study area (the inner city). By considering a study through the critical vernacular approaches towards a design that is oriented to the locality and yet receive the contemporary technology in order to obtain responsive design.

Figure 1: Evidences of the 'critical vernacular' at the historic trade and commerce core, City of Kozhikode; **Source:** SimpliCITY, https://www.skyscrapercity.com/threads/calicut-kozhikode-cityscapes.620470/page-31 (accessed Nov 6, 2021)

An Academic approach

'Architecture and the City' in this context signifies a certain scale of academic exploration, where the goal is to first of all engage in the socio- cultural context of the city to derive a contextual approach in architectural interventions within the city. Here, the City context which is part of a larger cultural landscape is considered as the 'Site' of intervention to conceptualize the responsive public projects.

The paper is part of an academic research as part of a third year undergraduate architecture studio, on understanding and reinterpreting the cultural landscape of the trade and commerce core of the city of Kozhikode. This academic approach which is underway, is attempting to propose an experimental pedagogy, to investigate the transformations of the cultural landscape through an alternative pedagogical approach. It is a two part academic research where part one attempts to critically look at the emergence of the cultural landscape by attempting to comprehend the hybridity of the place through 'spice' as an agent of transformation. Part two examines the transformations of this cultural landscape through the lens of 'critical vernacular' by closely mapping the aspects of Land, Life, People and Place, hence rediscovers the 'architectural identity' interlaced in the city's cultural landscape. This method presents an argument where critical analysis of the emergence and transformation of the mentioned historic core, leads to spatially appropriate inferences in designing within this cultural geography. The approach will address the contemporary and future challenges through proposing responsive environments which generate sustainable dialogues with the place.

Reinterpreting the emergence the cultural landscape:

Spice as an agent to decode the material and cultural expressions

How 'Spice' acted as an impetus for emergence of the cultural landscape was investigated through the following thematic inquiries. What was the relevance of Calicut in the global 'spice' history? How India's flourishing spice trade shaped its historic trajectory and the future of the world? The critical deliberations

were to understand the 'making' of the historical geography of the city of Kozhikode by interpreting **the distinct physical association of 'Spice' with the historical evolution of the urban form and apparent cosmopolitan cultural manifestations and way of life of the place.**

'Spice' as an agent of transformation was inquired through the seminal readings - **India & The Indian Ocean (Ashin Das Gupta, M N Pearson, 1987)**, through the discussions on trade and faith on the medieval Malabar coast1[1], and along the regional portrayals in the impressionist survey of the history of the city and related events[2]. Here, the Urbanity of Spice and built is traversed through the proposed six thematics of the studio : *In TransOceanic History and Evolution of the Urban Form, In Territory formation (Coloniality and Political aspects), In Economical aspects/ Interrelationships/ Concurrence, Influence of spice as a A Commodity (Market orientation), A Socio- Cultural Marker, A Testimony (Community and Culinary culture).*

This was carried out through an alternative pedagogical approach aimed to reinterpret these Architectural and Urban Cultural conditions that go into making and 'Experiencing' Calicut as the 'City of Spices'. The critical analysis of the evolution of the city's cosmopolitan fabric were carried out through the design inquiries at two delineated zones- first site, being situated on the Kozhikode beach where the trading activities have begun in the past (with its contemporary critical modern/ colonized public layer of the city) and the second one which was part of the inner city / the historic core area - with a traditional vernacular character and community expressions which were the resultant of the long established maritime trade networks.

The inferences gathered were pointers to consider, while rethinking about an urban architectural intervention at this cultural landscape- which aids the visitors to relook at this agent of change and refamiliarize the implications of the city's 'spice culture' through a responsive architectural intervention at the historic core as an Interpretive experience.

'In TransOceanic History , territorial formation and the evolution of the Urban form:

."..From the fourteenth century onwards, Calicut was the most important entrepôt in the region. By the time of Vasco da Gama's arrival, its rulers were on course towards achieving hegemony over all the rival pepper ports on the Coast. Over the following century, Calicut became the focal point of resistance against the Portuguese and a fulcrum of Muslim commercial, political, military, and religious activity. Despite this key role that Calicut played not only in South Indian but also wider Indian Ocean history." (Prange, 2018)

Figure 2: Aerial view of the historic trade and commerce core of Kozhikode with the 'critical modern' (colonised) and 'critical vernacular layer'; **Source:** Kozhikode Kuttichira, https://www.youtube.com/watch?v=WQDxN2PG_Yg (accessed Nov 6, 2021)

1 Sebastian R Prange, The monsoon Islam: Trade and Faith on the Medieval Malabar Coast, Cambridge University Press, 2018

2 M G S Narayanan, Calicut: The City of Truth Revisited, University of Calicut, 2006

Figure 3: Delineated study precinct along the Beach and within the Historic inner city area; **Source:** Author
Figure 4 and 5: Delineated Sites within the Historic Inner city area for Design Intervention; **Source:** Author

The focused investigation along the delineated study zone reveals the cultural transfusion across the various continents through its oceanic (spice) trade in the South West Indian coast. The presence of extra regional and trans local diaspora communities (Gujaratis-Jains and Bohra communities, foreign Muslims), their historical and cultural affinities and exchanges between these trading groups, along with the natives Hindu and Muslim demographics, re-emphasize the multiculturalism evident in the social fabric of the city.

The establishment of port/ trade infrastructure between 1500-1800 CE (archaeological and epigraphic evidence) stimulated the trade networking and the resultant territorial formations along this port city with the built interphases in different regions and their growth/decline triggered the socio-cultural as well as political events/developments in turn drastically guiding the city's evolution and transformation.

This urban place, shaped over centuries, expresses a record of ongoing cross-cultural interactions between the place and the people yielding both tangible and intangible expressions of built fabric- the character zones/neighbourhoods, networks of market streets, related Warehouses (Pandikashalas) and social institutions. On a critical revisit to the altered/evolved urban cultural landscape depicted in the missionary writings, regional impressionistic narratives, folks- war songs portrays the city with its international trade networks and political scenarios during the zamorin's era showcasing the amalgamation of people, place and time, contributing to the unique spirit of the contemporary city.

Figure 6 and 7: Beach Hotel, Coxswain tower and Gujarati school along the Beach Road (North); **Source:** Author

‘Spice’ as a commodity and evolution of the mercantile networks in the city

As MGS Narayanan discusses about the southern part of the beach: *“if we take a ‘History walk’ from the South end of the calicut beach, “ We may enter the city from the seashore through any of the old roads like the Silk street road, Copra bazar road, the Big bazar road, the Gujarati street road, or the Kuttichira road. In these parts, we have small streets like the Silk street, Gunny street, Halwa street, Mint street etc.They are old names reminiscent of the medieval city” (MGS, 2006)*

The organization of mercantile networks and creation of a commercial realm in the city demonstrated the evolution of the urban form and determined the economic trajectory of the place. The research underwent to understand the allocation of these networks and co-existence through the study of the advent of the market streets, pandikasalas (warehouses) and the meaning of sea pier which acted as a conduit for bringing people, trade, growth, money and tremendous economic change and spatial configuration of the urban space.

Figure 8: Old Pandikashals (copra); **Source:** Babu, Captain Ramesh (2020).Calicut Heritage Trails, DC Books, Kottayam
Figure 9: Old shops at Gunny Bazar street, near Big Bazar Road; **Source:** Avani Semester V studio, Monsoon 2021

The inner city area of the city with its sedimented medieval spirit, stands as markers for a trade network of collecting, storing, selling and supporting networks for the spice and other trade activities.

Big bazar, Copra pandyalas (warehouses), gunny bazars, halwa bazars- the market streets in the precinct still upholds its character, which worked as interdependent networks which collected, stored, sold and supported the spice and related trade activities specific to the wholesale markets of the precinct. This was the practical organization of long distance trade in the medieval period. The recent haphazard developments in the precinct along with globalization of the economy is imposing a shift in the activity patterns and practices of these areas, where the built fabric is trying to find a place in the contemporary urban form, where these spice roots have started working independent of each other, leaving the streets as well the precinct a lost memory of the celebrated past.

‘Spice’ as a socio- Cultural Marker of the place: testimony of community and culinary culture

The built fabric stands as the testimony of the trading culture, the arrival and exchange of various ethnic groups and identity of the old city core- with its socio-cultural institutions, historic remains/evidence at the site as the identity and pride of the Malabar region, institutions, landmark buildings (the pier, institutions, landmarks etc.) and the built form that knitted the communities together.

Figure 10 and 11: Entry to Gujarati temple and Halwa bazar street; **Source:** Authors

Figure 12: Kuttichira precinct with Mishkal mosque and mappila settlements; **Source:** Kozhikode Kuttichira, https://www.youtube.com/watch?v=WQDxN2PG_Yg (accessed Nov 6, 2021)

The alliance of Gujarati traders with Zamorins started in the 6th to 7th century, and they gradually made a permanent settlement in Kozhikode. It started to grow around the Arab and Dutch bazaars in Calicut, which is just 50-1000m away from the sea.[3] The typical warehouse typologies known as Pandikashalas (locally pandyalas) with residences cum office spaces within it, showcases an intimate spatial relationship with the context, architectural vocabulary adapted from the indigenous material palette of Kerala and peculiar cultural expressions.

On closely examining the social organization of these Muslim trading communities and the settlement pattern along the Kuttichira precinct of the city, points out to the religious transfusion happened between the Arab muslim traders and the native communities with an evident matrilineal spatial practice of the 'Tharavadus'. The presence of the 14th century sacred precinct of Mishkal mosque along with Jumaath Masjid and the Muchundi Palli are regional adaptations of the typologies in terms of the spatiality and material expressions.

The multiculturalism evident in the social fabric of the city points out to the historical and cultural affinities and exchanges between the migrant trading communities along with the natives. A walk at the north-south beach stretch in the city reveals the reminiscence of the medieval international glory of the space through its urban form, the built fabric and memory of the place. It portrays the medieval splendor of the place through its traditional temples, mosques, dilapidated warehouses (pandikasalas), 'character' zones and ethnic community settlements, large tanks, the rusty old piers and the city's cosmopolitan cultural expressions and 'colonized' critical modern urban interventions, built over the ruins of the historic harbour town.

3 The Study of a Hundred year old Gujarati Settlement in Calicut, Trisha Parekh, Published on Oct 29, 2013

Alternative Pedagogical approach

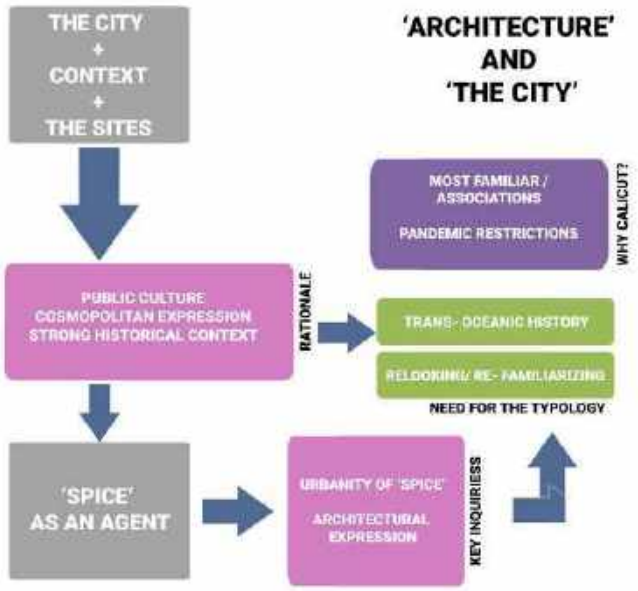

Figure 13: Exploration chart- 'Deciphering Cultural Expressions' of the City of Kozhikode through interpreting the 'spice roots'; **Source:** Author

Archival Research: as the means of Deep documentation and Re familiarising with the city

The critical pedagogy relooked at the old trade and commerce core of the city of Kozhikode (cultural landscape) which was documented/analyzed in untangling the hybridity of the urban form and space. This multiscale pedagogical approach started from the archival readings and debates, investigating on how the place has emerged and started evolving through the lens of the 'spice' and trade, further analyzing the cosmopolitanism of the historic landscapes of the city of Kozhikode. This emerging alternative academic approach which takes into account the cultural processes, transformations, protection and development.

Here, the evolution and transformation of the cultural topography was readdressed through creative cartographic exercises of these recorded observations, unravelling the historic as well as impressionistic narratives and other published contents. These were overlaid with cognitive maps to tap the individual association and perception about the city. The Archival research was used as the means of deep documentation, followed by distinct translational tools for synthesis. This alternate approach was found as a useful method. This academic research approach was found to be a suitable take in the shifted pedagogical topographies of remote- distance studio process as these studios were conducted during the Covid-19 pandemic where the access to the city was either limited or nil. The adapted Trifecta method (Documentation/Analysis- Translation- Responsive Project) is discussed in detail in the forthcoming chapter.

Translational Tools

Thinking, diagramming and cognitive modes of design, were the tools for the staged modes of inquiry. The studio began to translate and generate architectural vocabulary for the present site/city context while using Narrative and Diagramming as primary tools to explore, develop and express through design matrices and an experimental development of hybrid drawings.

The idea of re-examining and further developing the 4 x 4 design matrix with hybrid representation, catalyzed the spatial thinking of the proposed first shaping of the project. This way of distilling the information and ideas into an easily perceivable format, ascertained transitions through the complex urban scale of discourses in designing. These translational tools of composite diagrams and matrix methods mediated the relational understanding of key aspects, to conceive a responsive public gesture in and for the city.

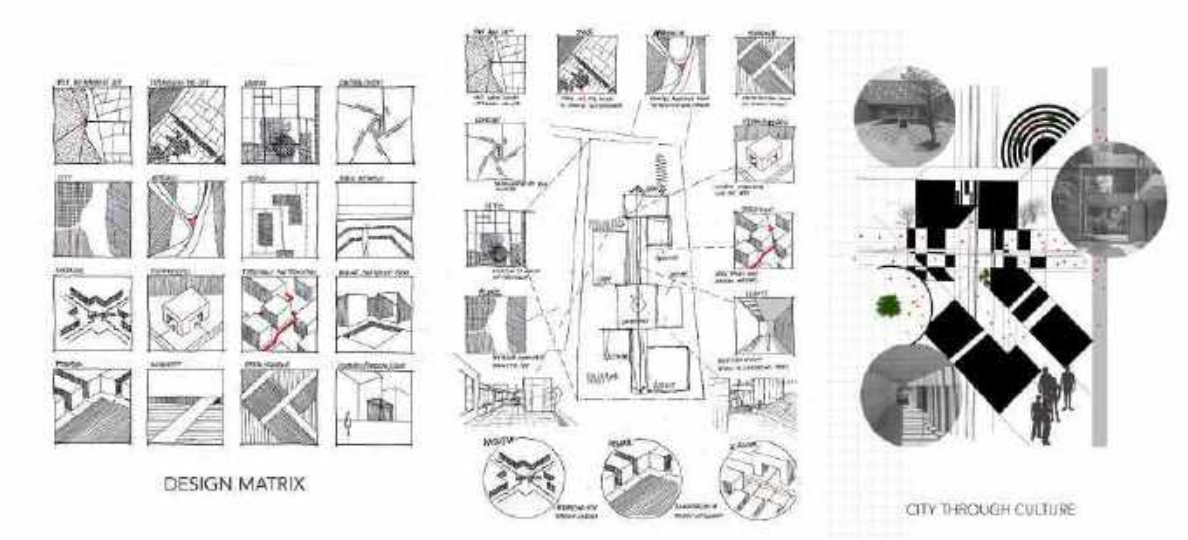

Figure 14: Design matrix- the composite 'Siting' drawing and the Hybrid drawing; **Source:** Mohammed Farhan, Avani semester V studio, Monsoon 2020

Archival research, diagramming and cognitive modes of design, were the tools for the staged modes of inquiry. The studio began to translate and generate responsive architectural gestures for the present site/ city context while using Narrative and Diagramming as primary tools to explore, develop and express through design matrices and an experimental development of hybrid drawings.

Mapping Cultural transformation through the lens of CRITICAL VERNACULARISM: Part 2 Responsive Environment for Kozhikode

Critical Vernacular is the latter half of the two part academic research where part one (as discussed in the previous section) aimed to critically look at the emergence of the Cultural landscape of Kozhikode, through 'spice' as an agent of transformation while this Studio titled "Critical Vernacular Revisited_ Responsive environment /architecture 2.0" penetrates into the deeper layers of the architectural Identity & diversity of the built environment of the city of Kozhikode, thus aiming to address the core inquiry: "How can contemporary architecture respond to the history of the city through **Form, Built fabric & Memory** ".

Critical **vernacularism** extends and decolonizes the concept of Critical Regionalism, the architecture movement aimed at balancing the local needs with the progressive lessons of modernism. The studio argues for an evaluation of the regional practices (revisiting the 'vernacular') and specificities in terms of materials, techniques, building practices, scale etc to innovate the design solutions for contemporary yet contextually responsive projects. This process needs to be conceived as a fundamental approach without being nostalgic about the past and as a requisite in contemporary and future development proposals.

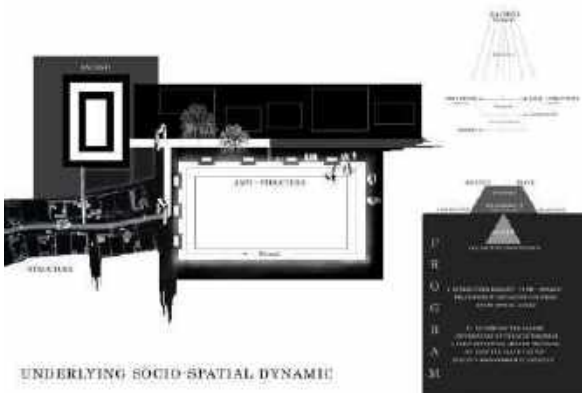

Figure 15: Visual Narrative of the historic Kuttichira Area; **Source:** Athul George, Avani semester V studio, Monsoon 2021

Archival research, deep documentation, critical translational tools and responsive projections are developed to come up with an open architecture typology of responsive environments with a design language which is true to the critical history and 'publicness' of the place and the people.

Through this deep documentation of the city and its precincts we aim to understand the Critical vernacular and hence trace the evidence of the following aspects :

- Responsiveness to the Critical History of the city
- Climate responsiveness
- Technological/Material/construction responsiveness
- Responsiveness to the current challenges of Migration & Inequities/livelihood
- Socio Cultural responsiveness/People/Publicness

Figure 16: Critical vernacular architecture along the Beach Road (South); **Source:** Avani semester V studio, Monsoon 2021
Figure 17: Gujarati houses along Gujarati street; **Source:** Babu, Captain Ramesh (2020).Calicut Heritage Trails, DC Books, Kottayam

The methodology largely focuses on creating translational tools as a part of the design pedagogy that does not mimic, however responds to the existing built vocabulary and the settings .

The Trifecta methodology is as follows

Documentation – Translation – Project

1. Documentation - Questioning the Notion of Responsive Architecture/Environment in the city of Kozhikode through the lens of the "Critical Vernacular"

2. Translation - To define the current context and to document and analyse - using diagramming, mapping and matrix studies - the changing landscape of the built and the urban environment in the current context.

3. The Project - Triangulating History/Critical Vernacular

Contemporary availability of materials/skills/craftsmanship & developing a response environment to the city acknowledging sustainability, technological and digital developments, eco-literacy and climate change

Note : Post the documentation stage, the studio organised an Integrated workshop in collaboration with Prof. Roger Connah on **Translations & Relational Thinking.**

Conceptualised as two stages: Pre-film/ Visual treatment presentation, where a relative narrative detail from the documentation stage is translated in a cohesive visual narrative with the help of Relational matrix which could be translated into a strategic 'open idea for the project' through relational drawings in the form of a 16 Panel Portfolio.

The visual narrative and the 16 Panel Portfolio act as a catalyst in translating the inferences from the Documentation stage to producing a unique tool of reanalysis and representation which leads to spatially appropriate inferences in designing in/for the cities, thus addressing the contemporary and future challenges, proposing responsive environments/ architecture which generates sustainable dialogues with the place.

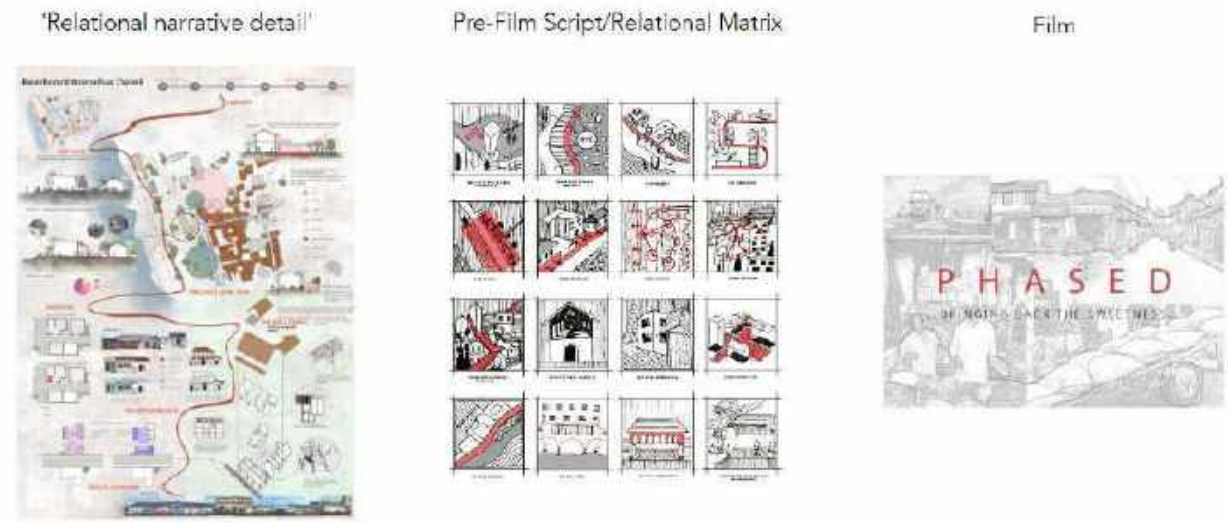

Figure 18: Relational Narrative Detail, Relational Matrix and The Visual Narrative of the Responsive Project; **Source:** Avani semester V studio, Monsoon 2021

Figure 19: Visual Narrative as a Translational tool ; **Source:** Avani semester V studio, Monsoon 2021

Theoretical Three pronged approach: For Responsive Operative Practice

This experimental pedagogy was envisaged as a three pronged theoretical premise of Responsive, Relational & Intersectional design approach.

The following three zones - Theories/Pedagogies - will form the basis of the way the studio takes its shape from research and through collaborative-relational thinking leading to ideas for a responsive operative practice in the city.

Relational - Responsive - Intersectional

a. Relational Research & Documentation (Mapping/Representational studies)

To document the distinct physical and cultural manifestations and translate the evidence and relationship between land life, people and place in Kozhikode's maritime history and present.

b. Translating Intersectional Design and collective responsibility (Matrix studies)

Intersectionality in architecture and the built environment disciplines is not just about the politics of recognition, but extends to a framework of collective responsibility and action toward practices that are inclusive, egalitarian, and socially just. As both a method and overall methodology, it can be applied at every stage of the design process.

c. Responsive Approach (Operative Design Methodologies)

The previous two stages then offer collaborative key markers and operative methodologies with new representational ideas, towards a responsible and responsive approach to future inclusive and intersectional urban development.

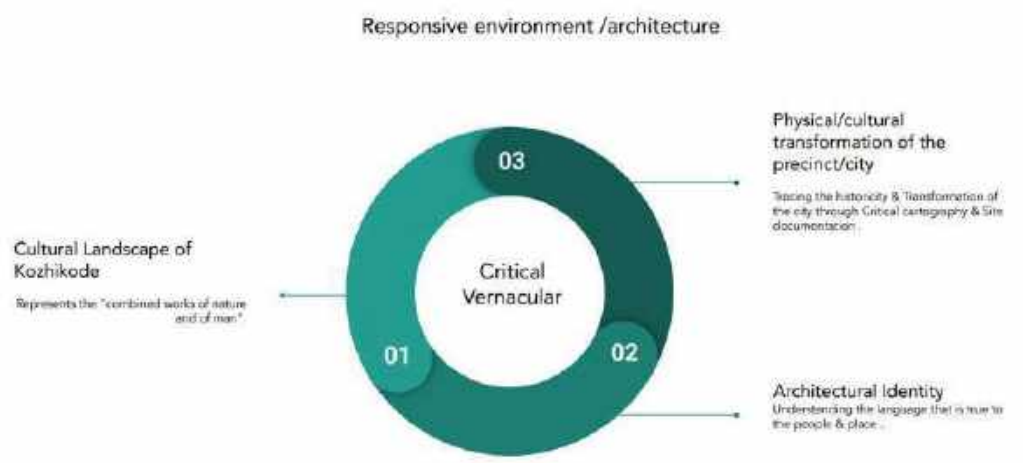

Figure 20: Critical vernacular 'revisited'- Theoretical premise'; **Source:** Authors

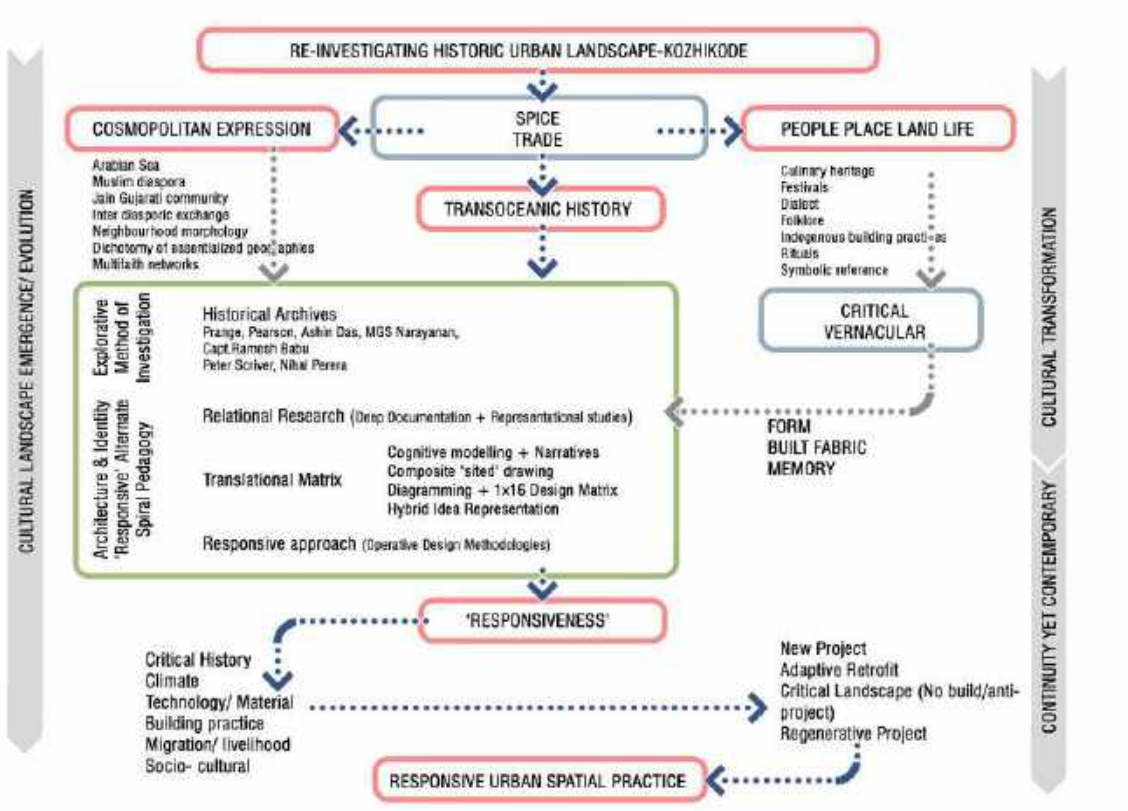

Figure 21: Avani Semester V Studio Methodology of Exploration Flow chart; **Source:** Authors

A way forward

Figure 22: Responsive Design exploration along the South Beach, Kozhikode; **Source:** Hiba K, Avani semester V studio, Monsoon 2021

The Studio has taken architecture in its expanded conditions by addressing the real life situations and present day challenges in the city with each stage of the studio being an exploration into the modes of researching, diagramming and drawing of the inferences. It drives the design solutions as a departure from Responsive projects to Responsive environments .

The contemporary layers of the city are moving towards homogeneity, not responding to any sorts of its historic plurality and cultural expressions which is unique in determining the sense of the urban space of Kozhikode. The city landscape is witnessing a rapid haphazard growth with piecemeal solutions to the urban problems even worsening the situation with generic urban spaces, characterless streets enhancing the crisis of identity and contextuality / resulting in loss of identity. This critical methodological alternative strongly proposes responsible and responsive approaches as an emerging concept/idea for mediating continuity and/in contemporary urban developments in the cultural landscapes.

The analytical and interpretive approach put forward by the research paper helps in critically deciphering the distinct associations - both physical and cultural to the historical topographies, helps to comprehend the intermingling and interactions of the natural setting, people and the place through setting up of tools of analysis and distinct translational methods to grasp the urban cultural landscape, spatial practices and memory.

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04

Ephemeral Landscapes of a Living City: Predicting the Spatial Transformation of Chandni Chowk

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Sub theme: Settlement/ Places/ Urban/ Rural/ Regional - Cultural Landscapes - Transformations, concepts, ideas, and approaches

Keywords: spatial transformation, living city, imageability, ephemerality, historic landscape

Abstract

The contestation between permanence and ephemerality in cultural landscape have been debated widely in the domain of architectural conservation and urban design. There are several urban forces acting over traditional and primarily homogeneous settlements. These forces tend to change and transform the settlements while the regulations pertaining to historic urban landscapes ensure protection of the 'original character'. The underlying debated and constant disturbances in the physical and cultural dimension ensure that there is a resulting equilibrium leading to survival of the living nature of these cities. This, on one hand is through protecting the heritage value while ensuring to maintain the use value with changing need and context. This equilibrium is maintained due to the constant adaptation, transformation, and production of spaces. In case of historic landscapes, there is a debate over what should remain and what needs to be upgraded over time to ensure that the life of the 'living city' is retained. This paradox has given rise to an urban flux, raising a need for spatial order that ensures a transitory phase in such landscapes.

This research aims to question the relevance of permanence in living historic landscapes, as a result of urban processes and forces. The research method used is the spatial analysis of the chowks and squares located on the main street of Chandni chowk. The paper compares the spatial transformation along the main street of Chandni Chowk over a period of 10 years. From the detailed analysis, it was derived that the flux in cultural landscapes occurs as a result of contestations between cultural, economic, social and political factors while questioning the idea of permanence in urban spaces.

Introduction

This cultural landscape located amidst urban forces, the old city of Shahjahanabad has been constantly witnessing a strong influence of urban processes associated with the capital city of Delhi. These processes have had direct and indirect influences on the spatial elements of the urban landscape. Being the capital of the Mughal Empire for one and a half centuries (1648- 1803), then of the British Raj for 36 years (1911-1947) and to the Republic of India during the last 75 years (1947 onwards), Delhi was never free from the fluctuations of political turmoil and glories (Saha, 1990). The city was built with a vision to be one of the finest Mughal Capital in 1648, long before Paris set the fashion (1670 AD) of having the principal streets of the city flanked with avenues and boulevards to become the attractive features of the modern towns in modern Europe, Shahjahan had planned in 1638 a beautiful boulevard in the Chandni Chowk, Old Delhi. (HLRC, 2014). It was a trader's paradise to sell their goods in the moonlit square of Shahjahanabad. In the early 19th century, British troops gradually started converting parts of Shahjahanabad to accommodate

the requirements of the army. The mansions in the north were converted, while a larger dense part around the Jami Masjid was completely razed off to build army barracks. After the fall of the Mughal Empire post 1857 revolt, the British Empire shifted the capital of India, to a more (security wise) stable Calcutta (Kolkata), where it remained till 1911 (when they came back to Delhi). After quelling the 1857 revolt the Britishers built a military garrison inside the Red Fort and evicted 3000 people approximately who were living there at that time and destroyed many of the residential palaces (HLRC, 2014). The introduction of railway penetrating through the city was a major contribution that was further a cause for closest and most convenient accommodation for the migratory population during and after Partition and Independence. Migration led to rapid commercialization of spaces, residential spaces getting converted into warehouses and other wholesale stores (Figure 1). The Post-Independence Shahjahanabad witnessed rapid and uncontrolled densification and commercial development, due to lack of clear guidelines in the Master plans. It was only in the 1990s, that a series of proposals to restore and redevelop the glory of Shahjahanabad came into play. The changing needs of the residents, the political forces looking at the voters of the most populous and the most powerful zone of the city with greater connectivity of the metro rail system allowed for this transition. The establishment of Shahjahanabad Redevelopment Corporation (SRDC) led to a focused and planned approach on major streets of Shahjahanabad and specifically the recent street beautification and pedestrianization project of Chandni Chowk.

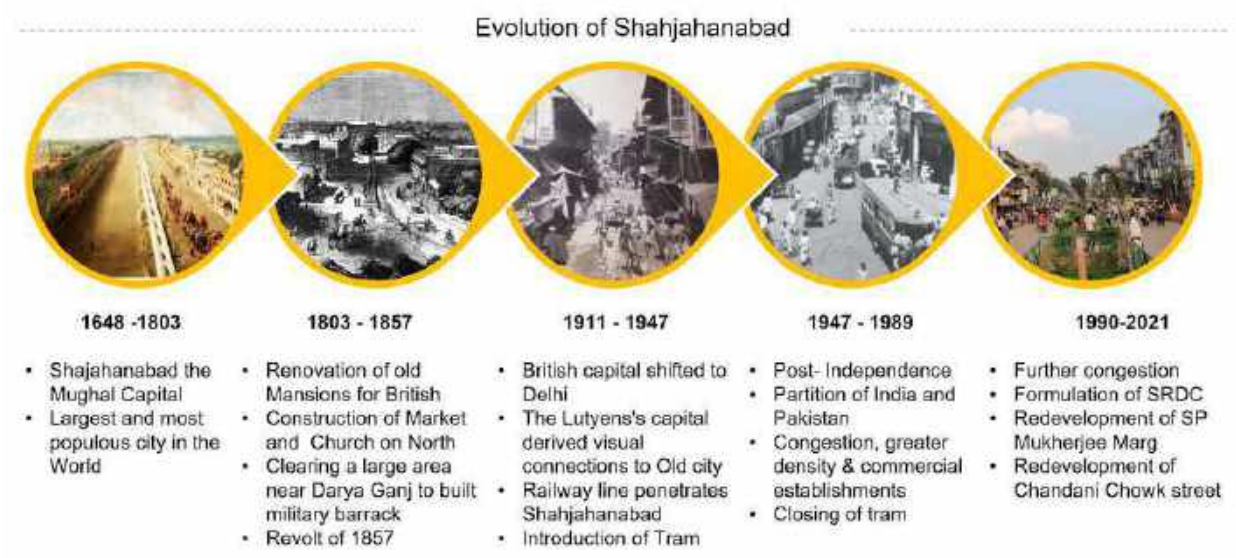

Figure 1: Evolution of Shahjahanabad; **Source:** Author

The Structure of Shahjahanabad

The site for the Mughal capital in Delhi was selected with care to ensure safety with the presence of the ridge and the river (Figure 2). The river ensured a regular supply of freshwater and easy reach to the 'doab', a proven fertile region for agricultural products, just across the Yamuna River (Saha, 1990). Physical connectivity was also crucial for trade and commerce. The two principal streets were Faiz Bazaar and Chandni Chowk connecting the Red Fort. (Figure 3)

In this hierarchy the next set of streets radiated from Jama Masjid and to the 10 gates of the city. Since its establishment, Shahjahanabad was divided into separate quarters for distinct social groups. The zoning was according to occupation, industries, and commerce. (Parween, 2018). The Mohallas were named after the caste, which is derived from the occupation and further grouped together into broad zones based on religion.

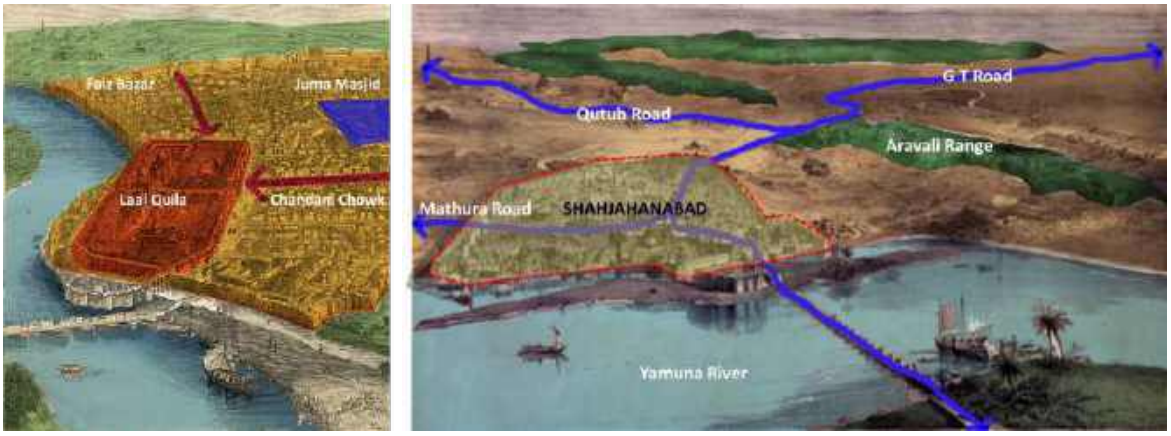

Figure 2: The Context of Shahjahanabad; **Source:** Edited from a painting in British Library

Figure 3: The Bazar streets making principal axis ; **Source:** Edited from The Illustrated London News, 1858

The Walls: Real and Virtual

The original street hierarchy is visible amidst double density. Some traces of walls and gates of the original city can be seen and are preserved as heritage structures. However, a new set of walls of planning boundaries (Figure 4) and municipal ward limits (Figure 5) are overlaid on the existing structure of Mughal walled city. These new forces have created invisible walls for gradual transformation of the city.

Figure 4: Map Showing zonal Boundaries- Special Area; **Source:** DDA.org

Figure 5: Map Showing the original wall of Shahjahanabad versus municipal boundaries of Ward 80, Chandani Chowk; **Source:** Author

The Chandni Chowk

The principal axis of Chandni Chowk or moonlit square is a visual connection between Red Fort (Laal Qila) and Fatehpuri Masjid (Figure 6). The Fountain Chowk and Ghantaghar Chowk further mark important nodes along the axis. The street is lined with specialised bazaars as planned by Shahjahan.

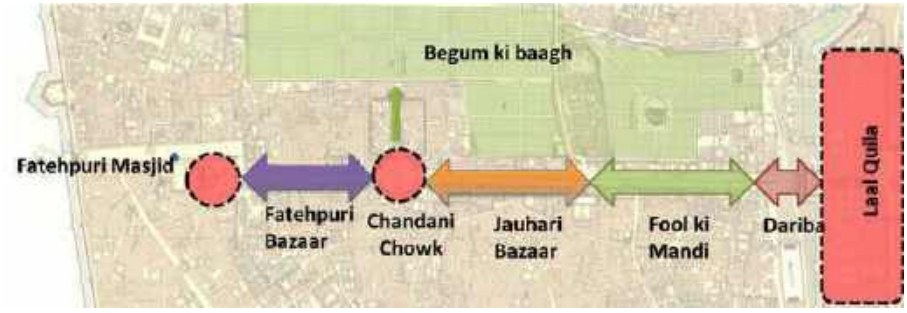

Figure 6: The chowks as nodes and landmarks; **Source:** Edited from 1850 map, Indian office record Archives, British Library

The streets and nodes were key structuring elements of the city and even today they are essential for wayfinding. The Chandni Chowk square being the most important and the core space of Shahjahanabad have been further studied in detail in this research. The original form of Chandni Chowk square was imagined to be circular in plan, with arch shaped buildings enclosing the space from both sides. The built form had a fine grain with arcaded pathway and single-story building height. To mark the rise of British rule in India, a new axis - Nai Sarak was created to terminate at the chowk and new structures of Clock tower and Town Hall were added. The spatial form was slightly distorted by the introduction of Town Hall with a flat elevation. The Clock tower or Ghantaghar was erased with the decline of British rule (Figure 1). After independence, Shahjahanabad was left to deteriorate for 50 years due to absence of any regulations and complex ownerships. It was only in 2008 that the plan to redevelop the central axis of Chandni Chowk began. New structures like mosques, warehouses, etc. emerged to define the edge of Chowk. The proposal went through a series of criticism and revisions and was finally executed and opened for the public only in 2020. The redevelopment proposal is being promoted as a street beautification and pedestrianization initiative. Though the issues with the inner lane remain unaddressed.

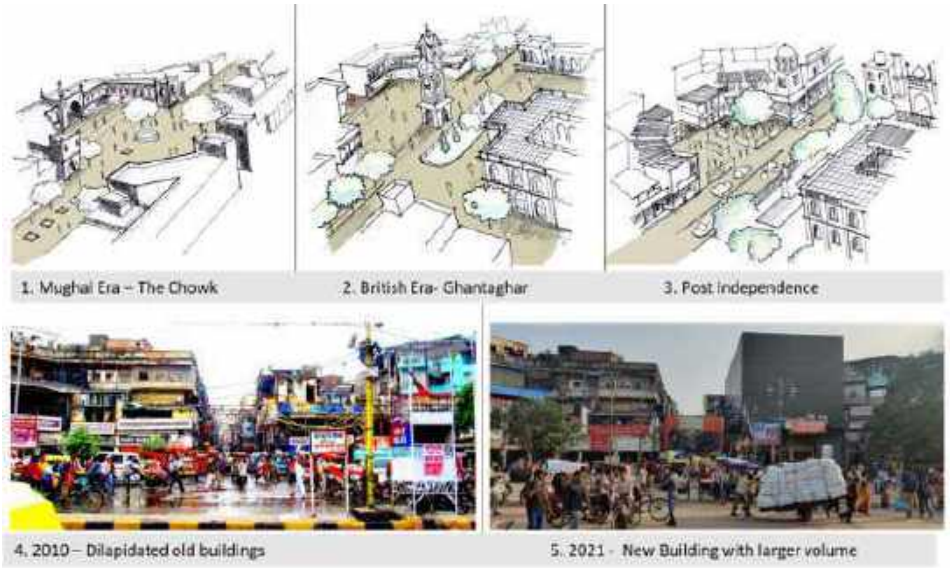

Figure 7: The key 5 stages in the transformation of Chandni Chowk; **Source:** Sketches by Sachin Sathyapalan, Photographs by Author

The transformation of Chandani Chowk was not isolated as each zone along the central axis witnessed several historic events and had left physical traces from the process of transformation. The evident transformation in the past 10 years is documented through a series of photographs by the authors as shown in the Table 1 below.

Table 1: Comparative visual analysis of key spaces in the Central axis of Chandni Chowk; **Source:** Author

Space	2010 image	2021 image
Chandni Chowk Square (Town Hall)	 • Signages and boards • Police barricading • Dilapidated buildings	 • Reduced street congestion, • Control over Vehicular access from Nai Sarak • Addition of New Building (Black box)
Street – Central axis near Red Fort	 • Jam packed with vehicles • Pavements are invisible due to congestion	 • Clearly segregated zones • Addition of street design elements • Restriction of vehicular movement.
Street – Central axis overlooking Sheeshganj Gurudwara	 • Mix of transport modes • Wires hanging above	 • Only pedestrian and cycle rickshaw allowed • Wires have been taken underground and axis is defined by plantation
Street – Central axis overlooking Chunamal ki Haveli	 • Large space available in front the Haveli was used for loading and unloading of goods	 • A pedestrian plaza has been created and loading-unloading activities are limited to night-time only.

Conclusion

The urban processes and associated forces witnessed by an urban public space have evident spatial implication as discussed through visual analysis of Chandni Chowk. The flux created by these forces have emerged as determinants of spatial transformation. Yet, the structural integrity of the city and the Chowk is still clearly decipherable. The spatial contestation is directly associated with the spatial values. The aesthetic improvement with the redevelopment project has been greatly appreciated by locals, while

the placement of toilets and generators on the central axis was criticized by professionals. The economic value has been detrimental to the city as it causes great contestation between the stakeholders. The key challenge with the ephemeral landscape of Shahjahanabad is to survive in the era of technological innovations and maintain the use-value of space. Sense of association and memory with the place not only for the residents but with the visitors who have memories of old visits and the exceptional experience. The image value is associated with political will and a sense of ownership between various stakeholders, on one hand original character is important while on the other the 'improvement' becomes an election agenda. There is a constant transformation, adaptation, and redevelopment with time (Figure 8).

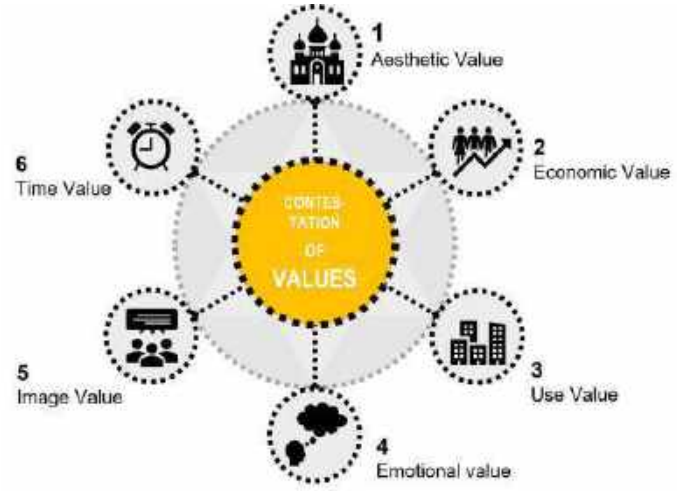

Figure 8: The Contestation between forces and values in Ephemeral landscape of Shahjahanabad; **Source:** Author

Way forward

When we further look at the proposed vision for surrounding areas and the pattern of growth, a threat to the original character is understood and leaves us with a strong point to ponder on what could be the future of Shahjahanabad? With so many forces in place, the research leaves you with the three possible directions – First, that the forces are in sync and equilibrium with one another, and the transformation is gradual. Second, the local strong contextual forces prevent even the maintenance of existing areas, while the struggle between the user needs, economic forces cause a gradual dilapidation of the spaces and architecture. Third, with the commercial and economic forces taking over and completely transforming with buildings of large footprints, the architectural identity is limited to decorative elements only.

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05

Ingrained Urban Social Spaces : Courtyards of Haveli temples in walled city of Jaipur

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Sub theme: Historic urban landscapes as an approach to heritage-led development

Keywords: urban social space, haveli temples, courtyard, transformation, community interaction, revitalization

Abstract

Layout of the walled city of Jaipur is unique in its disposition of solids and voids. The city has 800 odd temples woven into the fabric of the settlement, without once making a statement of their religious identity. These temples are built around a courtyard unlike their "Nagara and Dravida" counterparts which tend to dominate the city skyline with their soaring Vimanas. These temples with a central social space, have been inlaid in the continuous built mass of the commercial and residential areas of the city. Courtyards of these temples are different in scale and proportions from residential buildings and act as major social spaces during various public events. These courtyards function as a buffer between the sacred precinct and mundane urban activities and at the same time maintain the continuity of the cultural landscape by connecting small to moderate inlaid open spaces with the major movement corridors and / or open spaces. Modernization of transportation and communication systems has brought about radical changes in activity pattern and concept of social interaction and community structure. Traditional Indian cities had community social spaces ingrained in residential areas. These residential neighborhoods had homogeneous population characteristics in terms of religion and profession, hence religious building precincts suited the most for social interactions. As the urban society and the idea of community underwent transformation, these precincts lost their glory. Haveli temples, however, retained their utility to some extent as they had open and semi open spaces that are well ingrained in the urban fabric at the same time they had an intrinsic resilience. This paper aims at an exploration in the changing concept of community space, structural transformations of old areas and the adaptability of religious public courtyards (Haveli temples) to modern day social needs.

1.1 Public spaces in a city

Any space in a city that is not private socially or legally may be termed as a public space. It includes gardens, open spaces, roads, markets and all green spaces. Public spaces within the city give an identity to the city. In history, cities are remembered for their public spaces, the Greek Agora, the European squares, the Roman Forum and Indian ‘chowk bazars’ (cross road market places), the ‘public’ place in the city represent the experience of a city. They add as much value to the experience of the visitors as for inhabitants. Public spaces create value-laden experiences for the inhabitants, as these spaces reflect the experience of lived reality. There are levels and categories of public spaces. There are civic squares, parks and gardens, bazaars and sports grounds. These spaces usually house inter community activities.

A city structure is morphed by countless communities. Each community is unique in its constitution and

activities. Community activities are group activities but they may be at different scales. Some of them may have a claim on the city square occasionally (such as religious processions, major festivals etc,) but most of them are localized and restricted to left over spaces within neighborhoods.

Organically grown cities generate these spaces on their own in a slow process in response to climate, society and land form. However in planned settlements, it needs understanding of complex social processes to envisage such spaces, as community location and size in a city cannot be predicted offhand.

1.2 Transformation of community spaces in today's context

Many authors state that the changes in urban space organization is an indicator of changes in socio-economic profile of a city (Harve, 1973) (Lefebvre, 1992). Pre-industrial cities were characterized by urban spaces facilitating day to day communication, interaction and trade. Current idea of urban social space is radically different. Post-industrial cities in both developed and developing countries show three major trends in urban space transformation

1. Fragmentation of urban fabric and deterioration of public space
2. Dominance of commercial activities in public spaces
3. Public green areas being used for individual activities rather than community activities

In Indian cities, the industrialization and rapid urbanization brought about a permanent change in the activities of old towns, experience of the public realm, the nature of the social environment, and definition of community. This process caused expansion of cities and cities started having large and heterogeneous populations, breaking down traditional socio-spatial fabrics (Matthew Carmona, 2003) The automobile traffic and introduction of zoning regulations created divisions in the cityscape, causing the fragmentation of the urban fabric and converting open spaces in parking lots. Consequently, public spaces and their character changed as they ceased to function as facilitators for social interaction and were reserved for merely utilitarian purposes. Public spaces lost their historic role as places in which the public could mingle earlier, in post-world war cities. (P. Hall, 2002). Spaces meant for community gatherings were the most accessible places in a medieval city due to obvious reasons hence they bore the brunt of the changed situation the worst.

This paper addresses the issues related to the loss of community spaces due to the social and physical transformations, in the walled city of Jaipur. The focus of study is limited to internal courtyards of Haveli temples, which served as important community spaces in the pre-modern era.

1.3 Research area

After the literature review and preliminary survey, it has been noted that land use transformations are leading to over densification and congestion in the city. Precious community spaces are vanishing. In spite of the government and non-government organizations working on the conservation of this city, the emphasis is limited to street facades and the conservation of individual structures. Many temples are there on the list of structures to be conserved but focus still remains on the built structure. No attention is paid to the spaces that lead to these buildings. Through this research, authors are trying to put forward the need of urban conservation of the spaces, which are ingrained in the city fabric as temple courts and have been functioning as important community spaces till the recent past.

1.3.1 Step by Step Methodology:

- **Step 1-** Study of city fabric, planning principles, hierarchy of community spaces in the city was done on the basis of published secondary source data.
- **Step 2-** Study of demographic & land use changes was made through master plan & CDP.
- **Step 3-** Physical survey of select temples, assessing the current activities & physical conditions of structures.
- **Step 4-** Interviews with priests and visitors about activity patterns.

- **Step 5-** Photographic survey
- **Step 6-** Identification of problems & challenges.

1.4 Jaipur walled city: History and planning concept

Jaipur is one of the oldest planned cities of India. It was founded in 1727 by Kachhawaha king Sawai Jaisingh in the year 1729.

The east-west axis of the town was divided by three perpendicular roads into eight portions with the central ones of uniform width and the outer ones as per the site topography. Chand Pol in the west and Suraj Pol in the east mark terminal points of the original planned city. City in layout and spatial organization follows guidelines by "Rajvallabh mandana", a medieval text authored by Sutradhar mandana of Mewad. A sawaya (a quarter extra) system of measurement was used in the planning and details of Jaipur, with use of 18th century dimensional norms dimensions that are a quarter more than a whole number. (Jain, 2011)

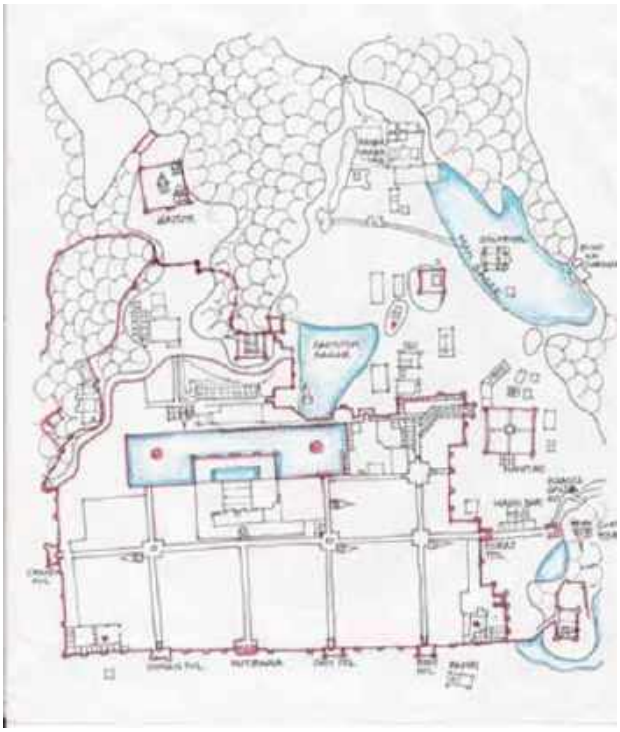

Figure 1: Concept Plan, Jaipur walled city; **Source:** As published in a concept paper by UNESCO , Walking in the Microcosm of Jaipur city . This partial map is based on an earlier map of Jaipur that has been dated in the reign of Pratap Singh (1778–1803) by Gole, (Indian Maps and Plans, page 195).

The city is simply composed of six sectors or “Chaukaris”. A large central rectangular sector, housing the palace complex, is surrounded by 5 square residential sectors or "Chaukaris" on three built sides (Figure 1) and on the north, it overlooks an artificial lake, "Tal Katora". Developments on the northern side, beyond tal katora, are mostly organic and don't seem to be a part of the original plan. A seventh sector, Chaukari Topkahana Hazuri, was developed in the late 18th century.

1.4.1 Public spaces in the walled city of Jaipur

Three parallel avenues namely Kishanpol Bazar, Chaura Rasta and Johri bazar, intersected at right angles by Tripoliya bazar, laid east west are major Bazar streets. Each north- south avenue starts on south from a magnificent gateway, the central one leading to the palace complex and other two continuing across the city creating major public spaces "*Chaupars*" at cross junctions. The palace complex on the central sector has a low density construction (Figure 2) with important administrative and civic buildings. Rest of the Chaukries are densely built. Although the main spines of the city are sufficiently wide, inner roads are narrow. Residential and mix-use chaukaris have inbuilt breathing spaces as courtyards in almost all structures. (Figure 3)

Figure 2: Built mass density Distribution, Jaipur walled city; **Source:** Vastu Shilpa, studies towards Vidhyadharnagar Vastushilp Foundation

Figure 3: Plan of jaipur walled city; **Source:** Vastu Shilpa, studies towards Vidhyadharnagar Vastushilp Foundation

1.5 Residential areas and open spaces.

The residential area layout has straight geometry. Outer roads of residential sectors are broad and are reserved for commercial or civic use. Inner roads were narrow, often winding and had dead ends. Each sector is further divided into "*Muhallas*" separated by minor roads. Like all medieval settlements, Muhallas were homogeneous communities hence minor roads are often named after a community or family e.g. *partanion ka Rasta, Nataniyon Ka rasta, Thatheron ka Rasta etc*. Each of these neighborhoods have temples of local deity within. There are Jain temples in areas with majority Jain population, Hindu temples in Hindu majority neighborhoods and even temples of folk deities such as *Bhairu Ji, Goga Ji, Teja Ji, Pabu Ji etc*. (Sachdev and Tillotson) The urban layout served as support for a social repartition associating the *mohallas* to the system of castes. A relationship between nobles' houses (*Havelis*), temples and wells (both constituting ritual spaces) is quite evident in the walled city of Jaipur. Main streets accommodate mostly Vaishnava Temples with central courts or terraces as gathering spaces. A typical residential Chaukari had a hierarchical distribution of open spaces as shown in Figure 4.

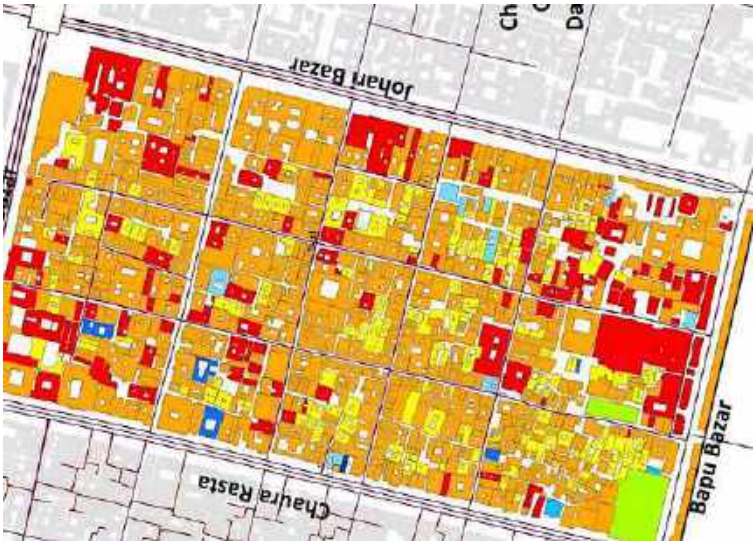

Figure 4: Plan of Chawkari Vishveshvar Ji; **Source:** Draft Heritage Area Development plant, Jaipur

1.6 Transformation of walled city of Jaipur in 21st century

The walled city of Jaipur experienced major changes in function and intensity of uses in the 20th century. With the introduction of automobiles, broad avenues of the city felt increasingly congested. Need for parking lots was felt badly. Trade and commerce as well as tourist influx in the city had grown multiple times. Modern infrastructure networks were not integral to the city fabric (Shipra Goswami, 2022). Provision of piped water supply, sewage network and electricity lines further complicated issues. The population had already multiplied more than 4 times between 1901 and 1991, and kept on growing. Table 1.1 shows the population growth of the walled city of Jaipur, since its inception.

Table 1.1: Population growth in Walled City of Jaipur; **Source:** (JnNURM, n.d.), (SLAC, Town Planning Department, n.d.), Census of India as mentioned in

Year	Population (millions)	Annual Growth Rate (%)	Area (sq.km)	Population Density (People per sq.km)
1727	0.06	--	6.74	8,902
1881	0.12	(+0.04)		18,662
1991	0.5	(+0.38)	6.74	74,184
2001	0.4	(-1)	6.74	59,347
2011	0.63	(+2.3)	6.74	93,664

1.7 Overview of the problem

Residential sectors were primarily planned for mixed use to support the livelihood of the households. They accommodated small workshops, small commercial establishments and social institutions (Town and country planning Deptt., Jaipur Nagar Nigam, Dronah, 2021). Contrary to the basic idea of mix-use residential clusters (provision of neighbourhood level market and social infrastructure), the use of land/ buildings have continuously been changing to an increased degree of commercialization and resulted in decline in the quality of environment for residential use.

Increase in commercial activities necessitated more and more service areas. Everything needed space and the worst sufferers were community spaces. Chowks turned into parking lots, wells were filled in, trees vanished and market squares turned into traffic junctions. Earlier the city had ground floors of buildings reserved for commercial use but the 20th century saw commercial activities flourishing even on the upper floors, hence terraces being used for extended services. Khandas, Katlas and bazaars (traditional

commercial precincts) became very congested due to unorganized growth of informal sector shops. The public space was eaten off by commercial growth. Houses increasingly turned into shops and warehouses. (Upadhyay, 2017)

Temples initially remained untouched due to their cultural importance and religious beliefs of the community. Open spaces within and around religious precincts still provided breathing spaces in otherwise densely packed urban activities. However, in the recent past, temple courts have also been affected.

1.8 Haveli Temples and associated spaces

Haveli temples in the walled city are modelled primarily on Haveli themes. They are courtyard houses at public scale. A typical Haveli temple has a variety of spaces arranged around a central open space. The entrance and the "*Garbh Griha*" define the visual axis. Sketch plan in Figure 5 shows standard lay out of spaces in a *Haveli* temple. On the axis are laid single or more courtyards. Inner court is often placed at considerable height from the outer, connected by a flight of steps and segregated by a gateway or "*poli*". Many service spaces are connected to both the courtyards such as kitchen, water storage, store for worship accessories, dresses and jewelry etc.

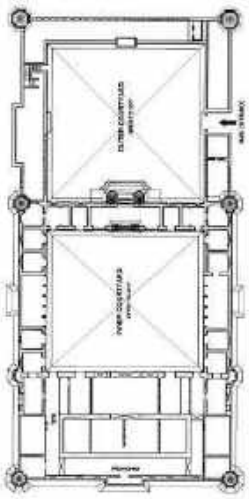

Figure 5: Plan of Mandir Shri Brajraj Bihari Ji Tripolia Bazar; **Source:** Author

Vaishnava temples have a tradition of periodic worship and "Darshan". Haveli temples respond to this need by extended space for public gathering in inner court, outer court, balconies and verandahs. As all these spaces look on to the much awaited opening of the curtains of the Nij Mandir. Temples, which stand as a part of continuous built fabric, accessed at ground level have an outer court which acts as a transition space between the Sacred and the mundane. (Figure 6) It houses one or more sacred trees and plants (such as Indian Basil or Tulsi, Banyan or Peepal tree), a well and a sitting space about them.

Figure 6: Outer court as Transition space; **Source:** Author

Ones, which are accessed through a staircase from the road and have a floor high plinth (Figure 7) do not have a transitional space or outer court. They sometimes extend their activities on the terraces of juxtaposed structures. These temples, consequently, have three open space types :

- Inner or sacred court
- Outer or public court
- Terraces and balconies connected to both

On the other hand, temples which stand isolated from the continuous built mass have the outer precinct or entrance court, inner court and occasionally gardens attached to the temple.

Figure 7: High Plinth as cut off line; **Source:** Author

1.8.1 Activities and social transactions

The course of worship in *Gaudiya Vaishnava Sampradaya* is structured on the model of the lifestyle of *Shri Krshna* described in scripture like Bhagavat. During the course of worship, festivals like *Sanzi, Hindora, Hori* etc. are also celebrated as the inhabitants of Vraj province used to celebrate them. Festivals like *Gopashtami, Diwali, Govardhana-puja, Annakuta* etc. that are connected with some or other incidents that happened in the time of *Shri Krshna* are also celebrated. In these festivities lies the soul of community interaction. There are large gatherings, dance and singing performances. Religious discourses and "*parsadi*"(community lunches) during these festivals. Inviting friends and community for "*Parsadi*" is one of the most common modes of social interaction still in Jaipur. Temple courtyards and verandas serve as receptor spaces for these functions. There is an entire genre of Indian classical music called "*Haveli sangeet*" associated with these temples. The temple courts are used for these cultural performances.

1.8.2 Cultural significance and artistic merit

All temples of *Haveli* pattern have one or more courtyards. There is no set size or proportion of temple courts. Depending on the location, status of the builder and social- religious importance, courtyards range from 18ft X 15ft. (Mandir Radha Damodar Ji) to 80ft X 90 ft. (Mandir Shri ram Chandra Ji). They are square or rectangular, enclosed by a built façade single to triple-storied height.

The central open space connects to arcaded verandas on three sides and entrance on the forth. The screen and walls are adorned with beautiful plaster mouldings, depicting various parts of a palace. Surfaces or building skin that defines these courtyards acts as a coded message using various religious symbols and mythological scenes painted on them (Fig 8). Paintings on walls along with plaster mouldings speak of "Braj" the place of pastime of Lord Krishna in playful dancing or in duel with evil figures.

Courtyards are naturally comfortable in hot climates. The comfort is further enhanced by inclusion of plants in these courtyards. Jaipur walled city still has a large community of Vaishnava devotees. These courtyards are a place of interaction, celebrations of various festivals and religious discourses. Many

organizations, both government and non-government organize classical music and dance performance in these temple courtyards. These courtyards are frequently used for community lunches called “Parasadi” These spaces are so well fitted for these purposes, that visiting and attending a festival in these temples is a seamless experience in “Bhav and Bhakti”.

Figure 8: Paintings on walls and screens; **Source:** Author

Field Studies

In spite of socio-cultural significance and widely appreciated artistic qualities, these courts are falling into disuse or in a bad state of repair and maintenance. A broad study was conducted to identify issues and challenges posed by continuing transformations in the city fabric . Temples were selected on different locations, different patterns and of different scales. Table 1.2 shows selected temples.

Table 1.2: List of temples with, location and category

S N	Name of the temple	Location	Category *	Type	Observations
1	Mandir Shri Brajrajbihari JI	Tripoliya bazar	Direct Charge of Govt.	Double court type	Encroachments and constructions in front court. Flaking and cracks in plaster mouldings Fading wall frescoes Peeling off plaster Cracks in marble borders
2	Mandir Shri Thakur Krishna Chandra Ji	Tripoliya bazar	Self dependent	Terrace and pavilion type	Shop in main court, Extension of household activities in main court Fading of wall frescoes Central fountain used as sitting for customers
3	Mandir Shri Radhdamodar Ji	Johari bazar	Under a Trust	Terrace court type	Terrace has been covered with fiber plastic sheets Main terrace has been developed into annexe for the home Glass mosaic on the wall has deteriorated
4	Mandir Shri Roop Chandrama Ji	Chaura Rasta	Handed over to Govt.	Terrace court type	Regular worship not held Façade in very good condition Courts used to store junk Paintings and art work on walls and screens is completely worn off

5	Mandir Shri Brajnidhi Ji	Chandani Chowk	Direct Charge of Govt.	Double court type	Very good state of maintenance Recently repainted Flooring of Tibari and pradakshina is changed to polished granite, results in loss of original character
6	Mandir Shri Roop Chaturdash JI	Chhoti Chaupad	Added by Govt., under a trust	Terrace court and Pavillion type	Paintings are in good condition Terrace court has some incongruous constructions The view of the entrance is disrupted due to encroachments on the footpath Tibari Ceiling is cracked, structure showing signs of decay
7	Mandir Shri Gopinath Ji	Purani basti	Direct Charge of Govt.	Double court type	Front court used as parking Parts of front court used for temple related shops Inner court and extended verandas in good condition but due to great importance of temple courts are littered with Prasad and other things Paintings are in excellent condition Structure in good condition Courts are live with community activities
8	Mandir Shri Gopal JI	Gopal Ji Ka Rasta	Under a trust	Single court type	The court is littered with personal belongings of staff Structure is covered with dirt and suite Half of the court has been covered by permanent construction in RCC Beautiful front verandah is used for sitting by random market visitors
9	Mandir Shri Vijaykrishna Bihari JI	Gopal Ji Ka Rasta	Under a Trust.	Single court type	Court houses shops and storage rooms Court vegetation is not maintained Structure showing signs of decay Courtyard is used by residents of upper floor for spill over activities
10	Mandir Shri Deodi JI	Johari Bazar	Self Dependent	Triple court type	Front court spaces are rented out Inner court screens lost original character due to successive efforts of painting Very few patches of beautiful paintings on wall are in place Temple rooms are used by residents for dumping areas Open wires and cables on walls Original lime jalis replaced by iron jalis at places
11	Mandir Shri Champawat JI	Johari Bazar	Handed over to Govt.	Double court type	Outer court rented to shops Inner court is intact and maintained Paintings on walls are in good form, though, not of great artistic merit Fountain and garden not maintained well Basement is abandoned
12	Mandir shri Ramchandra JI	Sireh Deodhi bazar	Direct Charge of Govt Supported by Trust	Multiple court type	Front court and side courts are being used by various government offices. Paintings on front court wall badly worn off Inner court in good condition

13	Mandir Shri GovindDev JI	Palace precinct, Jaleb Chowk	Self Dependent	Pavillion type	Well maintained Paintings restored and in place Original character extended in extensions and additions Several areas added to original temple The entrance path is developed in haphazard manner Number of Commercial establishments have cropped up in front of temple Facilities for devotees are in place

*Temple category based on Rajasthan Government Devsthan Vibhag categories

1.9 Major issues as observed, are:

1.9.1 Encroachments by commercial activities

It is noted that, all temple properties except for temple Shri Ramchandra Ji, have been encroached upon by commercial activities. Those on the main roads house retail shops on the road front. Those on minor roads house shops and warehouses in front courts. (Figure 9) House temples (Temples as a part of residences) have varied uses within , as parts of premises have been rented out by various organizations. Currently temple Deodi ji Head office of Jila Congress committee, Temple Shri Champawat Ji houses shops and similar establishments. Parts of the temples , which have been taken over by the Government, have been given to different organizations.

Figure 9: Commercial activities in outer court and road face; **Source:** Author

Mandir Shri Brajraj bhari ji houses a girls school, Mandir Shri Ramchandra Ji houses many government offices and Sanskrit college. (Figure 10) These activities are not aligned with religious activities, hence the front courts remain ill-maintained and crowded by parking etc.

Figure 10: Renting out of outer court for other activities, Outer court Deodi Ji and Ramchandra Ji temples; **Source:** Author

1.9.2 Poor upkeep of inner court

Inner courts of temples, which are actual sacred spaces, have rooms for the priest and staff around them. As the worship and congregation is periodic, these courts are used for domestic activities for the rest of the time of the day. Residual activities and service spaces affect the ambience of the place. Courts remain dirty. The built structures are deteriorated due to accumulation of water and putting old hooks and pegs in convenient places.

Figure 11: Poor upkeep and spill over of domestic activities in inner court, Temple Gopal Ji; **Source:** Author

1.9.3 Deterioration in built structure

As these temples are 200 to 300 years old and constructed in lime and stone most of them are showing signs of ageing. Plasters are peeling off. Water seepage from terraces has caused serious structural damages. Railings have been broken and replaced by new cement railings.(Figure 12)

Figure 12: Structural Deterioration and damage Mandir Shri ; **Source:** Author

Incongruous alterations made by users in the built structures include, covering of inner court to make a hall (Figure 13 and 14), construction of small service structures within the court, poor upkeep of sacred vegetation, basil plant, open wiring and other electrical installations. (Figure 16)

Figure 13 and 14: Incongruous constructions; **Source:** Author

1.9.4 Loss of surface artwork

These temples were adorned with beautiful fresco paintings and plaster mouldings. Due to paucity of funds and willingness on one hand and age of structures and poor handling by people on the other, these temple courts are fast losing this precious heritage. Colors of wall murals and paintings are faded, parts of paintings are completely worn off, chhajjas and shrines made in plaster work have come off, marble mouldings and cracked and columns have gathered suite. Araish work on walls and dados is badly deteriorated and needs immediate attention.


Figure 15 and 16: Damage to artwork on walls, Temple Murli Manohar ji and Deodi Ji ; **Source:** Author

This issue has another dimension also. Wherever the restoration has been done hurriedly the results are poor (Figure 17 and 18) and look artificial. In cases where property users/owners want to get it done, artisan and qualified masons are not available. The technique of stucco with mineral colors is a threatened art form. Current custodians of temple Deodi ji, Goswamis, said in an interview with the author, that they have applied for a restoration through governmental agencies, as theirs is a listed heritage property, 6 years ago and there is no artisan available to restore paintings.


Figure 17: Results of restoration work lac character and look like cosmetic treatment Picture comparing before and after restoration of paintings Brajnidhi temple; **Source:** Author


Figure 18: Results of restoration work lac character and look like cosmetic treatment Picture comparing before and after restoration of paintings Brajnidhi temple; **Source:** Author

1.9.5 Issues related to tenancy and property rights

Most of the Havelis are subdivided and there is no clarity about the responsibility of the upkeep of the temple in case of home temples. Those, taken over by the Devsthan Vibhag of Rajasthan Government, face the problem of shortage of funds and absence of technical support. Temples under trusts and *Ashrams* such as Shri Govind Dev Ji, Balanandi Ji , Shri Ramchandra Ji are in a fair state of maintenance. Some

temples, such as Thakur Krishna Chandra ji have kept the structure well but are using it for commercial purposes as there is no governmental or social intervention because of a clean title of ownership as private property under mixed use.

1.10 Efforts made by local governance for conservation under various schemes and projects

There are a number of schemes and policies by the state and central government, about conservation and protection of heritage. A number of projects have also been launched which focus on temples. Some of them are Heritage Protection as per 'The Rajasthan Monuments, Archaeological Sites and Antiquities Act 1961; it is specific to monuments and identified heritage.

- Adopt a Monument Policy, lack of finances and awareness among people
- Rajasthan Heritage Conservation Bill, 2015
- Master Plans for Jaipur: Earlier master plan lacked a sensitive approach towards walled city. MDP - 2025 have provisions for development but it includes only the overall development not micro level building activities.
- JNNURM and Smart City mission also included some conservation projects, although both these projects focus mainly on infrastructure development.
- One important project was Krishna walk which addressed all important temples but it has also been shelved right now.

Other than government projects, some private organizations have also been involved in heritage conservation projects in walled city viz; Virasat foundation, INTACH and ASIA URBS.

1.11 Main findings

The study is made on a small but representative sample. The observations based on this study can be summarized as

- Haveli temples is a unique typology where community space is ingrained in an institutional building.
- With the changed notion of social interaction in modern times, these courts have started losing their importance.
- About 90% Haveli temples house non religious activities in and around their front courts.
- 88% temples suffer alterations and patch up construction.
- All home temples, which have been turned into public shrines, allow parking in the front court.
- All community specific temples (under the control of a small community) have encroachments both commercial and residential.
- Temples under trusts are in poor state of repair and maintenance but temples under government with a supporting trust are well maintained
- All temples need restoration of artwork and paintings.
- Less than 50 % temples have been restored or conserved with expert consultation and skilled workmen

Popularity of temple courts as community space has gone down in the last 3 decades. People prefer to meet in commercial places like food joints and malls. Food habits of people have undergone a drastic change. Temples are located in the thick of the city, parking becomes a huge issue in any kind of social gathering. Religious gatherings are out of fashion for the youth. Issues of cleanliness and hygiene are also important these days.

As noted in the study, these structures are facing preliminary issues of serious structural damages and loss of the artwork that had been the hallmark of these temples. A wilful effort is required for the conservation of this precious heritage on the part of the government. As Jaipur is already listed as UNESCO heritage city, there is enough motivation for the job. What is important now, is to raise awareness and involve people in the mainstream activities of the time. Involvement of various peoples forums and organizations, involved in heritage conservation may be helpful.

A careful planning of events, modernizing facilities and a systematic movement plan is needed to revive these ingrained spaces. In a situation where open spaces and public greens are sparse, these modest spaces can play wonders to resume community activities. If religious activities are clubbed with social service and charity, it will draw the attention of many and temples will resume their lost status of grand social institutions.

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06

Potential of Actor-Network Theory (ANT): Aligning archaeological and non-archaeological components on a single theoretical framework

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Sub theme: Settlement/ Places/ Urban/ Rural/ Regional - Cultural Landscapes - Transformations, concepts, ideas, and approaches

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Abstract

Through the discussion of a complex cultural site, this paper agrees on the necessity for professionals in archaeological and cultural heritage studies to observe and consider the so-called non-scientific perspectives circulating in the site to depict the interests and communities at play. To achieve this desired approach, it proposes Actor-Network Theory (ANT) as a practice theory by discussing its concepts, application, and suitability to understand and align archaeological and non-archaeological components of complex cultural sites.

By overarching the traditional concept of 'Inscription' (epigraphical), the paper adopts the ANT's idea of 'inscription' for all those elements which have been materialised into a sign, an archive, a document, a piece of paper, a trace by the actor-networks associated with any archaeological site. These inscriptions represent the codified claims of the actor-networks that are in circulation and serve as a tell-tale for the produced knowledge (archaeological or otherwise), identity, and resilience. These scripts are time and again codified, displayed, and celebrated in the form of inscriptions. The paper takes the elaborate example of 'Śṛiṅgaverapura' to discuss and exhibit the potential of ANT as a practice theory that can be successfully adopted to study a complex cultural site, its archaeological, non-archaeological components, and stakeholders without discriminating their scientific appropriateness. This is followed by a brief discussion of the second site Bithoor and its complex historical and cultural heritage where in the absence of visible inscriptions at the site other circulating inscriptions concerning the site can be studied using the discussed approaches. Which, in turn, helps in better strategy formation and management of such complex cultural sites.

1 Introduction

Cultural sites are complex entities that generally survived human activities for centuries, thousands of years in the Indian context, the land of cultural plurality and diversity. This plural and diverse nature of culture and the uncomfortable co-existence of traditional and official (Thakur, 2011) seem to be on a continuum in the Indian context. It has given rise to and sustained many cultural landscapes and sites which are layered, relayed, readjusted, and interwoven, lending them complex contexts. These multiple contexts are not just essential parts of a universe but often operate as a multiverse, creating and vouching for independent existences. Two such contexts of any cultural landscape are its archaeological and non-archaeological, respectively perceived as scientific and non-scientific (sic). Though cultural conservation (primarily intangible) includes and imbibes both contexts, some archaeological practitioners are still at a crossroads. However, "experiencing a landscape through any of our senses – physical or ethereal – results in different appreciations and understandings among individuals and even larger social groups

(all of which remain networked). Yet, landscape will always be, regardless of how humans attempt to (de)construct, describe, and/or alter it. Perhaps even more profound, landscape, as both a concept and a term – or a form or a process, or an epistemology or an ontology – is best defined as the definitive 'stage' where everyone (and thus, everything) remains involved in production and consumption, whether aware of it or not" (Allen C. D., 2011a). In such a condition, the cultural landscape, with its inherent spatio-temporal complex presence, multifaceted contexts, and components, poses a greater challenge for its practitioners to align applicable frameworks capable of integrating research, planning, and implementation. However, approaching it with the Actor-Network framework would make it possible to acknowledge and integrate these complexities by providing an alignable theoretical and methodological framework.

With this backdrop, the author brings in her observations and learnings from archaeological practice concerning the site of Śṛiṅgaverapura to propose a possible way to integrate these two essential cultural contexts using ANT's conceptual ground. These are then discussed in the context of two more sites to bring in possible application scenarios of ANT in different contexts. Due to ANT's ability to adapt to multiple fields of study, its being a theory and methodology opens the possibility to study, assimilate and align both archaeological and non-archaeological components as ANT considers science a social construct, thus rendering scientific and non-scientific as frivolous categorisations.

Before the paper dwells further, it is essential to mention two points. The paper does not differentiate tangible and intangible culture but has consciously chosen to address archaeological and non-archaeological contexts and components. Second, the case examples in the present paper are handled at the cultural site scale, though the approach is sufficiently efficient to escalate to the cultural landscapes scale.

2 A glance into related literature

Cultural landscapes "represent the combined works of man and nature….. they are the places of peoples' livelihoods, identities and belief systems all over the world" (Ceccarelli & Rössler, 2003). The concept of 'cultural landscape' has been discussed widely in many fields concerning human and land interactions. With the ever-growing view of what constitutes cultural heritage in a landscape, the focus now appreciates the cultural products and the interrelationships. These interactions have emerged and are emerging between people, the environment, events, and places. Therefore, heritage inevitably becomes "inextricably linked to notions of identity and continuity, to private and public memories, and to sense of place" (Taylor, 2017). This necessitates integrating the scientific understanding of the site/place with other cultural components - mythological, living practices, etc.

Much of the literature regarding cultural landscape (Steiner & Thompson, 2000; Groth & Bressi, 1997; Southgate, 2019) discusses the case studies, project experience, metaphysical concept of the term, landscape components, conventions, implementation, etc. Studies focusing on theoretical approaches to integrating cultural landscape components are comparatively limited (Fleming, 1998; Fischer, 2012; Kühne, 2019; Eetvelde & Christensen, 2023). The present paper contributes to further this body of knowledge as it provides a common theoretical framework that can be queried and applied to multiple contexts and components of the cultural landscape without binary and dichotomous divisions like natural-cultural, archaeological-nonarchaeological, tangible-intangible, etc.

ANT’s concepts, theory, and method are adopted in many fields. Here, works from related fields (archaeology, landscape) are focused. In Archaeology and associated areas, ANT's approach has primarily been concerned with conservation, heritage management, tourism (Zheng & Liu, 2018), and community & public archaeology from an epistemological perspective. ANT's adaptation in archaeological thought and theory is well discussed, identified with ontological and material turn, and is well recognised as "symmetrical archaeology" (Olsen, 2003; Shanks, 2007; Witmore C. L., 2006; Webmoor, 2007; Olsen, Shanks, Webmoor, & Witmore, 2012), signalling the ANT's symmetrical principle. It is listed generally as part of the metaphysical turn within archaeology’s ontological turn (Lucas, 2019). It challenges the

subject-object dualism by recommending a-priori symmetry of human and nonhuman actors (Olsen, 2007; Olsen, Shanks, Webmoor, & Witmore, 2012; Witmore C. L., 2006; Witmore C. L., 2014; Olsen, 2012a; Olsen, Symmetrical archaeology, 2012b).

As the ANT-based research in Archaeology is ontological and application-based, it questions how phenomena are enacted and how they operate in practice. Some of the studies that apply ANT's theory and method to the application are discussed here (Yaneva, 2013; Oyen, 2015; Witmore C. L., 2005). Yaneva discusses the use of ANT as a method to study the archaeology of contemporary architecture and opinions that "ANT methodologies can help to create a space in which the past, present, and future are combined and are still in the process of becoming" (Yaneva, 2013). At the same time, Astrid Van Oyen (2015) deals with material culture and adopts ANT's approach to study how the Actor-network in ancient times would have engaged in producing a universally accepted pottery category called terra sigillata. The paper looks retrospectively at the historically established category from the contemporary research perspective by reordering historical evidence.

In the landscape context, the works of Casey D Allen (2011a) and Allen & Lukinbeal (2011b) come close to the present discussion. In the 2011a work, he discusses the dialectic context of nature-society and proposes an ANT framework to negate the dialectic nature in understanding and studying landscape. He notes, "ANT recognises that all objects and things exhibit consciousness, and through a consciousness, interact heterogeneously in space; the location of the interaction(s), where they are performed homogeneously, is the landscape" (Allen C. D., 2011a). Therefore, ANT can be used to study anything in the landscape – irrespective of the human–physical geography divides and, perhaps provocatively, even rendering scale unnecessary – both generally and specifically (Allen C. D., 2011a). Another work by Allen and Lukinbeal (2011b) proposes adopting the ANT framework for physical assessment teaching practice to graduate landscape students to unlearn overreliance on positivistic scientific teaching methods. Excluding these works, few other works have used ANT as a theoretical and methodological framework in cultural landscape studies (Hitchings, 2003; Arnaboldi & Spiller, 2011; Sheehan & Vadjunec, 2012; Bennett, 2017; Park, Park, & Lee, 2020; Ji & Heath, 2023).

3 Śṛiṅgaverapura: A complex cultural site

The Archaeological site of Śṛiṅgaverapura is located between 25°3' N – 81°39' E, on the left bank of the River Ganga, Allahabad district, Uttar Pradesh, India. It's a complex cultural heritage site with archaeological, mythological, living, and social components.

The site is a stretch of large mounds with excavated archaeological remains indicating the site occupation from the last quarter of 2000 BCE (Lal, 1993). It stretches along the River Ganga for more than a Km (Lal, 1993). Legends associate Śṛiṅgaverapura with the Indian epic "Ramayana," and the sage Rishyasringa was supposed to have had his Ashrama (hermitage) here. Excavation at the site was part of the project entitled "Archaeology of Ramayana Sites." Under this project, a total of five[1] sites that were popularly associated with Ramayana's events were dug up (excavated or explored) to find out if they could throw any light on the problem of the historicity of Ramayana and its events mentioned in the epic. At the site of Śṛiṅgaverapura, excavation was carried out from 1977-78 to 1985-86 for nine consecutive seasons at seven areas identified as SVP-1 to SVP-7 (Lal, 1993). At SVP-4 (Śṛiṅgaverapura Mound 4), a series of brick tanks were excavated and hypothesised to be an interconnected 'Flood Water Harvesting and storage system' dated between 100 BCE to 100 CE. Based on excavated terracotta figurines, the site was claimed to have been a veritable centre of Brahmanical religion (Lal, 1993, p. 19). The water tank complex and an unexcavated mound at the village's entry are protected by ASI (Sarnath Circle). The Tank Excavation report was published in 1993 and authored by B. B. Lal (Chief excavator), entitled 'Excavations at Śṛiṅgaverapura, 1977-86, Vol. 1' (1993), focusing on the excavated tank complex (SVP 4).

1 Ayodhya, Bhardwaj Asram – Allahabad, Chitrkuta, Nandigrama, Śṛiṅgaverapura

The site has a mythological association with Ramayana and has derived its name from the sage Rishyasringa, who was believed to have lived here. Dasaratha (father of Rama, King of Ayodhya according to Ramayana) had no issues with his three wives. With the wish to have sons, he invites Rishyasringa and requests to perform Putreshti Yajna (A sacrificial ritual performed to obtain male progeny). After the Yajna, all his three queens conceive and bear four sons. Next, the site features in Ramayana when Rama, Sita, and Lakshmana go into exile. Guha, the local Nishada chieftain, ferries them across the Ganga; the spot is still identified as Rama Chaurah. There is a recently constructed temple at Śṛiṅgaverapura, which is dedicated to the sage Rishyasringa and his wife. The Ramayana refers to an Ingudi tree under which the trio spent the night before crossing Ganga. Local people point to a tree (probable successor) as the location.

Figure 18: Showing multiple cultural components of Śṛiṅgaverapura.
a) – Cut-out of Guha in an atypical costume of a king, as depicted in popular media.
b) – Brick tank of Śṛiṅgaverapura (view towards Tank B).
c) – Ghat of Śṛiṅgaverapura with sage Rishyasringa and temples in the backdrop.
d) – One of the brick factories in the Śṛiṅgaverapura vicinity.
e) – People preparing for burial on the bank of the river Ganga.
f) – Group of burials on the Ganga riverbank; **Source:** Author

The site's mythological and religious association has recently been promoted, with Rama and Ramayanaas mainstream narratives. In the absence of connecting public transportation, visiting the site was difficult until 2016. Under the PRASAD scheme[2], 'Ramayana Tourist Circuit' development program was launched

2 Pilgrimage Rejuvenation and Spirituality Augmentation Drive

in 2017, which led to the development of tourism-related infrastructure, causing many changes. Along with this, the three-day Ramayana reciting fair is celebrated annually now.

The site's Nishadha (Fishermen) community draws its lineage from the Guha. They feel neglected and resiliently strive to get their association and cultural narrative recognised. The community perceives the protected archaeological remains as belonging to Guha's period, depicting him as the place's ruler. Archaeological claims and Rama claims have marginalised the Nishadha identity. This perceived threat has made the community actively display their identity and association, installing many inscriptions on the site, like the cut-out of Guha, the community gatherings, the annual festival organising, etc.

Many Muslim families are settled in the village. The community has built one prominent and two small worship places. There is also a Sai Baba Asrama in the village. The site is considered a sacred place to perform death-related rituals. Within a 40 km periphery, people bring their dead to either be cremated or buried. The place is one of the rarest sacred locations within UP that facilitates burying the dead. The area also boasts several small-scale brick factories in and around. Fascinatingly, the whole village is on the archaeologically rich mounds. Any new constructions in the area generally yield some remains or artefacts.

4 ANT's concepts and Case Discussion

The village is a complex cultural site with multiple cultural heritage components; if careless, any intervention concerning the site can result in the loss of cultural heritage and many identities. The quintessential development (including land use) and heritage interventions must understand the interactions of multiple communities and cultural components. However, the challenge is using similar and alignable theoretical frameworks or a single framework to integrate these components and contexts.

So, the present paper posits ANT as a theoretical and methodological framework to integrate and understand multiple interactions and negotiations occurring on this site. So, let's look into how ANT and its concepts can serve as a framework to facilitate and cover various cultural components (primarily archaeological and non-archaeological).

a. Actor-Network Theory Concepts

ANT was conceived and developed to study science and to understand how science emerges or gets created. From a Philosophy of Science perspective, ANT is a constructivist approach. According to ANT, "both social and natural sciences are [as] equally uncertain, ambiguous, and disputable, [so] it is no longer possible to have them playing different roles in the analysis. Since society is no more obvious or less controversial than nature, sociological explanations can find no solid foundations (Callon, 1986). Due to ANT's flexibility, it has been adopted widely across many disciplines and practices. Now, let's look into the most important and relevant concepts of the ANT.

i. Symmetry of Actors

One of the prominent characteristics of the ANT is its criticism of the human-centred interpretive knowledge generation, thereby discarding the notion of dualism. ANT believes that science (organised knowledge) is constructed in networks through heterogeneous actors' interactions and negotiations. Therefore, ANT privileges neither natural (realism) nor cultural (social constructivism) accounts of scientific production. For it, science is the process of heterogeneous engineering in which social, natural, and discursive are puzzled together in the process of translation (Tabak, 2008). Its relational materiality presupposes that all entities achieve significance in relation to others. For ANT, an actor/actant can be human or nonhuman (nature, object, tool, technology, institution, organisation, etc.) and assemblages of actors. These actors transact, negotiate, and align themselves to the Network's interest, leading to the growth of the Network on the one hand and the production of knowledge on the other. Therefore, every human or nonhuman actor can influence and negotiate. Hence, the theory argues for the symmetrical treatment of all actors at

the beginning of the process. "ANT is a viable method for studying anything in the landscape because it folds the nature-society dialectic (and space-time) into one concept" (Allen C. D., 2011a, p. 274). However, it doesn't mean that all the actors in a network have the same agency, capability to negotiate, or power. It just means their roles and agency emerge and depend on the occurring interactions, the number of networked entities, and alignment with network objectives.

ii. Actor-Networks

Actor-Network, in ANT's conception, is a macro-level phenomenon that represents reciprocal actor entities. In a sense, many actors come together and interact, establishing interconnections, translating each other leading to the formation of the network. At the same time, a Network cannot exist without actors interacting, as interacting actors further the Network's interest by enrolling actors to further the set objectives and establish claims. Before actors enter into the Network, they might or might not have an identity and association. However, once they join the network and negotiate associations, they get defined by their associations, which name them and provide them with substance, action, intention, subjectivity and role. Therefore, "actor-networks are processual, built activities, performed by the [actors] actants out of which they are composed. Each node and link is semiotically derived, making networks local, variable, and contingent (A-Ritzer, 2004)".

For example, in the case of Śṛiṅgaverapura, a minimum of one actor-network associated with each community is active and works to foster their specific network objectives in multiple ways. It can be an Archaeological Network that produces archaeological knowledge of the site, a Rama Network that forefronts the association of the site with Rama, a Nishada Network that claims their genealogical association with Guha (the chieftain of the place according to Ramayana mythology) and therefore the place, a Muslim Network that serves the living community at the place, temples Network, death ritual practice Network, etc. One has to remember that these networks will have human and nonhuman actors. Many networks related to the site share the same actors, for example, the River Ganga or the place itself. Therefore, a single entity, human/nonhuman/ assemblage, can be connected to many networks. Actors and actor networks might exist in the site's physical space or fully or partially outside the site's physical space. These networks must be studied and analysed to understand all the cultural components and perspectives circulating concerning the cultural site. Then, the question is how these actor-networks can be identified, tracked, and analysed.

Owing to the ANT's roots in ethnomethodology, ANT theorists describe networks by following the actor [Initiating Actor – henceforth IA][3] into translations ……..examining science in the making (A-Ritzer, 2004). So, as a researcher/professional studying the cultural components, one needs to follow the actors to study science/narrative/knowledge/claim in the making in multiple actor networks. However, not all the networks are active while the study progresses. For example, Śṛiṅgaverapura is a protected site under the Archaeological Survey of India (ASI); one can say that its Archaeological Network exists in the site's physical as well as outside the site's physical space. The ASI network contributes to sustaining the archaeological knowledge already claimed concerning the site. However, the actor-network responsible for producing scientific claims (excavation team) about its archaeological component is not active. The Archaeological Network, which is directly involved with archaeological knowledge production, has been dissolved and is not associated with the site. But the actor-network produced site inscriptions, such as excavation reports, papers, excavated artefacts, etc., are still circulating and testify to the network's existence. In such a situation, one has to deal with the actor-network posterior. Then, the study can be initiated by following the inscriptions produced by such an actor-network. Before venturing into both ways of observing the Network, let us first understand how the actor-network operates and engages in making knowledge/claims aligned to serve its objectives, and when and how it produces inscriptions through the concept of "translation."

3 The network initiators are the Initiating Actors to follow and through whose eyes an attempt is made to interpret the process of network construction.

iii. Translation and Inscription creation

Translation is the process of the alignment of the interests of a diverse set of actors.[4] It is the science/ knowledge/claim production process by the actor-network. ANT notes that the knowledge claims produced by the networks result from negotiations and alignment among its actors. Suppose the negotiations among multiple actors are a success. In that case, the Network grows on the one hand and produces science/ knowledge/narratives in the form of 'inscriptions/immutable mobiles'[5] on the other hand . This process, if successful, is called "translation," where freezing and materialisation of the claim occurs, which will be circulated, and therefore called 'immutable mobiles' or inscription. When the negotiations fail to produce inscriptions/immutable mobiles or are questioned, it leads to "dissidence,"[6] thereby the failure of the process. Therefore, building the Network and the process of science creation go hand-in-hand through four 'moments' leading to translation (Callon, 1986), giving rise to inscriptions/immutable mobiles.

The initial phase is the first step towards building the network, called problematisation. Here, the IA attempts to identify the network objective, the required knowledge claim, and what actors are needed within the Network (O'Connell, 2014). Defines the 'obligatory passage point' (OPP)- a situation that has to occur or abide by all of the actors to be able to achieve their interests, as defined by the focal actors of the network of the Actor-Network through the Focal Actor/s (FA) who sets and convinces the actors to agree to the interest defined for them.[7] As the IA works to build the Network, negotiations will occur with other actors regarding their roles within the Network (O'Connell, 2014). These roles will align with the FA and identified interests by the IA for the Network; this second stage is called interessement. In the enrolment moment (third), the Network adopts a set of strategies in which they seek to define and interrelate the various roles they had allocated to others (Callon, 1986). In mobilisation (fourth), IA reaches and aligns others external to the Network (allies) move to support it (O'Connell, 2014). This transformation process is called "translation," as it is a process; it is 'never a completed accomplishment' (Callon, 1986). If the actor-network successfully produces 'knowledge,' the produced knowledge gets established as fact or claim and accepted by others outside the Network. With this acceptance, arguments regarding the 'truth' are resolved, and it becomes 'fact' (Latour, 1987). The establishment of the 'fact' is proclaimed through inscribing them in an or a set of inscriptions. All other previously created and procured information, truths, and negotiations among multiple actors get black- boxed. Over time, the acquired 'truths' and produced facts get separated from the Network that built them, making the process and produced actor-network unknown, thereby challenging to trace. Hence, any query questioning the validity of the fact can be made possible only by re-opening the black box[8] and by retracing the Network (Latour, 2005). Once the Inscription mobilises the required support, it can't be questioned; it starts to get adopted into other actor networks anywhere in the world depending on its appropriateness as an actor in those networks. Thus, it black-boxes the actor-network that produced it and the numerous interactions and negotiations that went into making it. If an Inscription is questioned before or during its production, the actor network that produced the Inscription will have an option to revisit and realign the involved actor's interactions and negotiations, possibly resulting in revising the inscription. On the other hand, if the existing Inscription is later investigated and questioned, the translation turns out to be an act of betrayal of the produced inscription as it calls into question the Network's achievements and interactions

4 The process of the alignment of the interests of a diverse set of actors with the interests of the actor-network (Callon, 1986; Walsham, 1997).

5 Inscription or immutable mobiles refers to all those elements which have been materialised into a sign, an archive, a document, a piece of paper, or a trace by the actor-networks that would ensure the protection of certain interests of the actor-network (Latour, 1992; 2005; 2008).

6 Displacement during the final stage of the process and the failure to produce inscription by the actor-network led to betrayals and controversies (Callon, 1986).

7 The focal actor is the actor involved in negotiations who sets and convinces the actors to agree to the interest defined for them in the Actor-Network. Which in this case is the Archaeological Site holding all knowledge and info and the Initiating Actor who sets Network Objective.

8 It is an act when the network, involved actors and the relationships between actors have produced and established the knowledge claim as the 'fact' thus producing the immutable mobiles or inscriptions which would have internalises all actors and actions of the network that produced it thus making the network and interaction inaccessible and will be separated from the network and is freely circulated.

that had ultimately resulted in the production of the existing inscription. Then, a new actor-network must be initiated to deal with and solve the questions of dissidence. This is usually possible if the black-boxing process has not been completed or the initiating network has access to the black-boxed actors, interactions and negotiations; thus, documentation or recordings (all or partly) are accessible for examination. The Actor-Network that starts to look into things again has to engage with the actors, actions, and negotiations that happened in the previous network. In this way, the new actor-network gets operative.

b. Case Discussion

As we understand the concepts of the ANT, let's look into the application-based discussion. The paper proposes two approaches to understanding how to study the cultural components through respective actor-network. The practice-based application concerns only the archaeological component and is discussed with an application. Examples are from the author's Ph.D. study. However, the author draws from her site visit experiences and observations for non-archaeological application discussion. Therefore, she has not studied non-archaeological components and concerned actor-networks. However, through theoretical understanding and experience, the author formulates the possibility of expanding these approaches to a non-archaeological context. By this, the site's cultural components and numerous actor-networks are studied and brought together on the same theoretical and methodological framework to holistically facilitate alignment and understanding of the site and its transformations.

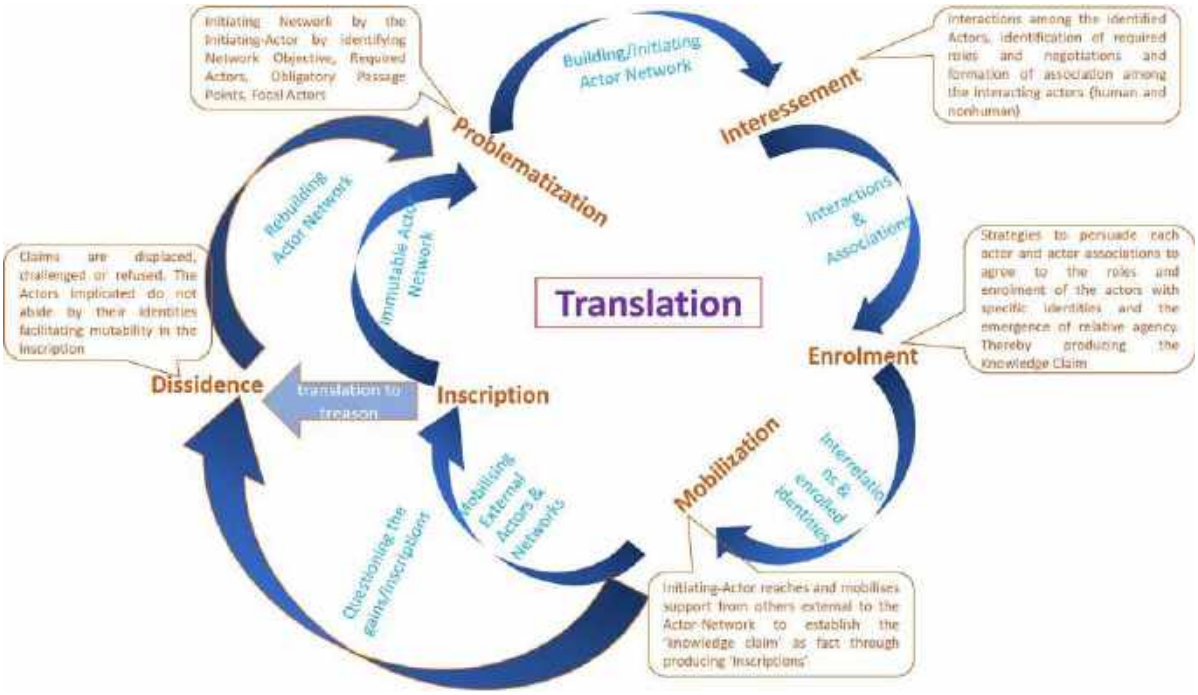

Figure 2: Pictorial representation of translation moments and process; **Source:** Author

The approaches are,

i. Tracing an actor-network through its already produced inscription (Retrospective)
ii. Follow an actor while the actor-network is in action till the production and circulation of inscription (concurrent)

i. Archaeological context:

<u>Tracing an actor-network through its already produced inscription (retrospective)</u>

The excavation report of Śṛiṅgaverapura (Lal, 1993) produced by the previous excavation network is considered a compendium of Site Inscriptions.[9] One of its archaeological claims or site inscription is "the site of Śṛiṅgaverapura was a veritable centre of Brahmanical religion." The provided Site Script (the

9 Site inscription refers to all types of transformations through which an entity becomes materialised into a sign, an archive, a document, a piece of paper, a trace' (Latour 1999: 306) 'representing fact' through the formulation of script/s about an archaeological knowledge claim that serves as the evidence for past activities and happenings.

storyboard that connects the inscribed claim to its production process) includes finding and arguing for the identification and categorisation of terracotta figurines obtained from the brick tank.

In the absence of the actor-network that produced the claim and in absence of access to examine the actual excavated archaeological objects and the field dairy or any other primary documents concerning the excavation, the author's critical focus was the published excavation report. The author followed the site inscription and associated site script in the excavation report that acted as the required storyboard connecting the inscribed claim to its production process as narrated by the previous excavation team. Thus, the excavation report was analysed to understand the translation that occurred.

The next step after identifying the inscription is to recognise the project objective. As in many cases the excavations at Śṛiṅgaverapura was part of much larger project called 'Archaeology of the Rāmāyaṇa Sites' which intended to excavate and explore five places that are orally and famously associated with Ramayana.[10] The excavation report mentions the overall project objective and the objective for the dedicated volume of the Excavation report addressing the Śṛiṅgaverapura tank complex. According to the report, "the realization that the Mahābhārata is likely to have had a basis, howsoever attenuated, prompted me [B.B. Lal- Principle excavator] to investigate the historicity of the Rāmāyaṇa as well. As a result, a project called 'Archaeology of the Rāmāyaṇa Sites' was embarked upon in 1975" (Lal, 1993, p. 3).[11] Therefore, the explicit objective of the Rāmāyaṇa Sites Excavation project, as stated by the Principal Excavator was to investigate the historicity of the Rāmāyaṇa - specifically to look for any shreds of evidence (archaeological remains) from the sites that are associated with Rāmāyaṇa narratives (have a similar name and famously associated still in the current popular belief) and date the site's existence along with understanding the culture of the past communities that lived in the place. Thus "the obvious step was to dig up the sites associated with these [Rāmāyaṇa] events and to find out if they can throw any light on the problem of their factuality (full or partial) to investigate the historicity of the Rāmāyaṇa" (Lal, 1993, pp. 2-3). However, the Brick Tank which was an unknown actor (as was not excavated when the project objectives are being set) which was not addressing the stated objective above but the Brick Tank (from the Tank Complex) was of interest to the Network from the perspective of its scale and hydraulic engineering, as stated by B.B. Lal in the Excavation Report (Lal, 1993, p. 5). However, the excavated terracotta figurines from the Brick Tank were iconographically categorised and the probable religious pantheons to which they would have belonged was asserted though they wouldn't have served to understand the scale and hydraulic engineering of the tank system but they would rather serve the stated objective of the project Archaeology of Rāmāyaṇa sites.

The excavation report lists the obtained terracotta figurines, their physical features, and iconographic reading, including interpretive challenges stated by the Principal Excavator, which this research considers to observe and trace the negotiations forged by the IA (Principal Excavator in this case) to align them to network objective and translate. The role played by the archaeological site, specifically the tank complex, as one of the FA along the IA sets defined OPP.

This is an exciting scenario where human and nonhuman actors together play the role of FAs to set OPPs. IA has a clearly defined objective in the project proposal that demands actors to align with it. In contrast, the tank complex/site sets its agenda by delivering terracotta figurines which are complex to decisively identify and thus conclusively align with the project objective. Because of this, though the IA presented the interpretation as a negotiated find thus producing the claim inscribing Śṛiṅgaverapura as a veritable center of Brahmanical religion in the lifetime of Brick Tank a critical inspection indicates the dissidence of the enrolled material actors(figurines), as these actors did not align with the proposed network objective. Thus, the narrated interactions and the resulting archaeological claim can be challenged and reopened for new/revised interpretations. This way, the produced archaeological claims though are circulating as site

10 For more details refer (Lal, 1993)

11 Italics are as per the original text

inscription can provide information on the identification of involved actors and facilitate identification of translation moments, gaps, and authenticity of the produced claims.

Follow an actor while the actor-network is in action till the production and circulation of inscription (Concurrent)

Concerning the Śṛiṅgaverapura, this author initiated a new actor-network with an object to identify and explore 'subsurface archaeological reserves' in and around the site to identify the site expanse. As the author is the initiator, she becomes IA for this new actor-network. Following her as an actor while the actor-network initiated by her is in action from formation through inscription creation is the second approach where one can observe science in the making. Through this approach all the four translation moments can be observed and documented, which is briefly discussed below for the example of identifying the Śṛiṅgaverapura site expanse.

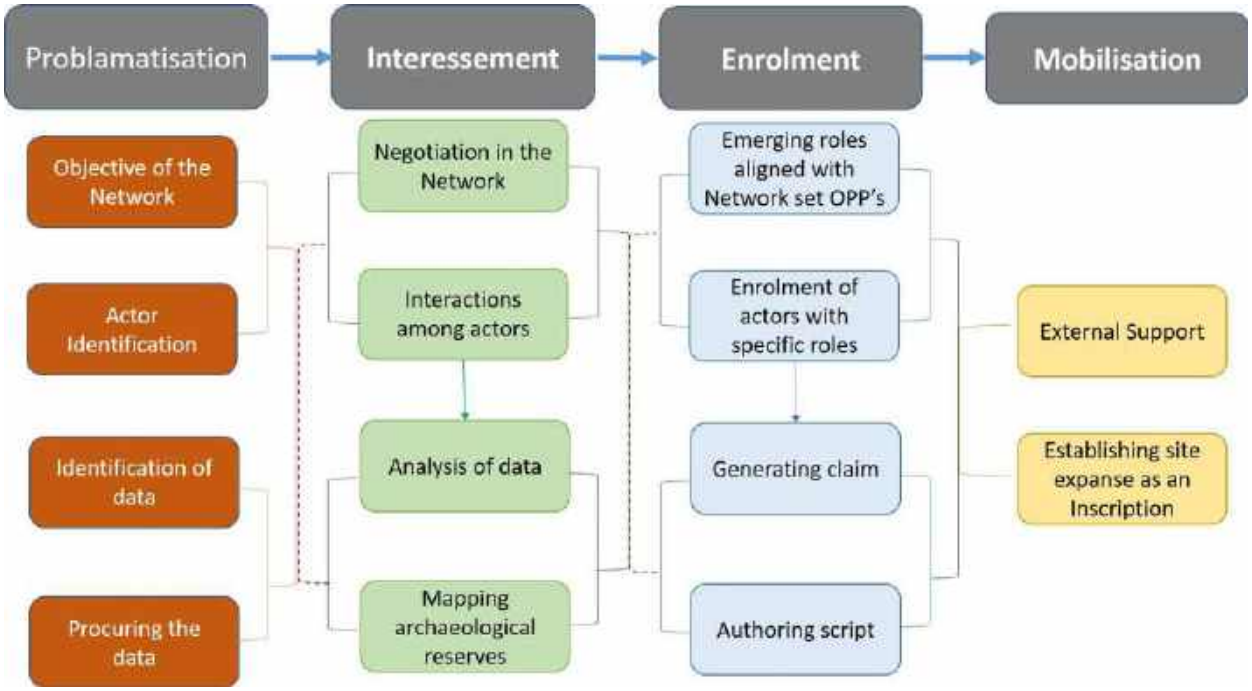

Figure 3: Showing the process flow by following Initiating Actor from the 1st to 4th moment of translation while the actor-network is in action for the site expanse example; **Source:** Author

In the Problematisation moment, IA initiates the actor-network by defining the objective. Accordingly, she brings actors into the Network fold- Google Earth Pro, Landsat-8, SRTM, Carto Sat–1, Śṛiṅgaverapura and satellite Analysis tools- ARC GIS, ERDAS Imagine, ENVI, Computers, and Google Maps. However, in this phase, the selection of satellite images was guided by the terrain features of the site. Because of this, the site along with the IA resumes the role of FA and both (the site and IA) set OPPs. IA sets alignment with the network objective as OPP whereas the site sets alignment with its terrain features as OPP. Interactions and negotiations occur among the contacted actors in the interessement moment and if negotiated roles are in alignment with the actor-network OPP's set by the FA's these roles get enrolled in the network at the enrolment moment. For example, the produced SRTM-DEM fails to align with the set OPPs, thus the network doesn't enrol the actor and its role and proceeds to contact another actor to initiate interaction and role negotiations. Thus Cartosat-1 enters the network and interacts with other actors to produce the DEM which is in alignment with the set OPPs thus gets enrolled into the network. Similarly, few analysis methods used for Landsat-8 didn't align to set OPPs; therefore, the roles (new actors) produced are excluded from the process, making them obsolete actors and thus black-boxing. Once sufficient alignment and knowledge claim production have occurred, actor-network moves towards mobilising external support (from actors outside of the Network) for its produced knowledge claim. This was achieved in the present case through the paper publication, presentation, etc. This paper itself serves

as a mobiliser of the external support as it publishes the intended knowledge claim. Thus, the submission and acceptance of the multiple publications to concerned institutes is part of garnering external support to validate the claim.

ii. From archaeological to Non–archaeological context

Śṛiṅgaverapura's association with Ramayana is a well-known narrative and a prime reason to consider it for the archaeological excavation. However, even with all this focus, its association with Rāmāyaṇa has never been pushed to the forefront in the past half-decade. Excluding the mythological association and certain spots within the site, nothing much related to Ramayana was ever promoted. However, in recent years there is a drastic shift towards intentional fore fronting of Rāmāyaṇa as a mainstream, primary identity for the site at the cost of other living cultural practice skewing the existing propositions. The site that had not seen any infrastructural development suddenly started to witness many "developmental activities."[12] This resulted from an isolated narrative promotion due to political will, leading to profound and uncharted complexity. For example, the Nishadha community, associated with the Guha of Ramayana, perceives a deliberate downplay of their importance, association, and identity. Again, the same community participates in the Ramayana festival's festivities for multifarious reasons.[13] They have counterclaims over the protected archaeological area as they perceive it as Guha's Palace. However, what is fascinating is that, though in such a volatile and complex condition, the Nishadha community has successfully gotten government land and grants to make a park where they can represent the land's association with the Guha and foster the communities' identity and association. It's again on the mounds which are rich in archaeological remains.

This is just the complex web of networks associated with two cultural components intertwining. Imagine how many more such (culture-specific) non-archaeological networks are surmounting the site, making it a complex meshwork. In such a situation, where does an author need to start, and on what theoretical and methodological platform can they bring in these networks and dissect them to have a more detailed, in-depth, and holistic understanding? Drawing from the archaeological practice discussion, the author proposes the above-discussed approaches to identify the non-archaeological components of the site.

The inscriptions do not necessarily have to be the product or outputs of archaeological or so-called scientific actor-network. It can be a social, economic, or cultural network at play. At Śṛiṅgaverapura, there are many non-archaeological inscriptions from both these cultural components. Before we even realise the existence of actor-networks, we come in contact with their inscriptions. For example, at the entrance to the village of Śṛiṅgaverapura, one encounters a king-like Plastic Flex cut-out (around 10 feet tall) dressed in silk robes typical to the mythological king's depictions in popular TV shows with a Kirita (head Gear) and a bow and arrow. The initial association of the figurine is probably to Rama. But, on the contrary, it's the figurine of Guha, which was intentionally placed at the village entry to establish the landscape/site's association with the Nishadha community and its continued collective cultural identity[14]. However, in their desperation to be associated with the site, the community's actor-network 'Ramanised' (Guha's depiction is appropriated and similar to the popular media's depiction of Rama) the Guha as a warrior prince with royal clothing. This inscription is evidence of the existing actor-network with specific objectives. In the bid to communicate, its association network tried to establish an equal status quo between Rama and Guha. It might seem like an innocent mistake rather than a conscious act, but it will be clearer when the translation process of the actor-network is studied, making intentions clear. The Nishadha community also celebrates a three-day annual festival (though the scale, participation, and

12 construction of Guest house, tourism facilities, infrastructural developments at Ghats, occupation of the un-occupied areas or government lands by unknown "saints", increased funding for the annual festival of Ramayana etc.

13 Like economic benefit, political representation, pure joy of enjoying the celebrations, etc

14 "Collective cultural identity refers not to a uniformity of elements over generations but to a sense of continuity on the part of successive generations of a given cultural unit of population, to shared memories of earlier events and periods in the history of that unit, and to notions entertained by each generation about the collective destiny of that unit and its culture." (Smith, 1991).

budget are small). The Nishadha community successfully negotiated with authorities and received a piece of land as a grant to monumentalise Guha and Nishadha association and claims. If we observe all three – Guha's image, the annual festival, and Granted land, we can see that they become inscriptions of the actor-network through which it proclaims its claims.

The process is supposed to be the same for any other cultural landscape, context, components, or even actor networks. However, depending on the context and components, the application may differ. The paper briefly discusses a cultural heritage site that encompasses multiple contexts and complexities, demonstrating the effective application of the previously mentioned theoretical approaches. Bithoor is a small town in the district of Kanpur, in the Indian state of Uttar Pradesh, on the bank of the River Ganga. The site holds religious and mythological significance, as it is believed that Brahma, the creator god among the thrimurthi's of the Hindu pantheon, created the first human, 'Manu'. The site is also associated with the Ramayana, as it is believed that Sita, after Rama banished her, stayed at Rishi Valmiki's Ashrama, supposedly located here. She gave birth to twin sons, Lava and Kusha, who grew up in these surroundings. Bithoor and its ghats are home to a number of temples and ashramas. The place also plays a crucial role in India's modern history, particularly in initiating the independence movement. Both Bithoor and Kanpur played a significant role in the 1857 Indian Rebellion, leaving a lasting legacy of callousness in both British and Indian minds, as well as in subsequent nationalist writings from both countries. The Siege of British Garrisons at Kanpur and the events that followed, specifically the massacres carried out by the Indian rebels at Satichaura Ghat (at Kanpur) and the Bibighur at Bithoor under the leadership of Nan Sahib of Bithoor and the methods used by Neil [the British commander] on the other, made Kanpur feature as a chamber of horrors in the minds of Indians and Britons alike (Mukherjee, 1998, pp. 1-2).

However, the British, as the ruling class, were able to commemorate their sufferings by transforming the spaces of violence into places of veneration. The Indian rebel forces brutally murdered British and European women and children at the Bibighar and threw their bodies into a well, which the British transformed into a revered space. The British erected a decorative stone screen encasing the well and placed a weeping angel, now known as a peace angel, over it. The space and shrine were accessible to Europeans and Indian Christians. Other Indians were not allowed near these memorials. A church (All Souls' Church, also known as Kanpur Memorial Church) was built near the entrenchment where General Wheeler and his men tried unsuccessfully to hold out against the rebellious sepoys under the command of Nana Sahib. The church commemorates the British and Europeans who succumbed to death at the hands of rebels. Both monuments served as a rebuke and justification for the empire until India's independence on August 15, 1947. However, neither the British writings nor the nationalist and independence writings acknowledged the violence inflicted on the natives and their sufferings before and after the revolt. Before independence, the British did not acknowledge or monumentalise the natives' sufferings before and after the 1857 revolt. Following Independence, public vandalism led to the relocation of both the stone screen and the weeping angel from Bithoor to All Souls' Church premises in Kanpur. To honour the rebels' contributions to the 1857 revolt, Independent India built 'Nana Rao Smarak Park' on the alleged site of Nana Sahib's palace and fort, which the British forces demolished in retaliation for the brutal slaughter of British men at Sati Chaurah Ghat and the mutilation and dumping of women and children into the Bithoor Well. Currently, the ruling class of independent India has virtually erased the identities of the massacre at Bibighar and the 'Well' at Bithoor from public memory. This conceals the horrors of the past, the suffering of British women and children, and the brutal violence of the Indian revolters and their celebrated leaders.

Apart from this, Bithoor is home to a variety of communities, including the Marathi community, which settled there alongside the banished Peshwa Baji Rao II and his adopted son, Nana Sahib. Nana Sahib established the town as his headquarters and played a crucial role in the 1857 revolt. This temple town, boasting indo-islamic architectural style temples, is an intriguing and complex cultural heritage site. The site exemplifies the deliberate revival and erasure of historical events and narratives, thereby preserving a singular or intended narrative. The ANT-based approaches discussed above can be used in order to

understand this site holistically. Although the physical inscriptions at the site have been deliberately erased, many written inscriptions from formal reports, historical archival material, and even many novels from the time can help us understand the complex actions and intentions of the actors and actor-networks who have ignored and denied cultural and historical events and multiple narratives at the site for hundreds of years.

This way, inscriptions always act to serve and propagate actor-network intentions, though the degree of activeness and their physical existence may vary. In such situations, having ANT as a theoretical framework would bring all cultural components and the multiple actor-networks that were and are active under the same theoretical lens for analysis and understanding. By examining each produced inscription and the active actor-networks from the perspective of ANT, one can gain a deeper understanding of how various actor networks and their intentions from various spaces and times have shaped the site into what it is today. This helps us get a better sense of all the different cultural parts and connections that shape the site's culture-scape and its surrounding landscape.

Figure 4: Well and Memorial at Bithoor and Kanpur
a) An outer view of the Memorial at Bithoor by Frith, 1870's; **Source:** Frith, Francis
b) Relocated Memorial at the All Soul's Church, Kanpur; **Source:** Author
c) Overview of the Well and the surrounding area by Sache, c.1870s, at Bithoor; **Source:** Sache, John Edward
d) Google image of the closed Well at Nana Rao Park, Bithoor; **Source:** Google Images

5 Conclusion

ANT posits that human actors perpetually interact with nonhuman actors and asks us to abandon the idea that only humans have agency. By drawing attention to how human and nonhuman agents are operatives in the production of translations (Littau, 2016). The case examples show that through cumulative interaction and associations, every human and nonhuman actor acts in the Network towards producing claims and representations that align with the network interest.

ANT lends and validates the studies of non-archaeological components as it considers every scientific production as integrated with and resultant of the social context and, therefore, a social construct. ANT provides flexible theoretical concepts and frameworks and delivers an executable methodology and approach to include all actors and treat them symmetrically without negating their role and agency that

other approaches have neglected.

ANT can operate as a unifying theoretical framework to facilitate study and create a more unified identity, including diverse cultural components and actor-networks. It can further consider multiple network convergence points to facilitate heritage prioritisation and collective cultural identity. Understanding these networks and their objectives makes it possible to intervene in them to enhance the effectiveness of cultural landscape planning. Identifying the actor-networks, provisions effective stakeholder representation, and creation of multiple platforms with stakeholder representation, even across the networks. Eases the decision-making, planning, and execution process and enhances the effectiveness of initiatives intending to protect, conserve and rehabilitate cultural heritage and landscape.

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07

Urban myths and intangible narratives: An approach to study, understand the evolving, and living cultural heritage and its perception in Lucknow

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Sub theme: Settlement/ Places/ Urban/ Rural/ Regional- Cultural Landscape-Transformation, Concept, Ideas, and Approaches

Keywords: cultural heritage, intangible heritage, cultural narratives, urban tales, and architecture.

Abstract

Lucknow is one of the foremost centers' that testify to the cultural assimilation of a late-medieval period that continued through its tangible and intangible heritage. This cultural assimilation is a well-concocted composition of Hindu, Mughal, and Nawabi cultures, resulting in the tangible cultural heritage and a host of intangible components surviving and evolving today. The city of Lucknow boasts "Decorum, Literature & Architecture" as its unique identity for decades.

However, this cultural incorporation evolved as an amalgamation of a marriage between tangible and intangible components. Generally, we try to understand and read the cultural incorporations through the art and architecture symbols of the tangible heritage. At the same time, considering the conservational ethics and norms, these tangible monumental symbols are preserved and conserved to their original best, making them seem frozen in time. Then what provides us with an understanding of evolving and continuously changing perceptions about the cultural heritage of an urbanscape? Though the answer is intangible components surrounding these monumental structures and spaces, we do not know where they lay in the vast urbanscape. Considering the question, this paper takes Lucknow as a case example to try and explore this question. It considers urban myths and narratives as a viable option and approach to take a sneak peek into the evolving and living cultural Heritage perceptions in and about an urbanscape.
Considering this, the study attempts to follow the urban myths and narratives surrounding the cultural markers of identity to answer how they got associated and presented as cities' socio-cultural identity markers, further contributing to the regional identity. The study adopts Online Research Methods (ORMs) to study cultural myths through online platforms as primary data concerning various heritage sites and cultural practices. The collected qualitative data is documented and analyzed to understand the evolving and living cultural heritage perceptions concerning the city of Lucknow.

The cultural landscape encompasses a diverse narrative that comprises a multitude of captivating elements. Among these elements, the concepts of "tangible" and "intangible" hold significant roles alongside numerous other characters within this narrative. The presence of supporting myths and legends is widely documented throughout many cultural landscapes, particularly within the framework of the idea of "Intangible cultural heritage."

The creation of these myths can be attributed to their function in facilitating comprehension and fostering a sense of belonging. Frequently, narratives and legends are constructed to provide justifications for cultural, social, or religious customs, incorporating plausible characters and corroborating incidents to heighten the overall engagement.

Among the Intangible narratives, myths and legends are essential elements in regard to cultural heritage as they provide a sense of identity, spread knowledge, and offer moral guidance, which again supports building the whole picture of the cultural landscape. They reflect a culture's values and beliefs, and it offers moral and ethical guidance, helping individuals navigate complex ethical dilemmas. Myths and legends act as a living repository of a culture's history and values. These interconnected intangible narratives originating from the cultural landscape that has endured through time have assumed a significant role in shaping the contemporary urbanscape of cities such as Lucknow.

Lucknow is well known for its history, narratives, and literature in the Gangetic plains. The city shares the view of the Gomti riverfront with the majestic monumental architecture, which stands as testimony to the Nawabi rule that flourished in the 18th-19th century. Its history and culture altogether build the whole idea of Nawabi culture, which very much thrives and sustains its old-world charm even today. The distinguished expression "Muskuraiye Ki Aap Lucknow Mein Hain" precisely embraces the significance of the city's wealthy culture and splendid past.

However, the vast landscape of this cultural heritage of Lucknow has evolved as an amalgamation of tangible and intangible heritage. Abiding by the conservational ethics and norms, these tangible monuments are preserved to their original best. Still, the constantly evolving intangible cultural heritage has various components to collect and retain. The intangible heritage incorporates multiple oral traditions, stories, expressions, and syntheses passed from one generation to another to contribute to a sense of identity in a particular place. These intangible cultural-historical factors play a crucial role in assigning the overall importance, including values attributed to tangible components. Still, this intangible heritage is not traditionally defined and fixed. Among these, myths and legends frequently function as the fundamental basis for the collective identity of a certain culture. Myths and legends play an essential role in the preservation of cultural legacy for various reasons, including the facilitation of identity formation and a sense of belonging related to various expressions of cultural values.

These elements are perpetually evolving with the simultaneous effect of traditional and contemporary narratives. UNESCO stated that "intangible cultural heritage not solely signifies the inherited traditions from the past, but it also includes the modern-day rural and urban practices with various cultural assemblages (UNESCO: What is Intangible Cultural Heritage?, 2023)". The research study titled "Values and Heritage Conservation" from the "Getty Conservation Institute" said, "The tangible fabric of a place and the intangible aspects that give it meaning are inseparable (Rogers, 2019)." Therefore, this essay investigates the elements of urban myths, proverbs, and stories and how the various values attributed through intangible factors associated with cultural historical past assist in constructing their present significance of cultural landscape. This paper takes Lucknow as a case study to try and explore the questions below.

- What is the role of urban myths and narratives as intangible assets to perceive an urbanscape's continuously evolving cultural heritage?
- How do its reflections as a social identity factor create a tangible heritage, and how do these two converge to form a regional identity?

It considers urban myths and narratives a viable window to take a glance into the perceptions of evolving and living cultural heritage in and about an urbanscape. To structure the essay about these questions on the values of urban myths, proverbs, and narratives, the researcher has focused on cultural heritage and sought to identify the "stories being told."

These urban myths, narratives, and proverbs play a significant role in constructing the culture and evoke a specific emotion within us, along with helping one visualize the cultural and historical essence of a particular place. The term 'cultural heritage' has expanded its conceptual boundaries noticeably in the last few decades, partially owing to the instruments developed by UNESCO (UNESCO: What is Intangible

Cultural Heritage?, 2023). UNESCO states that “cultures and practices are not limited to the tangible heritage or things that can be held or the monument or buildings that can be explored, but it arrives to intangible characteristics of cultural heritage, for example, the songs, stories, oral traditions, performing arts, community practices, rituals, festive events, and other related knowledge, and skills to generate old-fashioned crafts. (UNESCO: What is Intangible Cultural Heritage?, 2023)"

Methods

The objective of this study is to define the importance of intangible assets related to the historical background of Lucknow, through the assets that are presently manifested as urban legends, proverbs, narratives, and other cultural elements within the extensive legacy of the city. Considering them as intangible sources, the study follows the urban myths and narratives surrounding these cultural identity markers. In this quest, the study attempts to identify the interrelationship between the intangible sources and cultural identity markers and the contributions of Intangible sources in cities' socio-cultural identity markers, further contributing to the regional identity. The study adopts the Online Research Methods (ORMs). Cultural myths concerning heritage sites and cultural practices are gathered from online platforms as primary data. The collected qualitative data is documented and analyzed to understand their contribution as intangible components in defining and shaping cultural heritage perceptions. The method encompasses traditional and urban stories, myths, proverbs, poetry, literature, etc.

Literature review

UNESCO introduced a new directive in 1982, stating the importance of intangible heritage to emphasize its significance and efforts to preserve cultural heritage. However, this did not precisely interpret the categorization process and evaluation of various knowledge and other intangible cultural elements that have prevailed since the 1970s. The term “Intangible Heritage” was defined officially in the convention of 2003 with an aim to safeguard the Intangible cultural heritage. Furthermore, The list was established in 2008 when the 2003 Convention for the Safeguarding of the Intangible Cultural Heritage took effect. After “UNESCO's 2003 Convention for Safeguarding of Intangible Cultural Heritage (ICH)”, ICH has received more and more recognition (UNESCO, 2003). Article 2.2 of this Convention defines the following five forms within the category of Intangible Cultural Heritage;

- Verbal, oral culture, and traditions
- Practices of Performing rituals and arts
- Social-cultural festivals and rituals
- Cultural knowledge and practices
- Traditional craft, artistry

From this time onwards, preservation of the ICH has become a trend, and several different intangible heritage elements have been studied to preserve them as an element of cultural identity. The role of ICH has been enhanced after recognizing that countless local cultural practices, traditions, and customs in numerous local communities worldwide were either lost or disappeared, especially in the era of globalization (Bakar, Osman, Bachok, & Ibrahim, 2014,). A specific place's tangible and intangible characteristics create inseparable meanings and correlation (Rogers, 2019). The 'stories' related to cultural heritage are entangled with a sequence of mapping the cultural activities of various communities, ethnographic tools, and articulation of historical researchers, which mirrors the heritage itself (Rogers, 2019). Intangible cultural heritage concocts all abstract manifestations of culture and portrays an image of the living cultural heritage of human tradition as well as the most critical aspects of cultural assortment (Lenzerini*, 2011). The tradition of “Storytelling” is followed in and around every culture around the globe. These stories often reflect historical facts, societal behavior, and hefty mythical consequences. While such stories are familiar enough for the people of a particular place, these stories are a unique blend of historical events and social implications.

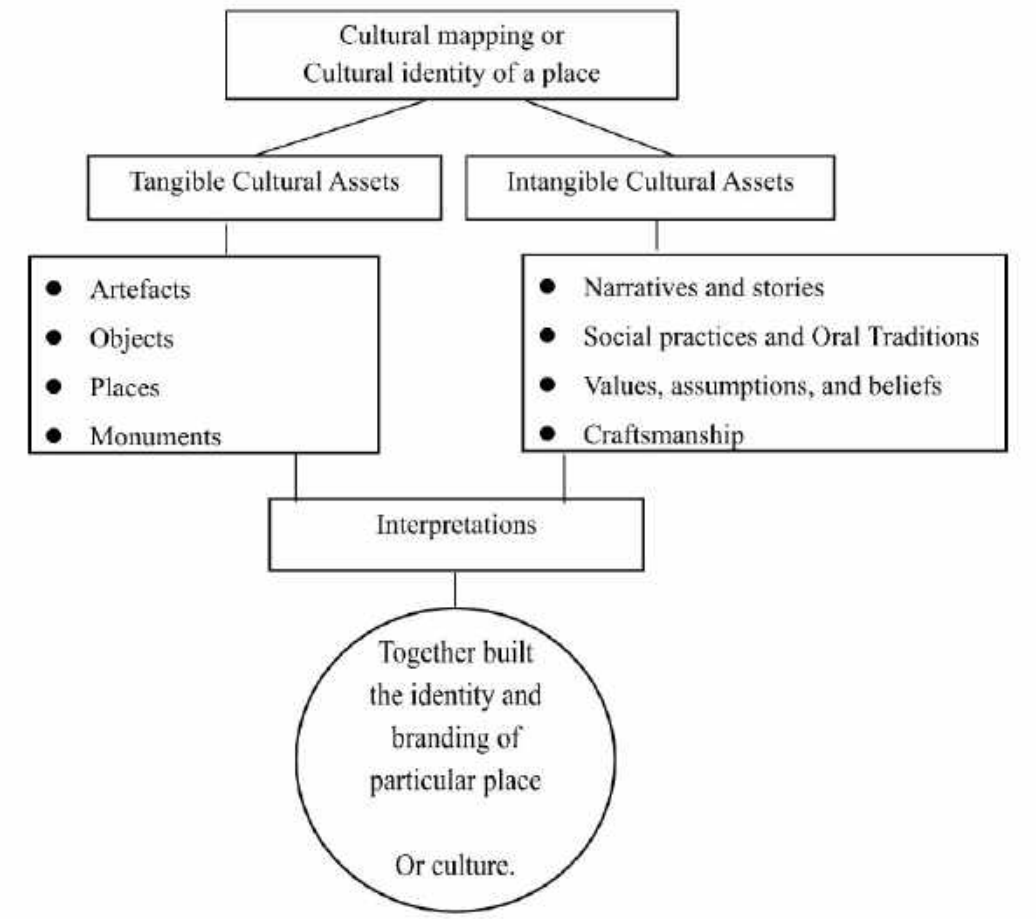

Table 1: Cultural mapping based on various cultural factors; **Source:** Author

Urban Myths and Intangible Narratives as an essential factor

Since 2003 UNESCO's convention on Safeguarding the ICH, storytelling has gained much more observation in diverse fields (Rehab El Gamil, 2017). Urban myths, also known as contemporary folklore, hold a distinct and significant role within the cultural fabric of urban settings. These "Mythical Tales" often correspond to a particular period, time, place, or monument in their detailing. Therefore these stories and urban legends are not always fictional; however, they are often distorted, exaggerated, or sensationalized through the years of storytelling. As storytelling is perceived as an effective vehicle to share knowledge, ideas, or experience, one can determine many cultural perspectives. These tales are significant in many ways, and have a particular role in shaping a picture of a place in general and tourism in particular. The engaging story can draw the audience's attention through immersion, and they can become a part of the narrative through participation (Ferraro, 2016).

However, the vast majority refer to short-lived historical phenomena with deep roots in time. They touch upon the familiar narratives and contribute to a new consciousness, 'Storytelling' is one of them. The act of myths and legends exists primarily in all cultures irrespective of time and location. On one level, these legends are simple stories, but they are long-lived in a society. It profoundly influences every individual who hears them and, thus, by extension, the social groups to which individuals belong, and the process continues. Experts in the field use various digital tools to document voices and videos; for example, digital devices, tablets, digital cameras, and smartphones serve as practical tools for recording (Perera & Chandra).

In light of this, the study focuses to analyse twelve instances wherein urban narratives, myths, and other elements are interconnected with the cultural history of Lucknow. Moreover, being part of the cultural scape assists and contributes to forming the whole cultural heritage scenario for the city.

Provenance of Lucknow

Historically, The Subah of Oudh was a distinct part of Rohilkhand, the Rohilla country, and the city & and provenance of Agra remained under the Mughal rule for a long time. In 1722, when Saadat Khan was appointed as a Subedar of the state. He laid the foundation of the Awadh dynasty of the Shia Nawabs of Iranian lineage- first at Faizabad and later at Lucknow. The focused chapter had started after the fourth Nawab of Awadh, Nawab Asaf-Ud-Daula, shifted the court from the city of Faizabad to the city of Lucknow in 1775. Along with the royal court to Lucknow, The city grew primarily in and around the then-existed town. The Lucknawi culture has emerged as a luring union of local material and ideas from the Shia heartlands of Iran and Iraq. In Nawab Asaf-Ud-Daula's regime, the identical architecture of Lucknow, the gateway, Rumi Darwaza, and Bara Imambara were built.

Bada Imambara

Asafi Imambara is one of the most magnificent buildings situated in the heart of Lucknow city. Imambara is one of the most famous architectures of its kind. Nawab Asaf-ud-Daula constructed it in 1784 at the cost of a crore rupees. It is renowned for its arched roof, built without a single beam or pillar for support. The Bada Imambara complex includes **Bhool-Bhulaiya** (the labyrinth), **Shahi Bouli**, and **Asafi Mosque**. The labyrinth of Bhool-Bhulaiya is an essential feature that supports the pillarless structure of Imambara.

Figure 1: Great Imambara of Lucknow, India, 19th Century; **Source:** Getty Images

Figure 2: Bara Imambara known as Asafi Imambara as well, built during the rule of Nawab Asaf-ud-Daula, in 1784 at Lucknow; **Source:** Wikipedia

Legends:	• A big famine struck the Awadh region. The Nawab generated an innovative plan for employment for all the public at that time. • There is a prevailing story that, during the famine, Nawab came up with an interesting idea: he had distributed work to every class, including the poor, working, and elite. The Nawab planned that the poor and working-class people would build the structure in the morning (Vinayak, Curious Tales of Bara Imambara in Lucknow, 2018). The people from the elite class would destroy the same in the evening. It is considered a fascinating way of guaranteeing work for everyone during a famine. Due to this consideration of Nawab, it took 11 years to complete the building (Vinayak, Curious Tales of Bara Imambara in Lucknow, 2018). • The Great Imambara is a remembrance to provide relief measures to the populace affected by the famine. All the state's people were affected by famine regardless of their gender, race, social and economic status. Due to their social position, the elites were hesitant to engage in such menial labor work with other people. The work and payments were made during the night without inquiry concerning the recipient's identity to maintain confidentiality. (places of interest , n.d.) • Everything went peacefully under the regime of the Nawab Asaf-ud-Dawlah. Thus Nawab's generosity became part of local folklore and a very famous proverb. Which goes – "Jisko na de Maula, usko de Asaf-ud-Dawlah". Meaning – "When Almighty won't give you, Asaf-ud-Dawlah will give". (places of interest , n.d.)

Bhul Bhulaiya

Bhool-Bhulaiya (the corridor of mazes) is a labyrinthine system or network of passages with 489 identical doorways positioned right above the main hall.

Figure 3: Bhool Bhulaiya in Lucknow's Bada Imambara; **Source:** lucknowtourism.co.in

Legends:	• A famous tale is that numerous secret underground passageways head paths to various cities such as Delhi, Allahabad, and Faizabad. There is also a way that heads towards the river Gomti as well. Though all of these passageways are closed for a very long time, and no one knows whether it exists in reality or not (Vinayak, Curious Tales of Bara Imambara in Lucknow, 2018). • The tour guide at these places will mainly explain the enigmatic and blended narratives that include architectural facts as well; together, it facilitates the centuries-old narrow passageways to set the weight of the underlying hall's roof. (MONTEIRO , 2015)

Shahi Baoli

The Shahi Bouli is situated to the left of Nawab Asaf-ud-Daula's Imambara in Lucknow.

Figure 4: Shahi Baoli, Machchhi Bhavan, Hussainabad Lucknow ; **Source:** lucknowportal.com

Figure 5: Secret Watchway of the Sentries inside Shahi Baoli Lucknow; **Source:** lucknowportal.com

Legends:	• This royal well served as a traditional summer resort for Lucknow's royal guests. One of the distinguished guests, Warren Hastings, also stayed and was entertained at this palace. (Asafi Imambara) • It is a prevailing story that while abandoning Lucknow, the Nawab Wajid Ali Shah arranged to throw the treasury's keys into this baoli to preserve them from falling into the hands of the Britishers. • In regard to this architectural structure, it is notable that the implementation of structural elements in this architecture has resulted an additional story, that one can hear from the tour guide “If one stands on the eastern side of the well, One can see an image of a person in the water who appears to be approaching the well.”

Rumi Darwaja

The Rumi Darwaza has a unique design, built with soft local material. Architect “Kifayatulla” designed the architectural design of the world-famous Imambara and Rumi Darwaza.

Figure 6: Rumi Darwaza, Lucknow, India, 1860s-70s. (Photo by Heritage Art/Heritage Images via Getty Images); **Source:** Gettyimages

Legends:	• The word "Rumi" was derived from the modern-day and as the architect of these particular buildings were from Rome; it is known as Rumi Darwaza. (Vinayak, Curious Tales of Bara Imambara in Lucknow, 2018)

Tales about the "Fish symbol" of Lucknow

"Fish" is considered a highly fortunate and widely visible symbol with its roots connected to the Mughal military decoration 'Mahi Maratib' symbol, which originated in Persia.

Figure 7: Depiction of two fishes on the Eastern Gate gate ; **Source:** travelandleisureasia.com

Legends:	• Sheikh Abdur Rahim was coming to Lucknow from Delhi, while crossing the river Ganga on a boat, two fish jumped into his lap from the river. Later, when he commissioned the construction of Macchi Bhavan, the two fishes were used as an auspicious symbol of Lucknow; later on, this building came to be known as a fish building or fish symbols building (places of interest , n.d.). • Another story associated with the Fish symbol's representation is associated with the narrative of two rivers: the Yamuna and Ganges. In Hindu iconography throughout India, Fish are associated with rivers and water, and it is often depicted at certain monuments.

Later on, when Wajid Ali Shah improvised his Army with a Fish Symbol, and it remains an auspicious sign till today in the region.

Charbagh Railway Station building

Charbagh of Lucknow is not just a railway station; apparently, it has its stake in sharing in all the stories that signify Lucknow's ancient heritage. Before building the railway station, this place was previously a "four folded garden," called Charbagh. J. H. Horniman designed the present building, and the construction started in March 1914. (Charbagh, 2020)

Figure 8: Charbagh Railway Station; **Source:** knocksense.com

Figure 9: Aerial view of Charbagh Railway Station, view from Google Earth; **Source:** Google Earth

Legends:	• 'Shatranj' or 'chess' was another widely famous narrative associated with the city of Lucknow and carries the stories about how it was a source of royal amusement activity of the Nawabs. The Nawabs were known as 'Peace lovers' who were interested in winning the battles on the Chessboard while staying in the privacy of their drawing room. Major General Claude Martin of La Martiniere was an excellent chess player of Awadh. Chess was his and his close friend Nawab Asif-Ud- Daula's favorite pastime (tornos india, n.d.). • The building of Charbagh has been designed in a way that the aerial view of the structure of the Charbagh Railway Station building presents a unique view of the chessboard. The domes and pillars of the building appear to be pieces on the board. • Later in October 1924, famous Indian writer Premchand wrote "Shatranj ke Khiladi," which supposedly draws on the Lucknow Nawab's love for chess. The story depicts two nobles as main characters, Mirza Sajjad Ali and Mir Roshan Ali, who lived in the empire of Awadh throughout their life. The story is based around the timeline of the 1857 event when the British invaded the region of Awadh. Both of them were inconsiderate towards their responsibilities, and they spent all day playing the battles on the chessboard. Their passion for the game is so massive that even when the head of state of Awadh, Nawab Wajid Ali Shah, is caught by the British soldiers, they keep on playing their game on the chessboard. A shift in the game ignites an altercation between them, and at last, they kill each other with their swords.

Gol Darwaza

After Nawab Asaf-ud-Daula moved the state's capital to Lucknow, the Gol Darwaza became the city's center, the most famous for shopping and other various cultural events.

Figure 10: Gol Darwaza, Chowk-Lucknow; **Source:** tornosindia.com

Figure 11: Gol Darwaza, Chowk-Lucknow at present; **Source:** hindustantimes.com

Legends:	• Nawab Asaf-ud-Daula, himself, often arrived at the place for his kite-flying from this gate's rooftop.

A tale about the Lakh Bangle in the market of Chowk

Legends:	• Once Nawab Asaf-ud-Daula was passing by a shop, where a lady was putting "lakh bangles" up for sale. Lakh is a word for inexpensive resin beads (Lakh); however, it is one lakh rupees in the regional language. When Nawab asked the woman for the price of a bangle set, which was worth less than half an anna, however the woman understood it as Nawab wanted to know about the raw material the bangles are made of. Therefore, she replied that Lakh and Nawab gave her a lakh of rupees instantly. (places of interest, n.d.)

A tale about the Ali Qudar

Miyan Ali Qadar was royal and inherited a massive property from his ancestors, and he had a luxurious lifestyle. 'Machhli Wali Baradari' used to be his palace. During the Revolt of 1857, the Britishers demolished various buildings, including residences of the wealthy and the royals of the city. In the same sequence, his inherited residence was destroyed to the ground.

Figure 12: Chowk Police Station (formerly this was the house of Phulki Qadar); **Source:** tornosindia.com

Legends:	• Ali Qadar had a psychological disorder where he believed that he would melt or at least harm himself if anyone touched him, so he used to be amiable and careful to avoid touching and being touched by anyone or something on the way. Due to his peculiarity, he was mentioned by a given name, 'Phulki Qadar', whereas a word, 'Phulki', refers to fragile or delicate. • Former Ali Qadar's lavish Chowk house was taken over and turned into a police station. Ali Qadar lost the majority of his estate, and his misery was expressed in an Urdu rhyme: **"Chal diya Phulki Qadar, unka zamaana ho gaya;** **Khud gai baradari, dyodhi pe thana ho gaya** (A living Museum chowk in Lucknow, n.d.)." **Translation:** The above lines explain that Phulki Qadar's time is over. His family and community are gone, and his house is turned into a police station. Later, he spent the rest of his life as a frivolous man without any luxury. (A living Museum chowk in Lucknow, n.d.)

The tales about Nawab Wajid Ali Shah's passion for Art and Music

Figure 13: Nawab Wajid Ali Shah (1822-1887); **Source:** Gettyimages

Legends:	• Nawab Wajid Ali Shah, the last Nawab of Awadh, is famous for his secular attitude toward the other religions. In this quest, his fascination with Hindu mythology and tradition reached an extent that Lord Krishna's life influenced him. • Kathak as a dance form gained popularity during the patronage of Wajid Ali Shah. Nawab found himself in a classic picture of romance as portrayed by Lord Krishna. Later on, he also composed Kathak performances in which he himself danced. (places of interest, n.d.)

About Lucknow Chikankari

Chikankari Embroidery tradition is renowned in the world with its everlasting charm. The word 'chikan' is derived from the Persian word 'Chikin' or 'Chikeen,' which means an intricately embroidered fabric.

Figure 14: CHIKANKARI: Mixture of all traditional stitches like Phanda, jaali, murri and meharki; **Source:** www.dsource.in

Legends:	• The most widespread story about Chikankari dates back to the Mughal court of Jahangir, where queen Nur Jahan was very fond of it. Being a talented embroiderer, she impressed the king with the ethereal white embroidery, soon gaining recognition and royal patronage. (About Lucknow Chikankari, n.d.) • Other legends talk about the 3rd Century BC, where Megasthenes, a Greek traveler, mentions flower embroidered muslins cloths by the Indians. (About Lucknow Chikankari, n.d.)

About the Food culture of Lucknow

The cuisine culture of Lucknow is renowned globally for its distinctive range of specialties. The shops located in the vicinity of Akbari Gate in Chowk continue to draw the attention of individuals due to their longstanding popularity for offering distinct culinary flavors.

Legends:	**Tunde Kebab** • There is a set phrase about Tunday Kebab, that **"When you want to eat something good and do not take the name of Tunde Kebab, then there will be some dishonesty in it."** (Real Story Of Lucknow's Famous Tunday Kababi, n.d.) • The story says, Haji Murad Ali, the grandfather of his maternal grandfather, was the chef of the Nawabs, who was extremely fond of food and drink. When he became old, it became difficult to eat meat. The Nawab Sahab demanded to make something easily edible. After that, the cook grinded the meat finely and mixed spices and papaya, and invented a kebab that easily dissolved in the mouth. The other old and young Nawabs also liked the taste of the kebab of Gillavat. That is how Tunday Kebab got the status of the royal kebab of Awadh. (Real Story Of Lucknow's Famous Tunday Kababi, n.d.)

Other than the stories, some films show the distinctive culture of Lucknow. Various classic Hindi films, such as Shatranj Ke Khiladi, Umrao Jaan, and Pakeezah, show Urdu poetry's influence and led to Legends' popularity. The Nazakat and Tehzeeb of the city played an essential role in the writings of the Shayars from Lucknow. **The famous dialect of Lucknow** and the uniqueness of Lakhnawi Tehzeeb can be observed in a common language – Urdu, which is known for being very soft and polite worldwide.

Discussion

Inside the socio-cultural landscape, the aforementioned storylines together symbolize a distinct identity, opulent way of life, refined and exclusive artistic sensibilities, and cultural admiration by the Nawab and, consequently, inside the city of Lucknow. Upon doing an analysis of the urban tales pertaining to Lucknow, the following key observations can be drawn:

The bygone regime: The Nawabs of the city are still celebrated for their cultural extravagance. The Nawabs of Lucknow were depicted as patrons of art and culture. They patronized cultural pursuits like music and dance and the construction of historical monuments that still stand today.

Lavish and elite lifestyle: the elegant and rich food, cultural and sophisticated Chikankari, and embroidery art create a grandiosity that Lucknow residents innately associate and resonate with.

Tehzeeb (mannerisms) and Nafasat (sophistication): The two authentic exponents of the world-renowned Lakhnawi culture. Again, the prized possessions of the zubaan (language) of Awadhi are a symbol of Lucknow's distinctive identity.

Culture and cuisine: Fine taste is the standard of living, and food has a unique legacy of Nawabi style.

The celebrated Tehzeeb of the city is connected to the Nawabs and their enthusiastic interest in various activities. Their encouragement towards attaining perfection in almost individual practices made this legacy more effective. Legends from the various corners of the city involve numerous events from history to culture to traditions. Altogether, these legends create a canvas where the Lucknawi lifestyle is depicted as indulging in the pleasures of life that are genuinely worth seeing and experiencing. This way, all legends associated with the tangible to intangible heritage surround and surmount an elite, luxurious picture of Lucknow, which is being sold as an identity of the city even today, including in tourism.

As discussed in one blog, “If you are the kind of person who loves to find some meaning in ruins and remains, then Lucknow is the place for you! (The Famous Lakhnawi Tehzeeb and Nafasat, 2014).” These narratives are primarily associated with tangible heritage and objects. The above narrations portray actual humans and events that generate a sense of belief among the audience, though they are not often directly verifiable. In this way, such urban narratives support building a brand for Lucknow as a tourist destination and as a city of elites, art, luxury, and leisure. In the contemporary scenario, these narrations and other intangible components coherently play a significant role as identity-defining factors. They create a portrait of Lucknow, not just sold on an international, national platform but also impacts the cultural decorum and activities of the city. Marketing also suggests the necessity of deliberate use of such stories to get more attention from people worldwide. These stories work as a process of emotional curiosity to imagine the past associated with a particular tangible or intangible heritage.

Conclusion

Analyzing these stories provides a clear indication that the current state of Lakhnawi's essence remains intact while evolving as a smart city in rapid urbanization. The study explains that tales and myths have portrayed a significant part in keeping the city's essence alive in the world of urbanization. The literature reviews identified the concept of storytelling as a significant concept of Intangible Cultural Heritage. This study proves that urban myths and legends as intangible cultural assets can be applied as a potential

identifying tool for understanding and safeguarding the traditional cultural context and evolving perceptions. The city and its cultural identity become the backdrop and an extraordinary context facilitating interaction and understanding between listeners and storytellers. These stories are being told to create a picture for people to understand what the place is about. The continuous enforcement and reinforcement of luxury, elitist life, art, and food consistently and continuously process a psychological sense of truth and experience, creating an unswerving picture of the city's spirit and its culture among its visitors and residents who not just live with it but also search for it in the city.

Once the person reads or listens to such stories, their relationship with the place will be deepened and shape the way they visualize the place's culture. Also, the outcomes show that legends and associated stories act as visual and verbal symbols for making a place and its identity. The study concludes that the urban myths and stories drench cultural perception and serve as pillars of a place's built identity/ symbol.

The current study demonstrates the potential for stories and storytelling to serve as a significant element of intangible heritage, contributing to the formation and contextualization of cultural identity in diverse urban settings. This analysis was conducted with online data as a result of the contextual constraints imposed by the pandemic. While utilizing this methodology can be considered a dependable method for investigating the aforementioned subject matter, the study could be further enhanced and expanded by the use of ethnographic methodologies in the field. The myths and legends about the cultural Heritage sites can significantly benefit the site and the surrounding community. However, simultaneously it is also essential to limit the interpretation of these legends, as these legends are just stories weaved together over a significant period of time, it is not necessary to be based on fact. If this can be achieved, myth and legend have an exponential influence on the understanding and formulation of the cultural identities of any site or city.

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08

Cultural Heritage Resources in a Rapidly Industrializing Region: Opportunities and Challenges

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Sub theme: Settlement/ Places/ Urban/ Rural/ Regional- Cultural Landscape-Transformation, Concept, Ideas, and Approaches

Keywords: conflict, cultural heritage, industrialization, regional development, stakeholders, urban governance.

Abstract

India's history and culture are dynamic, spanning back to the beginning of the Indus Valley civilization which was an urban civilization. This has given the richest historic layers, varied cultures, and unique heritage, which played an important role in shaping the built environment of various settlements in India. After industrialization and rapid urbanization in India, such towns and cities face the challenge of balancing the identity of historic landscapes and rapid development pressure.

In the context of the above, this paper aims to fill the gap by identifying the opportunities and challenges of managing the conservation of cultural heritage resources and the governance of development processes in a rapidly industrializing region.

The study consists of heritage resource sites located in Vadodara's peri-urban region and Halol, a city founded in the 8th century, now an industrial town that is located 42 km from Vadodara. The heritage sites mainly include Champaner Pavagadh Archaeological Park (CPAP) at Halol, Kalika Mata Temple at Pavagadh, and Sevasi Stepwell heritage structures located near Vadodara. The paper concludes that the management of the conservation of heritage resources and inclusive development of a rapidly growing industrial region requires a multidisciplinary team. The Planners can play a vital role in coordinating and managing the team.

A more proactive integration into current planning processes and contemporary use of cultural resources can protect and improve the historic landscape scenario.

Introduction

Heritage and cultural resources are recognized as social, cultural, and financial means for people. It is considered an essential component of community cohesion, identity and a critical resource for improving the quality of life of people while fostering economic development. Cultural resources developed over centuries are defined by a historic layering of values produced by consecutive and current cultures. It offers a crucial testament to humankind's endeavors and aspirations through space and time.

However, in both developed and developing economies, industrialization, and urbanization pose serious threats to heritage and cultural resources. SDG 11 places a strong emphasis on the sustainable conservation of heritage and cultural resources. Therefore, heritage management becomes essential to balance the protection of cultural heritage with urban growth. Achieving an equilibrium between development and preservation through effective heritage management will guarantee that future generations will be able to

appreciate and benefit from these priceless resources (UNESCO, 2011; 2020).

Urban heritage includes precincts, living historic cities, and/or collections of structures that are deeply entwined with the urban fabric of living towns and cities. People-centric heritage management strategies are necessary since settlements towns and cities are made up of a concentration of people who live and work there.

According to El Menchawy, Aly, and Hakim (2011), historic buildings, urban areas, and various stakeholders, who use them, live, and work there, all contribute to the development of these locations. Hence the objective of heritage conservation would be best achieved when all stakeholders' perspectives are clearly understood and their roles are properly recognized.

Stakeholders' Perspective on Heritage and Cultural Resource Management Processes:

In the context of the above, this study consists of heritage resource sites located in Vadodara and Halol, an industrial city and town in Gujarat, India. The Sevasi Stepwell heritage structure is located in Vadodara's peri-urban region. Halol, a city founded in the 8th century, which mainly includes Champaner- Pavagadh Archaeological Park (CPAP), and Kalika Mata Temple at Pavagadh.

Different groups of stakeholders have very different perspectives, connections, and experiences concerning the conservation and management of Cultural Heritage Resources. The stakeholders include local residents, visitors, corporate houses, industries, media and service providers.

"Now, the mute stones of Champaner-Pavagadh are set to put Gujarat on the world heritage map with UNESCO accepting the historical site as India's nomination along with 29 from other countries, for World Heritage Site status" (excerpts from Times of India article).

"Off the beaten path, Champaner-Pavagadh Archaeological Park, a UNESCO World Heritage Site, is said to be India's only complete and unchanged pre-Mughal Islamic city" (excerpts from the article by Uttara Gangopadhyay in Outlook India)

The Reliance group is assisting in the development and promotion of Gujarat's first World Heritage Site Champaner-Pavagadh as a tourist attraction with financial and infrastructural support as part of its community development activities. Other organisations, such as the California-based Global Heritage Fund (GHF), the New York World Monument Fund, and the Archaeological Survey of India, are also contributing to the protection and conservation project, which will cost roughly Rs. 100 crores (ASI).

Heritage Trust, a non-profit organization located in Vadodara, has taken the lead on this project and will collaborate with the Reliance group to promote it. According to a Business Standard article, Reliance's Spokeswoman said that the company will continue to investigate the potential for additional development of this world heritage property in the future.

This Sevasi Vaav or Stepwell was a lifeline for residents of Sevasi and adjacent villages over five centuries ago. The Sevasi Vaav, which was created in honor of spiritual leader Vidhyadhar, was an architectural marvel that was well-liked by the villagers and local people. According to the article published in the Times of India, the 542-year-old stepwell, which is positioned right at the entrance of Sevasi hamlet, is in ruins and has been entirely abandoned.

The Times of India article reports that on Wednesday, October 13, 2021, and Thursday, October 14, 2021, a large audience gathered in Pavagadh to worship Goddess Kali at the Mahankali temple, much like in pre-Covid days.

Villagers and farmers believe that the approach to heritage protection hurts their basic life needs. Many urban areas fail to manage their heritage resources located in and around a city. The ASI and various state archaeological departments protect only monument structures.

Development and conservation are usually considered separate fields. The reports show that efforts to protect our heritage resources have been extremely feeble and inadequate. However, corporate houses are showing interest in the development and conservation of cultural resources.

The Need for the Study

The interest in urban sustainability has grown in recent decades as a result of rapid urbanization, rising pollution, and intensifying climate change. The emergence of these phenomena poses a significant threat to historic cities and cultural assets. As a result, the goal of urban heritage conservation must adhere to sustainable principles. Cultural heritage resources and monuments are important in the creation of a community's identity as a place of remembrance, tradition, and social values, as well as a catalyst for economic development and creative activities.

In light of the above background, the purpose of this paper is to comprehend the difficulties associated with the planning and governance of development processes, along with the conservation of heritage cultural resources.

The study explores the role of a planner in the field of heritage conservation, here for a particular case of the cultural resource, an archaeological park (CPAP), an ancient temple premise (Kalika Temple, Pavagadh), and a Stepwell (Sevasi Stepwell, Vadodara). In the case of Champaner Pavagadh Archaeological Park (developed near Vadodara, Gujarat); new settlements and spatial patterns began to emerge in the core zone of the site with tourism growth.

The fundamental study undergoes identifying gaps among various stakeholders and analyzes their roles and responsibilities for the development of the region together with a critical analysis of legislation in place. Planning can facilitate navigating the often-complicated requirements of cultural resources law and regulatory agencies at local, state, and central levels to aid compliance and preservation of resources that are historically or culturally significant. This paper is based on a study conducted in the surrounding region of Vadodara city to understand the challenges of planning and governance of development processes and the conservation of heritage cultural resources.

Literature Review and Theoretical Framework

Cultural Heritage Resource and Urban Management

Many great cities of ancient times around the world were centers for great civilizations. There are many such places of historic importance.

India has a rich cultural heritage resource. However, a few cities have gone forward and continued to grow and change after the Industrial Revolution, leading to a mix of thousand-year-old palaces, temples, mosques, step-wells and streets and markets put up by the industrial sheds, modern high rises, government offices, and shopping area cluttering in between. Many cities in Gujarat are a few examples that one could relate to. India has 29 sites listed as UNESCO World Heritage Sites. The state of Gujarat houses one of the 29 UNESCO World Heritage sites, named Champaner Pavagadh Archaeological Park (CPAP).

Heritage is an important aspect of a city’s identity and should be appreciated while preparing a development plan. Development and conservation are usually considered as opposing areas. Heritage conservation is fundamental for sustainable development considering the urban context. Many urban areas are losing their identity due to the failure to manage their heritage.

Heritage is of great importance to the development of any country or region. They are not only the custodians of the past but also a major catalyst in inducing socio-economic growth in the country (Gantait, Mohanty, and Swamy, 2018). Guzman cites 27 similar markers of urban growth as variables affecting the conservation of 69 world heritage sites (Guzman, Pereira Roders, & Colenbrander, 2018). The researchers identified that the main issue of heritage management is due to a lack of communication and management among officials at different levels. The gap lies in understanding the dynamics of socio-economic development at the local level, urban development in the region, and heritage management practices.

Heritage Management in India

Heritage management is considered as conservation and preservation of ancient or historic buildings or monuments and historic precincts. Generally, a team of historians, archaeologists, craftsmen, architects, and artists participate in the process of heritage management. The conservation processes and attitudes are different in India and Western countries. The concept of conservation is quite new to India as compared to European countries.

Conservation-based sustainable development is exemplified by the Urban Renewal Initiative and the urban architecture of Mumbai's Fort District and the Nizamuddin Urban Renewal Initiative, which is an example of a non-profit People-Public-Private Partnership model for urban renewal. The heritage management plan, as well as plans for traffic and transit, pedestrian paths, and open spaces, are all part of the Mumbai Fort project. A holistic approach to development is emphasized in these activities.

Issues of Heritage Management: Conflicts and Resolutions

An individual conflict exists in all associations and arises whenever discordant interests transpire between stakeholders. Conflict can have a positive or negative impact and can create both opportunities and misunderstandings between stakeholders or institutions (Gordon, 1966). There are two basic components of every conflict. These are ‘conflict parties’ and ‘conflict issues’ (Rapoport, 1974). Since historical times, the land is considered the basic cause of conflicts. In the case of cultural resource management most of the time, the changes led to multiple land-related conflicts arising on the issues of land ownership, changes in land use, and land acquisition and infrastructure development (Kumar & Gaur, 1998) (Modi, 2008).

The escalation of heritage conflicts concerning human rights and social equity in India over the last three decades has piqued the interest of many scholars in community studies. Heritage conservation and development are widely regarded as opposed practices. Some research scholars proposed establishing a dialogue platform between cultural heritage conservation and city, town, or neighborhood development to resolve disagreements and conflicts.

The majority of the evidence suggests that the pleas of people living in nearby areas are focused on benefit transfer. Residents of a community are frequently characterized as pure profiteers. They want a rich compensation plan when the government is safeguarding and conserving it.

The study implies that members of small communities engage with the government to get a competitive advantage, but it mostly ignores the benefits that residents are fighting for.

Heritage conservation has been recognized as critical to sustainable development over the last two decades. Many legislations are formed to protect and conserve the heritage, however haphazard growth is observed in the vicinity of monuments. Most of the heritage legislation is based on monument protection and restricts the development in the surrounding areas. Many national and international organizations like UNESCO, ASI, ICOMOS, INTACH have been working to guard and conserve heritage buildings, still, many monuments and cultural heritage resources have been destroyed.

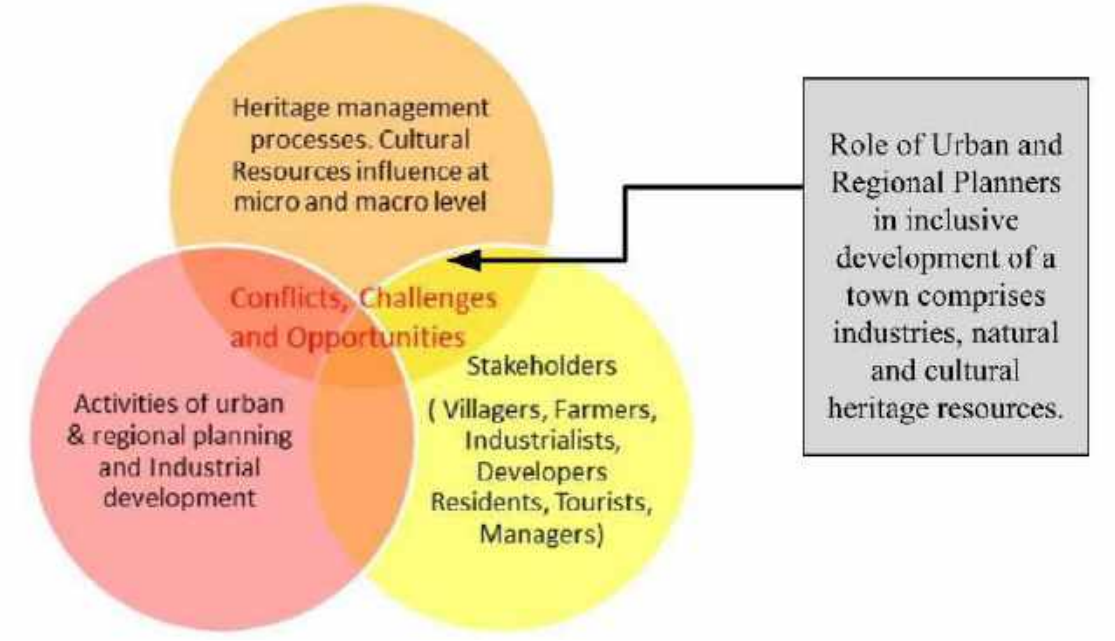

Figure 1: Conceptual Framework of the Study; **Source:** Author

Methods and Materials

At present in India, there are various heritage resource conservation laws and policies in place. There are several national and international agencies functioning for the management of heritage and cultural resources. However, the development of the region with heritage cultural resources is chaotic which eventually damages heritage buildings, campuses, and associated values of the monuments.

The inquisitiveness of the subject led to finding the answer to the question, "What are the major gaps in the role of each stakeholder and implementation for inclusive development of a region with cultural heritage resources?" and "How can the role of a planner facilitate the improvement in the development process?

Methods

This research uses both qualitative and quantitative data collection and analysis methodologies, which have been widely employed in the study of heritage preservation and local community issues, but the majority of the data is qualitative.

The major data collection methods are a questionnaire survey and key person interviews. Secondary options include field observations and official statistics. Through numerous websites, books, and interviews, secondary data is gathered on various organizations, their given duties and responsibilities, and their mission which constitutes secondary data collection.

It also involves a review of the CPAP's integrated management plan as well as research of key historic conservation regulations and policies in the country. UNESCO documents and reports on CPAP were examined.

The first author assisted with the research as a dissertation advisor and afterward performed additional surveys to further enhance and develop the research topic.

The first survey took 15 days and included semi-structured interviews with officials from the Vadodara Urban Development Authority (VUDA), Vadodara Municipal Corporation (VMC), Halol Nagarpalika, Pavagadh Temple Trust, Archaeological Survey of India (ASI), Heritage Trust Baroda, and Sevasi Gram Panchayat, as well as the collection of relevant data files and statistical data.

Laws and regulations, protective motivation, administrative measures, and community development issues in the management of the CPAP, Kalika Temple, and Sevasi Stepwell were discussed in interviews with government departments at all levels.

The second survey, which lasted six days, included semi-structured interviews with residents, managers, service providers, shopkeepers, farmers and villagers, and visitors.

Managers, service providers, industry managers, and residents were interviewed at various times and locations, with an average time of 10 minutes per person, to maximize the authenticity and comfort of the stakeholders during the interviews.

The basic personal information of stakeholders, such as age, income, and gender, was collected in the first section of the questionnaire for the second survey. The respondents were then asked to discuss the impact of cultural heritage resource sites on residents' rights and interests, both positive and negative impacts, particularly the impact of CPAP on residents' (farmers'/villagers') ownership and development rights, their interest in heritage management, and conflicts caused by the presence of heritage sites.

Study Area

Description of the Study Area

1. The CPAP at Halol: Industrial Town near Pavagadh Hill- A Unique Combination

The three different sites included in this study are located in the vicinity of Vadodara, a city known as the cultural capital of Gujarat. The sites, CPAP and Kalika Temple are located in Champaner, a village in Panchamahal District of Gujarat state. Champaner is approximately 49 Km from Vadodara city.

The nearest town is Halol, an industrial town located in the southern part of Panchmahal district in the state of Gujarat. The town is equally important from an administrative as well as tourism point of view. The economy of Halol mainly depends on industries. The town not only houses a GIDC estate, but the region between Halol and Kalol falls under the Special Economic Zone (SEZ). Pavagadh Hill, located at a road distance of 13.5 km from Halol, is a prominent geographical feature of this area. It is the source of river Vishwamitri, and Surya Stream.

The entire stretch from Pavagadh to Champaner is dotted with archaeological, historic, and living cultural heritage monuments, as well as a hill fortification from the early Hindu capital and the ruins of Gujarat's 16th-century capital. From the 8th to the 14th centuries, there were palaces, entrance gates and arches, mosques, tombs and temples, residential complexes, agricultural constructions, and water systems such as step-wells and tanks.

Figure 2: Study area location map (Vadodara City, Sevasi Stepwell location, Halol Town and Industrial area, CPAP, and Pavagadh); **Source:** Base image procured from Google Earth, Photos taken, and location drawn by author

Jama Mosque of Champaner | Kalika Temple Pavagarh | Sevasi Stepwell

Figure 3: Photographs of Champaner (CPAP) Kalika Temple and Sevasi Stepwell; **Source:** Photos taken and compiled by the author

2. Stepwell at Sevasi, Vadodara

There were nine step-wells in Vadodara. Four of these are still standing, while the rest have been demolished and replaced. The Sevasi Stepwell is in the village of Sevasi, near Vadodara is one of the remaining ones. The 500-year-old Sevasi Stepwell is located near the Mahi River's ravines. During Sultan Mehmud Begada's reign in the 16th century, it was regarded as the most magnificent Stepwell in the city.

The money for the construction of Stepwells came from the state's coffers. The east-west brick and stone vav is seven floors below ground level and runs east-west. Scriptures on festivals celebrated by communities of that era can be found on several of the walls. Stepwells were used to collect rainwater and became the subject of folklore.

Discussion and Perspectives

In this study, the institutional structure, the use of funds for heritage conservation, the planning of urban and regional areas, tourism management plans, conservation efforts, and community involvement are all analyzed concerning the management of three distinct heritage resources. The discussion and perspectives are elaborated below under distinct subheads.

Management of Heritage Resources in an Industrial Town: Issues and Implications

1. Ineffective Coordination among the Stakeholders

The study result reveals that the CPAP is managed by various stakeholders declared by the authority which was formed under the Champaner-Pavagadh Archaeological Park World Heritage Area Management Authority Act 2006. The authority comprises members from the central level to the local level in a complex organization.

Table 1: List of Stakeholders

Stakeholders- Sevasi Stepwell	Stakeholders-CPAP and Kalika Temple
Vadodara Urban Development Authority- Vadodara Municipal Corporation- for Sevasi Stepwell Collector Office, Vadodara State Archaeological Department Sevasi Gram Panchayat- for Sevasi Stepwell Developers and architects working, and residents living in peri-urban areas Service providers Village residents TPVD (Town Planning & Valuation Department) Gujarat Tourism Office Farm-house owners and weekend homeowners, Tourists, Vlog makers Banquet hall, Party plot, and Club Owners	Halol Nagar Palika ASI Joint Director General Halol Industrial Area (SEZ) Halol Residents, Industrial Employees, Village residents, Developers and architects, Service providers Collector Office, Panchmahal Kalika Temple Trust Heritage Trust Vadodara INTACH, UNESCO Gujarat Tourism Office, Gram Panchayats Hotel Owners, Tourists, Pilgrims, and Vlog makers. Forest Department

The position remains the same but with the change of a person in a position; the attitude towards CPAP also changes. The member consists of officials like ASI Joint Director General, District Collector, etc.

The study demonstrates that the lack of availability or the remote possibility of availability of senior authorities participating in the decision-making process makes it challenging to hold regular meetings for the development of CPAP. Ineffective coordination results in duplication of effort, missed deadlines, and abandoned initiatives. Government officials, scientists, and other stakeholders in conservation have never given it the consideration it deserves.

2. Halol Industrial Area and Heritage Resource Management

Halol also has a municipal committee to look after its civic administration. It is popularly referred to as the Halol Nagar Palika. Its job is to offer those services, which make city life healthy and pleasant. Water supply, sewage, and garbage management, maintenance of roads, parks, and other public facilities, street lighting, emergency response for firefighting, issuance of birth and death certificates, marriage registration certificates etc are some of the responsibilities of the Nagar Palika.

The survey reveals that Halol residents perceive that industries have done no good to them as they recruit people on contract. The villagers are disappointed with the Archaeological Survey of India (ASI) because they do not allow any construction near the heritage site. Even a small renovation such as fixing a leaking roof, is also not permitted.

At the same time, at present, several prominent developers are coming up with huge affordable residential schemes in Halol. The primary drivers of these places' expansion include many variables, including government priority, accessibility, and the affordability of big land tracts. Halol, which is close to Vadodara, is one such industrial location that is predicted to emerge as the next real estate hotspot. Except for those built by the locals, Halol town in the Panchmahal district has not had a gutter or drainage system since Independence. In the year 2008, a proposal of Rs 22 crore was presented for the installation of a drainage system in the town.

Halol industries are responsible for air and water pollution, which eventually may affect the heritage resources.

3. Underprovided Infrastructure

The study shows that the approach road to Champaner is well established and to date is in good condition which attracts tourists to visit the place but most monuments are located in isolation and are unapproachable which disappoints visitors. Lack of infrastructure facilities and amenities is also observed. The Champaner Pavagadh Archaeological Park has 114 monuments identified as heritage monuments.

Out of 114 monuments, 39 monuments are centrally protected by an Archaeological Survey of India. While 39 monuments are state-protected by the State Department of Archaeology, the remaining 46 monuments are not covered under any protection. The deficiencies identified for spatial planning take into account the main impacts of legislation, government, and the local community.

4. Lack of Inclusive Planning

The Kalika Mata Temple is the second historic structure investigated. Within the Champaner-Pavagadh Archaeological Park, it is a Hindu goddess temple complex and pilgrim site at the summit of Pavagadh Hill in Panchmahal district, India. It dates back to the tenth or eleventh century. One of the Great holy Sakti Peethas is located at the temple. A ropeway can also be used to get to the shrine. The temple is one of Gujarat's most popular tourist and pilgrimage destinations, receiving thousands of visitors each year.

Conflict arises at the time when a large number of people visit the temple on a particular occasion. This indicates how historic conservation is not integrated into urban and regional planning. Environmental initiatives and sustainable urban planning are not implemented at a holy place that attracts a high number of floating populations.

5. Neglected due to location in the City Periphery

The huge, poorly maintained Sevasi Stepwell is the third monument structure under study. This stepwell is currently missing a lot of its components. Right now, a disorganized group of shops obscures this stepwell structure. Although this stepwell is not easily visible from the road. A resident who knows the area well can help find it. Because it is not well-known. It receives very few visitors. This stepwell is now highly devalued by both locals and tourists. Teams from the local government and the archeological department visited the area multiple times, but nothing could be done.

The well recently dried up due to a blockage in the natural subterranean water supply. Locals continue to dump a lot of trash in the well, causing it to dry up. This case illustrates a situation in which regulations have been enacted, but heritage protection and sustainable development techniques have yet to be incorporated into peri-urban development.

6. Legislation of Development Restriction

The CPAP authority regulation is on development restriction. The development between any two historic monuments is not looked after. The authority doesn’t suggest any built-up or Land use regulations around heritage property. The C-GDCR has no special regulation for archaeological parks. The Halol Development Authority Development Plan (proposed in 2012) is restricted to Champaner boundaries. Local-level problems and national-level involvement delay the solution. In the case of Kalika temple, no special regulations are formed to take care of seamless management of the floating population and services required on special occasions. In the case of Sevasi Stepwell, the legislations are in place, however, implementation and management are poor hence conflict arises.

7. Lack of Communication and Involvement: Local Community and other Stakeholders

The study reveals that all stakeholders function in isolation hence no cross-communication takes place. The overgrown forest also makes accessibility difficult to most of the structures which further leads to their deterioration. Such a situation creates conflicts between the forest department and ASI (Archaeological Survey of India). Gram panchayat have been found to have been taking initiatives to retain the traditional water system but lack professional insight. Whereas the irrigation department proposed a huge canal underneath, from Narmada canal to Wada Talav (pond) this is likely to harm the existing heritage building. In addition, a road (which was cutting through a fort wall) is proposed by the State authority. Such an overlap of activities can be critical for the sustainability of the archaeological sites. The study reveals that the action plan mentioned in the Integrated Management Plan is not executed.

The study finds that there is a disparity between the officials of the agencies and the population. There is no involvement strategy. Restrictions on the construction and usage of monuments, particularly wells and tanks, have angered the locals. Because they do not directly gain economically from the archeological park, the village citizens lack a sense of affiliation. There are no indications of socioeconomic advancement following the UNESCO designation, nor are the locals aware of the advantages of having their area designated as a World Heritage Site. In the instance of Step Well, the locals are powerless to stop tourists' destructive behavior or to limit the amount of trash that can be disposed of on the property, which ultimately destroys the priceless heritage resource.

8. Fund Disproportion and Indistinct Responsibilities

The study reveals that a lack of funds for conservation work is observed while temple trust or religious trust is well equipped with funds. Almost 40% of monuments are unprotected, and the SDA does not have enough funds and lacks manpower. The ASI and SDA are not equipped to extend their limits to protect other monuments. The State Department of Archaeology has just one monument as according to law it protects only those buildings that are more than 100 years of age and constructed by using stone. Such a law does not facilitate the protection of significant heritage buildings and premises. There are multiple stakeholders involved in the heritage conservation process however the governance imbalance is observed as many of them do not have clarity of their jurisdiction. The majority of the stakes are given to the national government bodies while the regional level organizations play a nominal role.

9. Physical Planning of Heritage Structures Located in Isolated Locations

The research reveals that the archaeological sites are inaccessible as situated in isolated locations (three monuments are in Halol village and the other three are in between Halol and Champaner). Nearly ten monuments are scattered in the Pavagadh hill region. The rest of other monuments fall under different villages. The ASI protects 29 monuments but has created islands of protected territories within the entire Archaeological Park. Only religious trials were identified. Heritage trails are undefined.

10. Conflicts between Stakeholders, Need for Tourism Management Plan

Constant conflicts (land use and infrastructure) are prevalent between the residents, village panchayat, and heritage property management. Gram panchayat built a school in the heritage precinct is one such example. At the same time, no system is established to collect demographic details of visitors. The visitors' information depends on the bus ticket, monument tickets, or ropeway tickets though many visitors come by foot. The encroachment near a religious path on the hill leads to haphazard development which puts heritage around or beneath in danger. The research shows that the risk management study has been initiated by the Archaeology department of the local university. Such projects have the potential to contribute towards the sustainable spatial development of such heritage precincts.

Table 2: SWOT Analysis

Strength	Weakness	Opportunities	Challenges
World recognition is a point of interest at all levels.	Regulation is on development restriction, with no special regulation for heritage property. Delay in the solution.	Improvement of infrastructure & specific schemes for heritage resources	Continuing haphazard development
Provisions of laws, least urban interventions.	The development between any two historic monuments is not looked after. Only religious trails were identified. Heritage trails are undefined.	Scope for regularised planned development and a variety of programs to encourage tourist activities.	Damage to cultural resources due to industrial pollution
Good road connectivity to nearby towns and cities due to industries (SEZ)	Lack of professional insight at the local level. Governance imbalance due to no clarity of jurisdiction.	Risk management planning and awareness training from NGOs and academic institutes.	Incompatible development projects
Employment and business opportunities at the local level.	Authorities are not equipped to extend their limits to protect other monuments.	Scope of the revival of a water system and an efficient governance system. Opportunity to resolve conflicts among stakeholders.	Overlapping of services and digging process.
The presence of industries attracts the tourist population and CSR funds	Constant conflicts between stakeholders. No system is established to collect demographic details of visitors.	Build heritage ownership at the local level and resolve conflicts	Disturbance to archaeological remains and cultural resources of knowledge

Conclusions

In this context, the aforementioned three cases of cultural heritage resources in Gujarat are illustrative of the potential application of urban conservation strategies to reduce stakeholder disputes and to consider long-term sustainability goals.

From the above discussion, it can be concluded that in a fast-developing industrial region, conservation of heritage premises requires a multidisciplinary team and planners can play an important role in coordinating and managing the team. Such precincts can be identified concerning cultural resources and spatial conflicts can be resolved by coordinating between residents, village administration, and central and global authorities working in the areas of heritage conservation and management.

These examples represent a significant step forward in the marriage of cultural preservation and sustainable development, which is still far from becoming the norm.

Moreover, in the case of an industrial region, the enhancement of conservation practices and sustainable use of cultural heritages should be supported through proper land use planning around heritage sites, preparation of heritage conservation plans, and efficient tourist or pilgrim management plans. The industries (SEZ) can and are willing to contribute to the betterment of the management of such regions. A win-win situation can be created by involving industries in tourist and monument management plans. Large industries have regular visits from national and international experts. Which can help in increasing the visibility of heritage resources.

The study's analytical approach emphasizes that state heritage preservation measures should adhere to market economic principles and investigate the core causes of conflict from the perspectives of protection motives, development requirements, property rights relationships, and legal laws. The findings revealed that, first, the role of the state government in the CPAP conservation process is vague, resulting in ongoing confrontation between historical preservation initiatives and citizens.

From a purely objective standpoint, the government safeguards cultural assets to attract tourists and promote urban economic growth. National legislation in India lacks a clear description of the authorities and responsibilities of the federal and local governments in terms of preservation and conservation action. The government should accept the legal responsibility to protect, but it must define who is protected and what are the limits of various stakeholders.

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09

Integrated architectural & cultural landscape of Murud Janjira

Asavari Vare

Architect

Sub theme: Historic vernacular landscapes as references for indigenous sustainable practices.

Keywords: built heritage, natural heritage, indigenous communities, natural & cultural biodiversity, ecological balance, urbanization, intervenes, sustainable practices, contextual architecture, advancement, sustainable lifestyle.

Abstract

Situated within the Raigad district of Maharashtra, Murud Janjira is a quaint coastal village steeped in history and adorned with a unique natural landscape. Encompassed by the shimmering sea waters, the village's built heritage features iconic landmarks like the Murud Janjira Fort and Padmadurga Fort. Further enhancing its historical tapestry are architectural treasures such as the Ahmedganj Palace, Gol Gumbaz, and Khokari tombs, all contributing to the legacy of the Siddhi dynasty. The village's natural splendour is exemplified by the Garambi River, once shaped by British dam constructions in the 18th century, as well as the seamless fusion of the Western mountain range with the sea. Mangroves tracing the creek's edge, forested expanses, sea caves, estuaries, headlands, and the convergence of freshwater rivers into the Arabian Sea compose a captivating natural mosaic. Embedded within this milieu thrive indigenous communities that have cultivated sustainable livelihoods over generations. Thus, the village's cultural landscape stands as a complex interplay of multifaceted elements, meticulously explored in this study.

The architectural ethos of Murud Janjira emerges from a harmonious dialogue with its natural and cultural milieu, yet this potential often remains untapped today. The erstwhile ecological equilibrium, fostered by indigenous sustainable practices, is dwindling due to the encroachment of urbanization. While traditional vocational methods and vernacular architectural forms maintain an intrinsic harmony with the context, they face relevance challenges in the contemporary paradigm, unable to meet burgeoning demands and evolving lifestyles. This research identifies this gap and endeavours to resurrect community-driven sustainability within architecture, concurrently reaffirming the significance of vernacular architectural expressions. This initiative harmonizes historical wisdom with modern techniques to address shifting demands.

The study entails a comprehensive analysis of existing heritage structures, contextual elements, and insightful interviews with local communities and experts. The research endeavours to rekindle community sustainability and ecological equilibrium through architectural interventions. By embracing the past's wisdom and synergizing it with contemporary innovation, the study advocates for the continuity of contextual architecture and sustainable traditions, aptly adapted to contemporary requisites.

Aim

Reviving sustainable practices of local communities applied in architecture with innovation by protecting the nature and cultural heritage of the village.

Objectives

1. To study the region's natural landscape and its relationship with architecture and people.

2. To study the architectural fabric of the region in historical and present context.
3. To understand the significance of the traditional occupation & relevance of its knowledge in the present scenario.
4. To understand the vernacular architecture regarding construction technology and material selection.
5. To study the technology innovation that can meet present demands and build on the knowledge from the past.
6. To re-establish the sense of identity through architecture and culture in harmony with nature.
7. To develop a sensitive approach while designing for the region.
8. To bring awareness among the locals about the natural & cultural heritage of the region.
9. To generate employment opportunities by innovating the traditional occupational practices through technology and architecture.
10. To re-establish the sustainable practices and balanced relationship of architecture and nature, along with financial stability and independence among the community.

Introduction

Murud Janjira, situated in the Konkan region, is an ancient settlement adorned with a rich historical tapestry. Over the years, it has borne witness to numerous pivotal events. The village's strategic location and distinct geographical attributes have rendered it a crucial hub for commerce and trade, fostering a burgeoning human presence. This intimate relationship between human settlement and the landscape has forged the village's unique identity. Notably, this interplay between humanity and terrain is mirrored in the architectural expressions of the region, giving rise to a distinctive vernacular architectural style. This architectural idiom, interwoven with historical occurrences and cross-cultural influences, has crystallized into the architectural language of Murud Janjira, becoming its emblematic hallmark.

Incorporating a coastal belt and distinctive geographical features, the village boasts an abundant biodiversity. An ecological survey of the Konkan region reveals the presence of eco-sensitive zones within the village, harbouring rare and diverse flora and fauna, including mangroves and aquatic life (Meenakshi Kapoor, 2009). Highlighted within this context are specific hotspots that house unique ecosystems (Prakash Gole, 2006-07).

However, despite possessing a unique cultural landscape, the village has not remained immune to the impact of urbanization. The rapid surge in population and resource demands exerts pressure on everyday resources, eroding the historical harmony between community and landscape. The sense of identity nurtured by the village's architecture and cultural tapestry teeters on the brink of extinction.

The research delves into this predicament, investigating the ramifications of urbanization on the cultural landscape and exploring strategies to mitigate its impact. Additionally, it envisions a path forward, guiding future development within this sensitive context. The study underlines the resilience of traditional cultural and occupational practices alongside architecture, which have endured for centuries and thereby underscore the vitality of historical wisdom.

To effectively address the demands of contemporary urbanization, it becomes imperative to blend technological innovation with ancient knowledge. This research, therefore, endeavours to amalgamate these multifaceted parameters, unveiling the untapped potential of the context. Through a meticulous exploration across domains, the study aspires to craft sustainable architectural solutions that preserve the place's sense of identity while accommodating modern requisites.

Methodology

Stage 1-

This study commences by comprehending the context's significance, encompassing geographical, historical, natural, and architectural factors. It proceeds to examine the impact of contemporary human

activities, leading to an imbalance in the region's cultural landscape. Secondary data collection from the internet is employed, including the documentation of climatic analysis from authorized websites and site evaluations to assess changes, impacts, and potential future threats.

Furthermore, the research entails a review of scholarly articles, research papers, and journals addressing similar topics, offering prospective solutions. Uncovered gaps in the existing literature are identified, prompting revisits to the site for further investigation. The study also documents instances of contradictory actions within the context that have resulted in hazardous outcomes, drawing from news articles. Lastly, it investigates recent upswings in natural disasters in the region, probing for potential future threats.

Stage 2-
Primary data collection entails direct community engagement to comprehend the evolution of lifestyles from the past to the present. This exploration is vital for grasping how diverse village communities adapt to urbanization and its impact on their livelihoods and settlements. Conducting one-on-one interviews with community members not only unveils existing challenges but also reveals potential solutions from their perspectives.

In-depth knowledge about these factors is gleaned through interviews with regional masons and community members. Mapping the diverse activities of residents facilitates the examination of the intricate interplay between people, nature, and architecture. Additionally, analysing users from various age groups and documenting the populations engaged in traditional, sustainable occupations, as well as those who have transitioned to alternative sources of income, contributes to a comprehensive understanding of the situation.

Stage 3-
In this stage, the focus shifts to contextual architecture, with an emphasis on studying the region's vernacular architecture. This investigation involves a comprehensive literature review and on-site case studies, along with an examination of pertinent books. Additionally, it entails case studies of heritage structures to gain insight into the significance of vernacular architecture and its responsiveness to the local context.

The selection of these heritage structures is guided by a range of criteria, including comfort, functionality, aesthetics, human interaction within spaces, transitional areas, atmosphere, materials, sustainability, and their contextual relevance. On-site documentation of existing structures during case studies deepens our understanding of the enduring architectural style and practices that have endured for centuries. Modifications are assessed considering evolving lifestyles.

This documentation contributes to a comprehensive grasp of the architectural fabric of the region and its community, shedding light on the daily space requirements. It also uncovers the unique local technologies employed in various structures. Beyond traditional structures, this research also documents adaptations made by users to meet changing lifestyle needs, identifying specific areas warranting attention and user-driven changes.

Lastly, the research delves into the exploration of new sustainable technologies, their implementation potential, and their capacity to enhance living conditions in the region, all through in-depth case studies. This three-stage methodology provides a structured plan of action toward the desired goal of sustainable living through architectural means.

Background research

1. History of Murud Janjira – Natural & Architectural

The history of Murud Janjira dates to the 1st century AD during the reign of Kaniska, followed by rulers

like Satkarni, Mauryas, Pulkeshin, Silahara, and Yadavas from 124 AD to 1020 AD (Chauhan, 1993). During the 7th to 8th century, African slaves introduced their culture to the village through trade. Over time, they gained power and ruled the Janjira state under Nizamsah. Heritage structures like Ahmedganj Palace, Eidgah, and Khokari tombs were built during their rule. The architecture, as seen in Ahmedganj Palace, reflects a blend of Mughal and European styles, adapted to local construction techniques with pitched roofs to suit the climate.

Figure 1: Ahmed Ganj Palace, Murud Janjira; **Source:** Google Maps

The wooden sea fort, 'Medhekhot,' originally built by Koli king Rajaram Patil, was seized by Piram Shah. Malik Amber, in turn, converted it into a stone fort by excavating the island's foothill, leading to its famous name, Janjira Mehroob. This fort boasts a distinctive oval shape, harmonizing with the island's natural contours. Stones for construction were sourced directly from the island (as shown in Figure 2). Within the fort were two natural freshwater lakes, Hindu temples, mosques, schools, and more.

Figure 2: Janjira Fort Plan View, Murud Janjira; **Source:** www.flickr.com

The fort resembled a self-sustaining village, complete with both residential and commercial buildings, including markets. Its distinctiveness lay in its construction, with fortifications encircling the island and being tailored to the existing freshwater lakes on the fort. These lakes were then adapted to maximize water storage for residents over several months.

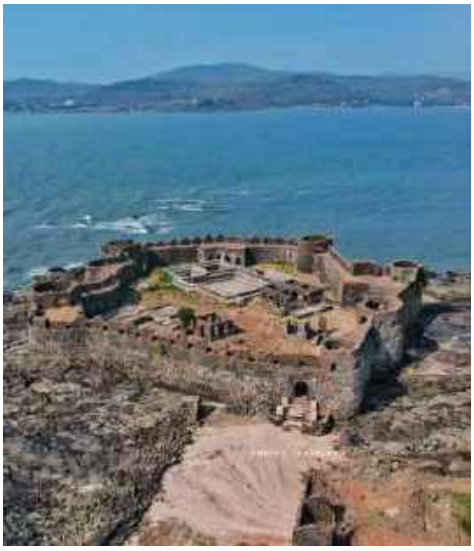

Figure 3: Padmadurga Fort; **Source:** Trawell Amigos

In the 16th century, Shivaji Maharaj constructed Padmadurg, depicted in Figure 3, as a strategic fort to challenge Janjira. This fort was built using locally sourced stones and natural lime mortars. Despite its current state of disrepair, it continues to serve as a venue for various cultural activities.

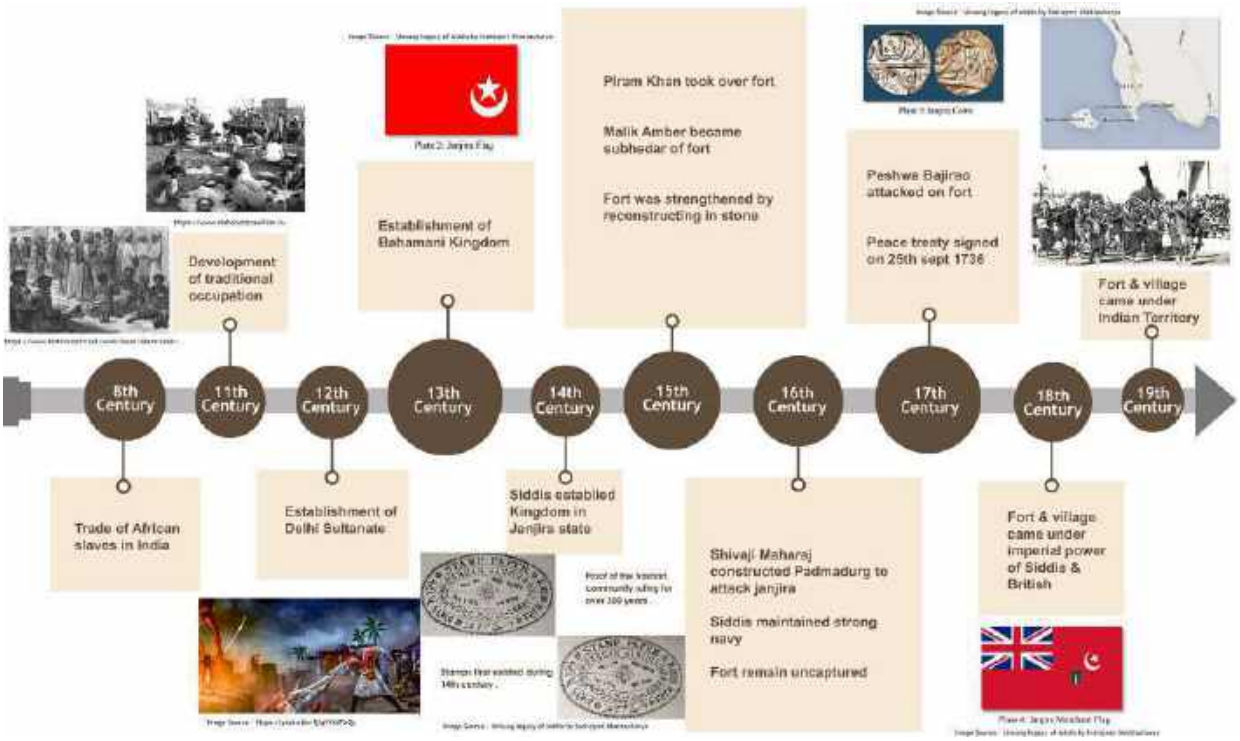

Figure 4: Timeline showing the significant events that affected Murud Janjira; **Source:** Author

2. Natural landscape of Murud Janjira & its Significance

Murud Janjira boasts a rich natural landscape within the Konkan region, characterized by diverse landforms. To the north, it is surrounded by imposing mountains, while a vast seacoast graces the eastern side. This lengthy coastline nurtures distinct marine biodiversity and a unique natural scenery. The region is intersected by numerous estuaries, water creeks, rivulets, and streams, comprising both saltwater and freshwater rivers. Along its shores, you'll find two types of beaches: rocky and sandy. Remarkably, approximately 70% of the rocks are adorned with various algae species, some of which are rare.

Ecological surveys have identified Murud Janjira as a part of both scientifically significant areas and

biosphere zones, as depicted in Figure 5, showcasing various eco-sensitive hotspots in the Konkan region. Dr. Jayashree Patil conducted a study on the local flora, revealing the presence of 36 plants with medicinal properties in Murud (Jadhav & Rajbhoj, 2018). Local communities possess knowledge of these plants and have employed them for centuries in the treatment of severe ailments. This underscores the deep-rooted connection between the community and the landscape.

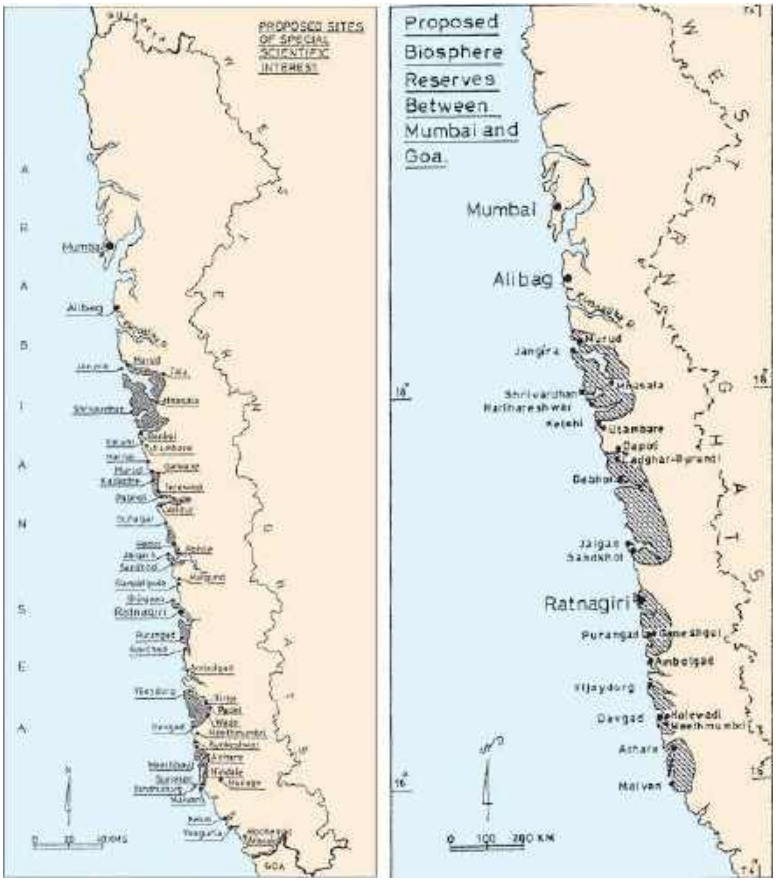

Figure 5: Eco sensitive zones & Hotspots; **Source:** Journal of ecological society vol- 19-20 , by Prakash Gole

3. Integrated architecture and its natural landscape

Murud Janjira's architecture is a captivating tapestry woven from the rich threads of diverse cultures, lifestyles, occupations, and historical narratives. To the north, rugged mountains greet lush forests, where settlements, predominantly inhabited by tribal communities deeply attuned to the natural surroundings, engage in farming and related pursuits. These dwellings harmoniously adapt to the landscape's contours.

In contrast, the southern expanse merges gracefully with the river and sea, prompting the construction of elevated structures, guarding against tidal incursions. Here, communities thrive on fishing and allied activities.

Every architectural facet is meticulously tailored to the locale. While styles may slightly vary across communities, certain shared elements prevail. Traditional homes, characterized by modest heights and thick insulating walls, nurture comfort. Thoughtfully placed windows, fortified with iron rods and wooden frames, manage ventilation and temper harsh sunlight. Sloping roofs, a response to heavy rainfall, ingeniously deflect sunlight, maintaining optimal temperatures throughout the year. This ingenious design absorbs winter warmth through the Mangalore-tiled roofs, supported by sturdy wooden structures. Wood plays a pivotal role as a load-bearing member, sustaining roof projections and exterior extensions, which extend gracefully from wooden posts forming integral verandas.

In essence, Murud Janjira's architecture eloquently embodies the synthesis of form and function, an

eloquent testament to its profound connection with the ever-evolving environmental and cultural dynamics that have shaped this remarkable coastal landscape.

4. Present scenario- issues and upcoming modern architecture

As shown in the plan in Figure 6, there are highly influential zones in the village. These are the areas that impact all other regions in the village. Every zone has its own significance and role. However, the identity of these zones is shifting rapidly due to the impact of urbanization & rapid growth.

The village is undergoing a profound transformation, deeply influenced by the tide of urbanization. Consequently, there is a prevalent yearning among the villagers for city life, driven by the belief that urbanization holds the key to development and a resolution to the village's challenges. As many villagers shift away from traditional occupations, they progressively lose their sense of connection with the landscape.

These aspirations have triggered a surge in concrete structures within the village, marked by monotony and a detachment from the local context. The once-practiced climate-responsive traditional housing has dwindled. Vernacular architecture, which endured for nearly a century with proper maintenance, now faces a crisis. Structures constructed in the last decade exhibit cracks, a consequence of subpar construction techniques, artificial materials, and design choices that lack relevance. Many of these buildings suffer from structural failures and leakage problems, exacerbated by the region's high rainfall.

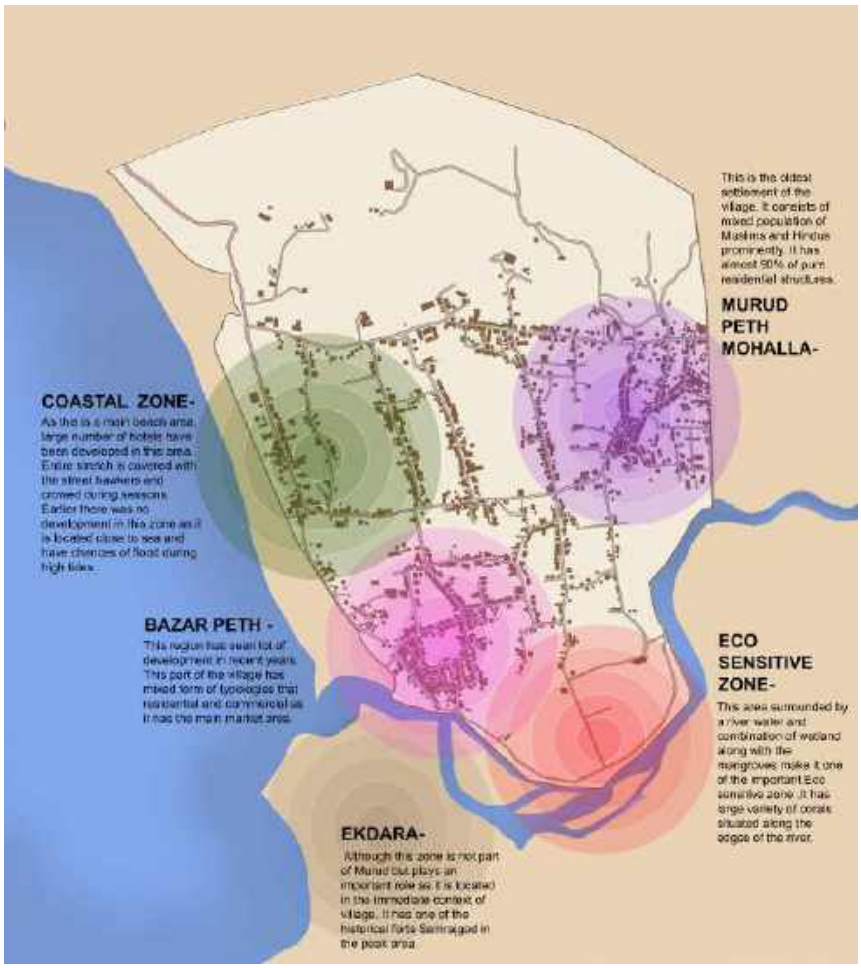

Figure 6: Murud Janjira Map-Major Influential Zones & open to build ratios; **Source:** Author

Collectively, these structures mar the local context and undermine the quality of regional architecture, signalling a critical need to reconsider the path of development in a way that preserves the essence of the village's heritage and landscape.

Conclusions from background research

Murud Janjira, with its rich history, diverse natural landscape, and indigenous architecture, holds significant historical and ecological value. However, rapid urbanization threatens to erode its cultural and environmental heritage. To safeguard this unique village, it is essential to revive the harmony between humans and the landscape. Embracing sustainable practices and reimagining architectural approaches can ensure the preservation of Murud Janjira's historical and natural essence for future generations.

Primary Research

1. Architecture & Planning strategies

This module explores ancient architectural and planning strategies that have evolved in direct response to the village's diverse context. Within the village, smaller settlements exhibit distinct characteristics shaped by unique cultural and occupational practices. These typologies have arisen organically in harmony with the physical landscape, preserving its intrinsic character while coexisting seamlessly with nature. The table below illustrates these typologies, highlighting their role in preserving the village's cultural and environmental heritage.

Table 1: Physical Aspects of Landscape & Architectural response; **Source:** Author

Its impact on the following	**Contours & small mountains**	**Low-Lying Areas Near River & Sea.**	**Along the coastline.**	**In the central part of village**
Occupation	Rice Farming & Other Agricultural Activities	Fishing & farming of rice in certain spaces	Fishing and selling tourism activities	Farming, particularly coconut & palm tree plantations
Settlements	Development of structure in levels along the land.	Arranged in linear format & less dense near low lying areas	Compact arrangement with streets in between	Closely arranged in a linear format along the streets
Architecture	High plinths are formed at different levels. 	High, steep sloped roofs to cut direct heat 	Balconies and raised verandas. 	Small windows Presence of mezzanine floors 

2. Relationship of built & unbuilt

A fundamental tenet of vernacular architecture is the construction of what is strictly necessary. This section delves into the symbiotic relationship between built structures and their context. Traditional occupations primarily unfold in open or semi-open areas, reserving indoor spaces predominantly for rest or sleep. In this context, transition spaces assume paramount significance. On-site documentation sheds light on the strategic positioning of these transitional zones in proximity to the built forms, attesting to their vital role in the architectural landscape.

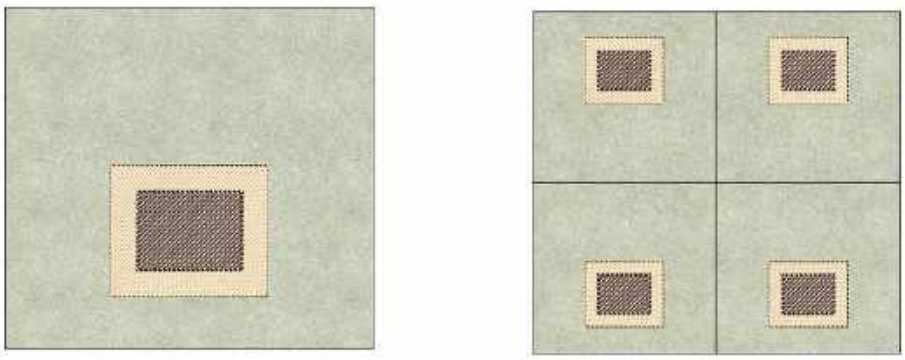

Figure 7: Modules placement on site; **Source:** Author

In conjunction with transition spaces, the interconnected open areas play a pivotal and multifaceted role, their characteristics intricately woven into the fabric of the village. These spaces take on diverse natures influenced by typology placement, intended use, and specific locations. Illustrated in the diagram below is the extent of open space enveloping a built structure, with an ingenious arrangement of four similar blocks. Remarkably, although these blocks are under distinct ownership, they collectively form an expansive open terrain, effectively functioning as a unified entity. This collaborative open expanse significantly enhances natural airflow and ventilation within the village.

Furthermore, the image below provides insight into the meticulous planning strategies employed to craft semi-open spaces within small residential structures. Enclosed spaces are denoted by hatch markings, and these areas are further enriched through the integration of latticed walls. The nature of enclosure is flexible and adaptable, responding dynamically to the specific activities transpiring within these semi-open spaces, thus harmonizing function with form.

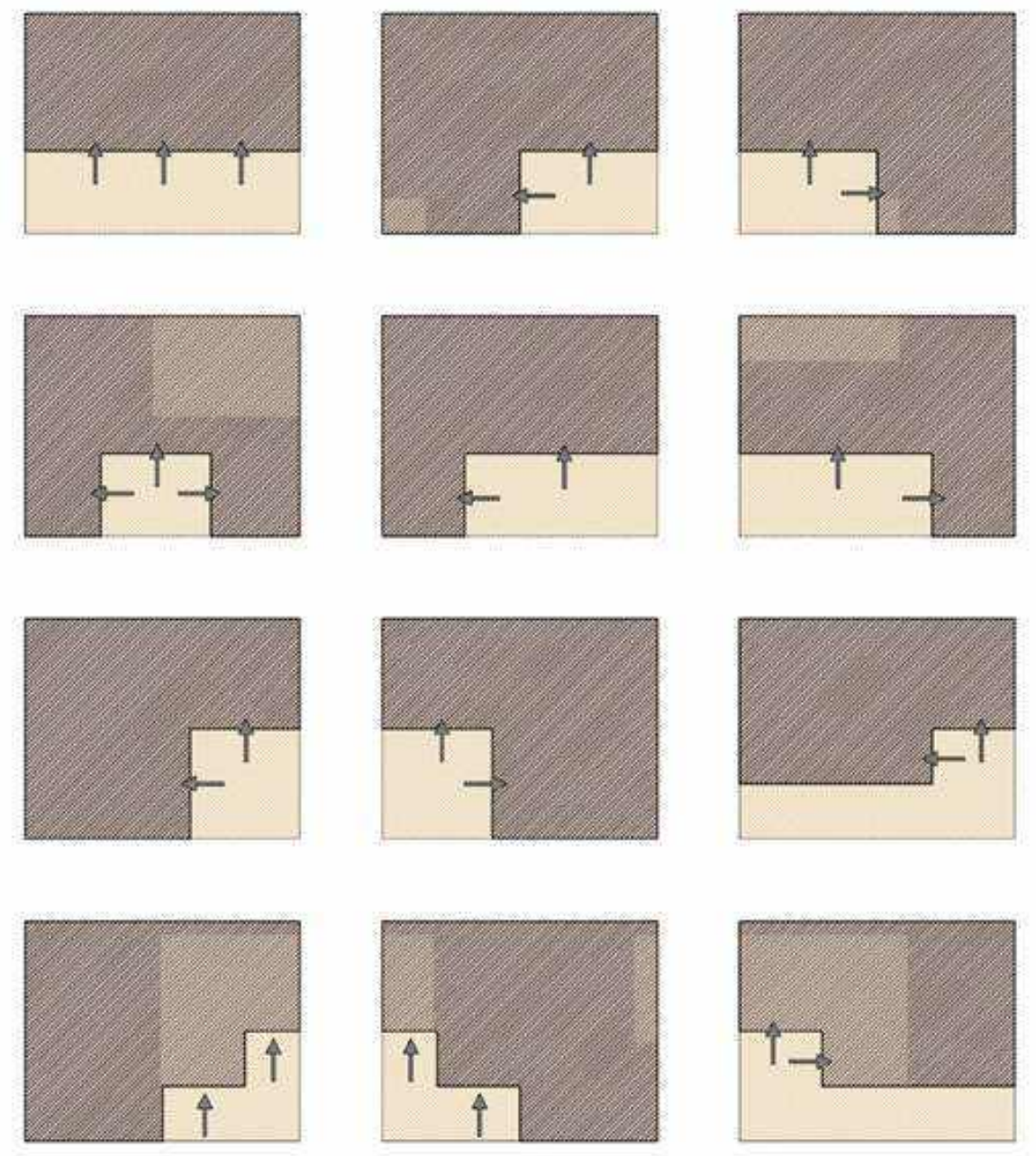

Figure 8: Planning strategies in vernacular architecture – transition spaces; **Source:** Author

Placement of jali in semi-open space on the basis of activity

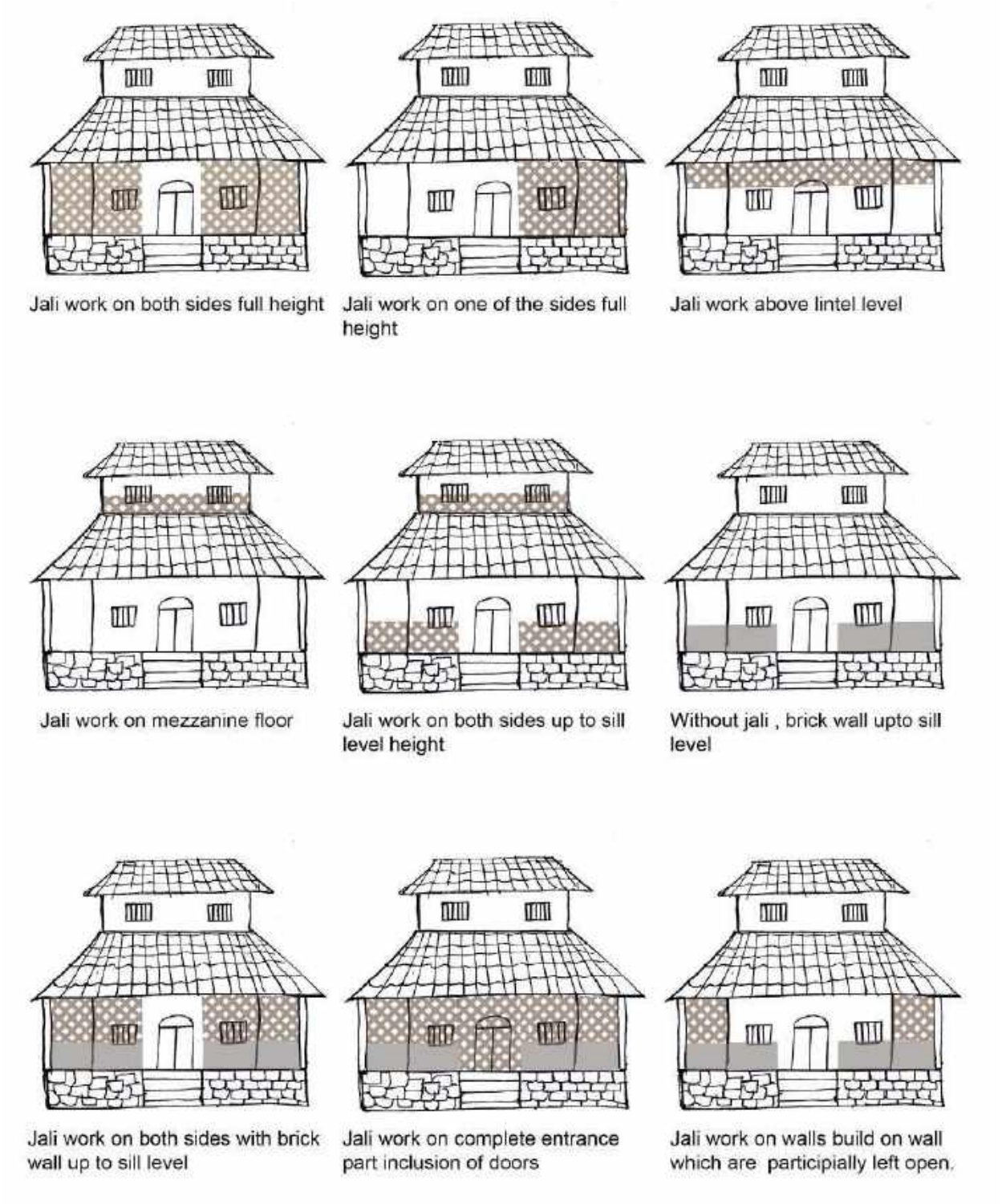

Figure 9: Jali placement for semi-open spaces; **Source:** Author

Fenestration in semi-open spaces predominantly utilizes readily available wood in the locality for jali work. These fenestration designs are tailored to the specific function and use of each typology, allowing users to customize privacy levels as needed, creating unique identities for every structure.

Figure 10: Wooden Jali in elevation; **Source:** Author

Figure 11: Bamboo & Iron rods Jali in elevation; **Source:** Author

Jali screens serve dual purposes: allowing indirect light while mitigating humidity. This design choice fosters a sense of semi-openness with partial enclosure and visual connectivity.

Additionally, balconies were strategically introduced to combat the hot, humid climate and shield interiors from heavy rainfall. These architecturally pleasing balconies boast climate-responsive features, blending functionality with aesthetics for a comprehensive design approach.

Figure 12: Balcony in Vernacular House; **Source:** Author

Figure 13: Balcony in Vernacular Structure; **Source:** Author

Housing typology in Linear Arrangement

The Peth area of Murud Janjira harbours some of the village's oldest settlements, primarily organized by communities with shared occupations. These clusters align linearly along narrower streets, featuring rear courtyards that blend residential and occupational spaces.

These settlements exhibit a compact arrangement of typologies, with open spaces at the rear. The streets in the front function as an extended interactive zone, forming a secondary communal space. Semi-open areas flank the typologies on both sides, serving as hubs for interactions and various occupational pursuits. Notably, these structures are relatively modest in height, typically comprising ground and mezzanine floors.

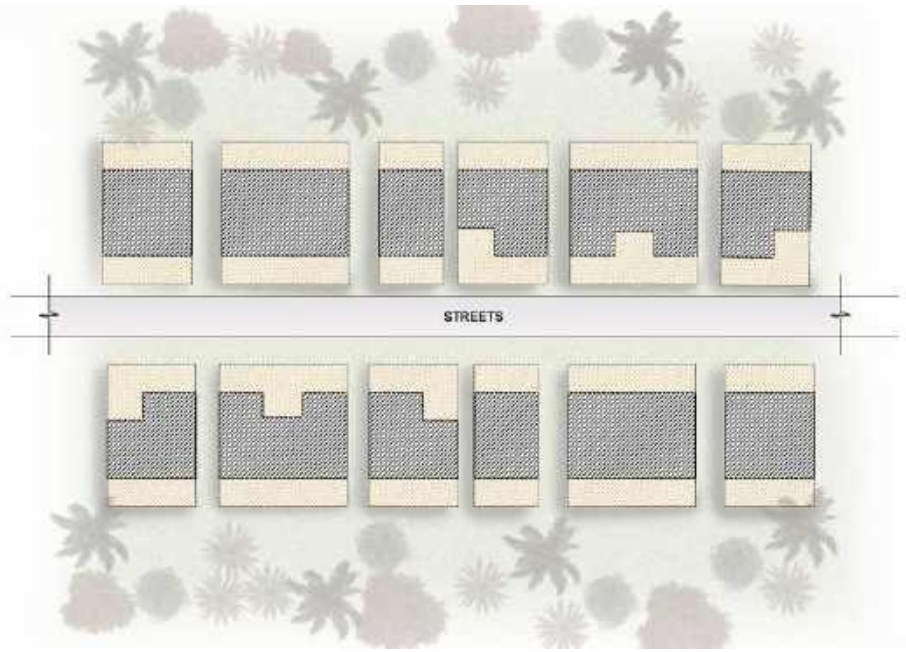

Figure 14: Linear Planning arrangements in modules; **Source:** Author

Housing typology in Cluster Arrangement

Within the Bazaar Peth area, ancient settlements adopt a distinct layout characterized by open spaces partitioned into smaller pockets. These intricately designed open areas serve as communal spaces on a smaller scale.

This arrangement of typologies plays a vital role in moderating the ambient temperature of the region while maintaining a harmonious balance between open and enclosed spaces. These open spaces are thoughtfully adorned with plants and trees, serving essential daily functions like cooking. Furthermore, these typologies incorporate semi-open spaces flanking both sides of the open areas. These shared open spaces act as vibrant interaction zones within the settlements, akin to enclosed courtyards formed by surrounding clusters of built structures.

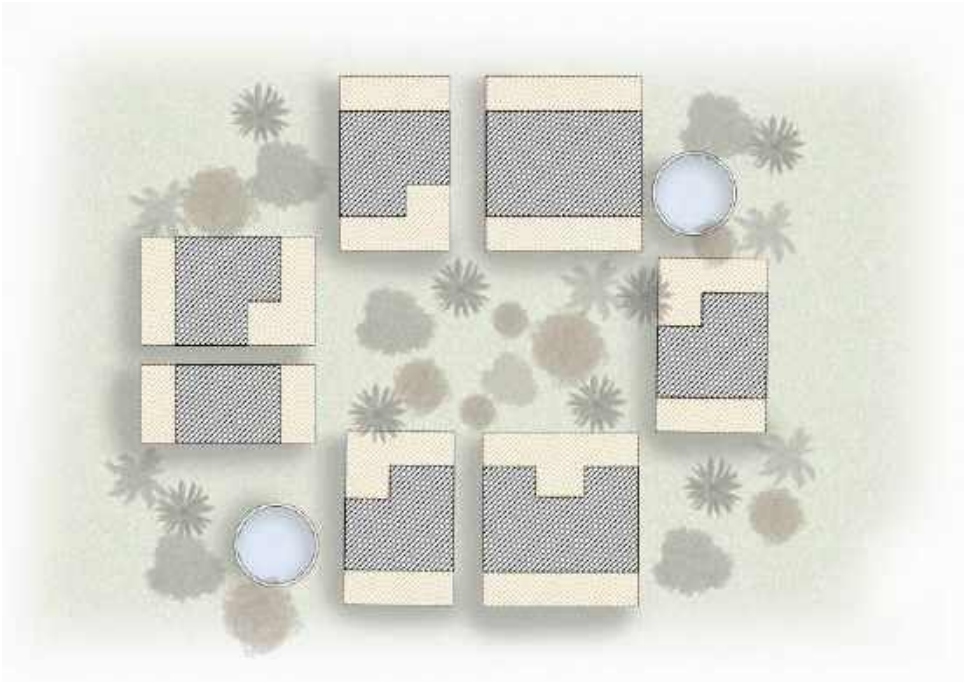

Figure 15: Cluster planning arrangement in modules; **Source:** Author

Significant Elements in architecture

Architecture of textures

Analysis of the village's ancient structures reveals a recurring use of specific materials and design features in construction. The diagram below illustrates the utilization of various textures. By increasing the material surface area through niches and irregular surface finishes, humidity molecules in the air tend to settle within these pores. This natural mechanism effectively blocks humidity from entering the interior, regulating indoor moisture levels. Porous materials, capable of absorbing water content from the air, exhibit this property.

Key materials harnessed for this purpose encompass brick, mud flooring, wooden columns, mud plasters, and wooden members. Employing these natural materials in their unprocessed state enhances their responsiveness to local climatic conditions. Notably, given Murud Janjira's proximity to vast teak wood forests, historical structures predominantly incorporate pure teak wood as a structural component. This indigenous material is renowned for its adaptability to the environment.

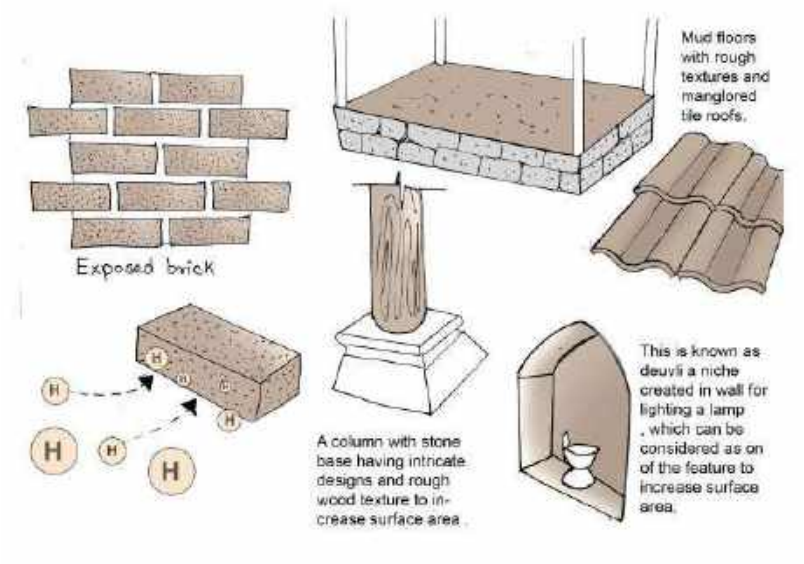

Figure 16: Elements & Materials of texture in vernacular architecture; **Source:** Author

Fenestrations Design

Fenestration design showcases architectural style and climate responsiveness. Smaller panels, double layers, and jali elements reduce harsh sunlight and promote airflow turbulence.

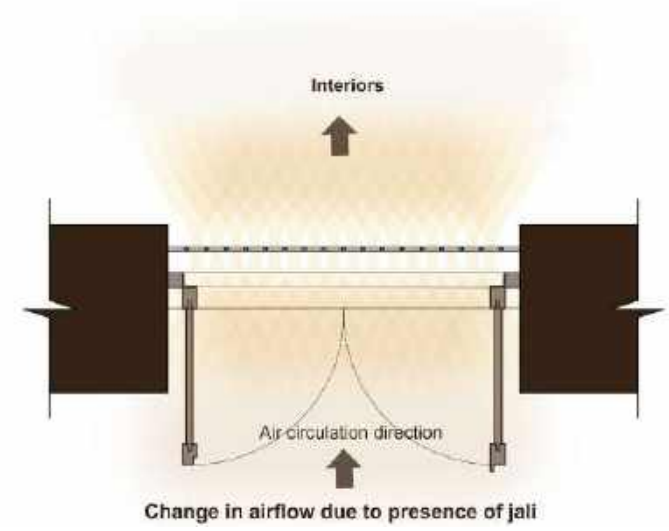

Figure 17: Air flow movement due to fenestration; **Source:** Author

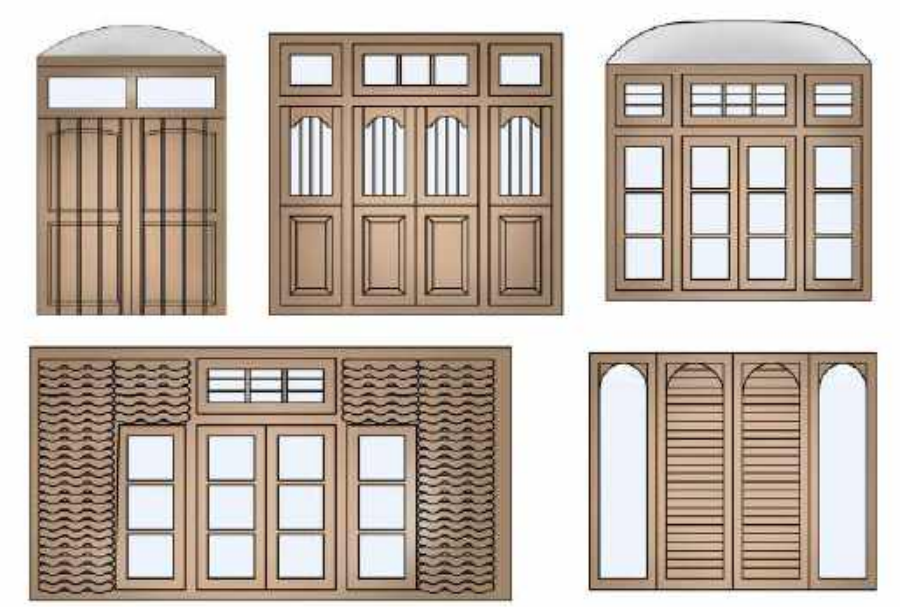

Figure 18: Fenestration designs of vernacular architecture of Murud Janjira; **Source:** Author

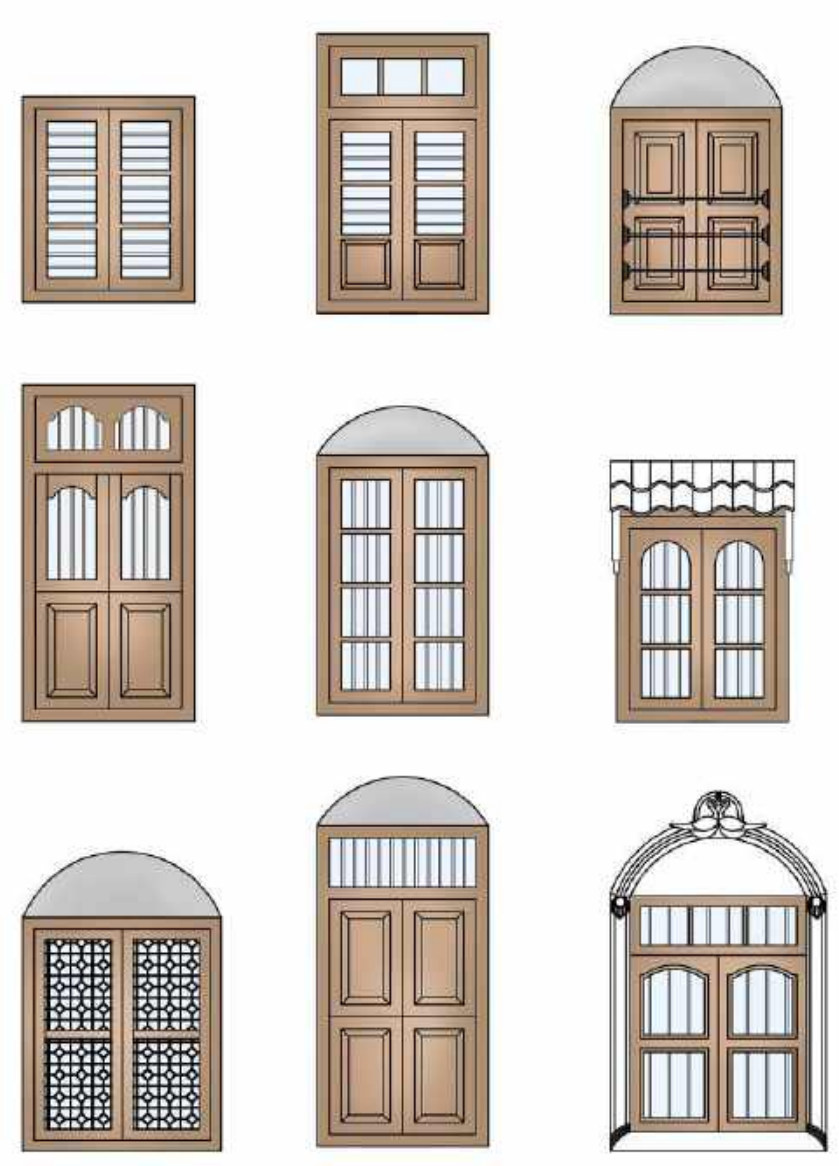

Figure 19: Fenestration designs of vernacular architecture of Murud Janjira; **Source:** Author

Community study

Community study reveals the pivotal role each group played in creating an interconnected system where life's essentials harmonized with various occupations. This caste-based hierarchy structured settlements accordingly. While many communities have faded, studying them remains crucial to comprehend the past system's profound influence on vernacular architecture. This architecture was a dynamic process, deeply intertwined with cultural practices, festivals, and rituals. The table below illustrates the community's relationship with nature and its profound impact on architectural evolution.

Table 2: Ancient Communities & their occupation and its relationship with architecture; **Source:** Author

Community	Occupation	Type of Settlement	Location in Village	Dependency on Nature
Koli	Fishery & related jobs	clustered in one group	near the sea on the western part	Direct dependency
Kumbhar	To make pots, utensils, and other clay equipment such as mangalore tiles, etc.	clustered in one group	on the northern part near the foothill	Direct dependency
Burud	to make bamboo baskets and other equipment from bamboo net	clustered in one small group	near the northern part of the village	Direct dependency
Karad	to work in labour-related jobs such as construction or the maintenance of gardens	clustered in one group	on the southern part near the creek	Indirect dependency
Bhandari	to climb coconut and palm trees and make wine	clustered in one group	near the sea on the western part	Direct dependency
Sonar	a person who makes gold articles, jewellery.	clustered in one group	near the central northern part of the village	----------
Agri	farming	clustered in one group	on the northern part near the foothill	Direct dependency
Mali	coconut & palm plantations	clustered in one group	In the central part	Direct dependency
Vaidya	treatment & medication of people	individual	scattered	Direct dependency
Brahman	conducting various activities related to worshiping god	clustered in one group	In the central part	Indirect dependency
Gurav	cattle breeding	clustered in one group	In the central part	Direct dependency
Tambat	making utensils from cop-per and other metals	clustered in one group	In the central southern part	----------
Sabnis	involved in administrative activity	clustered in one group	on the southern part near the creek	Indirect dependency
Saliv	weaving cloths	clustered in one small group	near the central northern part of the village, in the peth area	Direct dependency
Nahvi	Barber	clustered in one group	near the central northern part of the village, in the peth area	----------
Kasar	bangle seller	scattered	scattered	----------
Vani	grocery seller	scattered	scattered mostly in the Bazaar Peth	Indirect dependency
Sutar	carpenter	clustered in one group	in Bazaar Peth masal galli	Direct dependency
Bhagat	involved in worshiping god and other activities	clustered in one group	In the central part	Direct dependency
Lohar	Smithery	clustered in one group	on the eastern edge of the village	----------
Parit	Laundry or washing of clothes	scattered	scattered	Indirect dependency

Chambhar	cobbler	clustered in one group	on the eastern edge of the village	Indirect dependency
Mahar	leather-related work	scattered	scattered	Direct dependency
Muslims	all ancillary occupations of farming, animal husbandry & most of them are landowners	scattered	scattered	Indirect dependency
Katkaris	labour-related jobs and ancillary activities due to the economically weaker sections	scattered	not in the village	Direct dependency

Conclusion

This research presents a comprehensive analysis of vernacular architecture and sustainable practices within various communities. Despite lifestyle changes due to urbanization, several strategies remain relevant. A thoughtful examination of these practices can foster sustainable future development while preserving the community's harmonious relationship with the landscape.

Many planning and spatial creation strategies can still be applied in future architecture. These approaches not only retain the existing architecture's character but also enable the development of climate-responsive architecture through technological integration. Even if high-rise structures are needed to accommodate a growing population, the nature of these spaces can still reflect the vernacular architecture's language.

The use of natural materials, such as lime-based plasters and locally available construction materials, as well as the reuse of wood and other traditional materials, remains viable. Rather than transitioning to toxic artificial materials, employing natural resources can significantly reduce carbon footprints and minimize negative impacts on the environment. The study of different communities has revealed unique skill sets and knowledge. Based on this, there is potential to develop alternative occupational practices that capitalize on this expertise. For instance, proposing a coir processing industry aligns with the abundance of coconut trees in the region and the communities' knowledge. This approach allows them to maintain their connection with the landscape while pursuing sustainable occupations rooted in their traditional knowledge and skills.

Acknowledgment

The work presented in this paper owes its existence to the invaluable contributions of many individuals. I extend my heartfelt gratitude to my thesis guide, Professor Tejashree Lakras, for sharing her extensive knowledge & support during this research journey. Her unwavering motivation and enthusiasm guided me through every stage of this research. I must also express my deep appreciation to my family for their consistent support, especially my father, Mr. Surendra Vare, who accompanied me on site visits even during the challenges posed by the pandemic. This research stands as a collaborative effort, made possible by the guidance, encouragement, and support of these individuals and the communities that shared their knowledge and traditions.

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10

Indigenous Cultural Landscapes: A case study of Bastar

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Sub theme: Historic vernacular landscapes as references for indigenous sustainable practices.

Keywords: Bastar, Chhattisgarh, tribes, indigenous culture, sustainability

Aim

The aim of this paper is to study the role of Indigenous sustainable practices in Historic Vernacular landscapes in India and to understand how the traditional knowledge of the region makes Bastar a sustainably flourishing Cultural landscape.

Introduction

Bastar is the largest district in the state of Chhattisgarh, the tribal homeland of India. 70% of Bastar's population is tribal and it comprises 26.76% of all the tribal population in Chhattisgarh.[1] The primitive culture, history, natural and geographical location of the region makes Bastar a unique Cultural Landscape of world importance. There are various indigenous tribes in Bastar, each very different to another in the costumes they wear, the languages they speak, their lifestyles and their beliefs. Some of them are farmers and agriculturists, some are craftsmen practicing ancient crafts while some still depend on hunting and gathering. There are some exceptional festivals like Madhai Mela, Fagun Madhai, Goncha festival and most importantly the Dussehra of Bastar that portray the indigenous culture of Bastar in the daily lives of its population. The people still follow vernacular practices but due to advancements in the region the population is slowly drifting towards modernity and forgetting their own traditional knowledge. However, the indigenous practices followed by the local tribes still makes Bastar one of the biggest examples of a sustainably growing Cultural Landscape in India which derives its best features from its Indigenous culture.

In the land of living traditions where the mere dream of a beloved king led to the inception of an indelible cultural practice which is followed till date, in the land which has its roots intact and has held with pride its unique tribal culture is where one needs to stop and not just admire its beauty but think about the continuity of its cultural heritage. Bastar is the largest district in the state of Chhattisgarh, the tribal homeland of India. 70% of Bastar's population is tribal and it comprises 26.76% of all the tribal population in Chhattisgarh.[2] The primitive culture, history, natural and geographical location of the region gives Bastar a unique place worldwide. Except for some cities like Jagdalpur the region is densely populated with a large tribal population. The region is naturally very beautiful and historically very important. It is the bearer of Chhattisgarh's tribal culture and traditions. There are various tribes in Bastar, each very different to each other in the costumes they wear, the languages they speak, their lifestyles and their beliefs. Some of them are farmers and agriculturists, some are craftsmen while some still depend on hunting and gathering. The region which was under the rule of Chalukya Kaktiya dynasty before independence still has the south Indian influence and mannerism in the traditions followed by tribal people, the languages they speak or the festivals they celebrate. There are some exceptional festivals like Madhai Mela, Fagun Madhai, Goncha festival and most of the Dussehra of Bastar are celebrated in the region that portray the community character of Bastar.

1 (Gell, 1992, p. 1)
2 (Gell, 1992, p. 1)

Over the course of study, it was observed that Bastar is not just a geographic location, it's an emotion, an amalgamation of ages of traditions and beliefs that are still embedded in the hearts and minds of the people in the locale. The culture of the region not only reflects in their lifestyles but can be seen in a variety of things they do right from their construction techniques to their economic practices to their eating habits and their recreational practices. Everything, right from the art, architecture, dance forms, music, food and clothing is one of its kind and indigenous to the region. These traditional values are the backbone of the tribal society of Chhattisgarh. To keep these traditions intact and to avoid the culture from exhausting, a continuity in the practices is necessary so that the tangible and intangible heritage of Bastar can be passed on to younger generations and be preserved for the whole world to cherish them.

Theoretical understanding

Cultural landscapes can be defined as areas of land with cultural properties that represent the combined works of nature and mankind. The interdisciplinary character of sustainable management of cultural landscapes requires that nature and culture conservation strategies are integrated into one holistic system, where the preservation and remediation of cultural landscapes embrace both the key issues of nature conservation and preservation of biodiversity, sustainable use of ecosystem services and the conservation of built and intangible cultural heritage.

Cultural Continuity is defined by Kirmayer as, "Culture as something that is potentially enduring or continuously linked through processes of historical transformation with an identifiable past of tradition."[3] The heritage of a region is considered to be the best expression of the cultural identity of the community, of its traditional values and the culture of the civilization. It's one of the aspects of the creativity that a community has in store, where it originates in individuals or in groups. It is the story of the emergence of the community and the way in which they evolved; their guiding principles and their belief which gives them a unique identity. Bastar is the pride of the state of Chhattisgarh. Not only is it filled with natural bounty but is culturally rich and is home to some of the oldest living tribes in India and in the world. There is a lack of information about the tribal culture of Bastar and the magnificent Bastar Dusshera. Since ancient times the natural and cultural landscapes of the region have retained an active social role in the contemporary society of Chhattisgarh and is a symbol of the traditional way of life of this tribal state. The city of Jagdalpur is the district headquarter of Bastar and the glorious Dusshera of Bastar is celebrated there. The city is also a place of pilgrimage, a historic and holy site for the tribal community of the region. The city has still maintained all its traditions. Even after the induction of modernization in the locale, traditions are fully alive, even today. Every year during the time of Dusshera, people from the tribal communities gather in the city of Jagdalpur and celebrate the festival with great pomp and show. All the customs that were followed at the inception of the festival are still followed today. The traditional and culture however needs to be preserved and taught to the younger generations of the community who otherwise are getting detached from the cultural beliefs for their forefathers, for the continuity of culture and to stop the traditional elements of the society from fading away.

Tolina Loulanski in her paper has mentioned the concept of heritage as "susceptible to change and actually changing". She believes that the focus of heritage has interestingly shifted 1) from monuments to people, 2) from objects to functions, and thus, 3) from perspectives to purposeful preservation, sustainable use and development.[4] This shift of consideration from tangible to intangible heritage paves the way for a new approach in looking at intangible heritage preservation as a guiding light towards cultural continuity especially in regions like Bastar where Oral traditions form the course of history and traditional beliefs are a way of life. Would the cultural system of Bastar be able to retain itself with the ever changing notion of heritage with passing time and be able to grow sustainably?

3 (Kirmayer LJ, 2007)
4 (Loulanski, 2006)

Scope and limitation of the study

The scope of the study is geographically restricted to the Bastar region of Chhattisgarh and the major tribes of the area, their culture and festivals, their architectural practices and their construction techniques. The analytical scope of study throws light into the daily life of the tribal people, their occupation, their culture and to promote their traditional values to the world. It focuses on how the indigenous practices of these tribes are sustainable and can help in a qualitative development of the region if conserved and preserved. The study also forms a written record of the tribal life of Bastar as much literature can't be found on it. This is a documentation study of the region and the cultural values associated with the people residing there.

Methodology

The methodology was developed on the basis of a research-oriented approach to know more about the lives of the tribal population of Bastar, to know their cultural beliefs and traditions, their way of living, their needs and demands, their perspective for their future and the ongoing struggles for them as a community and how all of these going to impact their future. The information was gathered upon various field visits during Dusshera and Madhai mela to Jagdalpur and various villages of Bastar. All the data collection was done on the basis of structured questionnaire-based interviews. There were three main stakeholders for the documentation- the tribal people, the residents of Jagdalpur which is the host city for Bastar Dusshera and the government officers and experts in the region. Separate questionnaires were designed for all three of them and a series of interviews were conducted. The questionnaires are attached in the annexure. Bastar Dusshera being the well-known and most recognizable feature of Bastar was the preliminary point of study from where the research proceeded to the tribal life and its features.

Methods of Data Collection

The researcher found that the interview schedule is the most suitable amongst all available tools for data collection for research of the present type. Hence, a self-prepared interview schedule was used to elucidate the data required for the study. While designing the interview schedule, conscious efforts were made to include all the elements that facilitate the study with proper, precise and accurate information. For the interview the tribal heads and their family members occupied the role of primary respondents. The interview schedule was prepared to collect information on personal, family, social, economic, educational, health, housing, understanding of democratic institutions, awareness of Protective arts etc.

Before creating the schedule, previous studies were taken into account and studied. On the basis of these sources and the experience survey during documentation the following methodology was prepared:

- Direct participatory observation: The study area was personally visited wherein geographical parameters, villages, lifestyle, pattern of living, types of houses, education facilities, languages spoken by them, culture, festivals, drinking and sanitation facilities, markets, hospitals etc. were observed.
- Field visit: The site was visited several times but the most significant and fruitful one was during the time of Dusshera where all the tribes came together at one place and showcased their culture and religious beliefs of the tribal people.
- Interview: During all the field visits various interviews were conducted. Questionnaires were also filled by various stakeholders in this research. The questionnaire and interview schedule both were made on the basis of priority of information to be collected to reach generalized facts pertaining to the research. Apart from the tribal people, various interviews were conducted with the government officials and workers at the anthropology museum at Jagdalpur.
- Formal and Informal discussions: Data and additional information and verifies facts collected by the way of formal and informal discussions with the government officers, social community workers, NGO representatives, respondents and their family members during the period of data collection. Relative queries about the experiences, cultural beliefs and concerns. All the interviewed respondents and their family members extended great co-operation in sharing their views, thoughts and answers to the questions. This method helped to examine the tools used for study and doubts.

Results and findings

It was found out that the culture of the region is very vast and specific to the tribes. Their construction techniques are also different and dependent on climatological features of the region. The use of locally available materials makes the vernacular structures sustainable and economical. When it comes to art and culture, the notions are very diverse and the rich traditions can be seen in the lives of these tribal people and also in their festivals.

Tribes of Chhattisgarh

Chhattisgarh is a tribal state, in fact it is one of the very few states in India which still has its tribal life intact. There are various tribes and sub-tribes in Chhattisgarh. The region of Bastar has 8 main tribal communities. They are the Madia, Halba, Abujh Maria, Bhatra, Gadba, Dandani Maria, Dhurva and Dorla. These tribesmen majorly speak three languages- Halbi, Gondi and Muria. These dialects have a lot of influence from the Telugu language. The festivals celebrated by these tribal groups are: Bastar Dusshera, Madai mela, Fagun Madai, Goncha festival, Hareli, Diwali, Navratri etc.

Historical Perspective of Dusshera

India is a land of rich cultural heritage with numerous customs, religions, traditions, languages, art and culture. To honour these diverse aspects, we celebrate festivals. Each festival has its own significance and unique identity. This often means a unique way of celebration. Hence, there are certain Chariot festivals in India wherein, to honour a deity, a 'Rath Yatra' is arranged and millions of followers reach to the desired destinations to be a part of those magnificent celebrations. A deity and a temple are usually associated with such commemorations. Bastar Dussehra is a similar annual gathering. Although, being the longest festival to be celebrated in the world makes it unique and something to be really looked upon. Bastar Dussehra reaches a crescendo in the last 10 days of the 75-day festival. This is the time when people from all over India gather in the town of Jagdalpur to be a part of the glorious Bastar Dussehra. With regard to tourism, Bastar is a blend of both abundant natural beauty and spirituality and is Chhattisgarh's most compelling destination. It is rich in both natural and cultural heritage. The Dussehra celebrated in this region is unique but is still untouched and unknown to the masses. The area attracts local pilgrims as well as tourists from India and around the world. It has a tremendous potential for tourism, but it is often seen that there is a lack of infrastructure to encourage the inflow of tourists for a longer time. It is mostly seen that the tourist activity is largely local in these areas. This in turn is a threat to the heritage and safety of the tourists as well. Out of all the wonderful traditional festivals celebrated in Bastar (Chhattisgarh), the Bastar Dussehra is of utmost importance. With such diversified and detailed traditions and a massive footfall, the festival goes on for a splendid period of 75 days. It is celebrated with great pomp and show in Jagdalpur since its very beginning.

The folklore tells that once upon a time the Chalukya Naresh, Purushottam Dev walked to the sacred temple of Jagannath Puri and offered gems and riches to the temple. Pleased by this act of the Chalukya Naresh, Lord Jagannath appeared in the dreams of the temple priest and pronounced the Maharaja to be the "chariot king". From that day onwards, this chariot festival takes place every year during Dussehra. The local tribes and natives of Bastar are to be credited for bringing the Bastar Dussehra onto the national map.

The most interesting part of this festival is the carving of the wooden chariot every year since the last 598 years. It is conducted by the different villages of Bastar where each village carries on a unique but pivotal task. The chariot is built by the oldest village of the Sawra community, the collection of wood for the chariot is done by the people of the villages of Agarwara, Kachorpati and Raiketa. People of the Kesharpal village are responsible for the rope formation whereas the residents of the Karanji and Sonabaal village play the role of the chariot pullers.

The Bastar Dussehra that goes on for a period of 75 days (2.5 months) is the longest among all the major festivals in the Hindu calendar. It is an amalgamation of 12 different ceremonies that take place in a chronological order. It begins on the day of the *Hariyali Amavasya* with the *Path Jatra* ceremony which is succeeded by the *Deri Gadhai, Kachhingadi, Kalash Sthapna, Jogi bithai, Rath parikrama, Nisha Jatra, Kunwari Pooja, Jogi uthai, Mavli Parghav, Bheetar Raini, Kumhadakot Pooja* and is ended by the *Kutumb Jatra Pooja*. The festival is closed by the Muria Darbar.

Figure 1: Ritual Mawli Parghav during Bastar Dusshera; **Source:** Author
Figure 2: Jogi sitting in the pit and fasting for 9 days; **Source:** Author

It is said that the Bastar Dussehra does not belong to a particular community, it is a fiesta of harmony and oneness for the whole country. Not just the country, it presents a beautiful picture of our culture, tradition, values and spirituality to the world at large. So much so that Bastar is known for the infamous Bastar Dussehra which attracts tourists from all over the world. It is not just a festival for the people, it is an emblem of their heritage and pride, the pride one holds for his/her roots. These rituals need to be studied and observed as they tell about the pattern of the rituals in the region of Bastar. They are symbolic of the culture, tradition and beliefs of the tribal communities of the region. These cultural characteristics are also visible in the architectural practices of the tribes.

Vernacular Architecture

The Vernacular Architecture of Bastar is based on:

- Local needs
- Availability of construction materials
- Reflecting local traditions

The vernacular of Bastar involves the use of mud, bamboo, locally available wood (Sal, Teak, Nilgiri etc.), thatch, clay tiles and slatestone. Various tribes have their separate style of making houses and other spaces in the village yet all of them share one thing in common, the shared community spaces. They are all community dwellers and their houses are made in clusters with a common courtyard in between 4-5 houses which is used as a common space for gatherings and celebrations. Each house has a courtyard which is enclosed by a boundary made of wood from Tamarind or Babool trees. There are three types of house constructions: 1) Rammed earth construction used in hot regions of the district, 2) Random rubble masonry used in colder regions of Bastar, mostly seen in the villages near Jagdalpur, Chitrakote and Tirathgarh waterfalls, 3) Random Rubble masonry with mud plaster which can be seen on the more modernized areas of Bastar.



Figure 3: Rammed Earth Construction; **Source:** Author
Figure 4: Random Rubble Masonry; **Source:** Author
Figure 5: Random Rubble Masonry with Mud Plaster; **Source:** Author

Three types of materials are used for roofing: 1) Country tiles, 2) Thatch, 3) Slate stone mostly used by the Dhurva community. The beams and other structural members are made of wood from trees like Sal, Teak and Nilgiri. Bamboo is used to make rafters over which the roof rests.



Figure 6: Different structural members in the rural homes of Bastar; **Source:** Author

All the rooms in the house are interconnected. The house consists of two rooms, kitchen and animal shelter and Otla. Almost all houses have their own kitchen gardens. There are no toilets in the houses. Tribals generally defecate outside, in farms or open grounds or use government provided toilets and Shulabh Shauchalaya. The mud walls are as thick as 280-300 mm. These are made to this dimension to provide strength to the structure and support climate control.

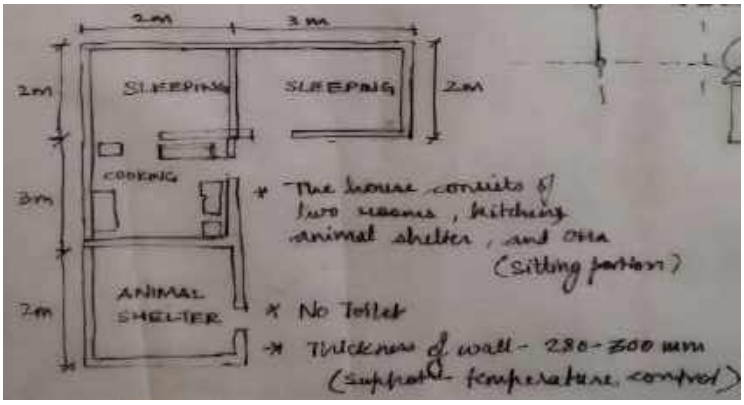

Figure 7: Plan of a rural house in Bastar; **Source:** Author

Plinth is made up of mud laid a foot deep to the ground. The plinth is approximately 300 mm in height. The verandah, which is called the Otla, is a very significant space in their houses as it is used for sitting out in the open to work or meet people and have conversations.

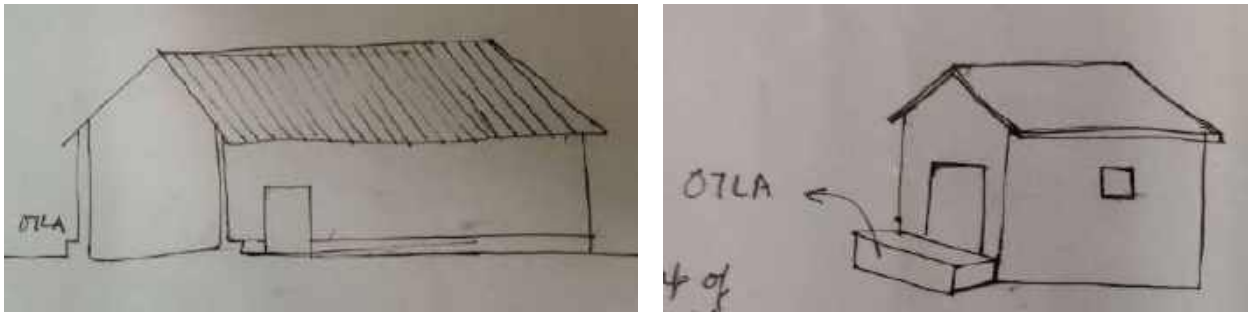

Figure 8: Position of Otla in a rural household in Bastar; **Source:** Author

Wood and bamboo are widely used for making joinery. Flooring is done by a mixture of clay and cow dung.

These community dwellers use their courtyards and verandas for multiple purposes like household work, gatherings, celebrating festivals etc. Their overlapping traditional values can be seen through their vernacular architecture.

Conclusion

The culture and traditions of Bastar are immortal and will be for eternity. Cultural continuity will support the continuing of rituals, beliefs, traditions, crafts and art forms as long as the tribal people keep on educating their younger generations and keep on imbibing knowledge and skills to them. As the study was conducted various inferences were gathered and the characteristics of the community of Bastar were found out. These features can be incorporated in the developmental measures taken for them and can be made useful for their growth and development yet protect their culture and heritage. Their intangible heritage being their beliefs, practices, festivals and rituals and their culture being their lifestyles and communality. These features can be seen both in the cultural practices and the architecture of Bastar.

An organic approach can be seen in the lifestyle of the people of Bastar. Their development patterns are spontaneous and interdependent on each other. A layered formation of knowledge and traditional skills can be seen in their everyday life, customs and beliefs.

Tribal people of this region are community dwellers and they live and work together in small communities. They even celebrate their festivals together and help each other in all things. Another characteristic feature is the temporal variation and usage of same spaces for multiple purposes.

The Adivasis follow a process-based approach, functions are given a priority and all development is function based. All sorts of construction or consumption of resources is necessity based. A sense of continuity, contextualism with historic beliefs and ongoing traditions can be seen and when it comes to the dwellings, spatial continuity can be witnessed.

The Tribal settlements of Bastar are based on the following sustainable principles:
Principle 1: Creating and organizing the settlements as a collective place of life
Principle 2: Management of water as the basis of settlement form
Principle 3: Infusing the sacred and the profane
Principle 4: Occupation and Ownership
Principle 5: Production and Consumption
Principle 6: Construction with the perishable
Principle 7: Renourishing Earth Naturally
Principle 8: Waste as a resource
Principle 9: Walking as the main means of transport

A holistic integration of human activities, not disregarding the joint resources of overlapping areas of these activities, is imperative to use natural resources in the most effective and efficient way. Landscape management shall be based on the ecosystem approach, taking into consideration even the built and intangible heritage of a cultural landscape.

Historic vernacular landscapes, compact, walkable, with mixed use, sociable streets and public spaces, integrally linked to water fronts and green lands have long offered alternative, low carbon models for liveable societies. These landscapes have also been intricately connected to their hinterland for food production, providing essential ecosystem services to the city. At this time when cities are engaged in rethinking and "building better" in the wake of the COVID- 19 pandemic, it is time to recognize, recover and nurture the place intelligence embedded in historic vernacular landscapes and their local communities for a more sustainable and inclusive future for all.

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11

The Sacred ecology of Govardhan Hill, Mathura

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Sub theme: Sacred Landscapes as a source of divine inspiration and community wellbeing.

Keywords: sacred landscape, urbanization, habitat fragmentation, local traditions, nature worshipping, sacred grove

Abstract

In the sacred lands of Braj exists Govardhan hill, highly worshipped and revered by pilgrims who visit to perform Parikrama around the hill. The sacred flora of the hill is sacrosanct to pilgrims who worship trees of Kadamba and Tamal as forms of Lord Krishna and Radha. The water bodies like Kunds, Sarovars and Pokhars are conceived as aquatic forms of Lord Krishna and places for rituals performed by pilgrims. Govardhan Hill with its rising popularity as a pilgrimage destination has suffered unrecoverable alterations in its landscape due to urbanization. Since, the sacred landscape of Govardhan Hill had strong lush imagery in the local customs therefore, the loss of sacred groves and disappearance of these place markers leads to subverting of cultural iconography and memories. The loss of several sacred sites and extinction of Kunds over a period of time has actually weakened the prevailing religious narrative of the pilgrimage. Moreover, the sacred hill which pilgrims hailed and prostrated while performing parikrama is no longer visible from Parikrama marg due to increased construction on the hill terrain. This study focuses on the sacred landscape of Govardhan, the urbanization around the hill and the vulnerable ecology of the region that still sustains religious practices of nature worshipping. This research attempts to discern into all the layers associated with a sacred landscape like Govardhan hill which has enormously transformed over the years as a major site of pilgrimage in Braj region.

1 Introduction

The sacred landscape of Braj has a distinct character which represents a unique symbolic relationship between the natural surroundings, flora and fauna. The ancient city of Mathura forms the nucleus of Braj while other major settlements are Gokul, Vrindavan, Nandgaon, Barsana and Govardhan. Braj is derived from Sanskrit word ‘Vraja’ meaning an enclosure of herdsman, a place where cows graze and pastoral community resides. The sacred landscape of Govardhan Hill, Vans, Raas-sthalis and Yamuna river had strong imagery in the local traditions and rituals. The region has a rich environmental and cultural history which makes it an important pilgrimage and tourism destination. As per the U.P. Tourism department, nearly 50 million pilgrims and tourists visited Braj region in 2018.

Figure 1: The part of Govardhan Hill that falls under the state of Rajasthan; **Source:** Author

Govardhan Hill, which is respected and hugely worshipped in the Braj region is believed to be the figurative form of Lord Krishna. Govardhan, literally meaning "The lord who increases the cattles," indicates the ancient practices of cattle rearing in the area. Govardhan hill finds several mentions in the Hindu legends. Lord Krishna and his brother Balaram spent hours grazing their cows on Govardhan Hill. Its shady groves and ponds and its hidden caves served as ideal places for Raas Sthalis (Places of Raas leela). In one of the most popular legends associated with Govardhan Hill, Lord Krishna instructed local villagers to worship the Govardhan hill not the sky God Indra because by directing the rain Govardhan made the land fertile and provided food for the cattle and supported the community. This infuriated God Indra who sent flood-causing rains on the villagers and then Lord Krishna lifted Govardhan on his little finger to protect his cattle and community (Brahmacari 1997, 1999). Most of these legends emphasize on the pastoral agrarian culture revolving around cows and how the sacred hill served the settlement for ages.

Figure 2: Govardhan hill and its settlements; **Source:** Author

2 Govardhan Parikrama

Govardhan is located about 23 kilometres away from Mathura city in the state of Uttar Pradesh. The sacred ridge lies adjacent to the state of Rajasthan with a small part of the site falling under the borders of Rajasthan near Punchari village at its southern foot. The five villages around Giriraj Parvat namely Jatipura, Aanyor, Radha Kund, Govardhan, and Punchari developed into dense settlements growing around the ponds (Sinha, 2004). A break in the profile of the hill where it tapers at its mid-range is known as Dan Ghati. Dan Ghati has been populated over the years for its connected roads with Mathura. Dan Ghati serves as the base point for the Parikrama Path, dividing the Parikrama into Badi Parikrama and Choti Parikrama (Sullivan, 1998).

The total distance of Parikrama is around 21 km long. The entire Parikrama is composed of Choti Parikrama and Badi Parikrama which are 9 km and 12 km long respectively. The pilgrims also perform an Inner Parikrama also called Talhati ki Parikrama which is 6.1 km long (UPBTVP). The Parikrama route crosses highly dense settlements like Dan Ghati, Radha Kund and villages like Aanyor, Jatipura and Punchari etc. Some of the prominent spots in the Govardhan Parikrama are Dan Ghati Temple, Mansi devi Mandir, Mansi Ganga, Mukharvind, Kusum Sarovar, Radha Kund, Shyam Kund, Ashok Van, Shri Girrirajji Mandir, Radha Govind Mandir, Surbhi Kund, Govind Kund etc. Presently, the road running around the Govardhan Hill provides movement of motorized vehicles like rickshaw or private vehicles like motorcycle, car etc. These rickshaws provide an easy option to pilgrims who prefer not to walk due to physical conditions or to save time as motorized transport reduces the time of a seven to eight-hour journey. Due to increased use of transport the Parikrama marg witnessed heavy congestion and traffic at several points. In 2015, NGT (National Green Tribunal) directed local administration to prohibit vehicles on Parikrama marg. Only E-rickshaws were permitted. A multi storey vehicular parking for the pilgrims is currently under construction near the police chowki in Dan Ghati. In 2018, NGT ordered the state government to declare Govardhan hill as 'No Construction Zone'.

3 The Sacred value of flora and fauna

In terms of geo-morphology, the region of Braj can be classified into 3 categories: the plains, the hilly area and the khadar area. Although the plain area is comparatively larger and extends on both the sides of the Yamuna river in west and east. The area on the east of river Yamuna (trans-Yamuna tract) is comparatively

more fertile than land on the west of the river (the cis-Yamuna tract) as trans-Yamuna land comprises of fertile clay soil. Generally the soil in cis-Yamuna zone is known as piliya, a light yellow loamy soil. The hilly area of Braj is confined to the west and north-west areas of Braj. These existing low hills (less than 100 feet) are actually the offshoots of Aravalli range and are regarded to be of high religious value(Gupta,2014). The vegetation in this region is of dry and deciduous type and the original species found in these areas are scanty vegetation species. (Joshi, 1968).

Although the earliest settlements and cultural horizon of this region starts during the protohistoric period, though, there exists evidence of the presence of palaeolithic (relating to the second period of stone age Stone Age from about 2.5-3 million years ago) men in the Govardhan hills. (Prof. D.K. Chakrabarti and an officer of A.S.I. Mr. L.M. Wahal had reported finding of O.C.P i.e. Ochre Coloured Pottery and late Harappan potsherds.) Varaha Purana composed in 10 to 12th century mentions the site of Govardhan as "To the West of Mathura, at a distance of two yojanas, is Govardhan, the topmost holy place. Anyone who performs its parikrama will never have to take birth in this world again." The texts of Vraja-bhakti Vilasa in 1552 AD also provide instructions to pilgrims on their parikrama of Govardhan Hill to offer proper respect to all the deities, brahmins, cows, trees, creepers, kunds and rocks of Govardhan. It is also advised not to offend any living entity, moving or non-moving otherwise the pilgrim will subvert the benefits of his parikrama. The local customs of Govardhan are deeply rooted in the beliefs of considering everything from flora, fauna, rock to water body as embodiment of God or divine power. The scented tree of Kadamb used in the production of Ittar, has remained a central figure in various episodes of Raas leela. The Kadamb Van near Jatipura village is a sacred grove that finds several mentions in religious text and is still present today. Sites like Surabhi Kunda, Indra Kunda and Airavata Kunda are all present inside Kadamba Van forest. It is believed that this forest served as a meeting place for Radha and Krishna. A pair of Kadamba and Tamal trees symbolizes the pair of Radha and Krishna. The pair of Tamala and Kadamba trees present in Raas sthali near Punchari are believed to date back 5,000 years ago and are said to have witnessed the rasa-lila dance. As per local beliefs, Lord Krishna is said to have performed his rasa-lila episodes here. The cup shaped leaves of Kadamba trees are believed to be used by Lord Krishna and his cowherd mates to eat yogurt or drink buttermilk. In 1514 when Sri Chaitanya Mahaprabhu came to Vrindavan, he rediscovered two important kunds called Radha Kunda and Syama Kunda which were lost by that time. The present-day Radha Kunda is said to mark the spot of the original kunda that Radha and the gopis dug. (Goswami Maharaj 2007). The text from Kunjavarnan from the 17th century describes Radha- Shyam Kunds covered with mango and Kadamba trees and lotus-filled ponds with ducks and swans (Goswami Maharaj 2007, Haberman 1994). Hindus believe monkeys to be revered and respected. This respect originates from the legend of the monkey god, Lord Hanuman in the Hindu Sanskrit epic Ramayana. All species of monkeys, including Rhesus monkeys are conceived as descendants of Lord Hanuman (Dutt, 1987). Hence all species of monkeys enjoy the reverence and offerings by pilgrims and people in Govardhan.

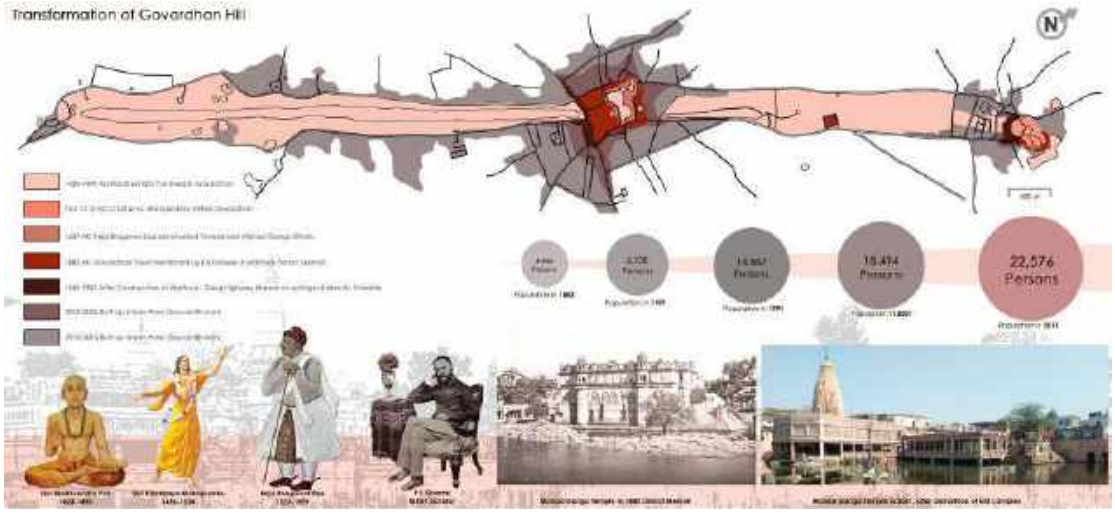

Figure 3: Timeline of the transformation of Govardhan Hill; **Source:** Author

4 Site Analysis

Using GIS, Slope and contours of the Govardhan Hill were generated. The creation of slope contours helped to develop a Digital Elevation Model of the site which was later cross checked with site visits. The methods of site visits, photography of the site helped in shaping evident site observations. After analysing site observations, the major issues identified on the site of Govardhan were-

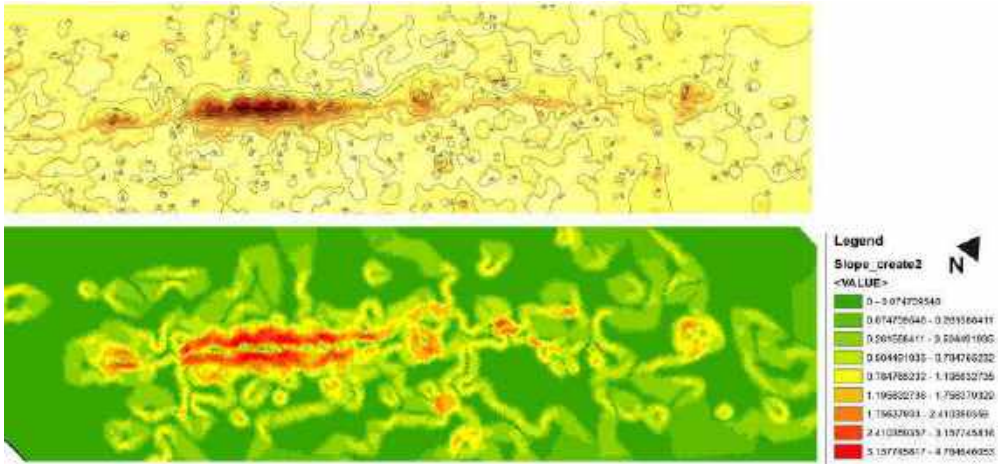

Figure 4: Contour (above) and Slope (below) of Govardhan Hill; **Source:** Author

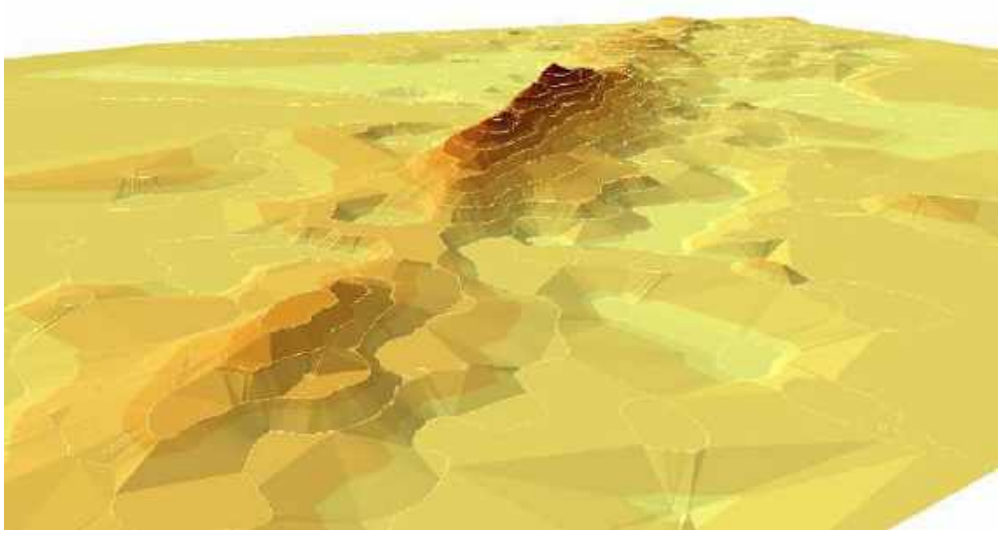

Figure 5: A Digital Elevation Model of Govardhan Hill; **Source:** Author

4.1 Encroachment

The Govardhan Hill has been heavily encroached at certain points mainly due to the lack of protection or delineation of boundary wall to segregate the sacred hill from the surroundings. However, at the time of the site visit, the hill and its surrounding forests were protected under the sanctuary of a recently constructed fenced boundary wall with gates. Still there were several points in the site which were not protected by the erection of a boundary wall. Dan Ghati is the point where the ridge terminates between Badi and Choti Parikrama. Due to the absence of a ridge, Dan Ghati serves as the ideal spot for human settlement and has been populated and urbanized from the longest time. Around 934 acres of land of the hill is unbuilt while 550 acres have been developed under the settlements (Sinha,2014). Most of these buildings at Dan Ghati are relatively old compared to the buildings linearly sprawling along the boundaries of Govardhan hill. In many places these buildings, hamlets, shops not only sit on the opposite side of the Parikrama road facing Govardhan hill but actually on the premises of the hill and its surrounding forests. The state of Uttar Pradesh has finally delineated a boundary to safeguard the hill, on the other side, a relatively less portion of the ridge that falls under Rajasthan at Punchari village is blatantly unprotected and poorly maintained. (Figure 2)

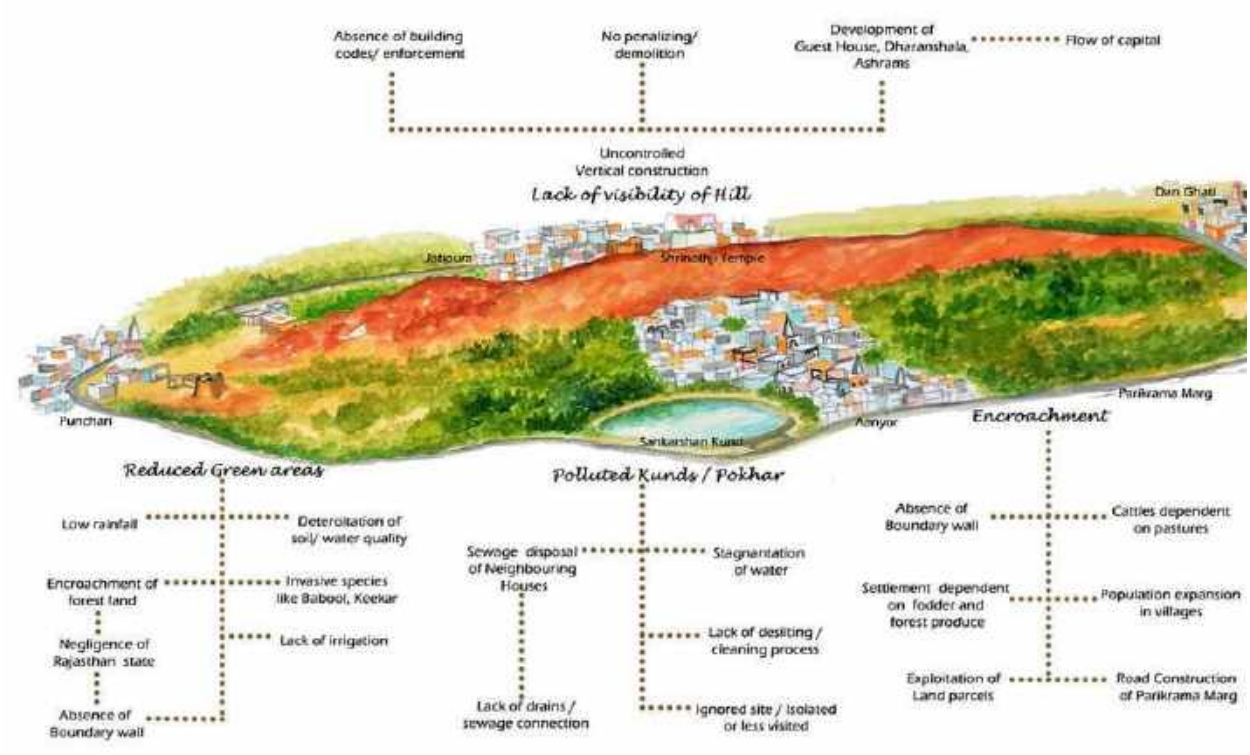

Figure 6: Identifying problems on Badi Parikrama route; **Source:** Author

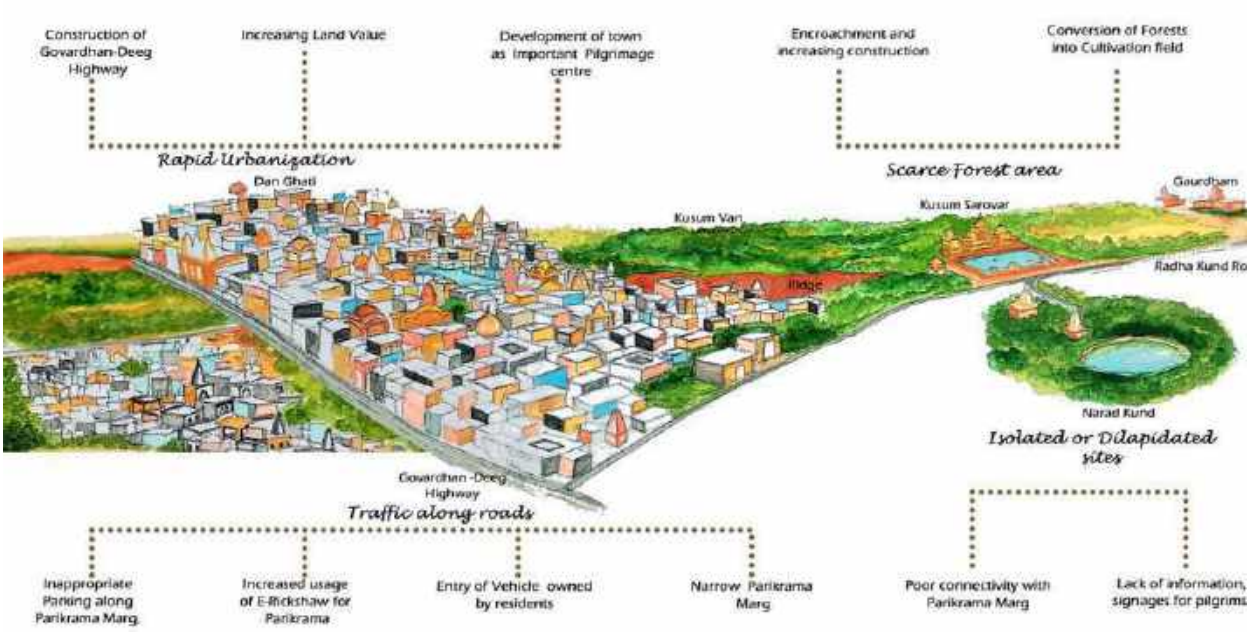

Figure 7: Identifying problems on Choti Parikrama route; **Source:** Author

4.2 Lack of Flora and Fauna

Over the years the patches of forests surrounding the hill were converted into farmlands. The wide range of flora and fauna that existed in Govardhan depleted due to its massive urbanization. Population of the city increased by 22.1% in the last 10 years. In the 2011 census total population increased to approx. twenty-two thousand from eighteen thousand in 2001 (DCHB,2001,2011). The rise in popularity of Govardhan as pilgrimage town contributed to the change in the existing environment where large patches of lands were converted to build more hotels, guest houses, dharamshala, public restrooms, gaushala, ashrams and temples. The dense forest cover started dwindling extensively when the surrounding tracts of land around the hill were converted into farmlands or residential colonies. However, fishing and hunting is not practiced in the villages of Govardhan but due to deforestation and human habitation, the forest

dependent fauna moved out. Govardhan had several wetlands and since wetlands in an agriculture-dominated landscape are known to support high bird diversity (Sundar & Subramanya 2010; Sundar 2011). Apart from inviting bird populations these wetlands also offer ecological services like cattle grazing, harvest of wetland produce and water for agricultural purposes (Sundar & Kittur 2013). These wetlands support breeding populations of waterbirds, including those that form heronries like Painted Stork Mycteria leucocephala, Asian Openbill Anastomus oscitans, and Black-headed Ibis Threskiornis melanocephalus. These Heronry birds were good indicators of the health of the wetland ecosystem that once existed in Govardhan. Govardhan was once a house for a mono-specific colony of Painted Storks in Mathura district. This heronry was considered the oldest on record, first described by Hume & Oates in 1890. But in current time this heronry of Painted Storks in Govardhan is now considered lost due to absence of nesting of the Painted Storks for more than 5 years. The nesting depends on the habitat type and nesting tree species in the region (Dwevedi,2014). Although, during winter season several migratory birds visit from Keoladeo Ghana National Park which is around 35 kms away in Bharatpur. The forests of endemic species like Kadamba, Tamal, Karaira, Pilkhan in Govardhan were reduced to shrubs of Babool and Keekar with shrinking wetlands.

4.3 Polluted Kunds

Govardhan has around 23 major kunds. Some of them are located at the foothills of Govardhan hill like Hariji Kund, Govind Kund etc, while some of them are located away from the hill in the interiors of forest like Uddhava Kund, Surbhi Kund etc and some of them are surrounded by dense human habitations around them like Radha kund, Shyama Kund, Manasi Ganga etc. Some of these kunds receive surface flow of other kunds especially those in pairs like Radha -Shyam Kund or Rudra – Hariji Kund while some of the kunds are fed by wetlands, natural springs or Agra canal. The pilgrims use to perform rituals, ablution or take holy dip in these kunds. Hence, they are an inevitable part of pilgrimage. Most of these pilgrims offer milk, flowers, and puja samagri in the waters of kund which leads to the eutrophication and deterioration of water quality of these kunds (Agrawal,2017). Many of these kunds also receive the sewage waste from the neighbouring drains or villagers even wash their cattles in the waters of these kunds. While some kunds are desolate and suffer from negligence like Gwal Pokhara kund, Malayhari Kund etc. Some of these kunds have started to vanish due to extreme eutrophication and eventually drying up. For example, Banu Khor, Malayhari Kund etc.

Figure 8: The polluted Banu Khor near Radha Kund; **Source:** Author

4.4 Insensitive development

Although the peaks of Govardhan Hill rises about 17 to 20 metres above the ground, most of the ridge remains invisible from the outer Parikrama Marg of both Badi and Choti Parikrama. It is around Punchari

village and before Aanyor Village that the hill is actually visible from the Parikrama Marg. It is only when one walks inside these sloping villages that they get to see the Govardhan hill. Most of the houses in Jatipura or Aanyor have resorted to operate as guest houses or dharamshala in the additional floors to invite pilgrims. The open spaces inside the villages have been converted to parking spaces. The Nilgai, deers and birds which grazed or lived in the forests of Govardhan hill have now maintained distance from the hill due to human activities.

5 Discussion

5.1 Regulation of Building Construction around Govardhan Hill

Govardhan hill should be considered as heritage citing its religious, cultural and ecological importance in the region of Braj and pilgrims across countries. Subsequently, it is extremely important to regulate the building construction in villages like Jatipura and Aanyor which actually sit over the Govardhan Hill.(Fig 6) These villages are densely populated and over the time have developed into mixed use areas with shops selling and catering to pilgrims selling them offerings, prasad etc used for the worship and darshan. The increasing number of floors in the houses of Jatipura and Aanyor blatantly obstructs the visibility of the hill to the extent that it is simply not visible from Parikrama Marg. The narrow lanes provide no hint of the hill from the Parikrama marg. Not only the vistas but these villages are expanding spatially and are encroaching the neighbouring forests which act as a buffer around the hill. It is really important to devise a revised set of development controls in the villages like Jatipura and Aanyor which are located over Govardhan hill to restrict the building height and construction to reduce the impact of human habitation on the flora and fauna of the forests and hill.

5.2 Afforestation and creation of buffer zones

The surrounding forests around the Govardhan hill have been decimated at several places like Dan Ghati, Jatipura, Aanyor and Radha Kund. The areas lying opposite to these forests on the other sides of the forest have been turned into residential areas or simply agricultural fields. These isolated patches of forests surrounded by fields and human settlements from all sides cause habitat fragmentation for fauna dependent on these forests causing both loss of natural habitat and ability to move between regions hence leading to extinction of species (Fahrig,2003). The proposed Land use Plan for Govardhan has even designated these land patches along the Parikrama Marg as residential areas. It is important to actually turn these areas adjoining Parikrama marg into protective forests buffer areas which further discourages construction of buildings or encroachment on this area. It is important to establish native species of Govardhan like Kadamb, Tamal, Pillkhan, Karaira, Parijat, Pakar, Ashoka, Neem, Tamarind, Bakul etc. These native trees have an important role in attracting and housing the native fauna of the region especially endangered birds or heronry which nested in this area like Painted Storks. These forests in buffer areas will not only provide food and habitat for fauna but will add scenic value for pilgrims and ecotourism. The water bodies lying in these buffer areas should also be restored and planted with these native species. These forests should enjoy the reverence of pilgrims who worship most of these native species as a form of gods. It is of high importance that the proposed Land use Plan should actually designate these adjoining areas under forest buffer areas of around 100-200 metres and simply prohibit any kind of building construction under these areas. These forest buffer areas can function as green corridors for fauna which can move for food and grazing between the regions through the interconnected buffer forests especially deer, cow, Nilgai, goat, fox etc.

Figure 9: Creation of protective Green Buffer zone along hill; **Source:** Author

5.4 Restoration of Kunds, Pokhars

The kunds of Govardhan like Govind Kund, Airawat Kund, Surbhi kund, Udhhava Kund etc which are located in the forests of foothills suffer from stagnation of water causing the sludge to settle down and leading to eutrophication. This results in algal growth and deteriorating quality of water. It is important that these kunds are drained and desilted. The water of these kunds needs to be refilled and cleaned regularly. The water drained from these kunds can be easily used for irrigation of the surrounding forests and groves. It is also necessary to completely prohibit pilgrims from disposing of flowers, garlands, idols, milk or ashes from hawan into the water of kund by erecting suitable signboards.

5.4.1 Retention Ponds

Pokhars in Govardhan are simply ponds with no consolidated ghats, which receive water from surface run off or from overflow of low lying wetlands. These pokhars might or might not hold any significant religious importance but are of great ecological importance for the Flora and Fauna. The villagers use pokhars for washing their cattle while birds like Sarus Crane, Painted stork, duck or flamingo often can be seen in these water bodies due to the proximity of Keoladeo Ghana Bird Sanctuary which is around 35 kms far from Govardhan. Most of these pokhars have either dried up or have been reclaimed or encroached for construction activity leading to less number of pokhars. It is therefore important to restore these ponds by constructing retention ponds which collect the surface runoff from the hill slope. The GIS method has been used for calculating the slope of Govardhan hill and generating terrain and Digital Elevation Model of the Govardhan hill which clearly highlights the low-lying areas which can be used for constructing retention ponds. These retention ponds can supply water collected from rain water harvesting to both kunds and ponds after treatment from phytorid system.(Fig 10) Some of the kunds like Hariji Kunds, Rudra Kund, Radha Kund, Shyam Kund, Lalita Kund etc are situated near the settlements and receive wastewater from the neighbouring drains. Hence, it is important to treat the water by setting up a Phytorid system. Phytorid system is a subsurface flow constructed wetland system used as a stand-alone sewage treatment method. It is used for treatment of domestic wastewater from colonies, commercial complexes, hotels, open drainage, agricultural wastewater etc. It has a flexible design which can be implemented at any soil strata, water levels, above ground level or below ground level, even on slopes. Phytorid system uses a phytroid bed of subsurface flow system with plantations of species of aquatic plants to attain maximum efficiency in the treatment of domestic wastes. Some of these species are Forage Kochia (Kochia spp), Poplar Trees (Populus spp), Willow Trees (Salix spp), Alfalfa (Medicago sativa), Reed (Phragmites spp), Hyacinth and other grasses etc. The advantage of using the Phytroid system is that no mechanical or electrical machines such as aerators are used in the process, which makes it more sustainable and cost effective. The vegetation of phytroid can be well integrated into the landscaping design. The water from retention ponds can be used to fill the waters of drained kunds. The kunds and water bodies should be planted with hedges, shrubbery and trees to develop shaded Kunj (rest shelters) for pilgrims or visitors.

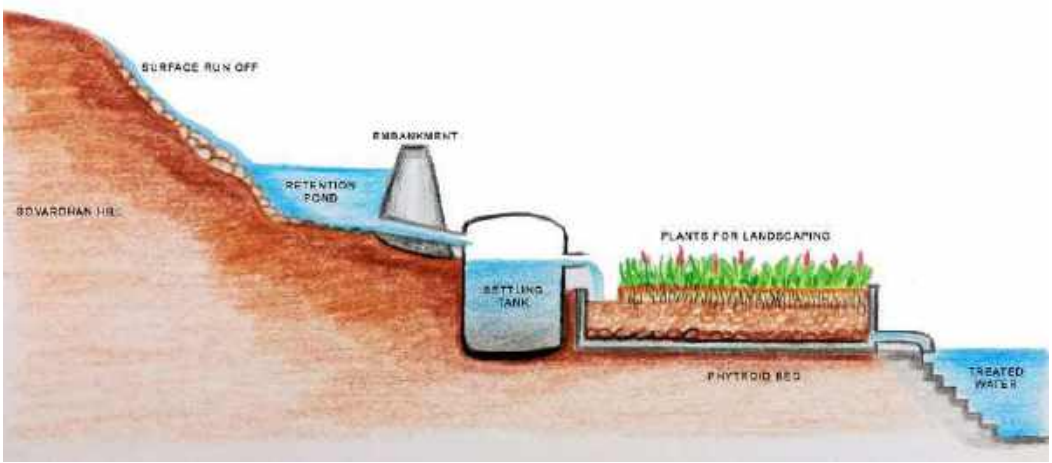

Figure 10: The combination of retention ponds and Phytroid system to catch run off from hill; **Source:** Author

6 Conclusion

The major issues posing threat to the ecology of Govardhan Hills were identified in the study as encroachment, lack of endemic flora and fauna, pollution of kunds and waterbodies, Insensitive or uncontrolled development and construction etc. Based on these issues this study suggested measures of regulating building construction in the critical areas of the site which will protect the terrain of the hill currently hampered by the settlements. The creation of a buffer zone will enrich the vegetation and provide shade along the Parikrama. The construction of retention ponds to catch runoff from the hill will supply water to kunds and water bodies in the sacred groves. The treatment of wastewater discharged into kunds by the Phytroid system will prevent the contamination of water bodies. The water from retention ponds would help in irrigation of sacred groves, buffer zones or refilling of kunds and sarovars.

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12

Reclaiming Ramjanmabhoomi in Ayodhya as a Narrative Landscape

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Sub theme: Sacred Landscapes as a source of divine inspiration and community wellbeing.

Keywords: narrative, memory, place images, Ramayana, cultural landscape

Introduction

Ramjanmabhoomi has been much in the news lately, with the Supreme Court of India's verdict in 2019 on the dispute between Hindu and Muslim claimants paving the way for the construction of a Hindu temple at the site. Narendra Modi, Prime Minister of India, laid the foundation in silver bricks in the *bhoomi-pujan* (site worship ritual) ceremony on August 5, 2020 to which were added water and soil from sacred rivers, tanks, and holy sites from across South Asia, and a *parijat* (coral jasmine) tree sapling was planted. [1] The temple is designed by the Sompura family of architects in the Gurjara-Chalukya style of architecture according to the traditional canon of vastu shastras (design treatises). The imposing edifice with soaring towers (*shikharas)* over five *mandaps* (pavilions) is being built with sandstone and the sanctum sanctorum has been erected over what is believed to be the exact spot of Rama's birth. But it is not clear how the site in its entirety is going to be designed. Media images and walkthroughs show exhibition galleries, museum, 360-degree amphitheatre and colonnades covering most of the 70-acres, interspersed with a generic lawn sprinkled with trees. No existing temples, wells and trees are included in these views, leading the viewer to believe that the site has no history. Moreover, it is treated as stand-alone, not embedded within the cluster of sacred sites in its vicinity. The image projected is of a grand monumental complex, befitting the stature of Rama, the divine hero and king.

The traditional canon is strictly adhered to in the Ramjanmabhoomi temple design but there is less clarity on designing the temple surroundings. It appears the complex will combine worship spaces with exhibition halls and museums, food courts, and souvenir shops, all set within vast landscaped courts of green lawns, water bodies with dancing fountains, and colonnaded walkways. These theme park style temples are very popular in India as well as in diasporic Hindu communities in other parts of the world, promoting entertainment at the expense of rituals (Singh 2010). This precedent, if followed, would treat the site as a blank slate, obliterating its richly textured and layered history and would be an imposition on the land, a simulacrum of what would have existed at any given point in time.

Narrative Landscape

It is proposed that Ramjanmabhoomi site design aims to create a narrative landscape that interprets Rama's story cherished by millions of Hindus for two and half millennia and deeply embedded in their collective consciousness. The narrative form is best suited to 'recall and reshape memory, to overcome the amnesia that time piles up on a people's psyche' (Sheikh 1994). The origins of Rama's story lie in the bardic oral culture of north central India where the Koshala kingdom with its capital at Ayodhya flourished in remote antiquity. *Ramayana*, composed by the sage Valmiki anywhere between 5th and 2nd

1 The *parijat* tree is believed to be a tree of paradise, produced when the ocean was churned by the gods and demons. Its trifoliate leaf is a symbol of Brahma, Vishnu, and Shiva, creator, sustainer, and destroyer of the world respectively (Amritalingam 2013).

centuries BCE, has preserved for posterity the extraordinary tale of the warrior king, Rama, who was Vishnu (one of the supreme gods of Hinduism) incarnate, having descended on earth to vanquish evil and restore the moral order. The story told in many genres includes place legends that commemorate sites specifically associated with his life. Ayodhya, and especially his birthplace in the historic fort of Ramkot is a receptacle of legends, and witness to the history of contestation between Hinduism and Islam, thus providing a continuum between myth and history.

Images are integral to memory formation and recall. Archetypes as mental templates generate a range of possible images and their interpretations that become building blocks of collective memories (Rowlands 1993). Archetypal landscape images in different genres--poems, stories, paintings, sculptures, and performances—are significant in the narrative structure and play a key role in remembering. Actual sites are shaped into significant places in the likeness of images and thus embody the *Ramayana* narrative, attracting pilgrimage. At Ayodhya too, landscape archetypes—combination of hilly terrain and river or river confluences—forming the structure of sacred geography in India, and garden groves with water tanks on riverfronts, are significant mnemonic markers of Rama's story. Site readings of this landscape structure and its archaeological remains, its toponymy, and spatial practices of pilgrimage, are essential to projecting into the future. In the conceptual framework of design as place making, place images are integral to narratives in multiple genres; person and place share attributes, and at times are synonymous; and topographical features embedded with archaeological fragments are memory traces that can anchor the emergent landscape narrative. The framework is predicated on the idea of place making as a process for memory retrieval in the present and encoding memories for the future, the 'built environment as a memory bank, both individual and communal' (Treib 2009). Site planning and design of Ramjanmabhoomi, guided by site readings would create a landscape narrative for the viewers and not only preserve memories of the divine hero and his deeds for posterity, but also communicate the lost environmental ethos of living in harmony with nature. The premise is that devotees will visit the temple to obtain darshan (ritual sighting) of deities of Rama and his family, but they will experience the place as a site of memory of his earthly life, of his divinity made immanent in the physical landscape.

Place Images

The many *Ramayanas* in different languages composed over a long period are a testimony to the centrality of the story in the cultural imaginary of south and southeast Asia (Richman 1991). The collective memory of Rama's rites of passage, trials and tribulations he faced in his exile from and return to Ayodhya, and his attainment of divine status, is sustained by texts and their enactments in dramaturgical performances, visual representations and artistic productions of every kind, and most of all in physical places. Ayodhya as the birthplace of Rama and the capital of the kingdom he ruled, has served as the mnemonic landscape for more than a millennium. Legends were grounded at specific locales, the most important being Rama's exact place of birth, Ramjanmabhoomi, a site of hierophany, manifestation of divine Vishnu in human form as Rama, and therefore a sacred place where encounter with divinity would be forever possible (Davies 2009).

Figure 1: *Ram durbar*, folk art at Ayodhya street; **Source:** Author

Ramjanmabhoomi is both a place and image—a place of birth and domicile and an image of Rama. The child deity worshipped at Ramjanmabhoomi is one among his many forms, each associated with a place. Of the plethora of images in verbal and visual texts, three are ubiquitous, celebrating the roles Rama played on earth—king, warrior, and renunciate. In the Ram durbar (court of Ram), he is the king of Ayodhya presiding over the court with his wife Sita, his brothers and the monkey-god Hanuman, in attendance (Figure 1). His kingdom is *Ramrajya* where everyone is happy, healthy, and prosperous over whom he rules as a just and compassionate king. He is *maryada purshottam*, supreme among men whose behaviour epitomized honour and righteousness but he is incomplete without his wife Sita, his *shakti* (primal energy). He, the dark sky god, is complemented with the fair earth goddess, and together they rule the earthly kingdom of Ayodhya, exemplary in their love and devotion to each other, and in their faithful adherence to the royal code of *dharma* (moral law).

Rama is visualized in a warrior pose holding a bow, a slayer of foes, conqueror of demons including Ravan, the powerful king of Lanka, who had abducted Sita and held her captive in his island fortress. The king and warrior images establish him as a sovereign ruler and powerful world conqueror. There is yet another iconic image of Rama –*tapasvi raja,* renunciate king–who acted selflessly, made *tyaga* (renunciation) a supreme virtue, and had extraordinary control over his emotions. This renunciate persona was shaped by his education in the *ashram* (hermitage) of his guru Vashishth and his sojourn in the wilderness with the sage Vishwamitra to protect the brahmin ascetics from demons, and then later in the fourteen years of his exile with Sita and his brother Lakshman. The archetypal hero's journey, although beginning and ending at Ayodhya, takes place in the forest, thus linking the city of his birth with the larger territory beyond.

Ayodhya is the seat of *Ramrajya* captured in the iconic image of *Ram durbar* but the forest is the setting where his warrior and renunciate personas are fully developed. There is a saying in Hindi, "*Jab Ram ban gaye, tab hi Ram ban gaye,*" meaning that Rama became himself when he went to the forest (Lutgendorf 2000). In facing wild beasts and conquering demons in the wanderings through wilderness, and in practicing an austere way of life in forest hermitages, Rama's growth into a *tapasvi raja*, one who combines in himself the traits of warrior king and ascetic renouncer is evident (Lutgendorf 2000). The archetypal landscapes of exile that shaped Rama's persona—aranya (wilderness) and van (forest)—are depicted in rich imagery in Valmiki's *Ramayana* and its retellings in other languages and pictorial representations. They are integral to the story in communicating his thoughts and feelings and as settings for his actions that results in self-discovery of his own divinity.

Ramayana reveals ancient Indic attitudes towards nature, with many facets, of which the transformation of chaotic aranya into the pastoral *tapovan* (forest of asceticism) is significant in the story of exile. Rama, Sita, and Lakshman visited many ashrams in their journey through Dandakaranya, named after the demon Dandak. In contrast to the impenetrable and trackless aranya wasteland, inhabited by cannibalistic rakshasas (demons), the van is depicted as lush and sylvan with diverse mix of vegetation types and teeming with birds and animals (Lutgendorf 2000, Roy 2003, Amrithalingam 2013). Of the different kinds of van, *tapovan* is represented as an island of sanctity where sages practiced austerities in ashrams built on riverbanks and in the forest clearings and purified the wilderness of its inherent evil through their moral force. While the *tapovan,* characterized by absence of violence and amity between beasts of prey and humans, is a place of spiritual force and a sanctuary, *pramodvan* is a veritable paradise of eternal springtime where nature is at its most fecund, inspiring eros. The valley landscapes of Chitrakut and Panchvati where Rama and Sita lived happily during their exile and riverfront groves in Ayodhya depict such garden groves in the *Ramayana* (Figure 2).[2] The natural diversity of the tropical deciduous ecosystem is captured in Valmiki's descriptions of lush natural scenery with water as a central feature. The text mentions 200 plant species, and a large variety of animals and birds, indicative of the poet's

2 *Viraha rasa*, intense pangs of love in separation, are also acutely felt in natural surroundings --Rama laments Sita's loss after her abduction by Ravan as he waits out the monsoon at Pampa Lake and Mount Prasravan and Sita is grief stricken as she remembers Rama during her captivity in Ashokvan at Lanka.

familiarity with the native flora and fauna of the region (Lee 2000).

Figure 2: Rama, Sita, and Lakshman on Chitrakut Mountain, Mewar, 1649-1654; **Source:** British Library

Memory Traces

Contrary to media images, Ramjanmabhoomi is not an empty site but has significant memory traces--archaeological fragments, building structures, and historic wells—that speak of continuous occupation of the site since 13th century BCE. The undulating terrain of hillocks and water bodies is an armature for place legends admirably traced by Hans Bakker (1986) in his study of three recensions of the place text, *Ayodhya Mahatmya* compiled as a pilgrimage guide between 11th -18th centuries CE. He considers the deification of Rama and reification of Ayodhya as his capital to be parallel cultural events. The imprinting of stories on Ayodhya's landscape began in the second millennium in face of the rising power of Islam in the Indian subcontinent. However, this does not preclude the possibility that place legends preserved collective memories of the site as the birthplace of Rama, lost and reclaimed repeatedly.

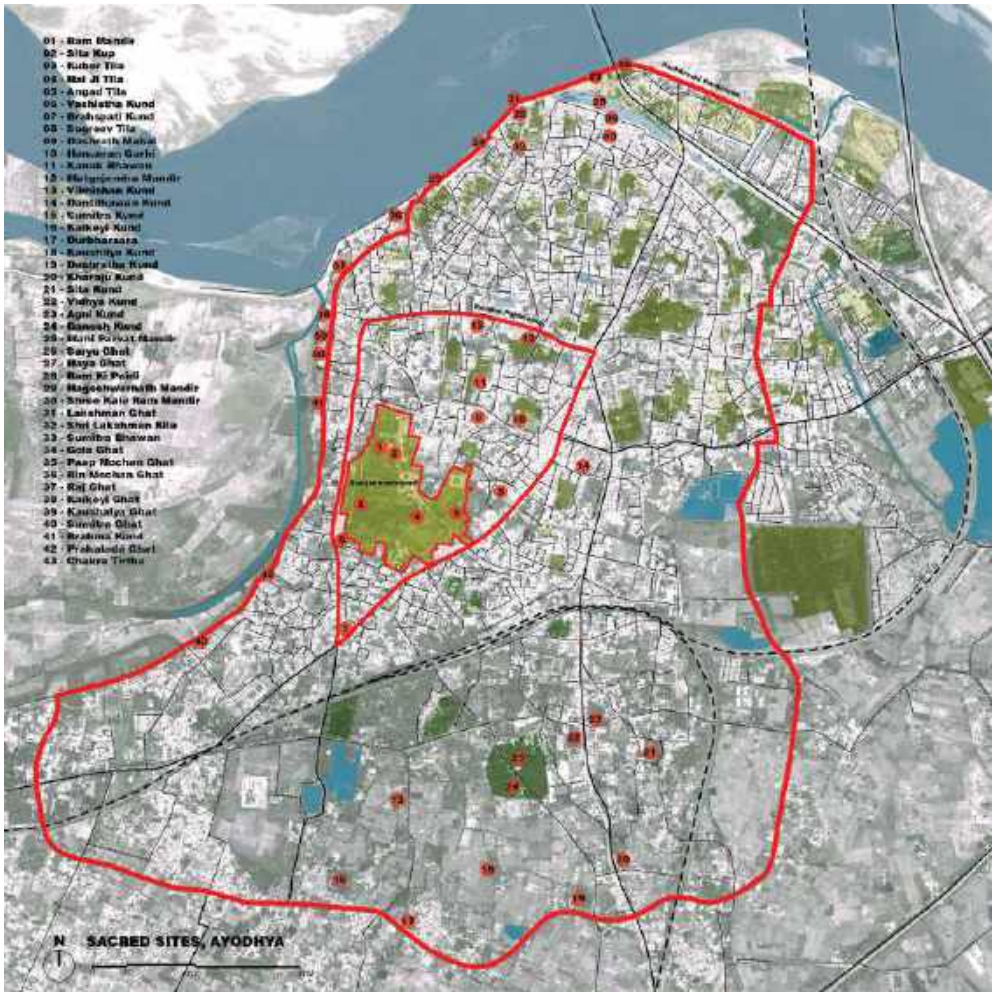

Figure 3: Sacred sites in Ayodhya; **Source:** Author and Heena Gajjar

Place toponymy reveals the imprinting of Rama's story on the landscape as the Rama cult grew in medieval India and Ayodhya became a pilgrim centre (Bakker 1982). The land acquired for building the temple covers part of the ancient Ramkot, the fort built by Ram on the hilly plateau overlooking the River Saryu in mythic time, that was repeatedly rebuilt by later Hindu kings, and Islamic rulers. The shrine of Sita Rasoi (kitchen) and the nearby Sita Kup (well) on the north represents the power of Sita, the earth goddess, who transforms raw food into edible food. She, a symbol of plenitude, is the source of bounties of *Ramrajya*.[3] The remains of the gateways of the historic fort are represented by mounds to the east, southeast, and southwest of Ramjanmabhoomi. They are named after the monkey warriors who helped Rama in his quest to trace Sita and bring her back after killing the demon king of Lanka, Ravan. Legend has it that Rama brought them with him to guard his fort when he returned to Ayodhya from his exile. The mounds to the southwest and southeast include Kuber Tila, Nal-Neel Tila (who had built the bridge to Lanka), Angad Tila, and Sugriv Tila (west of the site), the last three named after monkey warriors.[4] This place toponymy connects with Rama's exile and shows the money warriors to be symbolic guardians of Ramkot, replacing the older place deities (Bakker 1986).

Figure 4: Skyline of Ramkot; **Source:** Author

Ramjanmabhoomi and the land acquired around it cannot be treated as stand-alone; the future temple complex will remain embedded within a cluster of sacred sites in Ramkot and on the Saryu Riverfront (Figure 3 and 4). This heritage precinct is a dense urban settlement of narrow winding streets leading to temples with large open courtyards. The very human scale of Ayodhya's core contributes to the sense of place that new interventions should conform to. Hanumantila, named after celebrated monkey-god Hanuman, is to the east of the site with a 18th century temple that by some accounts, is the most visited shrine in Ayodhya, vying with Ramjanmabhoomi in its popularity, and in its close proximity are popular temples such as Kanak Mahal, the golden palace of Rama and Sita and Dashrath Mahal, built in the late nineteenth century (Figure 5).[5]

3 Sita's fertility and life sustaining powers are grounded in the landscape at Sita Rasois in many other sites in India commemorating her power in stoves, grinding stones, and rolling pins. At Chitrakut, site of her exile with Ram and Lakshman, a Sita Rasoi is built at the top of the hill. Lalapur Hill on the banks of the River Tamasa near Prayagraj, the site of her second exile in Valmiki's ashram, has a small cave known as Sita Rasoi where she cooked for her sons Luv and Kush.

4 Kuber Tila, marking the south-west bastion of Ramkot has both mythic and historic significance—named after Kuber, the god of wealth, and occupied by a Buddhist stupa during and during the Gupta period (Bakker 1986). More recently two freedom fighters (Ramsharan Das and Amir Ali) hanged from a tamarind tree in the first war of independence in 1857.

5 According to Bakker (1086), originally there was a *bhairav* sanctuary at the site and only later with the rise of the Rama cult in the sixteenth century was the site linked to Hanuman. Hanuman is worshipped as the caretaker of Ayodhya when Ram left for his celestial abode by immersing himself and his followers at Goparatra, the confluence of Rivers Sarayu and Ghaggra, about eight kilometers from Ramkot.

Figure 5: Kanak Mahal in Ramkot; **Source:** Author

Space of Representation

Ramjanmabhoomi is a representational space, of Rama's birth and his continuing presence invoked through ritual, and thus a mounting pilgrimage destination. It is also a space of representation produced by artifacts, historic narratives, and visual texts (Lefebvre 1992; Sinha 2020). The ambitious design program for buildings proposed by Ramjanmabhoomi Teertha Trust has a major focus on spaces of representation --a museum for the display of archaeological relics, open air amphitheatre, exhibition hall, theatre, library and reading room, lecture rooms and communication centre--for promoting material and intangible cultural heritage of *Ramayan* in buildings and artifacts.[6] The landscape design program includes only three features—lily-pond and musical fountains, an activities area for children, and a meditation zone. These proposals appear to be prioritizing spectacle in monumental buildings and a theme park landscape. The soaring towers and gateways, gigantic colonnades, towering statuary, sweeping lawns and dancing fountains would overwhelm and bury the local features of the site and associated place memories. Site features such as mounds, wells, and trees are significant memory traces but ignored in the program (Figure 6). The construction of *place* into *site*, primarily a space of representation, would mean an erasure of collective memories grounded in the locale (Beauregard 2005). The monumental scale would be a disconnect from the immediate urban context replete with memory traces commemorated in small courtyard temples, water bodies, and the Saryu River. The energy and water requirements of the complex would consume large quantities of fossil fuels and deplete precious groundwater resources plus waste generated from footfall of millions of devotees would exceed the capacity of local sanitary treatment plants.

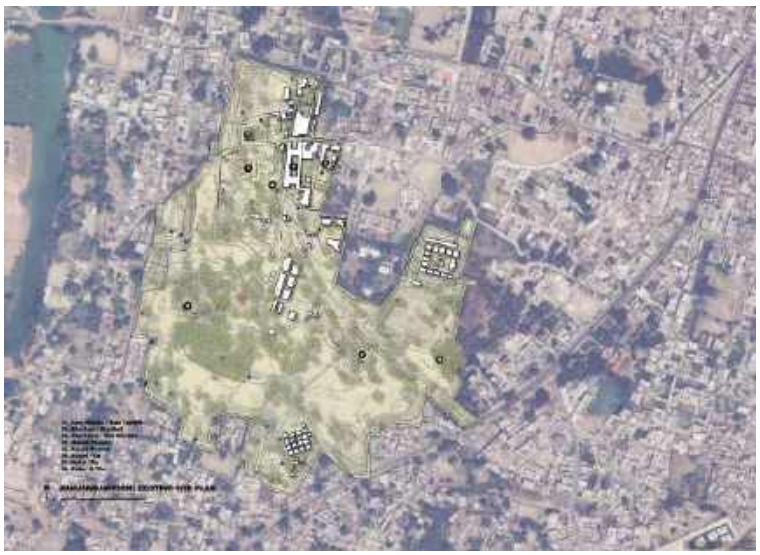

Figure 6: Ramjanmabhoomi Site Map in Ramkot; **Source:** Author and Heena Gajjar

6 https://srjbtkshetra.org/

In the proposed design framework, memory traces and spatial practices will be generative tools for designing Ramjanmabhoomi as a narrative landscape with temple as the monumental core. Ramjanmabhoomi will be acknowledged as embedded within a network of sacred sites, and Ayodhya's cultural landscape as part of the wider 'imagined landscape' of *Ramayana* characterized by polycentricity through spatial transposition and duplication (Eck 2012). The larger landscape of Rama's life including his formative years in the forest and the exile period would be distilled thus synecdochically representing them. The amplification of memory traces through site design would mean that narrative is implicit *in* rather than added *to* the landscape (Potteiger and Purinton 1998). The mnemonic landscape would not only be a reminder of the past but also commemorate a living heritage in enhanced place experiences and enactments.

Figure 7: Proposed Ramjanmabhoomi Site Plan; **Source:** Author and Heena Gajjar

The design language is proposed to be informal, a counterpoint to the strict formality of the architectural design of the temple complex (Figure 7). Place images in the rich corpus of verbal and visual texts, and local place legends, would be represented and sustained by landscape typology of *van* (tree grove), *vatika* (garden), *tila* (hillock), *kunj* and *nikunj* (bower and arbor) and *kund* (stepped water tank) derived from historic and vernacular precedents. The ancient practice of circumambulation around a tree, hill, water body, or a shrine, traces the boundary of a sacred site and is an act of homage. This spatial practice can be the generative tool for designing the trail system looping around the landscape features, thus reaffirming their significance. The garden adjacent to the museum complex at the arrival point would be designed as a timeline of the site's recent history displaying the archaeological fragments and remnants of Babri Masjid. *Ramlila*, traditional performance of Rama's story drawing large crowds of devotees can take place outdoors in the *maidan*, a large flat expanse of ground used as public commons in communities across India.

Performative Landscape

Sustainable design entails that the proposed landscape performs at three levels—symbolically, ritually, and ecologically. Symbolic meanings will be enhanced when sacred sites–Sita Rasoi and Kup, Kuber, Nal-Neel, and Angad Tilas –and existing wells, tanks and trees are incorporated in site design. These memory traces will be preserved and augmented in gardens, groves, and water bodies, reminiscent of places described in the *Ramayana*. Buildings will be located on the periphery, tucked into the edges and corners of site boundaries. This would preserve existing trees and open up areas for large scale planting of tree groves symbolic of *tapovan* landscape around water bodies and hillocks. Children's play area will be appropriately named Luv-Kush Nikunj--Luv and Kush were twin sons born to Sita during her second exile in Valmiki's ashram. Vatikas or gardens have symbolic allusions to Ramayana landscapes—Ashok Vatika, north of Sita Rasoi, would be planted with Ashok trees that sheltered Sita in her captivity in Lanka, and Nakshatra Vatika with medicinal herbs used in *Ayurveda,* the ancient knowledge of holistic medicine.

Among the cultural practices that are fundamental to place experience, circumambulation (*parikrama*) of sacred foci is an essential aspect of pilgrimage. Pilgrims circumambulate Ayodhya, following the footsteps of Rama, Sita, and Lakshman when they left for their exile. Ramkot *parikrama* path takes them around what remains of the ancient fort of Rama. The landscape of Ramjanmabhoomi is proposed to be structured through visitor movement in a series of embedded circular loops around the entire site, the main temple, and specific landscape features. These trails will be connected to the main temple boulevard from the southeast entry on the main street linking the Ayodhya Railway Station to the Saryu Riverfront. On the boulevard will be threaded arrival courts with exhibition pavilions and shops selling ritual items. Walking or moving in small battery-operated vehicles on the trails and pathways will be an opportunity to see the many narrative episodes represented in the landscape with design features such as walls, murals, statuary, and pavilions. Sensory experience of groves and their clearings, water bodies, gardens, named after *Ramayan* settings, will be the building block of new personal memories, reinvigorating collective memory of the cherished epic. Participation in *Ramlila* in the *maidan* and other performances in the amphitheatre will lead to first-hand experience of the landscape as a situated event. Movement and experience would acquire ritualistic overtones while traditional veneration rituals will be performed in the main temple complex.

To avoid being a theme park and a spectacle that has a deleterious impact on the environment, it is essential that symbolic and ecological values be combined in site planning. As Lee (2000, 262) points out, "…contemporary readings of the *Ramayana* are a powerful cultural force. They may help us improve attitudes to sustain nature." The rich biodiversity of forests and the conservationist attitude cultivated by hermit sages in Valmiki's *Ramayana* communicate an environmental ethos that can be practiced at reclaimed sites, especially Ramjanmabhoomi, reimagined as a temple in a garden grove. The landscape will function as a constructed ecosystem, in addition to its symbolic and ritual uses, and sustainability is the key to its success. The tapovan ashram practiced an austere way of life, dependent upon the forest for food sources, building materials, and daily necessities of life. This ancient ideal can be adapted today for promoting sustainable practices such as local food production and creating waste to energy cycle.

Ramjanmabhoomi can be planned as a green campus with zero waste and self-sufficient in its water and energy use. The temple will generate an enormous quantity of waste that can be segregated and processed. For example, flowers, an essential item in veneration rituals, can be grown in Pushpa Vatika and medicinal plants in Nakshatra Vatika for making herbal remedies that will generate revenue for the temple. Flowers once offered, become 'waste'; large quantities of flowers and other forms of organic waste generated in the temple can be composted. *Gau-shala* (cow shed) will supply milk required for making food offerings to the gods and distributed to the devotees. Cow-dung from *gaushala* can be collected and treated to produce biogas and digestate used as a fertilizer. Biogas will be useful in temple cooking and rooftop solar collectors can supplement the grid for lighting and heating water.

Water management is the key to sustainability of the proposed landscape of groves and gardens. *Kunds*, wells, and *sars* (ponds), are indigenous water structures found all over Ayodhya, and can be revived and built at the site as well. The existing historic wells at the site when restored will augment the piped water supply from River Saryu. Ayodhya receives most of its rainfall in June, July, August and September. Much of this can be harvested in underground water tanks that replenish tanks and wells. A large pond built in the low-lying south western part of the site and integrated with an open-air amphitheatre for performances and festivals, can function as the major catchment and retention facility. Surface runoff and rainwater from rooftops can be collected and conveyed through a gravity fed network to the pond, filtered and recycled for use. Water tanks constructed at the base of mounds will collect runoff, recharge the groundwater table, and cool the microclimate.

Conclusion

Reclaiming Ramjanmabhoomi is an act of place-making for retrieving and revitalizing collective memories of Rama's deeds. His birthplace as a site of manifestation of the divine on earth is going to be commemorated with a grand temple, befitting his status as the god on earth who had inspired Hindu kings for two millennia and continues to be worshipped as the most popular incarnation of Vishnu. This magnificent edifice is proposed to be situated in a narrative landscape that will speak of his person and deeds by amplifying memory traces at the site. Imagery from textual and visual representations of places in *Ramayan* when encoded in design would allow personal narratives to be constructed and experiences to be enriched at the site of memory. The proposed temple landscape would serve as precedent in combining cultural and environmental values in reclaiming other sacred sites.

The centrality of *Ramayana* in the cultural imaginary of Hinduism means that places associated with Rama will continue to be revered and those lost with the passage of time, reclaimed. Of the many place images associated with Rama's life, none are more important than the landscapes of his exile that were formative in his becoming the renunciate king. The Government of India in its' Swadesh Darshan' scheme is planning a *Ramayana* circuit to promote religious tourism.[7] Ten out of twenty-eight states of India are covered by this circuit and it is extended to the neighbouring countries of Nepal and Sri Lanka as well, indicating the breadth of Rama's story grounded in cities, forests, hills, and riverbanks of the Indian subcontinent. The focus is on infrastructural development and tourism facilities rather than conservation of cultural landscapes that embody reverence for nature. Infrastructural planning appears to ignore landscape conservation, and this is a missed opportunity for protecting and promoting natural heritage. The forests were ideal settings for fostering spiritual growth in ancient India, and those associated with Rama's journeys, acquired sacrality, thereby preserving their rich biodiversity (Lee 2000). Today, they are symbols of a harmonious human-nature relationship, and express a natural aesthetic stemming from biological diversity (Danino 2011). Their preservation and augmentation, restoration of water bodies, and protection of sacred hills will ensure that landscapes continue to serve as sites of memory of the extraordinary story of Rama, the divine king.

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13

Questions of Authenticity: The case of sacred landscape of Jain communities in the walled city of Ahmedabad

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Sub theme: Sacred Landscapes as a source of divine inspiration and community wellbeing.

Keywords: authenticity, sacred landscapes, World Heritage Sites, Jirnodhar, historic Ahmadabad, Historic Urban Landscape, jain heritage

Introduction to the conflict

The story of the Walled City of Ahmedabad became known to the world in the wake of its inscription as a UNESCO World Heritage site in 2017. Six hundred years of economic, political and religious conflicts have resulted in several spatial and ideological 'responses' making it the 'Historic Ahmadabad' as it is known today. Yet again, the city faces a new conflict, between the historical traditions and its emerging modernity. The recent heritage protection laws are challenging the local Jain traditions of *Jirnodhar* (Traditional restoration procedures of their temples).

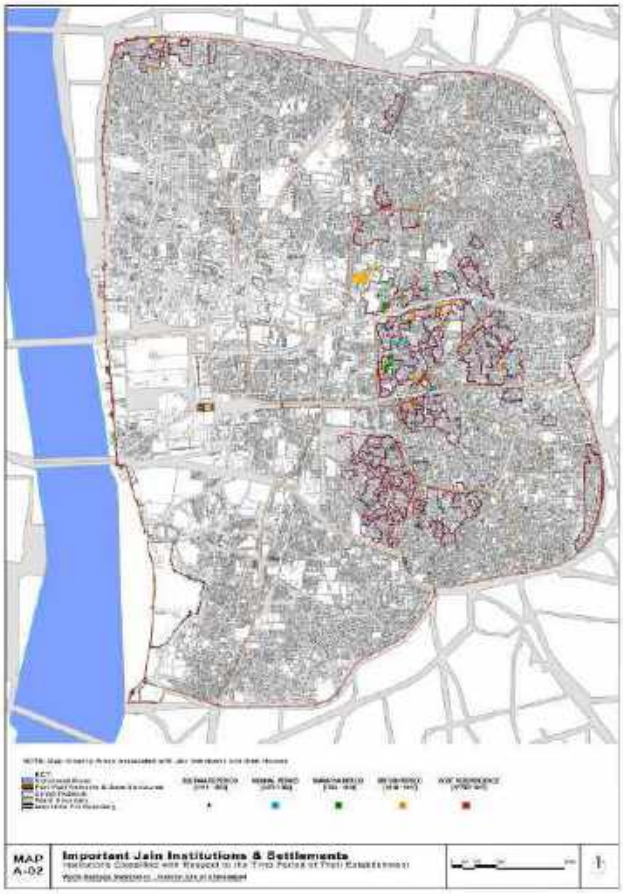

Figure 1: Jain community's settlement and temples in the historic city of Ahmedabad; **Source:** Nomination Dossier for Historic city of Ahmedabad (AMC)

The Heritage department of Ahmedabad Municipal Corporation (AMC) listed more than a hundred Jain temples with sacred monasteries and pilgrim lodges in the list of protected monuments within the city (refer to figure 1). They were identified as significant monuments and were listed along with other graded buildings. A varying degree of intervention was allowed depending on the structure's grade as per the comprehensive heritage management plan drafted by the Ahmedabad Municipal Corporation (the Urban Local Body)(AMC , 2017). The pressure on the municipal body to safeguard the crumbling heritage fabric of the city has led to the enforcement of strict legal protection laws.

For the Jain community, who have been a part of this traditional temple restoration practice for centuries, this was not a welcome move. These ritualistic practices are the medium for them to spiritually associate with the temple and were considered an integral part of their religious doctrines. Since the community's sacred act of *Jirnodhar* had now transformed into an administrative procedure involving a lot of permissions and paperwork, the Jain community found it difficult to comply with these new regulations and felt deprived of autonomy. The tension between both parties led to a protest, and ultimately the community decided to remove the 'heritage grading plaques' that were installed at the listed temples by the Urban Local Body, which created headlines in the leading newspapers of the city.

Research Objectives

This research stems as a response to the aforementioned conflict and from the struggle of the city's heritage management plan to comprehend the complexity and multi-layered nature of this sacred landscape. The objectives of the paper are twofold. The primary aim of the research is to explore the intricate links within the various elements of the said sacred landscape and investigate its origins and evolution using archival research, on-field cultural mapping tools, and oral history surveys. However, the broader aim of this paper is also to distinguish between international ideals of 'material authenticity' and the local community's 'spiritual knowledge' and to recognize the conflicting interpretations of 'authenticity' in the process.

In the given situation, it is crucial to consider multiple perspectives when making restoration decisions through engagement with local communities. This study is an attempt to aid this pressing need by highlighting the intricacies and challenges of preserving sacred landscapes. While it may not provide a definitive solution, it can provide valuable insights and a way forward into effective heritage conservation practices.

Chapter One- The origins of the sacred landscape of the Jain community in Ahmedabad.

Ahmedabad became an important trading centre of western India within a century of its establishment of Ahmedabad in 1411. The symbiotic relationship between trade and migration promoted several waves of migration of the Jain merchants looking for business opportunities post the sixteenth century. The migration led to the development of the home shrines, which were the earliest typology of temples locally known as *Ghar-Derasar* (Home shrines, refer figure 3)."The Urban structure of Jain communities focused on community living with the temple and religion as an overriding part of their lifestyle" (Ray, 2015), which materialized into a unique urban character of the Jain neighbourhoods with the *Derasar* interwoven along with gated street community- pol (refer figure 2). Few *Ghar-Derasar (Home-shrines)* are still retained by some of the prominent Jain families in the city, while others have been converted into a full-scale temple.

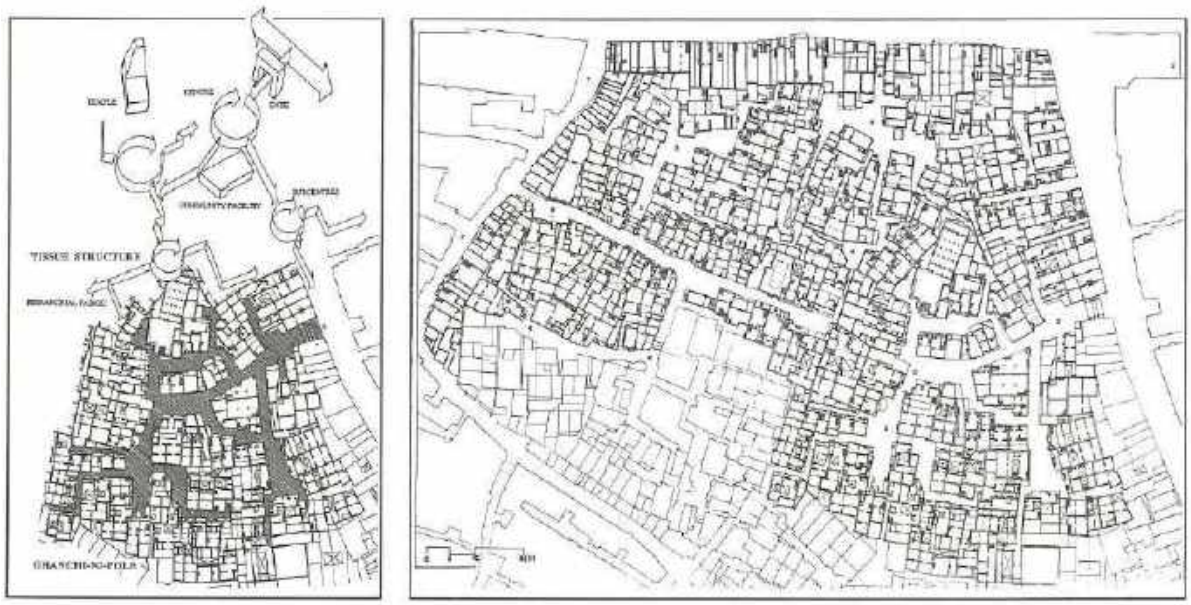

Figure 2: The urban character of pol (Ghanchi ni pol & Nagjibhudar ni pol respectively); **Source:** Vivek Nanda (1991)

Hegewald (2016) further describes the placement of *Ghar-Derasars* in her book, "the urban conditions of the cities greatly influenced the typology of the earlier 'temple'. The ground floor was majorly used for commercial purposes due to its business value. So, the top floors were used for the shrines, preferably the north-eastern corner of the house" (Hegewald, 2016)

Figure 3: 'Ghar-Derasar in Zaveri pol and 'City-Temple' Shantinath Derasar in Shekh no Pado; **Source:** Author

Over several centuries, the socio-political scenario of the city has had a compounding effect on the development of Jain temple typologies, from the early Ghar-Derasar to the more elaborate city temples'(Refer to figure 3). Before the Maratha rule, "the wealth of Ahmedabad was controlled by Hindus and Jains, especially the old, established family firms that grew their control over the commerce" (Gillion, 1969, p. 17). The powerful Jain elites also known as *Nagarseth* used the 'divine' to extend their influence in the public realm, they patronised many temples and also funded/maintained the existing temples. According to local pol residents, "the *Nagarsheths* fulfilled the need to establish a 'city-temple' by donating their residential properties to be converted into a temple and in other instances, funded the temples from scratch, in both cases locally available brick and timber construction was adapted to form a temple typology". The origins of the 'city-temple' typology in Ahmedabad were hence, nurtured from the famous timber-laced housing typology. (Refer Figure 3)

Alongside the temples, Nagarsheth's funding and maintenance of monasteries, tourist lodges, and Jain schools were crucial to preserving and promoting the Jain way of life. The monasteries provided a space for Jain monks and nuns to live, study, and practice their faith, while the tourist lodges served as a meeting

point for members of the community and provided accommodation for Jain pilgrims. Overall, the Nagarsheths' support for these institutions created a rich and sacred landscape that once had a thriving social life, with the temple being the epicentre of all socio-cultural activities.

Figure 4: On-site plan sketches of various Jain temples in Ahmedabad; **Source:** Author

Hegewald further explains, "the plots used for the 'city-temple' usually were rectangular and had open access from one or two sides. Hence, the *char-mukhi* sanctums (four-sided sanctums, See Figure 4-A) prevalent in the Jain Architecture, were not preferred, and instead, almost all of the temples were 'mandapa line' temples with *garbhagriha* at the end (See Figure 4-B)" (Hegewald, 2016, p. 96). Subsequently, the temples in the city adopted a 'mandapa-line' pattern in their architectural typology. This pattern involved a series of pillared halls or pavilions (mandapas) arranged in a straight line, typically leading up to the main shrine or sanctum of the temple. (Refer Figure 4C, 4D & 4E).

However, from the on-site observations, it's clear that "over centuries most of these wooden 'city-temples have undergone a major transformation because of *Jirnodhar* (Traditional restoration procedures of their temples). Deterioration due to aging, extreme climatic conditions, and frequent earthquakes made it necessary to restore them regularly. *Jirnodhar* of these existing temples is considered spiritually significant as their construction, so the pol community actively pooled their funds and resources. However, changed rules of deforestation made wood quite inaccessible and expensive and the timber craftsmen too disappeared rapidly. This affected the community's capacity to maintain the timber-laced temples. Subsequently, most of them were converted into stone or brick structures in *Jirnodhar*. Out of more than a hundred listed heritage temples, a handful of such wooden temples are remaining to narrate the story of the beginnings of the Jain temple typology in Ahmedabad" (Gupta, 2020).

To gain a comprehensive understanding of the evolution of the sacred landscape of Jain communities in the city, it is essential to develop a timeline that conceptualizes its emergence. This timeline will provide a framework for tracing the historical development of the sacred spaces and define the crucial role played by the rebuilding or *Jirnodhar* of temples over the years in shaping their sacred landscape.

The book *Rajnagar no Jinalaya*, a record of Jain temples of Ahmedabad, explains the three phases of construction of the Jain temples- "the early-seventeenth century, mid-eighteenth century and nineteenth century. These were Akbar's, Aurangzeb's (both Mughal) and British rule respectively. The communal violence throughout these phases has been a reason for the destruction or abandonment of the Jain temples, coupled with the seismic activities of the region made earthquake-related destruction quite frequent. The *Jirnodhar* or rebuilding of these destroyed temples was a common practice. These newly built temples show a transformation in style, depending on the era of their construction" (Shah, 1997) For example, the Jain temples that were built or rebuilt during the Mughal era showcased a significant amount of Islamic motifs and decoration, mainly due to shared craftsmen between the Jain and Muslim patrons. (Refer Figure 5)

Figure 5: Jain influence on Islamic architecture and vice versa (pics- Ajitnath temple and Jama masjid respectively); **Source:** Author

Subsequently, the colonial influences also resulted in a change in the built fabric during the British era, this can also be linked to the major changes in the temple building practices. This era saw a major rebuilding exercise of the Jain temples which were destroyed in the previous Mughal and Maratha rules. The new architectural style of the Imperial rulers was monumental and pragmatic, and it had a significant influence on the fabric of Jain temples. The patrons adopted "the new progressive, westernized building practices that expressed a bizarre mixture of oriental and occidental forms, stylized and preferential but completely lacking in an integral characteristic that the earlier building traditions displayed. The craftsmen once again exhibited their innate ability to adapt to changing situations and employ their best skills for the purpose" (Vasavada, 2011)(Refer Figure 6)

Figure 6: 'European influences on Jain temples – (pics - khetarpal ni pol and old stock exchange respectively); **Source:** Author

The more recent, 21st century versions of these temple types are understood through on-site examination evolved out of "The ease of transportation, mechanized processes and available resources have reduced the construction time and has severely affected the new temple typologies in terms of scale and style. Marble-clad temples are now being preferred excessively for their aesthetic appeal and load-bearing construction. The construction process has become controlled and considerably quick" (Gupta, 2020).

The reason for these transformations of styles observed during these several rules in the city is described by Vasavada, "because the synthesis produced out of the mutual desire to appreciate and adopt from both cultures were the new hybrid types of religious and institutional buildings born out of giving and taking from all cultures. Mughals, Marathas or the British, like the earlier invaders, brought with them their cultural ideas for building environments, involved local craftsmen, borrowed local materials and building practices and built their settlements and buildings, these ideas counter reflected in the styles of local temple architecture of Gujarati Jain and Hindu communities". (Vasavada, 2011) These *Sompuras* or the temple's master craftsmen were accepted, cherished and patronized by builders of all faiths to build their religious buildings. The resultant fabric of the sacred landscape in the Historic walled city is a product of co-existence between time, place and people. (Refer to Figures 5 & 6)

In conclusion, the sacred landscape of the Jain community in the walled city of Ahmedabad is highly dynamic and transformative. The landscape changed depending on the style, patrons and construction type of their time. The cycle of recovery, restoration, and reconstruction of the Jain temples has not only led to the overlap of many layers of history, meaning and materials, but it has also established its values over centuries.

Chapter Two- Jirnodhar, Sompuras and the role of the Jain community

According to the Wisdom Library (2007)"*Jirnodhar* is a Sanskrit compound consisting of the terms Jirna and uddhara, meaning ruined and revival respectively; the best translation for this would be 'renewing the old'. The practice of *Jirnodhar* has evolved in various regional varieties with its nuances and application procedures and techniques all over India." For the city of Ahmedabad as well, the *Jirnodhar* practices had shaped different typologies of temples as seen in chapter one. This chapter will now dwell on the various interpretations, techniques and implementation processes of *Jirnodhar* (Refer Figure 7).

Sompuras or the temple's master craftsmen have been extensively patronized by local Gujarati Jains and Hindus as their temple builders. For them, the definition of the word *Jirnodhar* is contested, it depends on site contingencies as well as the patron himself and covers a wide degree of conservation practices. Based on the interviews with *Sompura* craftsmen working at a temple in Lankeshwar ni pol (Refer Figure 7), it is, "any kind of improvement to beautify an existing temple, to finish incomplete work, or to make additions of any kind. The expanse of our practice is vast, and there is always an element of flexibility. It could mean that more or less entire temples are reconstructed from scratch because the surviving remains are too structurally unstable. Or it could also mean adjustments to spatial layouts of existing temples. It could also mean repairing those damaged stone slabs" (Gupta, 2020) The differentiating element between *Jirnodhar* and any reconstruction is the existence of the spirit of *Jina*' in the deity and the temple precinct (Kamiya, 2010). The *Jina* of the place guides the evolution of the new design through its previous form.

Figure 7: Jirnodhar in progress at Lankeshwar pol; **Source:** Author

The *Vaastu-shastras* are traditional Indian building bye-laws that describe a set of elaborate instructions for conducting rituals and techniques for *Jirnodhar*. Inglis (2016) described these rituals and techniques as "something divine that was bestowed upon them by *Vishwakarma* (the Godly Architect) and were kept as a family secret for religious advantages. Craftsmen communities like *Mahapatra shilpis* of Orissa, *shilpis* of south India and the *Sompuras* of Gujarat all have their versions of these texts."

For the *Sompuras* construction sites are an ensemble of various knowledge spheres and on-site strategies."*Shastras* in the western Indian context were known to exist, but they were rare and held in manuscript form, within private libraries of influential and conservative families until the publication of N.M. Sompura's *Shilparatnakar* (1939). The *Shilparatnakar* arguably is the most preferred traditional building code by the *Sompuras* today due to its narration in Gujarati, the language spoken by the local craftsmen". (Inglis, 2016, p. 186) *Shilparatnakar* made it accessible

for the Gujarati-speaking craftsmen to study various astrological values, building details and Jain iconography (Refer to Figure 8.1). The publication of the Shilparatnakar (1939) marks the passage of this codified information from a private and family collection to a more accessible public domain.

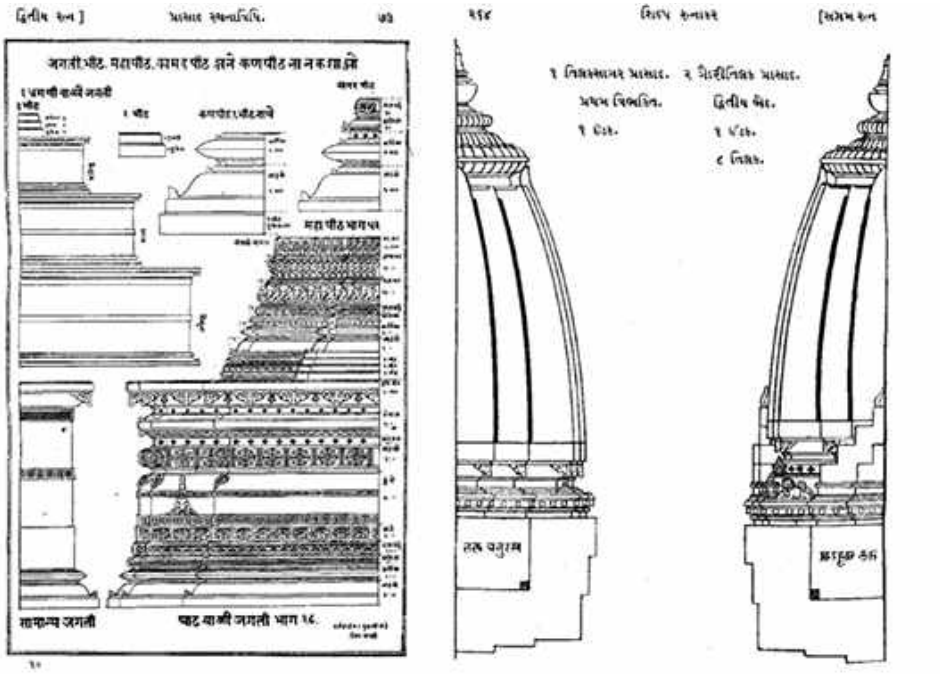

Figure 8.1: Extracts from Shilparatnakar- Jagati (platform) and Peeth (base) and Prasada (Spire) respectively ; **Source:** Shilparatnakar by N.M Sompura (1939)

Conversation with various Sompura craftsmen around Ahmedabad brought out many nuances that further elaborate the nature of their practices- "The design of the temple may be based on these rigid *Vaastu* calculations, but the spatial layout and form are also decided by the requirement and aesthetic tastes of the patrons and community. The aesthetics may be based on the previous temples to invoke the memory the patron has, but this by no means is a restriction, most of the demands are based on inspiration from some other well-known temples as well (Refer to Figure 8.2). *Sompuras* takes full freedom to explore all possibilities in material and design under the constraints of budget, which has a significant role in the material and carving types of the temples" (Gupta, 2020). Inglis (2016, p. 30) further explains "the *Sompuras* while using the arsenal of modern technology having adjusted unapologetically to the present global world in terms of capitalist economies".

Figure 8.2: Footprints for the reconstruction of Somnath Temple; **Source:** Shilparatnakar By N.M Sompura (1939)

Based on interviews with members of the Jain community, it was revealed that there is an unspoken social expectation for them to actively participate in the restoration of temples. This could be either through the means of volunteering or donations. Apart from this, there are several maintenance practices overseen by the patrons and the caretakers to keep the temple 'pure'.These volunteers (*karyakartas*) are the youth of the community who actively execute these cultural and temple maintenance activities (refer to figure 9). The religious heads (*Maharaj sahib*) are the moral anchors and guides of the community.

The administrative structure and funding mechanisms for *Jirnodhar* in the city are sophisticated and strong. The top layer is the *Pedhis* (e.g., *Anandji Kalyanji Pedhi*), which is a national-level religious institution that funds and manages the famous Jain pilgrimage site across India. Local trust (like *Jinagnya Yuva* trust) conducts local religious and cultural events and aids in the maintenance of the temples (refer figure 9). The lowermost level is the temple trust's presence in every *pol* that works on the ground to organize religious and social events and festivals within the *pol*.

Figure 9: Jain Community conducting temple maintenance rituals in Ahmedabad; **Source:** Jinagnya Yuva trust (Website)

All these Institutions, trust and social groups follow a highly efficient model which reflects in their self-sufficiency without any external interference, making them a compelling example of community-led development in the sacred Jain landscape of historic Ahmedabad.

Chapter Three- The challenges for the UNESCO World Heritage City

With efforts from various stakeholders in the city, the walled city of Ahmedabad became the first city in India to be declared a world heritage site in 2017. As seen in Chapters one & two, the role of Jain history and heritage was recognized as a crucial factor in the development and evolution of the historic city. The dossier for the nomination of the city as a UNESCO world heritage site was prepared to account for "a significant interchange of values, traditional land-use & intangible traditions and belief, which lie under UNESCO's cultural criteria ii, v & vi respectively. The first two criteria were accepted, whereas criteria vi were rejected by ICOMOS as a supervising agency for UNESCO" (ICOMOS, 2017).

The role that Jain heritage played in the justification of stated nomination criteria is immense. Jain sacred landscape and community put forward a crucial argument as an expression of a social group through its spiritual response to the criteria ii, as seen in chapter two. On the other hand, criteria v noted the mixing of faith and ideas leading to the tangible and intangible features of the Jain heritage, clearly indicated in chapter one. Thus, creating a unique sacred historic landscape of temples and other socio-religious infrastructure inside a gated community of *pol* (AMC , 2017).

The ICOMOS committee rejected criteria vi stating "insufficient evidence" (ICOMOS, 2017). It seems evident that the nomination dossier did not emphasize the practices of Sompura craftsmen that generated a sound architectural response by building several Jain and Hindu temples within the nominated site. Noteworthy is that subsequently, the management and protection framework for the World Heritage Site was also drafted without the inclusion of these intangible processes.

The Heritage Department of the urban local body "acts as a catalyst to preserve and monitor the cultural heritage of the city. Around a hundred Jain temples with various Upashraya and Dharamshala in the walled city made it to the list of listed protected buildings. The properties have been classified separately into four grades based on their cultural value. The scope of changes and interventions varies according to the grading of the temple" (AMC , 2017).

Furthermore, the ICOMOS Interim report mentioned, "using traditional craftsmen and setting up an efficient mechanism to do so", calling their works and buildings, a "great asset for conservation" (ICOMOS, 2017). However, currently, there is no such framework in place, posing a threat to the Sompuras and the tradition of their craft. Above all, the urban local body's new policies levy a good amount of creative restrictions on their craft.

Several other issues faced by the local population for the restoration of a temple came up during the interviews with the community, a *pol panch* (pol leader) mentioned that "...there is a significant lack of the availability of traditional materials like wood, and craftsmen use of alternative material instead that weakens the structure".The priest of a temple in Ratan pol expressed during the interview that "*pols* temples have mosaic flooring, and others have intricate timber carvings but, the trustees go through a hard time finding a skilled worker for repairing the same. The available labour is forced to work on these intricate buildings creating a grave insensitivity for the heritage" (Gupta, 2020).

This loss of autonomy due to stringent regulations by the Urban Local Body is also a problem for social groups like *Jinagnya yuva* trust (JYT) leading to public condemnation and protest against these laws. The religious leader of JYT revealed during an interview that "The loss of autonomy in the decision-making process regarding the renovation and management of the temple is a serious issue. The social structure that has been formed around this process is not consulted, which can result in a lack of engagement and funding for restoration efforts. This issue is particularly pressing given the current demographic changes occurring in the walled city of Ahmedabad, which has resulted in a scarcity of Jain residents who actively participate in temple activities." (Gupta, 2020).

The chapter describes various ideological conflicts in contrasting restoration practices in the walled city, though devotion is the way the community and craftsmen express the truth for which reconstruction of the temple may not be seen as a loss of historic fabric. This becomes challenging for conservation professionals and local municipal bodies who strive for preserving the 'evidence' of an immense repository of knowledge which is beneficial for any culture and its future generation. In a situation like this where religious and cultural practices prevent outside experts from deciding on material, construction, design or any other aspect of sacred space, how then, is the authenticity ensured? Do the known definitions of authenticity apply here? If not, then what does Authenticity mean for the Jain community as a patron and for *Sompurasas* the craftsmen? The conclusion attempts to address some of these underlying research questions that have been derived throughout the three previous chapters of the paper.

Conclusion: Jirnodhar as a carrier of Authenticity

In recent years, the Urban Local Body has taken over the responsibility of conservation and management of the walled city of Ahmedabad. While the international conservation charter influences the Urban Local Body's regulations, those international ideals, practices and approaches are applied to the Jain community through the local heritage protection laws. This research addresses the conflict created by the two conflicting ideas of authenticity. On one hand, we see the 'material authenticity' of the heritage protection laws that put an impetus on building materials and forms and on the other hand, we see the community's authenticity by the means of spiritual sensibilities of the sacred and truthful creation of the temple structure.

The challenges faced by communities such as the Jain community, as well as those from Southeast Asian

and African nations, in interpreting the Venice Charter for their cultural heritage led to the creation of the Nara Document on Authenticity in Nara, Japan in 1994. The adoption of the Nara document (1994) made way for alternative approaches, especially oriental approaches to conservation recognized and acceptable in mainstream conservation. However, the document does not lay out a technical framework for analysing authenticity, rather it was left open to interpretation.

Figure 10: Craftsman's authentic creation: Parallels between Japanese temple craftsmanship in Nara and Jirnodhar Practice in Ahmedabad; **Source:** Japan times (Website)

"The Nara Document created the conceptual conditions to legitimize Japanese conservation practices like the periodic dismantling, repair, and reassembly of wooden temples so that the statement of authenticity is justified while submitting World Heritage nominations for international review"(Stovel, 2008) (Refer Figure 10). The case of the Nara temples has encountered comparable issues and challenges to those faced by the Jain temples of the city (Refer to Figure 10). By examining these similarities, it is possible to evaluate the credibility of the Jain temples comprehensively. One way to justify the credibility of the Jirnodhar tradition would be the "historical evidence or as historically existing practices relating to conservation and restoration" (The Nara Document of Authenticity, 1994).

As mentioned in chapter one, these pieces of evidence could include multiple layers of material and architectural details that have been superimposed over the years due to various cycles of destruction and recovery resulting from factors such as politics, floods, and earthquakes. However, these cycles of destruction and recovery also make it difficult to date the temples and their layers efficiently, and therefore, they cannot be the sole basis for judging their authenticity. While there may be very few temples that are 'historical' in terms of their materiality, for this particular case, historicity needs to be considered in relation to the many cycles of destruction and recovery in coherence with the traditional building codes and not solely based on the age of the building.

Figure 11: Community's Spiritual Response: Religious rituals for temple Jirnodhar; **Source:** Jinagnya yuva trust (Website)

The sacred doctrines and values held by the craftsmen and Jain community are multi-layered and demand interpretation from various sources. An ethnographic survey to bring out various interpretations of the sacred was carried out with the community and the creators of temples. “Most of them saw *Jirnodhar* as a tool for increased devotional attachment or ‘making *Bhagwan* (God) happy as the priest said and added ‘*Jirnodhar* earns you *Punya* (God’s merit)’. Furthermore, users take pride while narrating the historical events that happened in the temple. But ironically, when asked about retaining the old building for its material value, they reject it by referring to it as ‘*Purana*’ (old). This does not mean that they have a negative perception of ‘old’, as many of the religious objects in the temple are revered for being old and hereditary. Nevertheless, temples, as they say, should be ‘pure’. The notion of purity is a fundamental tenet of Jainism, which is often associated with newness. This association can be observed through the immaculate and well-maintained condition of Jain temples (Refer to Figure 11). It is possible that for Jains, the concept of "pure" is equivalent to "new.” (Gupta, 2020).

These intangible and spiritual connections of the Jain community can be further understood with a hypothetical comparison with Jukka Jokilehto’s philosophical analogy of the ‘Greek temple’. Originally conceived by Martin Heidegger, it argues that “the existence of the god or spirit is in itself the extension and delimitation of the precinct as a ‘divine’ precinct. The physical existence of the temple and the god’s image in themselves do not yet assign value to the site. However, it is the god’s presence, the spiritual or the intangible dimension that gives the real meaning” (Jokilehto, 2006).

The modern conservation principles like that of the SPAB Manifesto which commands “respect for the signs of age in surfaces and architectural features”(Slocombre, 2013) are not relevant to the Jain community because of the difference in perception of time. The community’s notion of time exists in alignment with the Vedic principles of karma and several cycles of life and death, in which the world is nothing but *Maya* (illusion) and nothing here is permanent.

The perceptual differences between times in the western and eastern worlds also contribute to their meanings of authenticity. “Opposite to the linear perception of time in the western world, the concept of cyclical time is deeply rooted in the Indian psyche. The cyclical perception of time places no critical temporal value on the human-made object but transfers the quality of authenticity to the site on which the object exists (Similar to Heidegger's analogy). Thus culture like that of South Asia, where the concept of cyclical time prevails, venerates the place rather than the building built on it, while European cultures that view time as a linear phenomenon venerates the building”(Menon). Likewise, Jain culture of the city, the concept of "truth" endures through Jirnodhar, and the preservation of the historical fabric holds little significance.

Advancing the argument of the truthfulness of the ‘creative response’ as seen in chapter two-

Temple *Jirnodhar* undertaken by Sompura craftsmen have many distinctive approaches, a partial restoration or even complete reconstruction is possible in some instances. “These practices may be a way to justify the authenticity, i.e., by recognizing that this tradition is **‘Truthful’** and their temples as **‘Authentic by creation’**” as explained by Jokilehto (2006). To put it simply, the traditional crafts employed by the *Sompuras* are a manifestation of their spiritual adherence to their building codes ‘*Shilipratnakars*’ as elucidated in the second chapter. Although multiple layers of *Jirnodhar* may have obscured previous elements of the temples over the years, the temple can still be considered an authentic product since the building process reflects the spiritual revitalization or embodiment of the spiritual beliefs held by the craftsmen.

This idea is further elaborated by Vasavada in his documentary about *Sompura* craftsmen, “When the ideas and imagination of creators are truthfully realized to its highest level as an artistic creation, a created object is considered to be an authentic representation of the imagined idea. The degree of its value

depends on the success in the truthfulness of its realization. There is always an effort to improvise and infuse contemporary viewpoints in renewal and reconstruction, which surely also is 'authentic' to our present times" (Vasavada, 2011)

To sum it up, this study investigates the ideological conflicts arising from two different restoration practices in historic Ahmedabad, resulting in divergent interpretations of "authenticity." To address these differences, the conclusion presents two essential arguments advocating a justification for authenticity considering the values and beliefs of the Jain community and the traditional craftsmanship of the Sompura artisans. The two key arguments presented below provide a way forward for a holistic conservation approach –

Community's historicity-

In the Indian psyche, the perception of time is deeply rooted in the religious knowledge systems, these knowledge systems have a cyclical notion of time because of the belief in karma and multiple rebirths. The Jain temples are an accumulation of several such built layers from centuries of *Jirnodhar*. In such cases, the application of conservation principles is difficult if the renewed layers are considered authentic. It becomes even more difficult when the community does not seem to share the same idea of historicity of age as shared by the heritage conservation experts. In a scenario where all the layers are seemingly equally important, the choice between 'what to keep and what to change?' or sometimes to 'keep or change them at all?' becomes very difficult and an ideal solution is practically impossible. However, in such scenarios, the approach to conservation becomes more important than the solution itself.

Therefore, a nuanced and informed approach to negotiations between stakeholders is critical for successful conservation efforts in this case. This means taking the time to understand the different perspectives and concerns of those involved, and working together to develop a mutually beneficial solution. Through effective negotiations, it is possible to find common ground and develop a plan that takes into account the needs of the environment and socio-economic factors involved, this will lead to solutions that are not only effective but also sustainable and enduring.

Craftsmen's modes of expression-

Craftsmen's traditional creativity is expressed through their interpretation of their sacred texts. The Jain community beholds meaning in this creative expression, as it strengthens their spiritual connection with the site. On one hand, their creation draws inspiration from site contingencies rather than references to the styles or construction of the past. On the other hand, the lack of an association with the past is alarming for heritage conservation ethics. While both perspectives are well justified in their spheres, the nature of the trade-off here is crucial for both sides.

Conservation professionals should consider that the interpretation of historicity is not merely through forms, styles or materials, these can also be through craftsmanship or rituals involved in the act of restoration itself. Conservation efforts should hence strive to preserve not only the physical elements but also the intangible elements that behold the sacred landscape. While the Sompura craftsmen should strive to uphold the core conservation principles so that the historicity of the temple does not become obsolete. This means using appropriate materials and techniques that are consistent with the temple's original design and craftsmanship. A balance must be struck between the perspectives of conservation professionals and Sompura craftsmen.

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14

Historic Urban Landscape approach as a new paradigm for the conservation of cultural landscapes in Indian cities

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Introduction

Every city in India has a distinct identity due to these two factors that may vary in character according to the regional context, and needs special care and conservation planning strategies. Due to the lack of a planned conservation strategy, these cultural landscapes are losing their identity and becoming increasingly homogenized in terms of technology and urban growth. One reason for this homogenization is that the different components of these landscapes are administered independently with less emphasis on the identity provided by the layers as a whole. That means the selected conservation strategies divide the city into multiple conservation zones and treat each zone's heritage structures as a separate layer. So it is required to develop a holistic and integrated approach that considers all layers of the cultural landscape within a single framework that also ensures socio-economic development.

A city can be characterized as a cultural landscape generated by a constant interaction between man and his environment (Rapoport, 1980) with a specific cultural identity. They are significant in contributing to the country's history, identity, and regional variety. But due to the unprecedented growth of the urban population, these landscapes are under pressure due to excess demand for new housing, commercial, and industrial infrastructures resulting in unsustainable tourism, environmental degradation, traffic congestion, and other concerns which will ultimately lead to losing their identity and It also harms cultures and heritage of all cities in the world. When a city is described as a cultural landscape, it should include both tangible and intangible elements, their associated values such as local customs, traditions, rituals, beliefs, and people's perspectives (O'Donnell, 2014) which has to be analyzed before developing any strategies to achieve this integration. There are several approaches for conserving such cultural landscapes that exist today, including one that sees cities as landscapes with diverse identities given by diverse layers(Taylor 2016; Antrop 2005). However, certain approaches are more fragmented and cannot express the cultural significance and integrity of a cultural landscape (Zeayter & Mansour 2018).

Since 2005, different ICOMOS Charters (2005, 2011) and UNESCO Recommendations (2011) have emphasized the development of an integrated system for historic landscape conservation. By combining all policies since 1976, UNESCO developed a new approach in 2011 known as the Historic Urban Landscape approach (HUL), which integrates the goals of socio-economic development with heritage management by prioritizing and structuring the evolving needs of people (Zancheti & Loretto, 2015) by considering the cultural values, traditions, and other factors (Ginzarly, Houbart & Teller2018; Veldpaus, 2013). India's living cities are also included in the earliest stages of this approach's application proposal. However, no substantial research has been done to see its suitability. So this study is an attempt to examine the suitability of HUL by finding the flaws in existing policies in the Indian context. This includes a study of

the concept, its attributes, and components as described in the UNESCO (2011) recommendation, as well as a critical appraisal of the approach in different cities where it has been implemented.

Conservation of heritage in Indian cities

Due to the high standard of the architectural and physical setting, which serves as the base for the place's and community's identity, historic cities in India have gained incomparable status in the modern world (Menon, 2014). This heritage not only serves as a powerful symbol in India's history but also offers a unique opportunity for job creation and income generation through heritage tourism and local development. The immense potential of India's incomparable heritage has remained unexplored mainly because it exists in so many different forms, shapes, and experiences from a variety of states (NITI Aayog report,2019). So its conservation has become an important part of contemporary planning policies which should be developed depending on the local context and culture of the people to maintain their uniqueness. Some of such policies are discussed in detail in the following sections to understand their flaws in the current conservation process.

Approach to Integrating Institutional Infrastructure in Urban heritage (AIIIU).

According to the UNESCO Convention on Cultural Heritage and Local Development, urban local governments can create an effective framework for the conservation and management of built heritage that can be funded by the government or private funding agencies (INTACH report, 2015). With the assistance of government and private agencies, such a framework has been developed and implemented in cities such as Ahmedabad, Hyderabad, Shimla, Pondicherry, and West Bengal. The respective heritage conservation cell committee devised this approach for integrating Institutional Infrastructure for Urban Heritage, and they primarily focus on inter-institutional linkages and coordination among urban local bodies and other institutions as part of the heritage conservation process (INTACH report, 2015). To raise revenue, it also seeks to provide financial and administrative support to urban local governments for heritage management, building preservation, and the upkeep of tangible assets in historic districts.

Figure 1: Walled City of Ahmedabad and 'pol' houses; **Source:** NIUA Report, INTACH & https://creativeyatra.com/culture/ahmedabad-old-city-living-layers-within-layer/

The fundamental flaw in this approach is the lack of public participation (Sen 2018; Mandyal 2017) and a disregard for intangible qualities related to the location (Menon 2014). This is partly because the policy has evolved to include the institutional insurance infrastructure with the heritage. There has been no specific measure taken to address the linked cultural values with the conservation process. Another disadvantage is that locals are unaware of the area's historical significance and the need for restoration because they have become accustomed to changes in their surroundings. There were also significant issues with a lack of competent personnel or organizations to carry out restoration work, and financial support and programs only cater to the conservation process rather than ongoing maintenance (Routh, & Shah, 2013). Numerous government departments have occupied several classified heritage buildings without appropriate renovations, and historic structure owners are asking for government assistance to dismantle them owing to financial concerns (Roy & Kalidindi 2017).

Approach for integrating heritage in the urban planning framework

The approach for incorporating heritage into an urban planning system is another tool for conserving heritage where heritage preservation and restoration are seen as a resource for urban growth, ensuring that conservation is not fragmented. Integrating urban heritage into city master plans aids in the overall development of the urban region as well as harnessing the economic potentials associated with the sites, and hence heritage must be regarded as an important facet of city master plans. The first step in bringing this strategy into practice was to use cultural mapping to establish a database of heritage resources in a historic area, which was then incorporated into urban and regional planning plans. This strategy has been implemented in Indian cities such as Mumbai, Champaner, Leh, Orchha, and Tirupati.

Figure 2: Walled City of Jaipur and heritage structures; **Source:** https://www.shutterstock.com/

The main disadvantage in this policy is that it is only intended for specific monuments and does not cover the cultural landscape as a whole. Another problem is the miscommunication and lack of coordination among the various heritage conservation organizations. Individual heritage building restoration and rehabilitation is a financial burden for the owners,which is also a downside of this approach.

Approach for Revitalization of Heritage City through Renewal policy

The goal of this approach was to carry out heritage conservation and revitalization projects in areas of special heritage character within the overall urban renewal. This approach focuses on enhancing the local area's identity by promoting history, culture, and local features, as well as improving the living environment quality by providing more community amenities like public spaces. This can be accomplished through the adaptive reuse of heritage structures and the physical enhancement of heritage areas through appropriate interventions. This method was primarily implemented in specific projects such as the conservation of Nagpur fort, Jaisalmer fort, the restoration of Eraniel palace, Tamil Nadu, the Jodhpur city walls, and the Muziris city project, Kerala. Even though it has given a fresh start to heritage revitalization in many places, proper integration has not been achieved in any of these projects.

Figure 3: Muziris project Map, Kerala, and the heritage structures within the settlement; **Source:** https://kiidc.kerala.gov.in/the-muziris-heritage-project/

Since this strategy focuses on revitalizing heritage cities, it necessitates proper and well-organized regulatory and compliance policies, which several initiatives lack. It lacked adequate planning, which resulted in the disconnection of multiple protected areas. The lack of a necessary mechanism for enhancing institutional linkages and interdepartmental operations was another important finding.

Community participation approach

The main goal of this approach is to consider the interests of the relevant stakeholders and to involve them in urban cultural heritage conservation and management projects (INTACH, 2015). This can be ensured by conducting awareness programs on the need and importance of heritage conservation for all sections of society, including the local community, public and private agencies, and various professionals. To ensure participation, training and skill development programmes were developed to create more job opportunities in the heritage conservation and cultural tourism sectors. This approach was implemented in projects like the Nizamuddin urban renewal project, Delhi, conservation of unprotected, old residential stock in Mumbai, etc. Since this is a community-oriented approach, their participation is critical. However, informing residents about the project is difficult and time-consuming. People had lost interest in such projects as a result of a lack of incentives and financial support. Aside from that, the extent of the heritage zone is not properly defined, which has caused problems for new developments in these zones. Political pressure also played a role in the failure of this approach in many projects (Mandyal 2017).

Figure 4: Nizamuddin urban renewal area; **Source:** Nizamuddin Urban Renewal Initiative: Annual Report, 2013

Table 1: Comparative analysis of different approaches; **Source:** Author

Approach	The main focus of Implementation	Cities were implemented	Shortcomings or failure
integrating Institutional Infrastructure in Urban heritage	institutional linkages and coordination among urban local bodies and other institutions	Ahmedabad, Hyderabad, Shimla, Pondicherry, and West Bengal	• Lack of public involvement • Disregard for intangible principles • Shortage of qualified people or organizations to carry out reconstruction work • Lack of financial support
integrating heritage in urban planning framework	The integration of heritage into master plans and city development plans, with special consideration for tourism	Mumbai, Gujarat, Ladakh, Madhya Pradesh, Tamil Nadu	• only intended for specific monuments and does not cover the cultural landscape as a whole. • miscommunication and lack of coordination among the various organizations • Creates financial burden for the owners in the case of individual heritage buildings

Revitalization of Heritage City through Renewal policy	Enhance the local area's character or identity by promoting history, culture, and local features, as well as improving the living environment quality	Maharashtra, Rajasthan, Tamil Nadu, and Kerala	• Lack of integration of different disciplines • Lack of organized regulatory and compliance policies to implement them • Lack of a necessary mechanism for enhancing institutional linkages and interdepartmental operations • Disconnection of multiple protected areas
Community participation approach	The involvement of the community, media, and private sectors in the conservation process	Delhi,Madhya Pradesh, Orissa, Maharashtra and west Bengal	• Informing residents about the project is difficult and time-consuming. • Lack of incentives and financial support • Unnecessary involvement of political parties. • The exploitation of heritage in the name of tourism and development.

According to the comparison, Indian policies prioritise the preservation of tangible parts of history over intangible aspects or their associated values. It has been revealed that very few policies take into account both the intangible and tangible features. The majority of techniques lacked sufficient coordination among the project's organisations or disciplines, resulting in a disconnect between conservation and new developments. The main reason for this lack of coordination is that India lacks a cultural policy that addresses the issue as a whole. People are also less aware of their history and the importance of conservation. This could be owing to a lack of education about our rich tradition, which gives the country a distinct character. And at the institutional level, there has been a dearth of initiatives to mainstream heritage preservation as a profession and to offer training. Public authorities have not given historic conservation the attention it deserves. Another major factor is the scarcity of financial assistance. The policy always provides appropriate instructions for using funds to carry out the conservation method. But, these cultural landscapes require ongoing monitoring, for which money is always in short supply. As a result, there is an urgent need for an integrated approach that addresses all of these concerns while treating both the tangible and immaterial equally. One such integrated method that has shown to be successful in several world heritage cities is the HUL concept (Ginzarly, Houbart & Teller,2018). A comparative analysis was carried out to determine the suitability of this approach in Indian cities, which was accomplished by thoroughly studying the concept of HUL and conducting a detailed analysis of cases such as Cuenca, Shanghai, and Rawalpindi where it has been implemented and proven successful.

An analysis of the concept of the HUL approach

Historic city conservation arose as a recognised historical type, but it concentrated only on the conservation of individual buildings or tangible components on architectural grounds, separating heritage conservation from the management of urban processes and new interventions. Most current conservation approaches tackle different layers of a heritage city independently and neglect the area's intangible qualities(Rodwell, 2010). As a result, it became important to devise a strategy that perceives the city as a landscape with all of its layers, both tangible and ethereal, in order to expand conservation beyond the acknowledged bounds of historic cities and urban centres (Vakhitova, 2015). This resulted in the HUL method being realised by merging numerous other techniques established since 1976 that see the city as a living organism (ICOMOS,2011). This concept was first introduced at a UNESCO conference in Vienna in May 2005 (UNESCO, 2005), and it was later promoted as "Managing the Historic Urban Landscape" in the Vienna Memorandum on World Heritage and Modern Architecture. According to this memorandum (2005), the historic urban landscape is engrafted with present and past social expressions and developments and any conservation effort in any historic urban landscape should value the connection between people's feelings and their environment and ensure a high standard of living to contribute to a city's socio-economic success (Zancheti & Loretto, 2015).

The HUL is a long-term analytical method that analyses the urban settlement as a historic layering of cultural and natural elements, moving beyond concepts such as "historic core" or "group of buildings" to the broader urban context and its geographical setting (ICOMOS, 2011). The city is viewed as a time-space continuum in this approach, with several layers of significance recognised, including natural and built surroundings, physical and intangible values generated by distinct groups in varied settings (Zancheti & Loretto, 2015; Martini, 2017). It proposes strategies for the planning and management of non-protected settings of surrounding protected areas to mitigate the impact of negative developments and transformations (Rodwell, 2008; Vakhitova 2015; Caballero 2016). It is an approach that is closely related to the cultural landscape concept of layers with changing social meanings (Taylor 2016; Ginzarly, Houbart & Teller2018). According to UNESCO Recommendations (2011), this approach manages the city as a cultural landscape with all of its qualities and significance as a heritage entity, and it integrates the city's conservation and new developments (Martini 2013; Rey-Perez & Siguencia,2017).
HUL is a systemic approach that sees cities, or parts of cities, as the result of natural, cultural, and socioeconomic processes that shape them spatially, temporally, and experientially (Zancheti & Loretto, 2015; Ginzarly, Houbart, and Teller,2018; Martini,2013). It gives equal weight to buildings and spaces, rituals, beliefs, and values of an individual or community associated with the city. It also includes layers of symbolic significance, intangible heritage, value perception, and interconnections between the various layers of the historic urban landscape (UNESCO 2011; Rodwell, 2008), as well as local knowledge of the community (Caballero, 2016).

Several stages have been identified for the implementation of the HUL in any living heritage city (Figure 5):

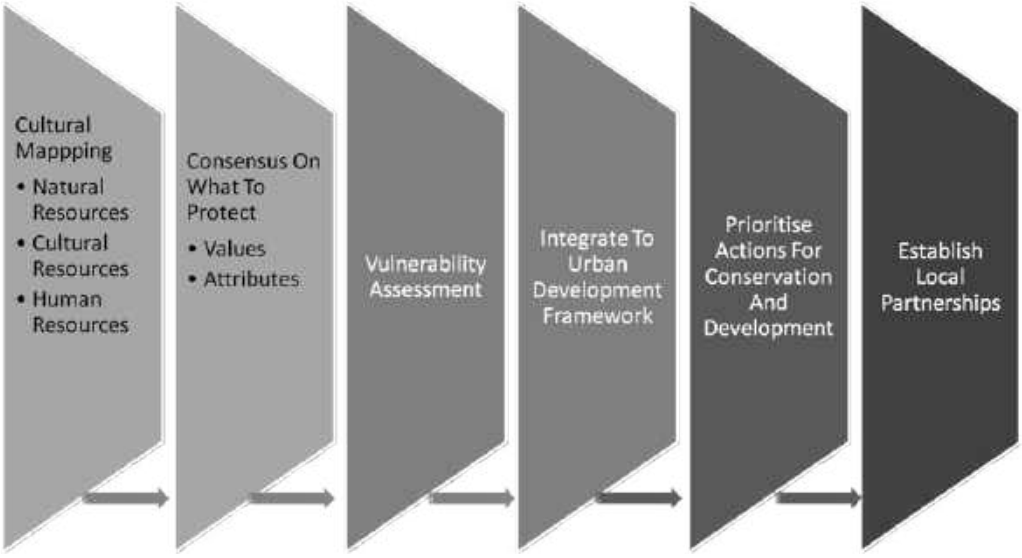

Figure 5: Six-step action plan of HUL; **Source:** http://www.historicurbanlandscape.com/

For the effective implementation of this approach, UNESCO (2011) recommends four tools, including knowledge and planning tools to ensure the integrity of the attributes of urban heritage, civic engagement tools to ensure public participation, regulatory tools to implement regulatory measures for the conservation and management of tangible and intangible assets (Bandarin & Van Oers 2015; Ginzarly, Houbart, and Teller 2018).

Application of HUL in historic cities

The HUL's implementation in any area would be heavily influenced by the context and setting, which would vary from place to place due to differences in urban governance and institutional and social capacities (Veldpaus, 2015; Veldpaus, Pereira Roders, and Colenbrander, 2013; Rodwell 2010; Caballero 2016). As a result, the HUL approach's applicability in the context of India must be established, which has been done by comparing three successful cases. The primary criteria for case selection are similarities in

the context of these cities within the developing economic background with that of Indian cities. The case studies are also examined in terms of local settings and key issues similar to those encountered in the Indian context.All three cases have distinct heritage values, which is one of the primary concerns for the development of this framework. The need for an integrated framework is also very strong in these cities, where urban growth is threatening heritage.

The first case study, Cuenca, is one of the Latin American cities working on integrated heritage conservation. The similarity of this case study's context to that of Indian cities was the primary criterion for selecting it. Cuenca is situated in a valley surrounded by mountains and a river, forming a cultural landscape with distinct heritage value that has evolved through natural and social values (Rey-Perez & Siguencia, 2017). Cuenca's layout and townscape, which is similar to many Indian cities, represent the successful fusion of different communities, societies, and cultures. Both contexts have a mix of different heritage building typologies, which adds to their individuality. This balance has shifted due to the impact of tourism and traditional activities over the last decade. As a result, any conservation strategy in this area should include heritage tourism & traditional trading, both of which are important aspects of socio-economic development (Rey-Perez & Siguencia, 2017).

Figure 6: Skyline of Cuenca; **Source:** https://go-hul.com/

In Cuenca, extreme urban growth, urbanization issues, unsustainable tourism, traffic congestion caused by high mobility and increased housing, have all been identified as contributing factors to a loss of urban identity (UNESCO, 2016). The municipality created a framework for heritage conservation in the city with the help of the University of Cuenca and an interdisciplinary research team including experts from different disciplines. Cultural mapping has been completed to identify various cultural values associated with people and to develop a series of strategies for sustainable urban development. The main challenge of this methodology was integrating historic center management into the overall city development plan (Rey-Perez & Siguencia, 2017).

In Cuenca, HUL has been implemented in three stages. The first stage was to learn about Cuenca's history and heritage values.Stage two included cultural mapping via comprehensive surveys of natural, cultural, and human heritage assets to determine the exceptional universal value of each element (Rey-Perez, 2017; Rey-Perez & Martinez 2017; Rogers, 2014) that contribute to the characteristics as well as to set protection levels and manage activities and uses(UNESCO, 2016). In stage three, all of the information gathered is compiled into a model sheet that identifies each landscape unit's cultural values, heritage resources, recommendations, and requirements. The research team was able to use this data to define the intervention criteria and landscape quality objectives that would shape the Visionary Strategic Plan Action Proposal. The case of Cuenca revealed that, despite outdated planning policies and regulations, pioneer efforts were made to provide the city with more holistic heritage management tools (Rey-Perez & Martinez, 2017).

The HUL approach recognizes the importance of incorporating culture and heritage as a foundation for sustainable urban development, allowing local governments to incorporate these new tools for heritage conservation into development processes (Van Oers, & Pereira Roders, 2012; 2013) recognizing community participation as the primary element for the development of the "Strategic Plan." The high level of interaction between stakeholders and their activities with the physical environment through workshops, training programmes, and historical-photographic analysis is one of the significant outcomes

of the proposed HUL framework (Rey-Perez,2017). It has helped to maintain a balance between contemporary architecture and heritage and most importantly, the city has been regarded as a single entity with proper integration of all tangible elements and intangible values (Van Oers, 2010; Rey-Perez & Martinez,2017). It also ensured that contemporary interventions matched pre-existing heritage assets, and it promoted the relationship between the urban and natural environments and the needs of current and future generations. When compared to Indian cities, the lack of balance between modern development and heritage, as well as a lack of community participation, are major issues that can be addressed through the HUL approach.

The second case study is in Shanghai, China, which is comprised of clusters of eight Lilong (typical housing complexes from the early 20th century)(Fig.7 & 8) that form a cultural landscape along the Hongkou River in the central part of the Hongkou District.This city is made up of several historic neighborhoods, each with its own distinct identity, making it suitable for comparison with the Indian context. Shanghai, like other Indian cities, has distinct pockets with varying heritage values and identities. So the framework had been designed in such a way that each neighborhood is treated separately but as part of a whole, with proper linkages in between (Van Oers, & Pereira Roders, 2013).

Figure 7: Aerial View of Lilong; **Source:** http://www.tripadvisor.co.nz/

Figure 8: Lilong along Hongkou River, China; **Source:** shanghaistreetstories.com

This historic urban landscape reflects a long history of development and transition, from the Qing Dynasty to foreign concessions and the modern period (Xie & Heath, 2017; Xu, 2000). The first settlement in Shanghai, according to archaeological findings, was established in 4000 BC (Verdini & Frassoldati & Nolf ,2017). The need to improve the poor facilities in historic buildings and damage to building structures, the socioeconomic recession that caused factories to vacate and businesses to stagnate, the increase in low-income populations etc. are the key issues identified in Hongkou (Verdini & Frassoldati & Nolf 2017; Xu 2000). The HUL approach is introduced to gain a thorough understanding of the balance between development and conservation in Hongkou, which interprets the site as a time and space continuum to improve quality of life (Veldpaus, 2015). Consultation on local development was also held by the local government, which was attended by research institutes and social organizations. Many local construction projects entailed both social and market forces, intending to revitalize the area's industrial heritage and

historic structures (Xie & Heath 2017; Van Oers, & Pereira Roders, 2013). To encourage economic development, creative industries, which are an important part of the revitalization, were introduced by reusing derelict factories and warehouses. As the redevelopment progresses, new social groups are drawn to the opportunities, altering the area's social structure.

HUL has been implemented in Hongou in stages, the first of which was data collection through mapping of cultural, natural, and human resources in collaboration with universities and other research institutes. These data sets are then incorporated into urban and regional planning frameworks. Following that, the types of intervention permitted in various urban settings were prioritized, with a focus on urban design and the creation of space inspired by history and memory (Van Oers, & Pereira Roders, 2013). It took approximately ten years to manage the redevelopment of the Hongkou River area's historic environment(Rogers, 2017) and the framework for local conservation and development attempted to include new constructions, and new spaces (Rogers, 2017; Verdini, Frassoldati & Nolf 2017).

Rawalpindi, Pakistan, is the third case study, and it has a different background than the first two. There were no proper conservation projects or approaches in place before the implementation of the HUL programe, and the people of the city were less aware of the need for conservation. However, by implementing the HUL approach, local heritage conservation and development have been very well integrated, and today Rawalpindi is considered to be one of the best examples to quote for its heritage management, according to the UNESCO Heritage reviewing committee (2016).

Rawalpindi's old core is a congested area with bazaars and neighborhoods known as mohallas (Fig. 9), which have organically developed, creating an enduring pattern of urban life. It bears witness to a tradition in which different cultures met and coexisted, as evidenced by a wide range of religious structures of various faiths, traditional bazaars and festivals, and daily life. From the 18th to the 20th centuries, the old city has had a significant amount of residential and commercial architecture, with no two buildings appearing to be identical in design or decoration. The domes and spires of Hindu temples and the minarets of mosques punctuate Rawalpindi's flat skyline, creating a distinct urban identity and sense of place. The heritage buildings in this city have only survived due to the people's desire to preserve their traditional way of life. It was critical to develop a new integrated policy, for which the HUL approach was chosen, to preserve the vestiges of the past (Gravagnuolo, & Girard, 2017).

Figure 9: Mohallas and streetscape in Rawalpindi; **Source:** https://go-hul.com/

Rawalpindi's problems are similar to those of historic cities around the world, particularly in developing countries like India (Rogers, 2017). Rawalpindi's cultural values demonstrate the city's social nature. Even though the official record does not recognize this area as a heritage area, the residents see it as the physical manifestation of their socio-cultural capital, which forms the crux of true heritage. The main issue in Rawalpindi has been identified as a lack of heritage awareness among residents, as well as a lack of heritage protection policies and experience in protecting historic cities.

The Rawalpindi Historic Urban Landscape Project (RHULP, 2013) sought to achieve three HUL objectives: a)managing change or maintaining continuity; b) improving local community living conditions; and c) generating a “virtuous cycle” in urban conservation (Van Oers, 2010).

The first three steps of the HUL approach were included in the Rawalpindi HUL program's preparatory phase. In the first step, several rapid inventories were conducted to determine the heritage value of these landscapes. In the second step, meetings, seminars, and workshops were held, to ensure the participation of all stakeholders, including residents, shopkeepers, and various levels of government. In the third step, the vulnerability level of each layer was determined. As a result, a better understanding of the historic city's values and the characteristics that must be preserved has emerged (Rogers, 2017). Following the implementation of HUL, city development occurs in the most sustainable way possible, with both heritage management and socio-economic development being integrated efficiently. This approach to heritage management that does not impede overall development is desperately needed in Indian cities as well.

In all three cases, the strategies were implemented with the assistance of four HUL-recommended tools (ICOMOS, 2011), which increased the effectiveness and inclusiveness of the strategies. Before beginning any conservation work under this approach, a comprehensive conservation strategy is created by a multidisciplinary team using a value-based and scientific approach. The city was divided into manageable clusters, and each cluster's layers were identified separately, ensuring a high level of applicability and integrity (Veldpaus, Pereira Roders, and Colenbrander, 2013). At several points, particularly when determining the historical significance of each stratum, the public was involved. Since the community is involved in the conservation process, it has strengthened their commitment to conserve the heritage as an integral part of daily life. Being the guardians of the heritage, they take part in the monitoring process as well, and as a result, the problem of financial shortage has been addressed. Based on these three cases, it is recommended that HUL be a viable solution for the preservation of Indian traditional cities. because the Indian city, like any traditional city, has a distinct heritage value as well as its own urban identity. Second, most developments in India have been piecemeal, with no integration with the past; in some cases, intangible aspects of heritage have been completely ignored. People's attitudes toward heritage city conservation have evolved, from the preservation of a single structure to more responsive preservation of the entire fabric and its associated values. But there is a lack of awareness about the importance of conservation. However, the issues identified in all three cases are similar to those in India.

Conclusion

Indian cities have a prominent regional setting with distinct heritage values, necessitating special conservation assistance. Urban development pressures, combined with a lack of an appropriate conservation framework cause the loss of significant cultural heritage here. This is due to a lack of heritage conservation expertise as well as a lack of research on the subject. In contrast to western conservation principles, the approach to conservation in India must be interpreted in terms of both tangible and intangible aspects. Based on a comparative analysis of various approaches and policies implemented in India, it is clear that there is no proper integration of heritage management and socio-economic development is happening. Most conservation policies focus on one layer of the city at a time, with no coordination between other layers such as geomorphology, social values, cultural processes etc.

In Indian cities, there is a lack of balance between contemporary development and heritage management, which could be remedied by implementing the HUL methodology and framework used in Cuenca and Rawalpindi, with necessary modifications based on the local setting and people's culture. Many heritage buildings in Indian cities, as in Shanghai, are vacant. The majority of them are under threat of demolition or transformation due to a lack of a proper framework for conservation and management. The HUL approach can be used in Indian cities because it has successfully managed such transformations. The strategies developed for these three cases could be modified and implemented based on local context. According to the analysis, there are several common features for all conservation practices, such as people's involvement, importance in urban planning policy development, development due to tourism activities etc. However, none of these practices prioritizes immaterial/intangible aspects of urban cultural heritage. Most conservation policies or methods isolate the heritage area from people by creating a buffer zone and keeping it as a controlled area that does not allow new developments. There are no such issues of

isolation identified in the case studies of the HUL approach's pilot cities because it treats all layers equally and considers intangible components as elements that enhance the livability of cities. HUL creates a space for discussion with city planners, urban designers, legal instruments, and national and local governments about how layered cultural experiences influence perceptions of the urban landscape and why these are important in urban renewal outcomes. This approach to dealing with a city's layers will improve local community perceptions and collective memories, leading to the country's socio-economic development. Based on this analysis, the HUL approach is found to be a suitable one for integrating heritage with socioeconomic developments and can be implemented for the conservation of heritage cities in India, but with proper framework, modification depending on the local context and setting.

This paper attempted to assess the suitability of the HUL approach in the Indian context by contrasting it with current practices. However, more research is required to determine what changes are needed in the general principles of the HUL approach to make it suitable for Indian heritage cities, as well as to assess the effectiveness of the tools recommended by UNESCO. The local social and cultural context of each Indian city should be carefully examined to determine whether this approach would result in desirable outcomes by reinforcing integrated socio-cultural and economic development which is an important area of research.

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15

Regeneration of the historic market precincts in Bengaluru

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Sub theme: Historic urban landscapes as an approach to heritage-led development.

Keywords: Historic urban landscapes, heritage led development, urban regeneration, historic urban neighbourhoods, stakeholder engagement, collaborative approach, cultural sustainability.

Abstract

Historic urban landscapes (HUL) can be defined as urban areas that are constantly evolving as a result of layering of various cultural, economic, social and natural values and continuous human interaction. They are interdisciplinary, inclusive and provide a value-based approach for cultural heritage management and related development.

Heritage led urban regeneration is the process of developing and planning approaches to rejuvenate the deteriorating old neighbourhoods and heritage assets into the modern flourishing environment so as to enhance their social, cultural, natural and economic values and improve the quality of life of the associated communities.

This paper traces the origin of Bengaluru as a 16th century market fortress town and discusses the different values that can be attributed to its heritage markets and highlights their character and significance to the city. The rich mercantile heritage of the city has undergone considerable transformation owing to years of interventions by various stakeholders and is slowly fading in the face of new development. Further, the paper examines the idea of how these markets, as important markers of the historic landscape of Bengaluru, have been used as a driver for social, economic and cultural revival of the historic precincts, through public awareness, planned collaborations, community participation and capacity building.

Introduction to Historic Urban Landscapes (HULs)

The definition of cultural heritage has been constantly evolving since the adoption of the UNESCO World Heritage Convention in 1972. With every new charter, the meaning of cultural heritage is expanding to include different concepts and systems, and cultural landscapes were also incorporated into the broader definition of cultural heritage in the last decade. This broader view of cultural heritage to integrate associative values and multiple perspectives from different stakeholders, rather than focusing solely on tangible elements has led to a holistic contextual understanding of urban heritage and historic cities and has furthered the concept of historic urban landscapes (Ginzarly, Houbart and Teller, 2018).

Historic urban landscape consists of a comprehensive urban context and geographical setting with a wide range of tangible assets like historic building fabric, streetscapes, urban settlements, traditional land use patterns and public spaces as well as intangible elements like community rituals, festivals, local folklores etc. HULs act as an important tool in integrating policies and theories of built environment conservation into the larger framework of sustainable urban development and management (UNESCO, 2011).

Heritage led urban regeneration

Historic neighbourhoods, systems, concepts and resources have become an important asset of the urban landscape today. The idea of urban conservation is a continuous process of change and is slowly being integrated in urban rejuvenation, development, management and framing urban policies and legislation.

Heritage led urban regeneration is a method of utilizing heritage conservation as a tool to ensure that the distinctive historic character of a place is not compromised by modern development. Instead it acts as a necessary balance between conservation and development, economic progress and community well-being. It helps sustain the symbolic value of heritage cities, their urban form, sense of identity and belonging, and the spirit of traditional communities. It is also strongly associated with the Sustainable Development Goals (SDGs) of 2030, especially goal 11 – Sustainable Cities and Communities, which emphasizes on protecting and safeguarding the world's natural and cultural heritage and enhancing inclusive and sustainable urbanization.

Methodology

The primary research method adopted for this paper is qualitative in nature. The initial idea and background research were assisted by qualitative data collection related to the subject through archival and online resources followed by the use of interpretative, theoretical and statutory frameworks for the analysis that informed the research. Based on this, a site and photographic survey was conducted to investigate the condition of the identified markets and their surroundings.

A case-study oriented approach has been adopted for exploring the issue of public markets in Bengaluru and reinstating its mercantile status. This approach was further divided into two methods to ease the process of study.

Firstly, **a review of historical development of markets**, was conducted alongside the chronological development of Bengaluru. This was achieved through extensive data collection drawing on multiple sources.

Secondly, a **time-based study** of the four identified markets, depending on the year in which they were constructed was conducted and a review of the heritage led development in the market precincts has been discussed. The parameters of study for the markets include their origin, historical context, setting and surroundings, association of the markets to significant personalities, architectural styles of the buildings and their cultural context.

The process of evaluation of the heritage values attributed to the market precincts is based on INTACH's Charter for Conservation of Unprotected Architectural Heritage and Sites in India (INTACH, 2004).

Tracing the History of Bengaluru as a major mercantile city and administrative and military centre

Bengaluru, the capital city of Karnataka, situated in the geographical centre of the Indian peninsula (Figure 1 and 2), has played a crucial role in shaping the history of southern India (Annaswamy, 2003).

Figure 1: Geographical context of Bengaluru; **Source:** Maps of India, 2018

Figure 2: Map of India showing the geographical location of Bengaluru; **Source:** Maps of India, 2018

The first mention of the term '*Bengaluru*' can be traced back to a hero stone inscription (a memorial stone erected to commemorate a battle), illustrating the Battle of Bengaluru in the 9th century AD during the reign of the Ganga dynasty (Figure 3) (Sharma, 2016). The Cholas and Hoysalas succeeded the Ganga rule and governed this region for a significant time period. It was during the rule of the Vijayanagara dynasty that Bengaluru emerged as an important fortress town (Figure 4). Kempe Gowda I, a feudal chief of the Vijayanagara kingdom is considered to be the founding father of the city. He was a visionary and prudent commander, who acknowledged the critical location and commercial potential of Bengaluru and decided to make it his capital. With the permission of the presiding monarch at that time, he built a fortress market town in 1537 AD called 'Pete' or 'Pettah', which refers to a market town in Kannada. In 1565 AD, the Bahmani Sultanates of Bijapur defeated the rulers of Vijayanagara in the battle of Talikota, after which Bengaluru became a major military base under the governance of Shahji. Bengaluru was granted to him as a personal jagir (meaning feudal land) and later flourished as a commercial hub under his son, Venkoji until 1687 AD.

Figure 3: The hero stone inscription depicting the battle of Bengaluru; **Source:** British Library, 1865

Figure 4: A 17th century plan of Mysore with Bengaluru highlighted; **Source:** Rice, 1897

The Mughal army was stationed in Bengaluru for three years after which it was purchased by the Wodeyars of Mysore in 1690 AD. They had a keen eye on this town due to its ideal location in a valley, guarded by hill fortresses that provided favourable conditions for a secure environment for trade and military purposes. During this time, the Mysore territory was under constant attack by neighbouring kingdoms. Hyder Ali, a commander in chief in the Mysore army, came to their rescue and was rewarded with the Bengaluru fort for his commendable service. He became the de facto ruler of this region from 1761-82 AD. His secular outlook further encouraged Bengaluru to grow as an industrial and commercial centre. Tipu Sultan (ruled from 1782-99 AD), Hyder Ali's son, inherited the town after his father's death and is known to have strengthened it as a defence headquarters (Sharma, 2016). By the end of the 18th century, Bengaluru was a formidable fortress town and a major trading and manufacturing centre.

The fourth Anglo-Mysore War (1799 AD), marks the official shift of power to the British, who were captivated by the salubrious climate of Bengaluru and shifted their military capital from Srirangapatna to Bengaluru in 1807 AD. The British set up a cantonment (the word cantonment is derived from a French word, 'canton', meaning corner or district) to the north-east of the Pete (Figure 5) and it quickly developed to become the largest civil and military station in South India with a flourishing administrative and residential centre (Jayapal, 1997). The settlement of the English troops attracted traders and merchants from the nearby districts and the new English culture and habits paved the way for different types of markets and commercial establishments. Trade connections with other parts of British India, which was previously curtailed due to political differences, were now actively encouraged and amendments in the economic policies and revenue system had an overall positive impact on the trade and commerce in the city. Thus, Bengaluru emerged as a city with multiple layers of history and varying roles under different rulers, and it continues to remain a strong administrative and commercial capital in the country.

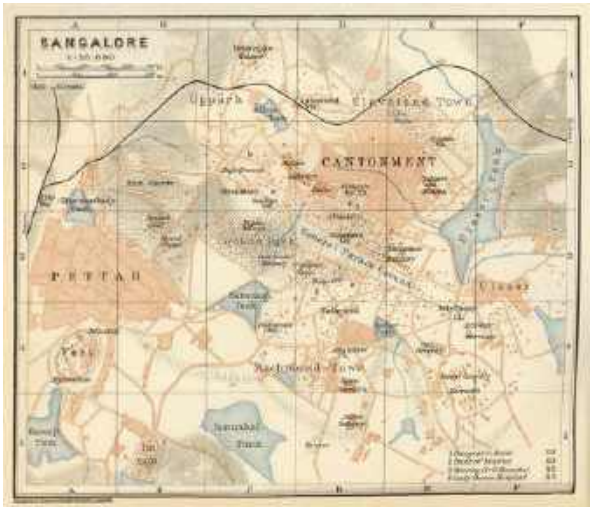

Figure 5: An early 20th century map showing the Pete and Cantonment in Bengaluru; **Source:** Baedeker, 1914

Public markets as an important marker of the historic urban landscape

American scholar and architectural historian, Helen Tangires, in the 6th International Public Market Conference, stated that, "*A city was inconceivable without a public market, and a market could not exist without the city*".

Public markets have been a familiar and an inherent feature of the historical landscape of any city and have served as important nodes where people gathered to engage in social, cultural, religious, and political dynamics (Tangires, 2016).

The evolution and design of markets is influenced by various factors like favourable geographic location, local merchant population, culture and traditions of a place and the variety of goods available for trading (Romano, 2015). Markets are rooted in individualistic traditions and practices that shape how they are conceived and function (Bevir and Trentmann, 2004). The concept of a market has constantly been transforming from a street activity to transaction carried out in a closed setup and the current trend of online shopping, which is slowly taking over the traditional market practices.

Historic Market buildings in Bengaluru

From the historic timeline of Bengaluru, it is evident that public markets have been an indispensable component of the historical landscape of the city and the public urban infrastructure today. The establishment of a fortress market town by Kempe Gowda I along with his invitation to traders from across the country to set up their business here, was the first radical measure that ushered in Bengaluru's development into a significant commercial capital. His foresight to establish this town as the business metropolis of the country has been successful, as the city through its various phases of growth, was the centre for both private and public sector industries in the late 20th century and is currently the Information Technology (IT) hub of the country.

As specified in the methodology, the study of the historic markets was carried out based on their chronology. The four case studies selected, are categorised into two broad spectrums: **pre-colonial (16th century)** and **colonial period (19th and 20th century)** (Figure 6). The pre-colonial period focuses on the fortress market town, housing different trading communities who conducted business from their shop front houses. The colonial period markets are divided into permanent indoor markets and outdoor/street markets. Each category is explored through their history, material-built forms exemplifying varied architectural styles and distinct cultural traditions.

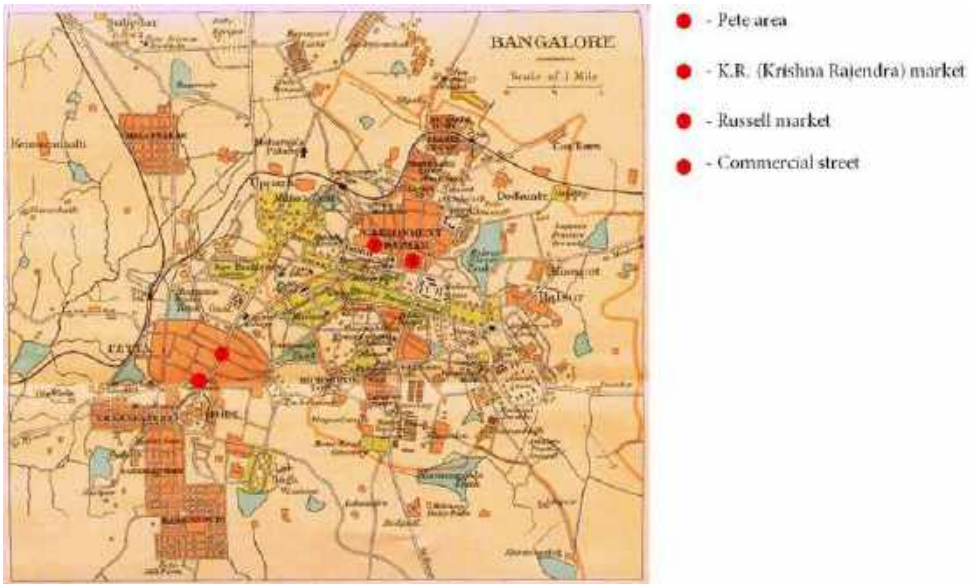

Figure 6: Early 20th century map of Bengaluru highlighting the 4 markets chosen for the study; **Source:** Murray's Handbook, 1924

Pre-colonial era market (16th century)

The Pete was arranged in an elliptical mud fort with a ratio of 1:2, with two main streets running north-south and east-west, namely Dodda-pete road (renamed as Avenue Road) (Figure 7 and 8) and Chikka-pete road respectively. Their intersection formed the town square or chowk, also called Dodda-pete square (Figure 9). This fort had eight gates with drawbridges and was enclosed by high rampart walls and a deep ditch or moat with hedging (Figure 10). Many historians like Fazlul Hasan, believe that this layout of the town was based on medieval treatises like the Manasara and Mayamata. According to a translation of the town planning explained in these texts, the plan of the Pete corresponds to that of a nigama type, a town consisting of traders or a pattana, a town where products from other countries are found and inhabited by people of all classes (Sharma, 2016). Within this military domain was a thriving economic enterprise composed of twenty sub-petes, each of them named after the commodity sold in that locality and occupied by the community trading them. This formed an intricate system of zones based on the mercantile arrangement as can be seen in Figure 11. Each guild of craftsmen resided in these designated sectors around the temple of their guardian deity and engaged in trade from their shop fronts and workshops (Annaswamy, 2003). The names of each district, their translation and the merchandise sold in them are shown in table 1. For example, Akki-pete (area where rice is sold) and Uppara-pete (area where salt is sold), are located in the north-western part of the town. The trade activity within the Pete was not only characterized by export and import of finished products, but also reflected the interdependency among the various communities. For example, the oil from Ganigara-pete was used by the dyeing community of Nagaratha-pete and Patnool-pete in textile manufacture.

Though today most of the built structures have not survived, some remaining buildings showcase the vernacular architecture of that time as seen in Figure 12. The decorative cornice, embellished parapets and eaves boards, and the typical shop front houses (Figure 13) can still be spotted, nestled in the interior streets of the region. The individual religious institutions of each community, like temples and dargahs, highlight the architectural significance of the market town. The neighbourhood can also be considered as an assemblage of cultural practices, for example, the venue for the annual Karaga Mahotsava, one of the oldest festivals of the city celebrated by the Tigala (horticulturalists in the local language) community, is the Dharmaraya Swamy temple in Tigalarapete.

Figure 7: An archival photograph of the Dodda-pete Road; **Source:** British Library, 1890

Figure 8: A picture of Avenue Road today; **Source:** Author

Figure 9: One of the edges of the market square today; **Source:** Author

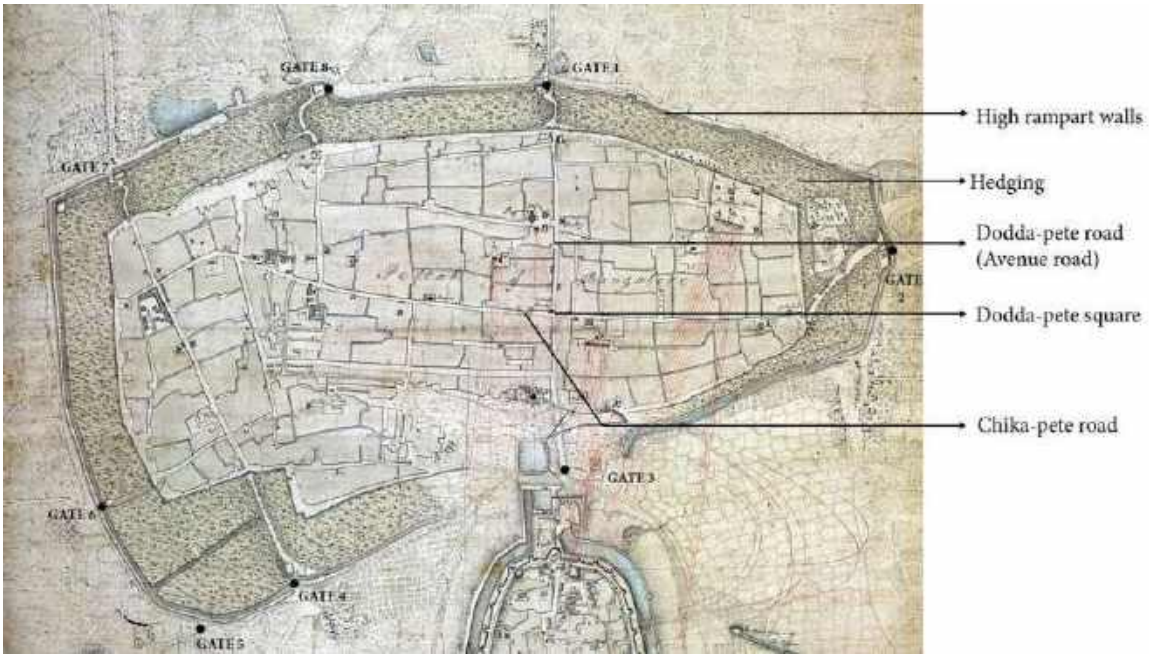

Figure 10: The Pete area as planned by Kempe Gowda I, drawn by Robert Home in 1791; **Source:** Sharma, 2016

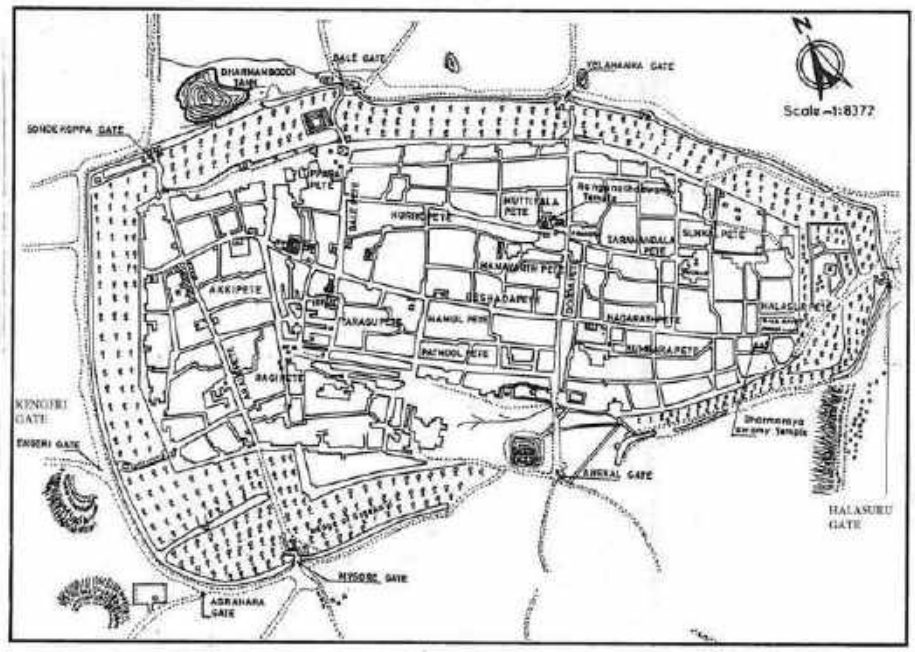

Figure 11: The organisation of the sub-petes within the Pete; **Source:** Annaswamy, 2003

Figure 12: The Mohan Building; **Source:** Author

Figure 13: A typical shop front house; **Source:** Author

Table 1: Tabulated by author based on Annaswamy, 2003 and Sharma, 2016; **Source:** TV Annaswamy 2003 and Yashaswini Sharma 2016

Serial Number	Name of the sub-Pete	Merchandise sold/trade activity	Community involved
1.	Akki-Pete	Rice	Middle and upper class
2.	Anche-Pete	Postal communication	-
3.	Arale-Pete	Cotton	Gonigas (gunny bag weaver)
4.	Bale-Pete	Bangles	Balijas (from Telugu country)
5.	Chikka-Pete	East-West principal street Silver and Gold jewellery	Wealthy merchants
6.	Dodda-Pete	North-South principal street Handicrafts	Akkasales, a sub-group of Panchalas
7.	Ganigara-Pete	Oil	Ganiga
8.	Halasur(u)-Pete	Halasu in Kannada means jackfruit	-
9.	Huriyo-Pete	Yarn twisting	Yarn makers
10.	Komati-Pete	Various items	Komatis (Vysyas)
11.	Kumbara-Pete	Pots	Kumbara (Potters)
12.	Manavartha-Pete	Groceries	Bulk traders
13.	Mutyala-Pete	Pearls	Yerra or Kilari Gollas (cow herders) and Brahmans
14.	Nagarta-Pete	Major trading post Weaving	Devangas and Togatas
15.	Patnool-Pete	Silk fabrics, cotton and woollen carpets	Patnoolkarans (originally from Vijayanagara)
16.	Ragi-Pete	Ragi (finger millets)	-
17.	Sunkal-Pete	Lime stone for building purposes	-
18.	Taragu-Pete	Jaggery, spices and household items	-
19.	Tigalara-Pete	Horticulturists	Tigala
20.	Uppara-Pete	Salt manufacture, brick making and lime burning	Uppara (Vaishnavas)

Colonial era markets (20th century)

a. Krishna Rajendra or City market, Kalasipalya

This is one of the oldest permanent indoor markets in Bengaluru selling fresh vegetables, fruits, flowers and all sorts of goods. The site on which the present-day market stands, was once a part of the Anglo-Mysore battlefield of the late 18th century. The area where the market now stands was close to a large water body called Siddikatte that acted as a buffer zone between the pete and the fort (Figure 14) (Aruni, 2016). By the late 1800s, several informal markets had opened in and around this area, including City Vegetable Market, or City Market. Maintaining the sanitation and hygiene in this market premises had become an uphill task and hence it was decided to build a new market in the same location.

In January 1907, the officials of the Bengaluru City Municipal and Diwans (administrative officials) of Mysore state inspected this area, and in 1914, it was decided to build a new market here. The market was designed by the Chief Architect of the Mysore State - S H Lakshminarasappa and Mumbai-based architect E.W. Fritchley, drawing inspiration from the Stuart Hogg market in Kolkata and the Victoria Hospital in Bengaluru. It was opened on October 11, 1921 in a grand ceremony attended by the president and members of the city council. The new market building with its open square space, arched colonnades, tower-like structures topped with mansard roofs and ornate railings, clock tower, jack arched roofs represents the magnificent European classical style of architecture (Figure 15). In 1927, on the silver jubilee celebrations of the rule of Mysore kingdom, an oval shaped park was inaugurated by the then king of Mysore, Krishna Rajendra Wodeyar IV and was named as Silver Jubilee Park (Figure 16).

The market was renamed as Krishna Rajendra market in 1946. In 1997, the city corporation constructed a modern concrete building in the open square for better hygiene, which has now partially fallen derelict due to lack of basic infrastructure and services, waste management issues and poor design of the building (Figure 17). In 1999, an elevated flyover was constructed in the square in front of the market to control the growing traffic congestion which affected the visual axis of the colonial structure (Figure 18).

The market precinct was a part of the Anglo-Mysore war in the old city and later functioned as an outdoor market representing the past military and economic character of the space. Its past association with notable personalities of the Kempe Gowda and Wodeyar family and the Anglo-Mysore war symbolizes its historical significance. The design of the market buildings, both old and new, holds strong architectural value and today they stand as an ornament in Bengaluru's cityscape. Even today, traders and farmers from the bordering districts gather in this traditional setup to sell their produce and the relationship between the merchant and the customer, shows the social importance of the arena.

Figure 14: The public space with the fort walls on one side; **Source:** British Library, 1860

Figure 15: A view of the front facade of K.R. market; **Source:** Author

Figure 16: View of the square in front of the market building; **Source:** Delcampe Luxembourg, 2018

Figure 17: Aerial view of the modern concrete building constructed in the open square; **Source:** The Bengaluru Live, 2021

Figure 18: Aerial view of the K R Market precinct with the elevated flyover; **Source:** Dreamstime.com, 2021

b. Russell Market, Shivajinagar

The growing size of the Bengaluru cantonment resulted in an increase in demand for household needs and everyday necessities of the British. Hence, they set up a general bazaar in the vicinity in the 1850s called New Market, which featured a clock tower and a square called Billi Akki Palli (White rice market) (Figures 19-20) (Jayapal, 1997). This market was reconstructed in 1927 to provide better facilities and the building which stands today is named after T.B. Russell, the then President of the municipal commission of the city, and was inaugurated by Hajee Sir Ismail Sait, a well known philanthropist. W.H. Murphy, an executive engineer of the municipal council is credited for its Indo-Saracenic architecture (Figure 21). The extensive front façade with arched panels has a central entrance marked by buttressed piers with octagonal 'chhatris' (dome-shaped pavilions) on top. The building has square blocks at the end with a high parapet and a squat dome with finial surrounded by four domiciles (Issar, 1986). A meat and beef market (Figure 22) was also established in its precinct in 1932 and is thronged by its regular customers even today (Shekhar, 2015). Russell Market, till date, continues to be the nerve centre for rare varieties of groceries, flowers and fruits imported from all over the world.

The present-day market stands on the site of an earlier market and open arena in the Cantonment depicting the past economic value of the area. Its historical connection to important figures of the city municipality like T.B. Russell, Hajee Sir Ismail Sait and W.H. Murphy highlights its associative value. The market building is a combination of Hindu and Islamic architecture, with a central square tower

rising prominently demonstrating ample design value and architectural importance. The market shops are run by third generation owners, comprising of a culturally vibrant section of the community hailing from different backgrounds, who work in harmony with each other and serve a loyal clientele.

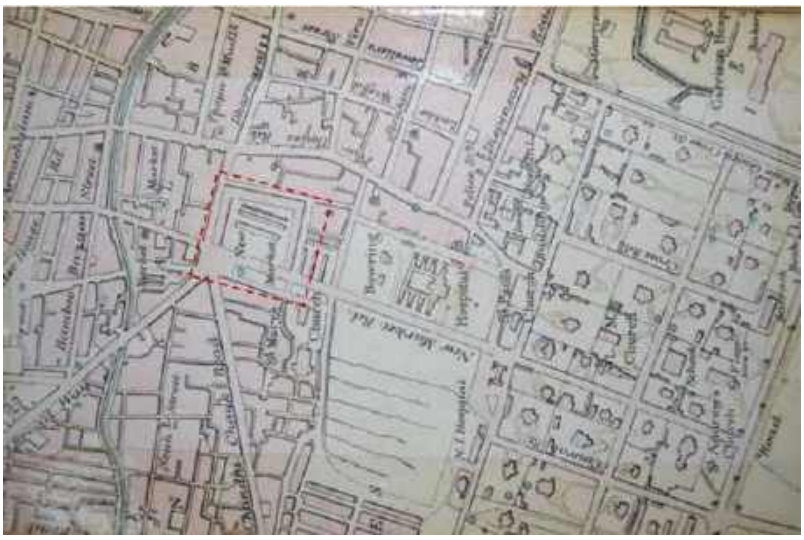

Figure 19: Map showing the location of New Market; **Source:** Mythic Society Library, 1935

Figure 20: The clock tower and open arena in front of the New Market; **Source:** Delcampe Luxembourg, 2018

Figure 21: Indo-Saracenic architecture of the Russell market; **Source:** Ram, 2017

Figure 22: The Beef market located diagonally opposite to Russell market; **Source:** Author

c. Commercial Street, Shivajinagar

The Commercial Street shopping zone is located between Kamraj road and Jumma Masjid Road and includes the by-lanes of Dispensary Road, Ibrahim Street, Veera Pillai Street, Jeweller's Street, Narayan Pillai Street and Lakshmi Mudaliar Street. Set up in the early 19th century, these streets were occupied by merchants and contractors who supplied provisions to the British army stationed in the cantonment (Figure 23). The area comprised residents from different cultural backgrounds, and the Tamil Mudaliar community was one such group which dominated the region. Most of the area was owned by Rai Bahadur Sir Arcot Narayanswamy Mudaliar, a wealthy businessman and noted philanthropist and hence the streets are named after his family members. The stores offer a wide range of options in textiles, garments, hosiery, shoes, hardware, artefacts, stationery, gold and silver jewellery. Though most of the older buildings have been replaced by modern extensions, one can still find the typical shop front houses personifying a mix of South Indian vernacular and European architecture (Figures 24-26) (Rizvi, 2013). Apart from being a major commercial haven, the locality also has important religious institutions that boast significant cultural heritage and exhibits harmony among the diverse communities. These are plotted in Figure 27 along with some of the renowned establishments.

The Commercial Street shopping arena is located in the Cantonment zone where once the British army was stationed and is surrounded by Infantry and Cavalry Road which has vital historical value. The area was occupied by an eclectic mix of people from varied backgrounds who formed an important part of Bengaluru's community. Apart from the linear arrangement of shops along most of the streets which accentuates the streetscape, there are remnants of typical shop front houses which represent a blend of European and vernacular architecture.

Figure 23: An early 20th century view of Commercial Street; **Source:** Delcampe Luxembourg, 2018.

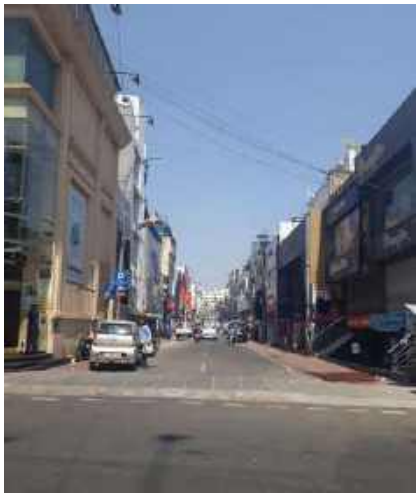

Figure 24: View of Commercial Street today; **Source:** Author

Figure 25: Typical shop front house; **Source:** Author

Figure 26: Typical shop front row house; **Source:** Author

Figure 27: Map of Commercial Street shopping zone; **Source:** OpenStreetMap, 2018

Regeneration of market precincts in Bengaluru

From about a decade, the Bruhat Bengaluru Mahanagara Palike (BBMP), the city corporation, has been striving to take up regeneration projects in the historic market precincts in Bengaluru. In 2017, the Smart City proposal of Bengaluru was approved by the Ministry of Urban Development (MoUD), under the Smart Cities Mission, and was incorporated as a Public Limited Company as per the rules of the Government of India in 2018. The Vision of the Bengaluru Smart City Limited (BSCL) is **"Liveable Bengaluru-Healthy, Connected & Vibrant"** with emphasis on four main objectives - Citizen and Stakeholder Focus, Environmental Responsibility, Safety Awareness and Employee Inclusiveness. Under the Smart City scheme, many projects were finalised: the redevelopment of K.R. Market junction, rejuvenation of Russell market zone, facelift of Commercial Street and improvement to few parts of the Pete area, are some of the important projects.

The K.R. Market junction is a prominent node that links S.J.P. Road, N.R. Road, Avenue Road and Victoria Hospital Road. The project was proposed to ensure smooth connectivity of traffic – both vehicular and pedestrian, by integrating transport hubs within the area and to promote business and tourism of the historic neighbourhood. The proposed redevelopment plan (Figure 28) consisted of construction of new public infrastructures like toilets, drinking water points, play area for children and management infrastructures like traffic islands and refuge areas for emergency situations (Ramani, 2021). The project was delayed due to the pandemic but began in February 2021, and the groundwork for the basic infrastructure like water, sanitation and waste management is underway.

Figure 28: Conceptual view of the proposed redevelopment of K R market junction; **Source:** BSCL, 2020

A similar rejuvenation scheme with multi-layered interventions and strategies was proposed for Russell Market zone. The recommendations include a pedestrian plaza, walkway to the integrated mobility hub, organised spaces for vendors, dedicated loading and unloading bays, defined circulation pathways and structured parking for the customers (Figure 29) (Jana Urban Space, 2021). The project has not yet commenced but the tenders have been floated and the market vendors are hoping that the project will kick start soon.

Figure 29: Conceptual view of the redevelopment plan for Russell Market precinct; **Source:** Jana USP, 2021

Commercial Street, the city's popular retail hotspot recently got a facelift under the Smart City project. The storm water drains, water pipelines, electrical lines of the British era were repaired and replaced with new ones wherever necessary. The road was then laid with wider footpaths and patterned coloured cobblestones and is now completely pedestrianised (Figure 30). The project began in March 2020 and was delayed due to the pandemic which impacted the functioning of the business district even after the lockdown restrictions were lifted. Currently, the work on the internal and parallel streets is ongoing. The BSCL is working in collaboration with BBMP, Bengaluru Water Supply and Sewerage Board (BWSSB), Bengaluru Electricity Supply Company Limited (BESCOM), Directorate of Urban Land Transport (DULT), Jana Urban Space, WRI India, all the market associations and the vendors and public to ensure a successful project completion.

Figure 30: The recently pedestrianized Commercial Street Avenue; **Source:** Citizen Matters, 2021

While preparing the detailed project report for each of the market precincts, the historical, cultural, economic, and architectural significance have been the focal point that demonstrates an integration of cultural heritage policies and management concerns in the wider goals of sustainable urban development, which is a key element of the HUL approach. The projects are yet to be implemented or finished and only once they are completed, an impact assessment of the historic urban landscape, in this case, the market precincts will help in understanding the repercussions on the tangible and intangible aspects of the HUL. Most of the interventions have been proposed to improve the market precincts by providing better

services and infrastructure, ensuring these historical markers of the city cater to the growing demands of the people and are not demolished, which is the scenario in most of the urban historic cities.

A participatory approach for the regeneration projects has been adopted by the local municipality by inviting the market associations and general public for project consultations. Several workshops, heritage walks and competitions have been conducted by INTACH Bengaluru Chapter for architecture, urban design and planning students and design ideas were discussed with the officials and displayed for public viewing. But the suggestions are yet to be incorporated in the execution of the regeneration process.

Conclusion

The study of market precincts in Bengaluru illustrates the contribution of markets in shaping the image and growth of the city and highlights their heritage values, importance of market neighbourhoods and the need to conserve them. It can be inferred that markets are not only key sites of public space, offering opportunities for local economic development and employment but are also nodes of cultural exchange with enormous potential for local regeneration and community initiatives. Today, architects, urban planners and designers study these historic markets seeking multipurpose tools for social, economic, and community development and for urban renewal of the market surroundings. This can be used as a platform to promote the idea of conserving the historic urban landscape while ensuring contemporary development.

The three examples of K.R. Market junction design, Commercial Street makeover and rejuvenation of Russell Market are model solutions where the historic significance of the market precinct became an important parameter in the redevelopment projects. All the proposals were made keeping the markets as the central focus, thereby protecting both the tangible and intangible aspects of the neighbourhood while also ensuring modern, improved infrastructure that did not impact the character of the space.

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16

A Study of Policy & Legislation For Infrastructure Upgradation In Historic Urban Landscapes

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Sub theme: Cultural Landscapes: Transformations, concepts, ideas and approaches

Keywords: policy, legislation, Historic Urban Landscapes, infrastructure, tools-toolkits, case studies

Introduction

There has been a global change in policy stance from defining myopic 'heritage quarters' to 'historic urban landscapes' (HUL). This defines a newer way to approach heritage upgradation. The main difference between a monument and a living thriving historic, heritage city is that people live and work there. Their needs are the same as that of any city dweller, but their habitat is governed by heritage legislations. The traditional mixed land use of historic urban landscapes is affected by policies of housing, urban development, archeology, manufacturing, trade, commerce, tourism, religious boards like Devsthal Vibhag, Wakf Board, environment, health, communication, education, and more. Characteristics unique to historic urban landscape include mixed land use, high-density low rise built form with majority of plots having 100% ground coverage and illegal structural modifications. They coexist with potentially incompatible commercial land uses including manufacturing, warehousing and wholesale markets.

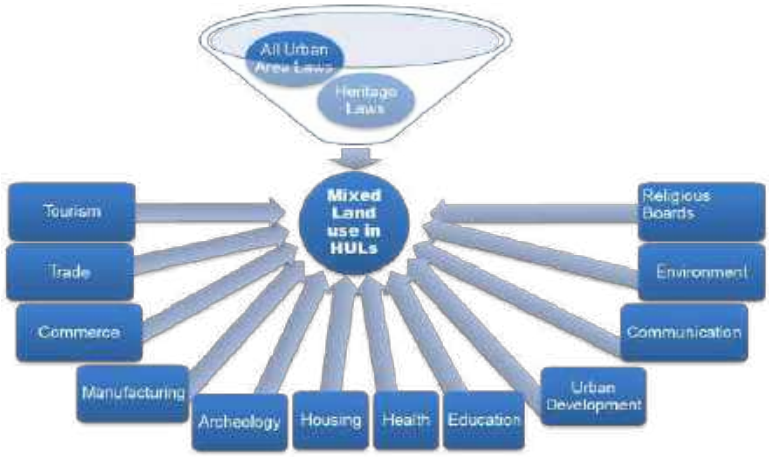

Figure 1: Sectors and Laws affecting Mixed Land use in Historic Urban Landscapes; **Source:** Author

The resultant infrastructure problems are typical to HULs, and surface repeatedly. These include narrow streets with disorganised parking, poor or disconnected transit networks, aging and inadequate utilities and street encroachment by commercial establishments. (MoHUA, 2015) Large floating populations of workers, renters, shoppers and tourists exacerbate the problem of creating accurate projections for planning processes. Land tenures in city cores have evolved into complex tangles(Rajagopal, 2017) of unclear land titles in a complex legal framework. Tardy judicial procedures lead to lengthy litigations, often stretching beyond generations. (Chandan & Kumar, 2019) From the user perspective, adequacy of infrastructure is an essential parameter of quality of life. Those who experience the city daily are the first ones affected when networks in place do not, or else inadequately, respond to their needs (UNESCO, 2020).

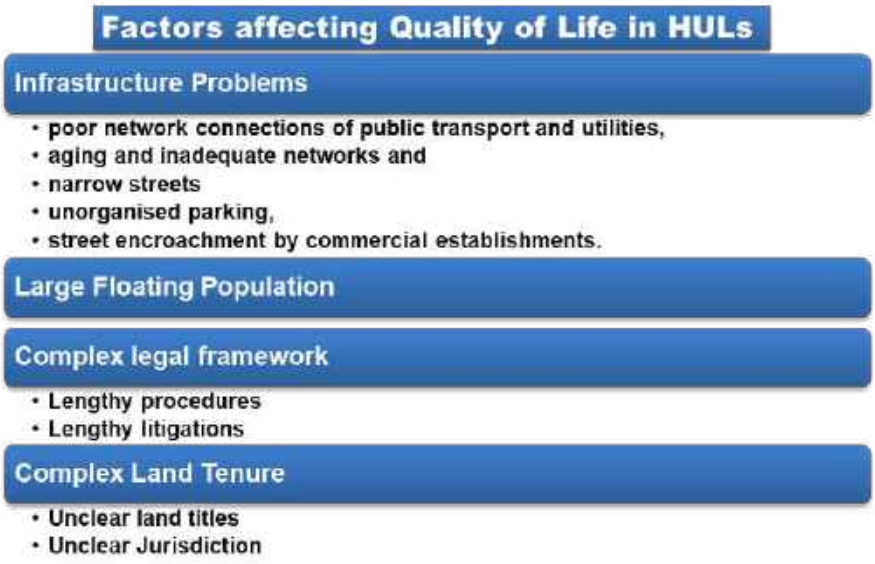

Figure 2: Factors affecting quality of life in Historic Urban Landscapes; **Source:** Author

Bringing together infrastructure to service all these needs while maintaining the heritage values of the historic urban landscapes has, rightfully, been the aim of planning and development exercises undertaken in India recently. Implementing this daunting task has been attempted through centrally funded schemes like the Jawaharlal Nehru National Urban Renewal Mission (JnNURM), SMART City, Heritage City Development & Augmentation Yojana (HRIDAY) and others. These aim to bring urban-level conservation exercises into the statutory planning process, with heritage sensitivity in infrastructure upgradation.

This study aims to look at the following questions:

- What specific policies and legislation affect infrastructure provisioning and upgradation in Historic Urban Landscapes?
- What policies and legislation shortcomings and impediments come to light?
- What remedies are suggested, to ensure that infrastructure provisioning in Historic Urban Landscapes is done successfully?

Global case studies of successful infrastructure implementation are examined in context of their guiding policies and legislation. It is hoped that cross-pollination can remedy or augment future practices in this sector. The changing perception is that infrastructure is no longer a part of the appendix of city plans; it is not to be listed under "threats" in Heritage Impact Assessments, EIAs, and SIAs. Instead, infrastructure is a necessary component of development planning, and must be done with sensitivity to its surroundings, especially in historic settings. Empirical evidence and knowledge of local social practices must form the guidelines for undertaking any development activities (Rajagopal, 2017). Organic evolution of physical, cultural and economic landscapes in a historic city must be respected and recognized in future planning (Iyengar, 2017).

What specific policies and legislation affect infrastructure provisioning and upgradation in Historic Urban Landscapes?

The most crucial policy areas affecting inhabited historic urban landscapes are housing and urban development, economic, environmental and, those of archeology and heritage. As per the updated list of Infrastructure sub-sectors alone, (Ministry of Finance (Department of Economic Affairs), 2021), we can judge the multitude of ministries and departments involved. These, when added to finance, commerce, environment, heritage etc, give us an idea of the complexity involved. The broadly relevant infrastructure sub sectors are:

- Transport and Logistics
    - Roads and bridges
    - Ports
    - Inland Waterways
    - Railways, including terminal infrastructure (stations and adjoining commercial infrastructure)
    - Urban Public Transport
    - Logistics Infrastructure
        - Bulk Material Transportation
        - Pipelines

- Energy
    - Historic Development
    - Street Furniture for electricity distribution and Street Lighting
    - Electricity Generation
    - Electricity Transmission
    - Electricity Distribution
    - Existing Network for Electricity, including surface and Underground service lines
    - Administrative divisions
    - Existing demand and supply scenario
    - Oil pipelines (if any)
    - Oil/Gas / Liquefied Natural Gas (LNG) storage facilities (if any)
    - Gas pipelines including city gas network (if any)
    - Renewable energy: solar / wind energy generation
    - Existing gaps and ongoing and future projects/planning

- Water Supply
    - Historic Development
    - Street Furniture
    - Water supply Network
    - Water Demand, Demand-Supply Gap Assessment
    - Service Level Benchmarking
    - Water treatment
    - Water Quality at source and at end user levels
    - Administrative setup
    - Ongoing and future projects/planning

- Sewerage
    - Historic Development
    - Street Furniture
    - Network, house connection data
    - Generation and collection system, transportation, treatment, reuse
    - Demand-Supply Gap Assessment
    - Service Level Benchmarking
    - Sewage treatment
    - Administrative setup
    - Ongoing and future projects/planning

- Stormwater drainage as separate from sewage drains; including rainwater harvesting
    - Historic Development
    - Street Furniture
    - Network

- Rainwater Harvesting
- Existing Service Level Benchmarking of drainage
- Administrative Setup
- Details of ongoing and future drainage planning

- Solid waste management
  - Historic Development
  - Street Furniture
  - Dumping locations
  - Solid waste generation scenario
  - Solid Waste Management Network
  - Service Level Benchmarking
  - Segregation, Disposal and Recycling Systems
  - Administrative divisions
  - Ongoing and future projects/planning

- Communication
  - Fixed networks, including optic fiber/wire/cable networks providing broadband/internet
  - Telecom and internet infrastructure
  - Street furniture (Redundant and in-use)
  - Service providers and coverage

- Social and Commercial Infrastructure
  - Education Institutions
  - Sports Infrastructure
  - Hospitals, Primary and Community Healthcare Centres
  - Tourism infrastructure
  - Tourism facilities
  - Agriculture markets
  - Affordable Housing
  - Affordable Rental Housing Complex
  - Exhibition-cum-Convention Centres
  - Infrastructure for large fairs, religious events
  - Disaster management

Figure 3: Most crucial policy areas affecting inhabited historic urban landscapes; **Source:** Author

For each involved sector, a study of policy and regulation looks at the authority-bearers for various functions, and the legal mandates at their disposal. Main functions are:

- Decision-making
- Regulation
- Financing
- Implementation
- Operation
- Maintenance
- Dispute resolution

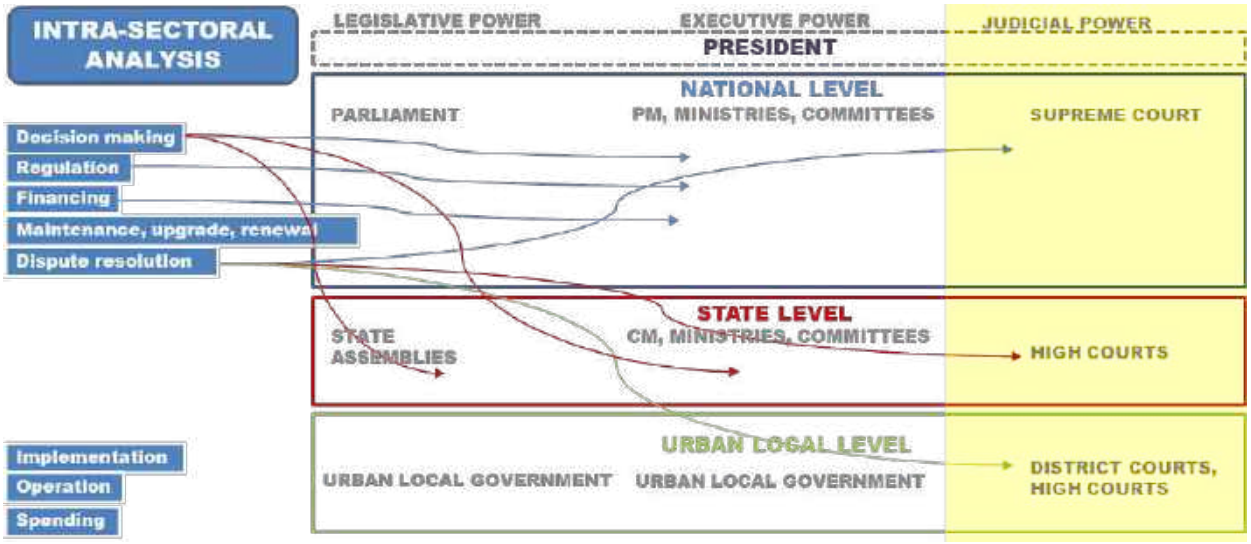

Figure 4: Main functions at various levels of governance; **Source:** Author

Policy-Makers, Law-Makers and Influencers

Figure 5: Policy-Makers, Law-Makers and Influencers at various levels of decision-making; **Source:** Author

International

Several international charters, norms, and recommendations have underlined the topic of integrating infrastructures into heritage sites, since the 1960s. (UNESCO, 2014)

Some Conventions ratified by India are:

- Convention on the Protection and Promotion of the Diversity of Cultural Expressions (2005) (ratified 15/12/2006)
- Convention for the Safeguarding of the Intangible Cultural Heritage (2003) (ratified 09/09/2005)
- Convention Concerning the Protection of the World Cultural and Natural Heritage (1972) (ratified 14/11/1977)

As per UNESCO's Recommendation on the Historic Urban Landscape (UNESCO, 2011) local authorities should define their conservation approaches in line with the broader prevailing policies in India. (MoHUA, 2015)

Country level

The stance of the government, in contemporary economic policy, has become that of a facilitator, rather than that of a provider. Demand for better governance standards and accountability has led to private participation, in several infrastructure sectors. (MoHUA, 2015)

At the National level, India has several laws and constitutional provisions for conservation (CPWD, 2019), (MoHUA, 2015)

- Article 253 of the Constitution of India, enables legislation for articles of National and State lists, as needed, for the implementation of any treaty, agreement, convention, or decision made at any international conference with other countries.
- Under Article 51A(f) of the Indian Constitution, it is the duty of every citizen of India to value and preserve the rich heritage of our diverse culture. (Gupta & Gupta, 2016)
- Ancient Monuments and Archaeological Sites and Remains (AMASR) Act – 1958, Amendment 2010
- Archaeological Survey of India-Gazettes N. 470 and 471 (updated January 2012)
- National Monument Authority Rules
- Heritage Byelaws for Prohibited and Regulated Area for each centrally protected monument /site.
- Model Building Bye-Laws, 2016
- The Environment Protection Act,1986
- The Tenancy and Rent Control Act
- 74th Constitution Amendment Act and roles of the State Town and Country Planning Department, status of the provisions of 74th CAA on Urban Local Bodies and development authorities
- The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013(RFCTLARR Act, 2013)
- Indian Stamp Act, 1899
- National Land Utilization Policy, 2013 (Draft)
- Industrial policies and Acts
- National Urban Sanitation Policy by MoUD
- Places of Worship (Special Provisions) Act, 1991
- Coastal zone management authority regulations

State Level

Under Article 49 of the Indian Constitution, state governments are obliged to protect monuments and places and objects of national importance (Gupta & Gupta, 2016). A few states have enacted draft Model Regulations introduced by the Ministry of Environment and Forestry, for Protection of Non-Monument built and natural heritage. Various states have made heritage laws while few others have proposed new laws.

Some of these are the The Hampi World Heritage Area Management Authority Act, 2002, Rajasthan Monuments, Archaeological Sites and Antiquities Act, 1961, Tamil Nadu Ancient Monuments and Archaeological Sites and Remains Act, 1966, the Madhya Pradesh Ancient Monuments and Archaeological Sites and Remains Act, 1964, Jammu and Kashmir Heritage Conservation and Preservation Act, 2010, Orissa Ancient Monuments and Preservation Act, 1956, Victoria Memorial Act, 1903, Salar Jung Museum Act, 1961 etc.

Some states have inserted Heritage Regulations / bye laws into existing laws. For example,

- Rajasthan State Heritage Council Rules (under the premise of Municipalities Act, 2009),
- Delhi Master Plan Provisions For Conservation Of Heritage

Urban Local Body Level

It is observed globally that Urban Local Bodies(ULB) of cities with poor or obsolete infrastructure, face a lack of vitality in their historic districts, whereas well managed infrastructure becomes a significant development tool. (UNESCO, 2020)

As per the 12th Schedule of Constitution of India, provision of physical and social infrastructure is a function of ULBs.The 74th Constitutional Amendment assigns the responsibility of heritage conservation to ULBs.

Litigation as a tool

The Indian Constitution has articles for Public Interest Litigations (PILs). It can be done by filing a written petition in the Supreme Court, under Article 32, and the High Courts, under Article 226. Several principles in the protection and preservation of the environment have come about due to PILs. To cite a few- famously the Taj Heritage Corridor Project, Taj Mahal Trapezium case, PIL in the High Court for preserving heritage property in its original form and material, in Chandigarh.

What policies and legislation shortcomings and impediments come to light?

Several schemes and projects that tackle infrastructure in historic urban landscapes in India, and their published analyses, reveal pertinent pointers related to policy and legislation. This section lists some of the observed lacunae and barriers.

Policy

International level policies and charters have strong and clear recommendations, but not all relevant charters are ratified by India. Even those that are, don't necessarily translate to national policies and legislation. Reconciling divergent values of culture, engineering efficiency etc. into a coherent policy example, is yet to be seen. At the planning stages of an infrastructure project, it is often difficult to bring consensus about what values are given importance. A case in point is the debate between importance of cultural values versus financial risk, while drafting project specifications. (UNESCO, 2014)

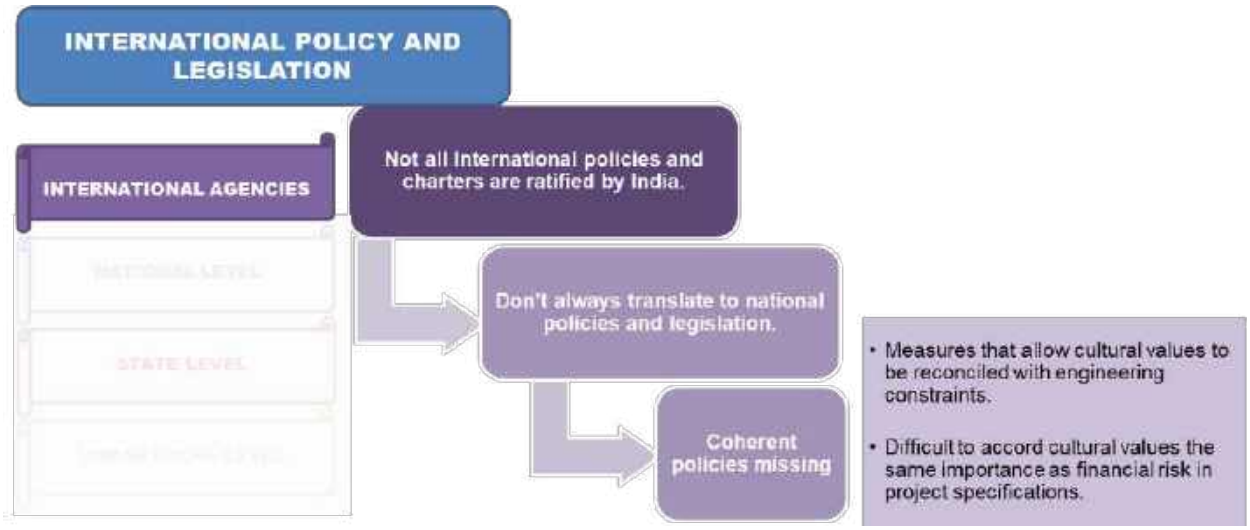

Figure 6: Shortcomings and impediments: International level; **Source:** Author

National level

Most national level policies are framed internally by individual ministries, dealing with their individual spheres. They are then combined and coalesced into multi-sectoral programs and schemes. However, resultant design projects are disconnected from the initial vision, due to missing laws for statutory implementation of these schemes and programs (Patel & Tayal , 2017). The ill-defined scope of work lacks attention to interstitial spaces, outdoor precincts and the relation between the public and private

realms of heritage sites (Rajagopal, 2017). Heritage then disjoints from its landscape, and gets cordoned off, like jewelry taken off from its wearer, and hung in a museum. The promised economic stimuli and aid policies don't deliver proposed benefits to those users impacted by such schemes, who are left bereft of tangible and intangible heritage, and the ecosystems it sustained (Chandan & Kumar, 2019). Legislation and regulations across sectors and ministries dealing with Housing, Urban development, hard and soft infrastructure, environment, archaeology and others are difficult to streamline. The lower levels of governance face snowballing of confusions that start at the national level, in overlaps amongst the various involved authorities, unclear institutional structures and unresolved lines of authority (Patel & Tayal , 2017).

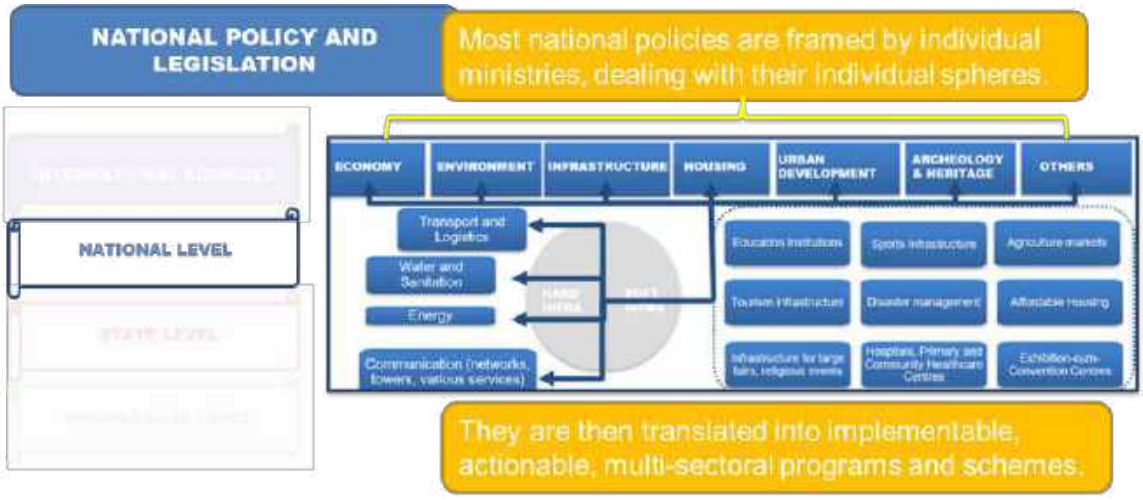

Figure 7: Shortcomings and impediments: National level; **Source:** Author

State level

At the State level, the functions of planning and urbanisation matters are discretionary for states. So are the creation of ULBs and parastatals related to planning and design. As a result, only statutory planning exercises get done. Except the district level and city level masterplans by the town planning departments, most programs end up with "plans" that are non-statutory, just like the "committees" of consultants that make them. These committees only have power to advise, not to legally enforce or implement, making these plans one-time, scheme-based exercises, using central government funding (Patel & Tayal , 2017).

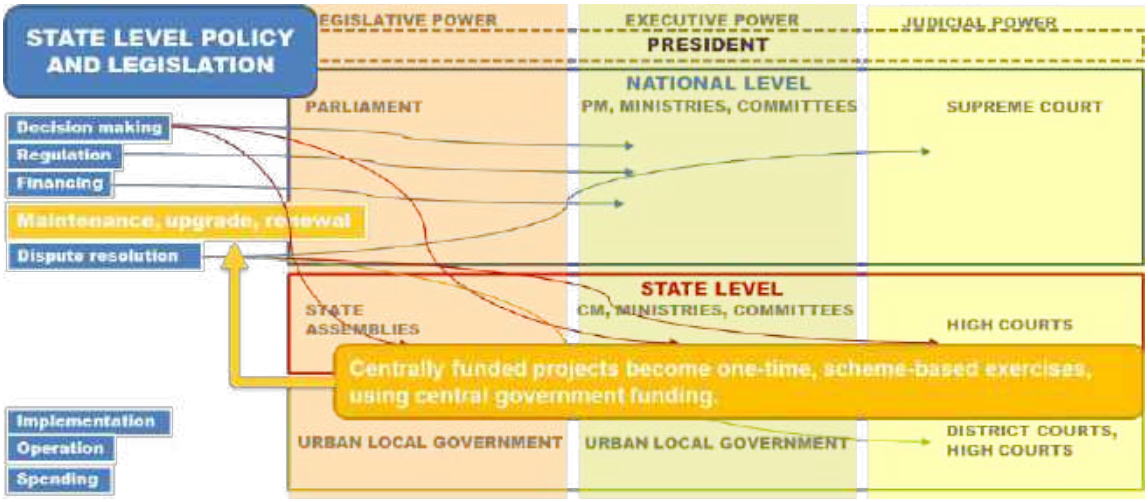

Figure 8: Impact of one-time central government funding: responsibility stays at national level; **Source:** Author

City Level

Urban Local Bodies face the cascading effect of lack of clarity at higher levels. The weak Mayor office, unavailability for consultation of prime infrastructure implementers like the Central Public Works

Department (CPWD) and state Public Works Department (PWDs), private infrastructure delivery agencies, all together weaken the decision-making. Transferable government officials need to be attached to a dedicated team over a project tenure (Patel & Tayal , 2017), to ensure continuity and greater answerability.

ULBs that do exist have limited capacity in relation to:

- Planning
- Engaging with consultants for outsourced plans
- Modification, objection, reward-punishment authority
- Implementation capabilities to enforce Urban Design or Heritage Guidelines at ULB level
- Fiscal authority and sufficiency
- Maintenance capacity

Urban local governments have inadequate finances and staff, exacerbating challenges in urban service delivery. (Dhindaw, 2021) They also have limited legal powers to address issues of basic services, like poor design or inadequate provisioning or disregard for heritage in implementation. There is obscurity and unavailability of data, ownership and land records (Patel & Tayal , 2017), ambiguous access to dispute resolution, arbitration, or channels to make suggestions about sufficiency and timeliness of payment. Budgets, approval processes and contractor procurement are largely opaque, as are implementation procedures. (Patel & Tayal , 2017). Uniformity is lacking in the interpretation of needs and scope of schemes, across target cities in India. For example, in the HRIDAY scheme, single "city anchors" were selected for each city, having varied professional backgrounds: either conservation or planning capabilities (Patel & Tayal , 2017).

Collaborative Planning

- There is a sway of local vested interests (Patel & Tayal , 2017) that drive project goals in divergent directions. Most easily and speedily implementable recommendations, and those related to beautification and tourism are usually the ones that get done.
- Stakeholder collaboration (state and non-state) and consensus-building for infrastructure planning in heritage areas has not been tackled successfully in the schemes so far.
- HRIDAY city anchors lacked power to "enforce" collaboration. As a result, the cities saw failure of collaborative planning, as end users or communities, implementation agencies, the City Mission Directorate, the ULB and its various departments hardly ever came together with the Concept/ Detail Design teams. (Patel & Tayal , 2017)
- Lack of early stage collaboration and stakeholder consultation at the concept stages lead to major changes and rework in detailing and execution stages of projects (Patel & Tayal , 2017).

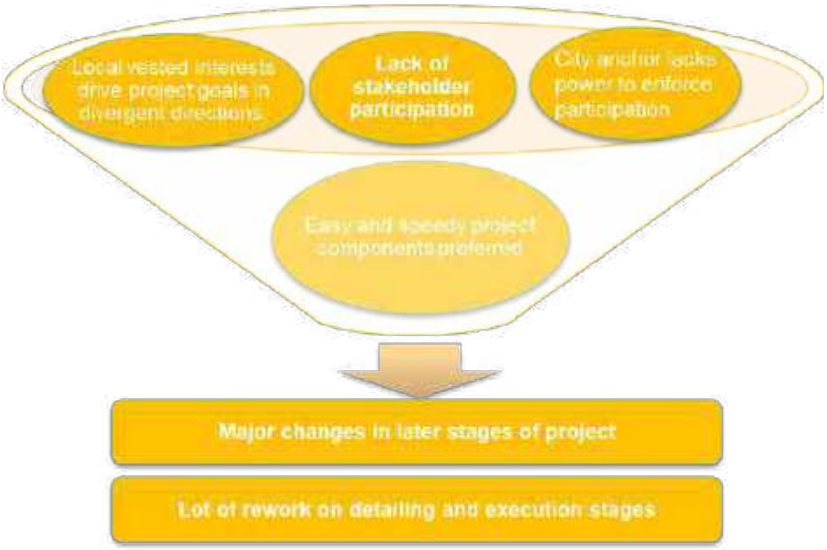

Figure 9: Lack of Collaborative Planning: Causes and Effects; **Source:** Author

Time

For long term strategies to take root, for preservation of local crafts and traditions, sustained, collaborative and flexible planning is necessary. Very short timescales assigned for planning can't achieve these aims. Thus, only easy-to-implement technologies, areas and solutions get selected (Patel & Tayal , 2017).

What remedies are suggested, to ensure that infrastructure provisioning in Historic Urban Landscapes is done successfully?

Provisioning of infrastructure in historic urban landscapes should be sensitive and respectful of heritage and end-users, should not disturb the Outstanding Universal Value (OUV) of heritage, and should be planned for residents first and then for the floating population and tourists. To achieve these goals, several policy and legislation tools have been recommended with regard to four functional classifications:

1. Regulatory tools
2. Civic engagement tools
3. Financial tools
4. Knowledge/planning tools

Global case studies of successful infrastructure implementation are examined in context of their guiding policies and legislation. Cross-pollination of successful implementation mechanisms from other infrastructure sectors with infrastructure upgradation in heritage areas are suggested using this classification of tools mentioned above. It is hoped that this exercise can further aid in building toolkits for the sector.

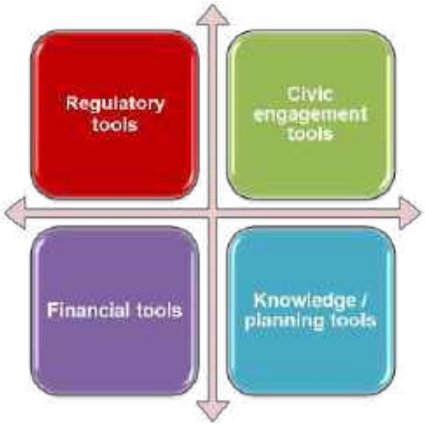

Figure 10: Recommended Policy and Legislative Tools; **Source:** Author, Diagram based on (UNESCO, 2011)

Case study of a Regulatory tool: Hyderabad Heritage Regulations

To bring statutory power to the Swachh Bharat Mission, a Constitutional Amendment had been proposed ('Nishank', Pokhriyal , 2016). Such a process is time consuming and open to several levels of parliamentary debate. Instead of seeking Constitutional Amendment, ULBs can seek to insert bye laws into existing Town Planning Laws or Municipal Laws. A notable example is the **Hyderabad Heritage Regulations**, 1995. These pioneering regulations helped include natural heritage in addition to the built heritage, and integrate heritage into the Master Plan of the city.

Case studies of a Financial tool: City Infrastructure Fund (MoHUA, 2015)

To strengthen revenue buoyancy at ULB level, a City Infrastructure Fund can be established at the city or State government level using an **Executive order**, as attempted by the **Odisha Urban Infrastructure Development Fund (OUIDF)**. Using multilateral assistance from KfW (Germany's Development Bank), the OUIDF was set up under the state Housing and Urban Development Department (HUDD), as a trust. It consists of:

- Urban Loan Fund
- Grant Fund
- Project Development Fund

Similarly, infrastructure expenditure in Rajasthan is halved between transport and others. Others include urban utilities and buildings.

Case study of Planning and Regulatory tools for Mobility (UNESCO, 2014)

Urban management of transportation infrastructure

Mobility, like housing, is a right, and an important indicator of quality of life. Restricted access in mobility from place to place or lack of access to an affordable, reasonable means of transport, contribute greatly to social exclusion, gendered exclusion and exclusion of persons with disabilities. Several case studies undertaken in "Developing historic cities: keys for understanding and taking action; A compilation of case studies on the conservation and management of historic cities" (UNESCO, 2014), show that successfully managing transportation and mobility should be a high priority for heritage cities. Several World Heritage Cities have experienced a marked decline in the use of cars, through renewal and expansion of their public transportation, cycling, and pedestrian zones.

In Salamanca, Spain, **a comprehensive plan for sustainable urban mobility** put in several interventions to develop pedestrian zones along the main roads of the historic center. The city, on the whole, underwent traffic replanning, to divert and discourage vehicular traffic within and through the old city. Underground parking lots were built at the edges of the old city, with paid parking and regulated automobile access for residents, thus creating a combination of push and pull measures for enabling mobility and decongestion.

Case study of combined learnings: Slum Networking Project (SNP), Ahmedabad (Annez, 2012)

The Slum Networking approach was a community-based sanitation and environmental improvement program, implemented at the city level in several cities across India, including Indore, Ahmedabad and a few others. These programs sought to upgrade urban utilities. Using the slum settlements as a starting point, linkages were built to existing city infrastructure networks and together, all utilities in the city were improved.

Resultantly, road networks, comprehensive sanitation systems including scientific treatment of wastewater were achieved at a fraction of the cost of conventional approaches. Slum dwellers' homes also saw significant improvements through their own investments, even without any promise of tenure security.

The complexity and cost associated with clearing land titles has given rise to a pool of land stuck in litigation, especially in old cities. Often, such land is the only available refuge for ignorant or poor buyers and renters, leading to slum-formation.

The main lessons for policy and legislation from the Ahmedabad Slum Networking Project are:

1. **Regulatory tools**
    - The local government has not experienced difficulties without **"no eviction"** guarantees. People still participated, accepting that ultimately such guarantees can't protect households if ever that land was needed for acquisition.
    - Pre-requisitioning clear land titles and records prevent the poor from engaging in the upgradation process. Hence, **formal tenure security should NOT be a precondition for, or a promise after, slum upgradation.**
        - It unnecessarily burdens the poor with getting several approvals and no-objection certificates from various city departments.
        - It is hard for the typical slum dweller to understand procedures, pursue authorities, and obtain all the requisite paperwork.
        - Increases cost
        - Slows implementation time.
        - Quality of project works is not improved by this paperwork

- Only 'No Objection Certificates' from owners, government departments owning the land in question, are enough for implementation.
- Similar to bankruptcy procedures, create fast-track systems at the local or state government level, to **unlock compromised land assets.**
- Reduce risk, and build in the feedback and learning loop, by undertaking upgradation in one neighborhood at a time.
- Once prospective stakeholders get to see the upgradation success first-hand, the implementation agencies can proceed much faster in subsequent neighborhoods. The Community Based Organizations (CBO) in the Ahmedabad case show this.
- Once the authorities show a commitment to results, by implementing pilot projects, they can generate greater momentum in subsequent neighborhoods.
- With lowered thresholds to entry, auctioning land becomes more open and competitive. Consequently, land use becomes more flexible, in policy and in effect.
- Cities could consider **Special Purpose Vehicle** for catering to one-time project demand, speeding implementation by creating **single-window clearance**.
- Self-building, that has become increasingly daunting, could be made easier again by simplifying land management systems.

2. Financial tools

- To tackle the problem of poor-quality construction and implementation, the **household contribution should be substantial**, and released by CBO from an Escrow account only after satisfactory progress. **Contractors would thus have serious incentive to ensure quality**.
- Eliminate the precondition of loans. Allow participants to pay installments as work progresses.
- Build in the costs of relocation housing into infrastructure project budgets right from the start.
- To scale up, eliminate the need for **Charity**. Ensure the Non- Governmental Organizations (NGOs), consultants and advisers are paid satisfactorily.

3. Civic engagement tools

- First train the NGOs, that will help inform the CBOs. In the Ahmedabad case, they were trained by a business school.
- Give Community Based Organizations legal authority and controls. They improved quality control in the SNP. CBOs and NGO involvement helped the project in numerous ways including: informing the individuals about their rights, contributing their views in the design of the program, training them to supervise the quality of work, therefore minimizing demolitions. This in return, mitigated disparity arising from necessary demolitions.
- CBOs controlled release of payment to contractors only after approval of the quality of works.
- Effective implementation is also dependent on well-managed Public Relations (PR). Once projects start to show results and consistent speed, they gain trust.
- While formulating the project budget itself, provision for promotion and PR.
- Use local language media, showcase the beneficiary individuals and families, to highlight the meaningfulness of the infrastructure upgradation program. Highlighting the positive impacts in equity, economy and the environment can instill a sense of civic pride, without resorting to any superficial, glamorous beautification projects.

4. Knowledge/planning tools

- Offer a choice amongst multiple solutions. This helps a larger spectrum of households to benefit.
- Avoid "either –or". Adequate housing can't alone be provided by government schemes or reservations.
- Understanding and addressing constraints specific to each city, each sub-project is crucial.
- Train local Community Based Organizations. Give them control. They can help to tailor-fit the program design and improve output quality.

Conclusion

There is a clear and pressing need to create a single line of authority for each intended program. Residences in historic urban landscapes, though privately owned and maintained, could benefit from participatory planning approaches. A detailed study of related litigation would be extremely useful for further guiding policy and planning. However, it is beyond the scope of this current study. Cross-pollination of successful implementation mechanisms from other infrastructure sectors with infrastructure upgradation in heritage areas is suggested. Few of these are described through this study. It is hoped that this exercise can further aid in building toolkits for the sector.

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17

Exploring Indian rural agricultural landscapes as shared heritage of the local communities, the systems that govern its intrinsic values & its relation with the management of its transformation: Case of Rajnagar, Bundelkhand

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Sub theme: Cultural Landscapes: Transformations, concepts, ideas and approaches

Keywords: rural landscapes, agrarian heritage, bundelkhand, climate change

Abstract

There is a certain quality to the rural landscapes which makes them poetic. Perhaps it's the continuity, perhaps it's the heterogeneity or perhaps it's the nostalgia.
The sensitive dichotomy of nature and culture is the result of innumerable variables and actors acting in unison to materialize the totality. These actors react and interact with it directly and indirectly via all their senses, making it a complex web of relationships. At times these changes are referred to as development. One might fear loss of intrinsic values during the process but the landscape displays inherent resilience till a certain magnitude of change. But only when the changes happen within the entropy of the ecosystem leading to the retention of the values and poetic qualities of a rural landscape.

The research explores the relationships and local stakeholders cooperation models existing within the stakeholders which helps retain the intrinsic values of the rural landscapes, with a case study of the rurban settlement of Rajnagar, India. The article envisages to understand the micro ecosystems and its connection with the larger landscape in the rural agrarian landscapes of central India.

1 Introduction to the case study

The rural landscapes with a core of agriculture, dotted with ancient trees and places of rituals, incubates various socio-cultural beliefs and manifests them into reality. A reality which derives all its powers from nature and succeeds in inspiring awe and reverence from the masses.

This sensitive dichotomy of nature and culture is the result of innumerable variables and actors acting in unison to materialize the totality. One might not directly belong to the rural landscape but can never fail to relate to it because of gastronomy, folklore, heritage or simply the origin of civilization. These actors react and interact with it directly and indirectly via all their senses, making it a complex web of relationships. These interactions over time lead to changes and the landscape changes and evolves. At times these changes are referred to as development. One might fear loss of intrinsic values during the process but the landscape is inherently quite resilient. There are systems in place which keep a check and control over these changes. These systems could be traditions, community knowledge or simply geographic constraints. They strongly resist a few changes and yield into some. But all of this happens within the entropy of the ecosystem leading to the retention of the values and poetic qualities of a rural landscape.

But certain changes could be fatal to the system and that's the margin one needs to vary and understand. How much change is too much change and what controls it? The research explores the relationships and cooperation models existing within the stakeholders which helps retain the intrinsic values of the rural landscapes, with a case study of the rurban settlement of Rajnagar, India.

India presently faces the onset of rapid development and change in every part of the country. Although the current GDP of 7.9% (Trading Economics, 2016)[1] shows positive trends, it's often based on standards and indicators which focus very heavily on only the economic output of the country as per the Neo-Classical model of Economics (Czech, 2010).[2] The indicators tend to ignore the significance of the cultural, social and natural capital in the development of the country. This paper brings out the role of the conservation of cultural landscape in sustainable development following the standard definition by UNESCO where culture should be regarded as the *set of distinctive spiritual, material, intellectual and emotional features of society or a social group, and that it encompasses, in addition to art and literature, lifestyles, ways of living together, value systems, traditions and beliefs* (UNESCO, 2001)[3] via a case study of royal produce gardens of Rajnagar. Historically as well at present with 68.84% of the total population of the country being rural (Census of India, 2011)[4], the idea of culture in India draws heavily from rural agriculture. The agricultural related activities are major factors in the transformation of Indian landscapes, blurring the boundaries between agriculture, culture and sustainable development.

Since the early settlements, India had innumerable and regionally very diverse agricultural and farming traditions, many of them being already lost to time (Shiva, 2000).[5] All these traditions and techniques very organically deal with the region-specific needs in terms of climate and environment. But in the current rapid urbanization and population pressure, government and industry policies alike tend to overlook and even endanger this traditional wisdom, resorting to extreme and technology based agriculture which comes with a heavy price on the environment (Shiva & Holla Bhar, 2001).[6] A possible strategy to counter this scenario is to exploit this inherent community wisdom and resilience to pave the way for a long term sustainable development. The paper presents how the conservation project of the historical royal produce gardens, found all across the region of Bundelkhand, attempted to tap into the local agricultural practices and wisdom to create centers of organic agriculture and biodiversity excellence.

2 Methodology

The research methodology applied is a combination of qualitative and quantitative techniques due to the complexity of the subject.

Post geographical survey of the region, a pan settlement public survey (10% random sampling) was undertaken in the settlement of Rajnagar to understand the level of awareness, knowledge and interactions of the citizens with the rural landscape. The survey was followed by two levels of stakeholders meeting and focus group discussions. One meeting was for the rural local bodies for all the villages within the larger town authority of Rajnagar, where the local meanings of heritage and development were discussed. And the second stakeholders conference engaged heritage experts, academicians, administrative bodies at district, state and national level. Here the role of the natural and cultural assets of the region within the sustainable development paradigm was discussed.

1 Trading Economics. 2016. *India GDP Annual Growth Rate.* Accessed July 28, 2016. www.tradingeconomics.com/india/gdp-growth-annual/forecast.

2 Czech, B. 2010. *Ecological Economics. Vol. 1, in Animal and Plant Productivity*, by EOLSS-UNESCO, edited by Robert J. Hudson, 333-363. Paris: EOLSS-UNESCO. www.eolss.net/sample-chapters/c10/e5-15a-13.pdf.

3 UNESCO. (2001). *UNESCO universal declaration on cultural diversity.* https://unesdoc.unesco.org/ark:/48223/pf0000127162

4 Census Organization of India. 2015. Census 2011. Accessed May 26, 2016. http://www.census2011.co.in/data/town/802140-rajnagar-madhya-pradesh.html.

5 Shiva, V. 2000. *An Ecological History of Food and Farming in India, Diversity: The Hindustan Way.* Vol. I. III vols. New Delhi: Research Foundation for Science, Technology and Ecology/NAVDANYA.

6 Shiva, V. and Holla Bhar, R. 2001. *An Ecological History of Food and Farming in India: Sharing Earth's Harvest-Creating Abundance or Scarcity.* Vol. II. III vols. New Delhi: Research Foundation for Science, Technology and Ecology/NAVDANYA.

The settlement survey data was converted to empirical format while qualitative understandings and inferences were derived from the other two focus group discussions of the stakeholders. The collected data was then overlapped upon the regional site data to draw inferences and understand the model of cooperation within the landscape stewards.

3 Background: Rajnagar and its surroundings

Rajnagar is a small town comprising roughly 2500 households and a population of 14,253 people (as per census 2011) in the Chhatarpur district of the state of Madhya Pradesh in India. Rajnagar is situated 5 kilometers in the north of the town of Khajuraho, which is known for the World Heritage Site of 'Khajuraho Group of Monuments' from 8-12 century AD (UNESCO, 2016).[7] This proximity to an age-old civilization, man made ponds, agriculture as the primary occupation and yet high drought probability makes the town of Rajnagar one of the interesting cases of agricultural heritage in India. (Figure 1).

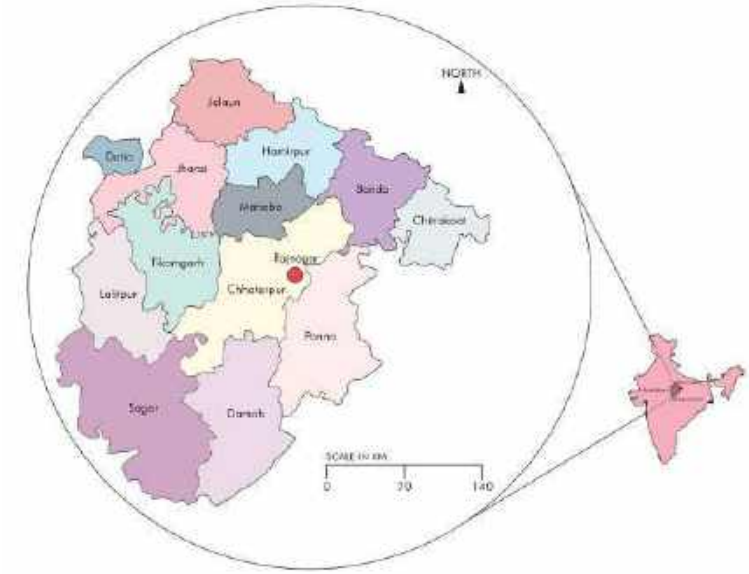

Figure 1: Location of Bundelkhand in India and zoom into location of Rajnagar along with the districts of Bundelkhand; **Source:** www.bundelkhandinfo.org.in

Bundelkhand region is spread over southern Uttar Pradesh (UP) and northern Madhya Pradesh (MP), between 23°10' and 26°30' north latitude and 78°20' and 81°40' east longitude. Bundelkhand comprises seven districts of southern Uttar Pradesh and six districts of northern Madhya Pradesh. The districts within the Bundelkhand region are Jhansi, Lalitpur, Jalaun, Hamirpur, Mahoba, Banda, Chitrakoot districts (all in Uttar Pradesh), and Datia, Tikamgarh, Chhatarpur, Panna, Sagar and Damoh districts (all in Madhya Pradesh)(Bundelkhand.in, (n.d.).[8] The Bundelkhand region within these boundaries has an area of around 70,000 sq km with a population of 15.5 million (Office of the Registrar General & Census Commissioner India, 2001).[9]

Geographically, the region lies between the Indo-Gangetic Plain to the north and the Vindhya Range to the south. It is a gently-sloping upland, distinguished by barren hilly terrain with sparse vegetation, although it was historically forested. The plains of Bundelkhand are intersected by three mountain ranges, the Vindhya, Fauna and Bander chains, the highest elevation not exceeding 600 meters above sea-level. Beyond these ranges the area is further diversified by isolated hills rising abruptly from a common level, and presenting from their steep and nearly inaccessible scarps eligible sites for forts and strongholds of local kings.

7 UNESCO. 2016. *Khajuraho Group of Monuments.* Accessed May 1, 2016. http://whc.unesco.org/en/list/240.

8 Bundelkhand.in. (n.d.). *Boundaries of Bundelkhand* http://www.bundelkhand.in/portal/info/boundaries-of-bundelkhand [accessed on 22/10/2014].

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Thus above an impervious layer of rock that is found at depths of 1 to 15 metres, several kinds and grades of soil are found across Bundelkhand. Broadly, the soils fall into two categories: red soils and black soils. Across Bundelkhand, soils of both categories have poor organic content. The second variety of black soil, called mar, is what is generally called black cotton soil. It has high clay content and is prone to waterlogging. The soil has a relatively high organic matter content, and hence can be cropped without the use of fertilizers.

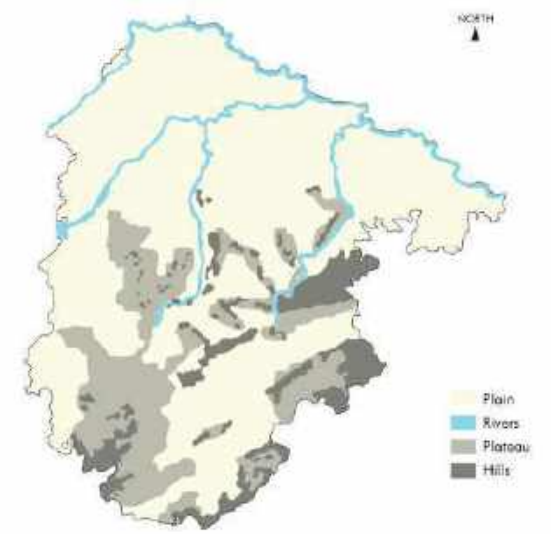

Figure 2: Physical relief of Bundelkhand; **Source:** www.bundelkhandinfo.org.in

Roughly, a total of over 11,000 sq km, or over one sixth of the area of Bundelkhand falls under four broad categories of wasteland, according to estimates given in the Wasteland Atlas of India, prepared by the Department of Land Resources, Government of India, on the basis of satellite data.

The atlas lists nearly 30 different kinds of wastelands found across the country. Among these, wastelands found in Bundelkhand can be grouped as: land affected by shallow, medium or deep gullies; wastelands with or without scrub in lowlands or uplands; degraded notified forest lands and barren, rocky and totally uncultivable land.

Over half of the total wasteland of the region is wasteland with or without scrub; over half of this land is found in the Bundelkhand Intermediate sub-region, in the Chhatarpur district. Half of the area of the district is wasteland. Around a quarter of the total wasteland is degraded notified forest land, found mostly in the Bundelkhand Upland (Chhatarpur, Tikamgarh, Panna) and the Sagar and Damoh plateaus.

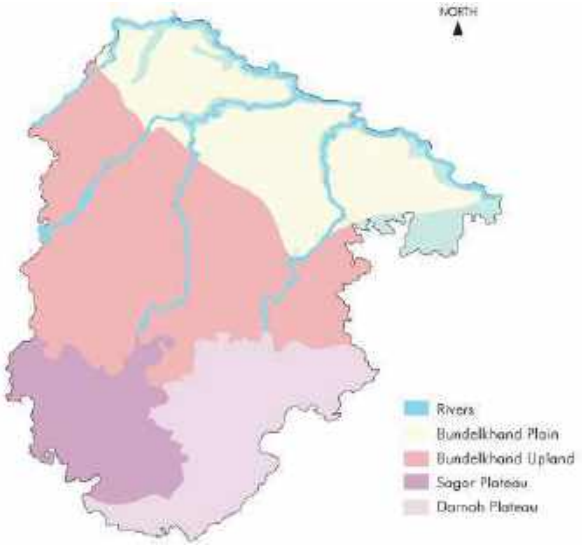

Figure 3: Geographical subregions of Bundelkhand; **Source:** www.bundelkhandinfo.org.in

3.1 History of the region

As per mythological texts, Dandaka, the son of Ishwaku, one of the earliest Aryan kings and his descendents set up the Chedi kingdom, which is mentioned in the epic Mahabharata, lying geographically in the same location as current Bundelkhand. In the Medieval times, the Chandela Rajput clan ruled Bundelkhand between the 10th and the 16th centuries. In the early 10th century they were feudatories of the Pratiharas of Kannauj, and ruled from the fortress-city of Kalinjar. A dynastic struggle among the Pratiharas from 912 to 914 CE allowed the Chandelas and other feudatories to assert their independence. The Chandelas captured the strategic fortress of Gwalior c. 950. King Dhanga (c. 950–1008) left many inscriptions, and endowed a large number of Jain and Hindu temples. Dhanga's grandson Vidyadhara (c. 1017–29) expanded the Chandela kingdom to its greatest extent, extending the Chandela dominions to the Chambal river in the northwest and south to the Narmada River. The Afghan king Mahmud of Ghazni attacked the Chandela dominions during Vidyadhara's reign, but did not retain any Chandela territory. The Chandelas built the famous temple-city of Khajuraho between the mid-10th and mid-11th centuries. During the Chandela period, Bundelkhand was home to a flourishing Jain community and numerous Jain temples were built in that period.

In the 12th century, the Rajput Chauhan rulers of Ajmer challenged the Chandelas. The Muslim conquests of the early 13th century reduced the Chandela domains, although they survived until the 16th century as minor chieftains.

3.1.1 Mughal Rule

Bundela Rajputs grew to prominence starting in the 16th century. Orchha was founded in the 16th century by the Bundela chief Rudra Pratap Singh, who became the first Raja of Orchha. In 1545 Sher Shah Suri, the only Indian king to defeat Mughals and sit on the Delhi throne, was killed while attempting to capture Kalinjar from the local Bundeli kings.

The region came under nominal Mughal rule from the 16th to the 18th centuries, although the hilly, forested terrain of the sparsely populated region made it difficult to control. Akbar's governors at Kalpi maintained a nominal authority over the surrounding district, and the Bundela chiefs were in a state of chronic revolt, which culminated in the war of independence under Chhatrasal. On the outbreak of his rebellion in 1671 he occupied a large province to the south of the Yamuna. Setting out from this base, and assisted by the Marathas, he conquered the whole of Bundelkhand. On his death in 1732 he bequeathed one-third of his dominions, including Jalaun and Jhansi, to his Maratha allies, who before long succeeded in controlling the whole of Bundelkhand, with the local rulers as tributaries to the Marathas. Under Maratha rule the country was a prey to constant anarchy and strife. By the end of the 18th century, the Bundelas had freed themselves to some extent from Maratha power. A grandson of the Maratha Peshwa (< Parsi : “ruler”) sought to restore Maratha control of Bundelkhand from his base at Banda. Ali Bahadur fought with the Bundelas from 1790 until 1802, when he died while attempting to capture Kalinjar (The History Files, n.d.).[10]

3.1.2 British Rule, 1802–1947

The Marathas ceded parts of Bundelkhand, which were later called British Bundelkhand, to the British in the 1802 Treaty of Bassein. After 1802, many of the local rulers were granted sanads (leases) by the British, which entitled them to the lands they controlled, in return for signing a written bond of allegiance (ikrarnama) to the British. A political officer attached to the British forces in Bundelkhand supervised British relations with the sanad states. In 1806, British protection was promised to the Maratha ruler of Jhansi, and in 1817 the British recognised his hereditary rights to Jhansi state. In 1818 the Peshwa in Pune ceded all his rights over Bundelkhand to the British at the conclusion of the Third Anglo-Maratha War.

The Sanad states were organised into the Bundelkhand Agency in 1811, when a political agent to the

10 The History Files. (n.d.). *Bundelkhand*. http://www.historyfiles.co.uk/KingListsFarEast/IndiaBundelkhand.htm

Governor-General of India was appointed and headquartered at Banda. In 1818 the headquarters were moved to Kalpi, in 1824 to Hamirpur, and in 1832 back to Banda. The political agent was placed under the authority of the Lieutenant-Governor of the North-Western Provinces, headquartered in Agra, in 1835. In 1849, authority over the Bundelkhand Agency was placed briefly under the Commissioner for the Saugor and Nerbudda Territories, who appointed a political assistant based at Jhansi. Shortly thereafter, authority over Bundelkhand was placed under the Resident at Gwalior, and the headquarters of the political assistant was moved to Nowgong, which remained until 1947. In 1853, the Raja of Jhansi died childless, and his territory was annexed to British Bundelkhand. The Jhansi state and the Jalaun and Chanderi districts were then formed into a superintendence. In 1854, the Bundelkhand Agency was placed under the authority of the newly created Central India Agency, headquartered at Indore.

In 1901, there were 9 states, 13 estates, and the pargana of Alampur belonging to Indore State, with a total area of 9,851 sq mi (25,510 km2) and a total population of 1,308,326. The most important states were Orchha, Panna, Samthar, Charkhari, Chhatarpur, Datia, Bijawar and Ajaigarh.

Deforestation accelerated during British rule. The population of the agency decreased 13% between 1891 and 1901 due to the effects of famine. In 1931, the Bagelkhand Agency, with the exception of the state of Rewa State, was merged into the Bundelkhand Agency.

3.1.3 1947(Independent India) – present

After Indian independence in 1947, the princely states of the Bundelkhand Agency were combined with those of the former Bagelkhand Agency to form the province of Vindhya Pradesh, which became an Indian state in 1950. On 1 November 1956, Vindhya Pradesh was merged into Madhya Pradesh.

Since the 19th century, the area has been economically and industrially one of the most backward areas in India. Lack of resources, poor communications, and infertile land are some of the reasons for underdevelopment in the region.

3.2 Agriculture in the region

While agriculture is the predominant occupation in Bundelkhand, conditions are unfavorable for growth of cash crops like sugarcane and cotton. Productivity is affected by the poor water retention ability of the soil, weather fluctuations and large amounts of wasteland. Rising input costs and frequent incidence of drought are pushing agricultural labourers and small farmers out of agriculture. The majority of rural households in most parts of Bundelkhand rely on income from local or inter-state, annual or seasonal or migration for work. Increased migration and increased use of tractors (hired or owned) would account for the significant reduction in the percentage of agriculture labourers between 1991 and 2001 in Jhansi, Hamirpur and Mahoba, Banda and Chitrakoot, Chhatarpur and Panna. Only in Jhansi district was the percentage of main workers engaged in other kinds of labour that includes working in government service, private sector factories, small industrial units, and businesses engaged in trading or service sector activities, or even working in stone quarries. Manufacturing, followed by trade, construction, employment in government, education and transport accounts for the highest percentage of main workers engaged in 'other work' in the region. The high percentage of household industry workers in Damoh and Sagar is due to the beedi industry. Until the end of 2008 there were only two large manufacturing units in the entire region. No small or cottage industry in the region commanded a large market outside. The potential of tourism had not been well realised. Service industry was limited to pockets. Land available and used for cultivation in the region is considerably lower than in other agriculture zones of the country. Due to large area of wasteland in the Bundelkhand Intermediate Region and Bundelkhand Upland sub-regions, the percentage of land used for cultivation falls drastically, to around 50% in the Chitrakoot and Lalitpur districts, and less than that in the Chhatarpur, Tikamgarh and Damoh districts; in Panna, only around 35% of total area is cultivated. In the Sagar and Datia districts, the percentage is around 53 and 67 respectively.

Apart from the size of land cultivated, agricultural production is primarily determined by the availability of water. Irrigation canals and bore wells supports multiple cultivation over a year, and offers considerable protection against vagaries of monsoon though leading to ground water table depletion, that in its turn leads to long term damages.

Traditionally, single crop cultivation used to happen in the region. Area cultivated more than once a year does not generally exceed 30% of total cultivated area, except in the Jhansi, Lalitpur, Sagar and Tikamgarh districts. The main crops grown in the region are cereals and millets, pulses, oilseeds and some fodder crops. Over the years, the luckless farmers of Bundelkhand have tried everything in the book to meet the challenge of the unpredictable weather.

The chronic drought from 2003-2010 and then again in 2014 prompted farmers to shift from growing a mix of dry crops—like millets and pulses—during the monsoon-dependent kharif season (June-September), to input-heavy and irrigated winter rabi crop of wheat alongside cash crops such as chickpea and mustard (November to April).

Governments did roll out a number of irrigation schemes in Bundelkhand, but these were insignificant before the grave needs of the region, notes a 2014 study (*Bundelkhand Drought: Retrospective Analysis and Way Ahead* by the National Institute of Disaster Management, Delhi). Only 45% of the crop area in Bundelkhand has any access to irrigation—that too with ground water as the primary source.

"The prolonged drought forced farmers to look for an alternative. They started digging wells and bores after taking to wheat. It took a toll on the ground water and many bore wells have dried up," said Raja Bhaiya, who runs Vidya Dham Samiti, a livelihoods and rights based non-profit organization from Banda district, Uttar Pradesh (Bundelkhand.in, n.d.).[11]

In this scenario, sustainable agriculture could be a potential option. Sustainable agriculture is an agriculture that respects the living entity with which it works. It's an agriculture that manages its most important capital, the living nature, in a sound way and so remains profitable in the long run. The farmer in sustainable agriculture works from a vision on the soil, plant, animal and man; a vision on plant selection, manuring, commerce, and often even a spiritually enlarged vision on his/her own existence and environment. This is why a healthy, sustainable agriculture has always been on all continents the basis for a sustainable, flourishing society.

3.3 Water urbanism in Bundelkhand

"The water (from the pond) is very good for cooking daal (lentils) because it's rain water. The groundwater here is brackish in places." (Bakshi, 2008)[12]

The Khajuraho region has sustained an agrarian economy over an extended period of time. Being a drought prone region there is an efficient water harvesting system in place which is based on artificial lakes, check dams and wells. However, unplanned urban development and excessive usage of the water reserves has precipitated this century-old technology to collapse.

With only three rivers in the region namely Ken, Betwa and Dhasan (Ken has very little water in the dry season) in Bundelkhand region, the medieval Chandela rulers took the initiative to create various artificial lakes and ponds for the common people. This was always achieved by blocking a rivulet or drain, submerging a terrain without habitation.

11 Bundelkhand.in. (n.d.). *Bundelkhand: The worst place in India to be a farmer.* http://www.bundelkhand.in/portal/news/bundelkhand-the-worst-place-in-india-to-be-a-farmer

12 Bakshi, N. (2008). *Jalyatra: Exploring India's traditional water management systems.* Penguin Group.

Talabs (ponds) were strategically located based on villagers' needs and preferences, with their active involvement in maintenance. Rulers or patrons, facilitating talab construction, ensured villagers contributed labor, and compensated for their efforts. Water-sharing rules and talab cleanliness guidelines were inscribed on rocks within the structure. The process involved villagers' requests, forwarded by the headman to the local chief, eventually reaching the king. The king, often addressing drought or famine relief, allocated funds for construction. The chief engineer, Vishwakarma, collaborated with villagers to design talab walls, minimizing farmland submergence. This approach guaranteed water security and financial support, preventing starvation.

The Chandela *talabs* feature stone walls and the black clayey soil of the region is used to seal cracks. This makes the wall partially waterproof, and water seeps through the ponds' walls. When the water level is high, the seepage helps maintain a high water table and keeps the fields around the talab moist. The typically forested or hilly catchment area usually slopes towards the wall and used to be, so as to fill the talab quickly after the rains. The talab's wall is faced with rock, not mud, where it faces the maximum impact of water, such as at the bottom of the rivulet. Some of the larger talabs have walls that are entirely faced with rock – this solid construction ensured that the wall would withstand even torrential rainfall. Most of the walls are extremely thick, between 20 and 40 feet, and look rather like a low hill than a talab wall, because they have blended with the landscape consisting of large trees and other vegetation growing on them. These seem to strengthen, rather than weaken, the walls. The stone facing of the walls serves also a practical purpose. They are built in steps, albeit extremely steep and irregular, with platforms extending onto the water enabling activities such as fishing, washing clothes, or bathing. All talabs have shallower steps near the point of exit for the water so that people can easily get to the water for their needs. This is how the region's water needs were met with artificial lakes and ponds.

The gardens cluster around these ponds and water rich areas in the otherwise dry landscape exhibiting how extreme climate can lead to extreme urban morphologies. The water bodies formed due to the natural slope and collection of rainwater in monsoons become the reason for existence of these settlements. Such a matrix of agriculture, settlement and water bodies can be found across the Bundelkhand region. The recent development, changes in farming techniques and over-exploitation of the wells has led to depletion of the water table in the surrounding area.

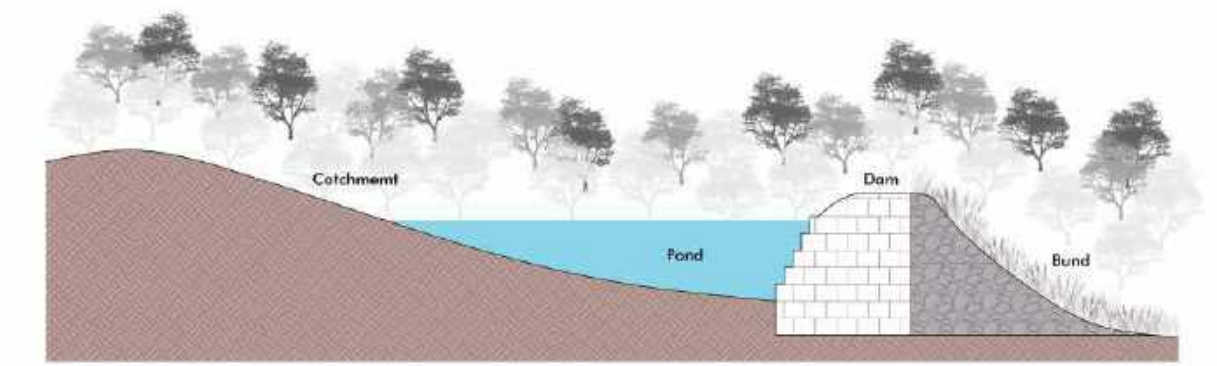

Figure 4: Graphical visualization of a Chandela (8-10th cy) pond; **Source:** Author based on Jacob, Nitya. Jalyatra

The gardens of Bundelkhand show a landscape-based settlement planning as a mitigation for scarcity of water. Since the earliest times, India has known innumerable agricultural and farming traditions, many of them being already lost to time. A possible strategy to counter this scenario is to exploit this inherent community wisdom and resilience to pave the way for a long term sustainable development.

4 Royal gardens of Rajnagar - As historical miniature ecosystems representing the wider agrarian landscape of Rajnagar

Since 1500 years , as per archaeological evidence and archives, the Khajuraho region has been an agrarian economy. Being a drought-prone region, it has a very efficient water harvesting system based on artificial

lakes, check dams and wells. However, unplanned urban development and exploitation of the water reserves have made this century-old technology collapse. In Rajnagar, the gardens are very much part of the local hydrological system, as most of them are situated near one of the two lakes, as a guarantee for a sufficient high groundwater level for the wells in the garden. Very little is documented historically about these gardens: no archival sources and very little oral tradition about its origins. But what we find in situ is already amazing. From detailed interviews and data triangulation, came the following narrative that the royal family of Chhatarpur would come to a smaller town like that of Rajnagar/Khajuraho for the big religious festivals. They would stay in their gardens in Rajnagar. Since all the gardens have a Samadhi (sometimes more), we assume that at the birth of an heir prince a new garden would be laid out, and become "his" garden during his life/reign. Whenever he and his family would visit Rajnagar, they would stay in "his" garden. Not in the Kothi, but tents. The Kothi was primarily used as a storage room (for utensils, tents, harvest), with the upper terrace as a nice place to sit in the evening or early morning. The temple was necessary for the daily prayers, the baoli for the ablutions. The wells and irrigation channels point to the fact that these were produce gardens, not leisure gardens. Nowadays, most gardens are in private hands; only two remain with the royal family.

In general, the agriculture in the gardens will have used animal traction (bulls) for ploughing, irrigation (drawing water from the wells) and transport. The fields will have been relatively small, as the gardens were divided by the presence of brick water channels. Local varieties of pulses, grains and vegetables will have been developed during generations by the local farmers, but the novelties from outside will have been introduced by the royals.

Contextualizing the Bundeli gardens in Rajnagar

"…In the garden there was also a pretty little temple, a large bowree, from whence water was drawn all day by bullocks for the purpose of irrigation and drinking, and a large stone-built, corridored chahbachcha, or cistern, self supplied with most excellent water; this made a capital bath.
This garden was the pleasantest spot we ever had the good fortune of pitching in during this campaign. We were cool all day; enjoyed all that the garden produced for table ad libitum; the wood doves cooing in the early morning; then the songs of other birds, and the plaintive notes of the bull-bull at night." (Lowe 1860)[13]

Figure 5: Satellite map of Rajnagar showing the location of the gardens; **Source:** Author

13 Lowe, T. (1860). *Central India during the rebellion of 1857 and 1858: Bundelkhand* (about the garden and the sarai of the Shahghur Rajah).

There is a concentration of as many as 15 historical gardens in Rajnagar. Built by the royal family of Chhatarpur, these produce gardens used for growing fruits and vegetables. All the gardens share common planning and architectural features and can be identified as a distinct typology. These gardens now lie in derelict condition and are unprotected, although they are an important component in regional history of Bundelkhand during the late 18th- early 19th century.

Garden Narrative

The Gardens of Rajnagar are identified based on the characteristic features that can be found in all the gardens. These features include a boundary wall, a gateway, a kothi (storehouse), temple, well/ baoli (stepwell), water channels, samadhi (memorial platforms) and old trees. The layout of all these gardens is not uniform. Some of the gardens are roughly rectangular while most of the gardens are irregular. The first hypothesis narrates the construction of a new garden to celebrate the birth of an heir prince. The prince would eventually become the king and rule over the region. When the king would pass away, a samadhi platform in his memory would be raised inside the same garden.

Figure 6: 3D modelling showing a typical Bundeli garden and its components; **Source:** V. Acsinte and author

Next to this first explanation, it is a fact that these gardens served various functions. As pragmatic exploitative use of landscape, most of the gardens were produce gardens and produced good quality of grains, vegetables and fruits for the royal family which may indicate the possibility of using these gardens as centers for good agricultural practices with e.g. the better seed varieties (comparable to the similar phenomenon in the Potager du Roi in Versailles) (De Courtois, 2003).[14] These gardens were also said to be used as a Serai when the royal family of Chhatarpur would visit Rajnagar (Singh, 2006).[15]

Figure 7: Ranibagh (Queen's garden); **Source:** Author

14 De Courtois, S. (2003). *Le Potager du Roi – The King's vegetable garden.* Actes Sud.

15 Singh, R. B. (2006, January 27). Interview by Geert Robberechts and Ameet Babbar. 2006. *Last ruling Maharaja/King of Chhatarpur (b. 1921- d. 2006)* Translated by Ameet Babbar. Chhatarpur.

Water and its manifestations

The use of water from the step well/baoli was for bathing and washing clothes, whereas the water from the wells was used to perform rituals during prayer in the temple. Also, getting a baoli constructed could further the influence of the royal family on the subjects since the ample availability of water was crucial for the citizens of historical Rajnagar in the drought prone region of Bundelkhand.

Figure 8: Stepwell in Rambagh; **Source:** Author

5 Rajnagar as a historical settlement located in the buffer of a UNESCO World Heritage site - The Khajuraho World Heritage region.

Rajnagar, situated just 5 kilometers from the Western Group of Temples of Khajuraho, is home to a concentration of 15 such produce gardens believed to be laid out by the royal family of Chhatarpur between the late 18th - early 19th century, collectively called the Royal Gardens of Rajnagar. These Royal Gardens were in ruin until 1998 when the Indian National Trust for Art and Cultural Heritage (INTACH) made a holistic development report for the Khajuraho region.

The natural setting of Rajnagar includes the Dantla and Lavanya Hills which are the most prominent natural landmarks. Dantla (meaning tooth in Hindi) is identifiable by its distinct shape resembling teeth. The hills are visible from almost everywhere in Rajnagar. The geographical scape is formed from granite rock-base and natural depressions. A natural slope is formed from the hills towards both sides. This slope facilitates rainwater collection. Though Bundelkhand is a drought prone region, as per the archives and interviews (Upadhyay & Sharma, 2018)[16] there were large expanses of jungle spread all around the region. (Jacob, 2008)[17]

Figure 9: 8th century chandela temple against the backdrop of Datla hills; **Source:** Author

16 Upadhyay, N., & Sharma, A. (2018). Understanding and Recreating Historical Landscapes through Oral History, Architectural and Archival Research—A Methodology: The Case of the Royal Gardens of Rajnagar, Bundelkhand. *Journal of Heritage Management*, *2*(2), 202-220. https://doi.org/10.1177/2455929617751170

17 Jacob, N. (2008). Chapter 8: Bundelkhand: The hand that built Khajuraho temples. In Jalyatra: *Exploring India's traditional water management system* (pp. 223–255). Penguin Books India Pvt Ltd.

6 The Royal Gardens of Rajnagar project as a case of protection of local produce gardens

6.1 Introduction

Figure 10: The Royal Gardens highlighted in Rajnagar; **Source:** Author

In 2004, when the Bundeli royal gardens were brought to light via detailed listing of the region, the idea to utilize these unique agricultural heritage for building up drought resilience and sustainable development of the area was immediately conceived. The primary aim of the project, which started in 2004 with the support of then INTACH Belgium chapter and now known as ITRHD Belgium chapter, is to restore the gardens into community training centers for sustainable agriculture for the local farmers with regular local training sessions. Currently, Madhya Pradesh Gandhi Smarak Nidhi, Chhatarpur holds discussion sessions for local seed variety conservation with the local farmers and is furthering the organic farming and training. To date, a crop rotation schedule is planned for the two gardens undertaken with a dynamic conservation approach.

A community seed bank has been established of the local varieties of grains, vegetables and pulses with the help of the local chapter of INTACH in 2007, in collaboration with Navdanya. The results are not as expected, and the whole management of the seed bank will be revised in the coming years. The project had previously helped raise hundreds of indigenous trees in their nursery and plant them along the streets of Khajuraho. The help of MP Tourism is sought for a broader afforestation campaign. The cultural rehabilitation was undertaken by doing a series of repair work for the gardens, which included full-scale renovation of the Kothi in Rani Bagh; the restoration of the temple, including a festive reinstating of a Shiva statue, brought back many people to the garden for their morning and evening prayers. A visitors' centre is under construction in Pateriya ka Bagh to incubate sustainable rural tourism with provisions for training for local farmers. This traditional lime construction is used to highlight the applications of eco-friendly materials like lime to construct a modern infrastructure in the region. On the social front, educational tours for children from local schools and awareness campaigns about the historical and agricultural values of these gardens are organized regularly in the town. Bundeli music concerts are organized regularly in the gardens for tourists, but equally engage the community and support the local music traditions. These concerts are followed by a dinner of local Bundeli food made from the harvest of these gardens for culinary tradition protection.

The project royal gardens of Rajnagar which was conceived as '*The Lost Gardens of Rajnagar*' in 2004, funded ever since by the Belgian chapter of Indian Trust of Rural Heritage and Development (ITRHD), aims to regenerate these traditional agricultural systems, starting with the 6 gardens of Rajnagar, 5 km from Western Group of Temples of Khajuraho, believed to be laid out by the royal family of Chhatarpur between 18th to 19th Century. The project envisions making these gardens centers for biodiversity conservation and agricultural excellence for local communities as well as for agro tourism across Bundelkhand.

Figure 11: Rani Bagh; **Source:** Studio Nara

6.2 Objective of the Project

The objective of the project is to promote sustainable agriculture, which are best agricultural practices harnessing the local traditional knowledge systems known to be economically sustainable for the farmers of the region for centuries. Employing eco-friendly practices in both agriculture and the preservation of the gardens' historical essence serves as a pivotal model for the region, emphasizing environmental and ecological sensitivity. Additionally, the engagement of the community and local resources in the building of resilient rural infrastructure in the region is a crucial point of focus as in this process the awareness building, training and education of the locals is given utmost importance that help enable equitable employment and economic opportunities in the region.

6.3 Contribution to SDG Implementation

As a response to the "survival agriculture" practiced in Khajuraho with very little surplus for the farmers to improve their standard of living, sustainable agricultural practice coupled with fair trade practices have proved to be more efficient with chances of farmers combatting the ill effects of existing hunger and poverty related issues within the region independently. The impact of Seed Banks and other biodiversity protection measures help in this process immensely to regain fine ecological and climatic balance that has been lost over the years due to insensitive development practices in the region. This also reinforces the nature-culture link, on which Indian rural societies are essentially built upon, leading to fostering resilient and sustainable communities.

6.4 Implementation of the Project

The primary aim of the project is to restore the gardens into community training centers for sustainable agriculture for the local farmers with regular local gastronomy training sessions. Currently, Madhya Pradesh Gandhi Smarak Nidhi, Chhatarpur holds discussion sessions for local seed variety conservation with the local farmers, and is furthering the organic farming and training. Until date, a crop rotation schedule is planned for the two gardens undertaken with a dynamic conservation approach.

With the help of the local chapter of INTACH in 2007 in collaboration with Navdanya, the seed bank was

established where local varieties of grains, vegetables and pulses went missing under NHD-monitoring. The same Project had previously helped raise hundreds of indigenous trees in their nursery and plant them along the streets of Khajuraho.

The cultural rehabilitation was undertaken by doing a series of repair work for the gardens, which included full-scale renovation of the Kothi in Rani Bagh. The reinstating of the Shiva statue brought back many people to the garden for their morning and evening prayers. A visitors' center is under construction in Pateriya ka Bagh to incubate sustainable rural tourism with provisions for training for local farmers. The traditional lime construction is used to highlight the applications of eco-friendly materials like lime to construct a modern infrastructure in the region.

As social initiatives, educational tours for children from local schools and awareness campaigns about the historical and agricultural values of these gardens are organized regularly in the town. Bundeli music concerts are also organized in the gardens to engage the community and to support the local artists practicing traditional forms of music. These concerts are followed by a dinner consisting of local Bundeli food that are made with ingredients cultivated from the harvest of these gardens for culinary practice protection.

6.5 Project outputs and Impact

The project overall has yielded highly favorable results on various facets. Nevertheless, the gardens' limited immediate economic returns, coupled with the absence of heritage authorities' protection, have resulted in irreversible alterations to three of the sites.

On the economic front, the gardens undertaken by the project produced organic harvest, which was used by the farmers and the family. The long-term project also provided food and livelihood security to six families of the workers who are constantly engaged in the same.

Figure 12: Rani Bagh; **Source:** Studio Nara

6.6 Beneficiaries, Key stakeholders and partnerships

The primary beneficiaries of the project include the local communities and farmers in Rajnagar and neighboring villages, royal garden proprietors integral to the initiative, the local town council, state tourism, and cultural authorities, as well as collaborating NGOs and partners. The partnership with INTACH and Navdanya, particularly for awareness campaigns and training programs, played a pivotal role in the project's initial implementation. Another point to note is, the Gandhi Ashram, with its traditional agriculture training center in Chhatarpur, located 35 kilometers from Rajnagar, is instrumental in restoring the region's traditional farming methods. Spearheaded by ITRHD and Dharatal Inc. since 2004, the project embodies a collaborative effort for sustainable impact.

6.7 Enabling factors and constraints

The challenges of the project are two-fold. The first being the need for substantial understanding of the site along with gaining the trust of the local community, resulting in a longer wait to produce desirable results. There is a general lack of awareness with regard to gaining long term benefits from organic farming practices. This poses a significant challenge to justify the desired outcome of the project, especially since the output has not been evaluated based on financial gains.

Additionally, the absence of proper legislative protection laws in place call for awareness campaigns to be conducted in order to convince the owners of the properties to understand the value of this heritage. An environmental challenge that proved to be another obstacle was the pertinent lack of rains that had affected the implementation of the project, to address this challenge drip irrigation methods are currently being explored in the area.

6.8 Sustainability and replicability of the model

The sustainable agriculture model incubates a huge potential and if implemented on a large scale on the series of such gardens all across Bundelkhand, can deliver remarkable results, understanding among the local population, and pave the way towards sustainable development of the regions.

To counter the urbanization, which includes private owners constructing commercial infrastructure within the gardens, and to provide a long-term sustainability to these landscapes, the project envisages making these historical gardens as part of a sustainable rural tourism. This tourist route is envisioned as an extension to the existing popular tourist trail coming for the UNESCO listed temples in Khajuraho.

The training of the methods to use lime as a building material to the locals has great prospects for its use in heritage conservation and other constructions in this historically enriched region.

6.9 Impact of the pandemic as a natural disaster, on the project

The COVID-19 pandemic had a profound impact on the project. The neighboring town of Khajuraho which heavily relies on tourism as a source of revenue generation is still grappling with the economic setback that the pandemic brought on.

In the aftermath of the COVID-19 lockdown, a large number of migrant laborers had to return to Rajnagar and Khajuraho upon losing their jobs. This gave rise to a renewed interest in the organic food market and agriculture, as it proved to be a potential source of income.

The ongoing training for organic farming and local biodiversity conservation is helping instil value of traditional and organic farming practices in the youth. The program in collaboration with Gandhi Smarak Nidhi, is also actively developing a retail outlet and fair market, an organic farming mission as part of the larger Gandhian philosophy.

Figure 13: Schematic representation of connections between the gardens and the larger understanding of the landscape by the local community; **Source:** Author

7 Public system of local management. The Gram Panchayat to the District magistrate

7.1 Administration in Rajnagar

Rajnagar is a statutory town and tehsil headquarters of Chhatarpur district in the state of Madhya Pradesh. The district comes under Sagar division, bordering Panna, Damoh, Sagar & Tikamgarh districts of Madhya Pradesh and Uttar Pradesh state on the northern side. The town is linked by both road and rail networks with the region. The nearest airport is at Khajuraho which has daily flights from the National capital. Rajnagar town was declared as Nagar Panchayat in 1998. Presently, the town has Nagar Parishad status which encompasses an area of 13.78 sq.km., with a total of 15 nos. of wards.

Based on the primary and land use survey, it is found that about 194.3 ha land is in urbanized areas i.e. the urban activities are going on in only 194.3 ha land out of the 1378.0 ha of the town area, which is around 14.10% of the total town area. Hill area and Agriculture/vacant land constitute 7.77% and 78.13% respectively.

A Nagar Parishad in India, also known as a Municipal Council, is an urban local body that governs towns with populations typically ranging from 20,000 to 100,000. It operates under the framework of the 74th Constitutional Amendment Act, 1992 of the Indian Government, which provides for decentralized governance in remote rural and urban areas.

There are a total 87 Gram Panchayats and 152 Villages under Rajnagar panchayat samiti jurisdiction.

7.2 Local legal system for cultural heritage protection and management

7.2.1 Legislative framework for Heritage protection

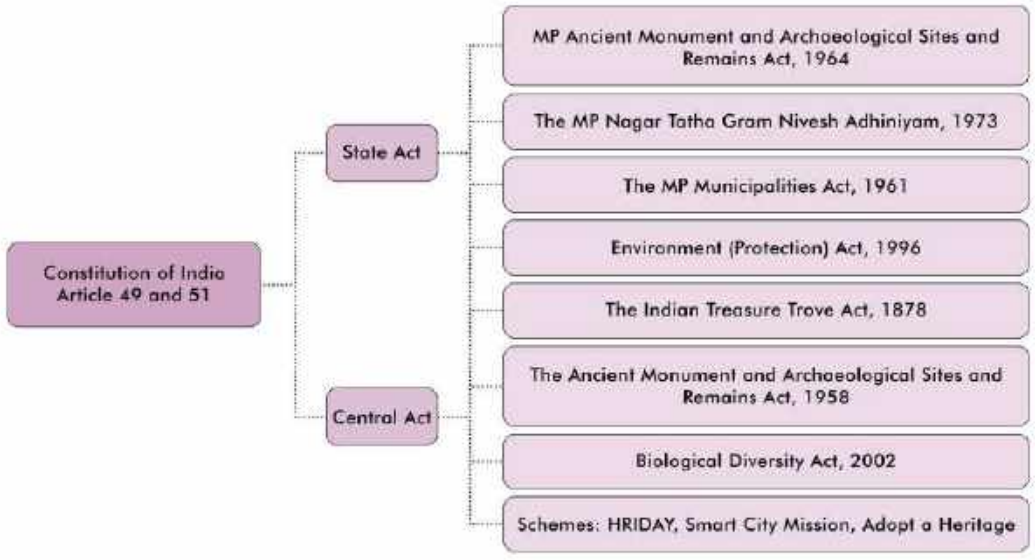

Figure 14: Diagrammatic representation of existing Legislation framework on heritage in India; **Source:** UNESCO report on HUL approach in Madhya Pradesh

7.2.1.1 Provisions under the Constitution of India

Obligates the state to protect every monument or place or object of artistic or historic interest, declared by or under law made by Parliament to be of national importance, from spoliation, disfigurement, destruction, removal, disposal or export, as the case may be (Article 49)(Constitution of India, 1949).[18]

"Article 49" in The Constitution of India 1949 reads as follows;

18 Government of India. (1949). *Constitution of India, 1949*. https://cdnbbsr.s3waas.gov.in/s380537a945c7aaa788ccfcd-f1b99b5d8f/uploads/2024/07/20240716890312078.pdf

"Protection of monuments and places and objects of national importance It shall be the obligation of the State to protect every monument or place or object of artistic or historic interests, declared by or under law made by Parliament to be of national importance, from spoliation, disfigurement, destruction, removal, disposal or export, as the case may be"

In 1976 Government made protection of monuments, sculpture of national importance citizens' duty vide clause (f) under Art 51A (Article 51 depicts fundamental duties which were inserted by 42nd amendment in 1976)

7.2.1.2 Competent authorities at various levels of governance

The Archaeological Survey of India (ASI) functions under the provisions of The Ancient Monuments and Archaeological Sites and Remains Act (or AMASR Act). ASI was established in pre-independent India and now it is an Indian government agency attached to the Ministry of Culture that is responsible for archaeological research and the conservation and preservation of cultural monuments in the country. It was founded in 1861 by Alexander Cunningham who also became its first Director-General. In India, various government departments take care of these structures such as ASI i.e. The Archaeological Survey of India but it protects only those monuments which are of national importance. Another is the *State Archaeology Department (SAD)* which protects the monuments of regional importance at the state level. There are also municipal laws for the protection of heritage structures of a particular locality, implemented through the *Municipal Corporation (MC)*.

7.2.1.3 Statutes, legislation and relevant provisions regarding conservation of monuments and archaeological sites

In furtherance of the Constitutional mandate, the Ancient Monuments and Archaeological Sites and Remains Act (or AMASR Act) is an act of parliament of the government of India that provides for the preservation of ancient and historical monuments and archaeological sites and remains of national importance, for the regulation of archaeological excavations and for the protection of sculptures, carvings and other like objects. It was passed in 1958 (Ancient Monuments and Archaeological Sites and Remains Act, 1958).[19]

Under the legislative scheme, heritage(s) is/are protected by three central laws: the Ancient Monuments and Archaeological Sites and Remains Act, 1958; the Ancient Monuments Preservation Act, 1904 (Ancient Monuments Preservation Act, 1904)[20]; and the Indian Treasure Trove Act, 1878 (Indian Treasure Trove Act, 1878).[21] The natural heritage sites are protected by the Environment (Protection) Act, 1986 (Environment (Protection) Act, 1986)[22] and the Biological Diversity Act, 2002 (Biological Diversity Act, 2002).[23]

The states have laws to conserve and protect heritage under their purview. Many Urban and Regional Planning and Development Acts have provisions for identifying "special areas/town planning schemes/ local area plans which are used to regulate activities around heritage sites.

As per Ancient Monument Preservation Act, 1904 the Central Government by notification declares an ancient monument to be protected within the meaning of this Act. The above Act was repealed by the

19 Ancient Monuments and Archaeological Sites and Remains Act, No. 24 of 1958. (1958). https://www.indiacode.nic.in/bitstream/123456789/15477/1/the_ancient_monuments_and_archaeological_sites.pdf

20 Ancient Monuments Preservation Act, No. 7 of 1904. (1904). https://www.indiacode.nic.in/bitstream/123456789/2339/1/A1904-7.pdf

21 Indian Treasure Trove Act, No. 6 of 1878. (1878). https://www.indiacode.nic.in/bitstream/123456789/2286/1/A1878-06.pdf

22 Environment (Protection) Act, No. 29 of 1986. (1986). https://www.indiacode.nic.in/bitstream/123456789/4316/1/ep_act_1986.pdf

23 Biological Diversity Act, No. 18 of 2002. (2002). https://www.indiacode.nic.in/bitstream/123456789/21545/1/the_biological_diversity_act%2C_2002.pdf

Ancient Monuments and Archaeological Sites and Re- mains Act, 1958 (in short "the Act of 1958") and the monuments notified under Section 3 deemed to have been ancient and historical monuments under the Act of 1958.
Salient provision of protection, prohibited, regulated areas, renovation and permission procedure for such areas. The monument sites are protected areas and have regulatory restriction and procedure on the aforesaid in the Act, under Section 19 and 20 as under. Now, after the central act we proceed further for the state acts.

7.2.1.3.1 Madhya Pradesh Ancient Monument and Archaeological Sites and Remains Act, 1964
The State of Madhya Pradesh has enacted a law called the Madhya Pradesh Ancient Monument and Archaeological Sites and Remains Act, 1964 (in short "the Act of 1964") for preservation of certain ancient and historical monuments and archaeological sites. Section 2(a) of the Act of 1964 means any building structure, erection etc. that has been in existence for not less than hundred years (Madhya Pradesh Ancient Monuments and Archaeological Sites and Remains Act, 1964).[24]

The powers to the state, granted under Section 3 of the Act of 1964, it can declare ancient monuments to be State protected monuments or archaeological sites to be a State-protected area. Also, the act deals with ownership/ guardianship of the land, maintenance, preservation, restriction and penalties with penal provisions. Now, we proceed further for the Municipalities Act as local law governing the area of concern under this project.

7.2.1.3.2 The Madhya Pradesh Municipalities Act, 1961
This act governs the building by-laws, management and maintenance of the building, common areas in municipality areas. The relevant section pertains to power over certain properties, management and regulated use under the act. (Madhya Pradesh Municipalities Act, 1961).[25]

7.2.1.3.3 The M.P. Nagar Tatha Gram Nivesh Adhiniyam, 1973
An act to make provision for planning and development and use of land; to make better provision for the preparation of development plans and zoning plans to ensure town planning schemes are made properly and their execution is made effective, to constitute Town and Country Planning Authority for proper implementation of town and country development plan, to provide for the development and administration of special areas through Special Area Development Authority, to make provision for the compulsory acquisition of land required for the purpose of the development plans and for purposes connected with the matters aforesaid (Madhya Pradesh Nagar Tatha Gram Nivesh Adhiniyam, 1973).[26] (An act for the town and country planning)

7.2.1.3.4 M.P. Heritage Development Trust
In the initiative of the Madhya Pradesh Government's Culture Department, Madhya Pradesh Heritage Development Trust was established on 27th May 2000 for the protection, preservation, and documentation of archaeological wealth and heritage of Madhya Pradesh (Madhya Pradesh Heritage Development Trust, 2000).[27] The objective of this trust is to receive funds from national and foreign investors and spend it on the protection, preservation and development of the state's archaeological heritage, monuments and museums.

24 Madhya Pradesh Ancient Monuments and Archaeological Sites and Remains Act, No. 18 of 1964. (1964). https://www.indiacode.nic.in/bitstream/123456789/21470/1/cg._ancient_monument_and_archaeological_sites_and_remains_act%2C_1964_no._12_of_1964_date_16.04.1964.pdf
25 Madhya Pradesh Municipalities Act, No. 37 of 1961. (1961). https://www.indiacode.nic.in/bitstream/123456789/3583/1/Municipal%20Corporation%20ACT%201961.pdf
26 Madhya Pradesh Nagar Tatha Gram Nivesh Adhiniyam, No. 23 of 1973. (1973).https://mptownplan.gov.in/otherfiles/adhiniyam18032025E.pdf
27 Madhya Pradesh Heritage Development Trust. (2000). Government of Madhya Pradesh, Department of Culture. https://upload.indiacode.nic.in/showfile?actid=AC_MP_74_284_00008_00008_1543489307914&type=rule&filename=madhya_pradesh_heritage_development_trust.pdf

7.2.1.4 The schemes of the Central Government

For urban planning, economic growth and heritage conservation in an inclusive manner and to preserve the heritage character of historical settlements there are national level schemes out of which two are most relevant for the RALs.

7.2.1.4.1 National Heritage City Development and Augmentation Yojana (HRIDAY)

The scheme was launched on 21 January 2015 with the aim of bringing together urban planning, economic growth and heritage conservation in an inclusive manner to preserve the heritage character of each Heritage City (Ministry of Housing and Urban Affairs, 2015).[28]

The objectives of the scheme are:

- Planning, development and implementation of heritage-sensitive infrastructure
- Service delivery and infrastructure provisioning in the core areas of the historic city
- Preserve and revitalize heritage wherein tourists can connect directly with city's unique character
- Develop and document a heritage asset inventory of cities – natural, cultural, living and built heritage as a basis for urban planning, growth, service provision and delivery
- Implementation and enhancement of basic services delivery with focus on sanitation services like public conveniences, toilets, water taps, street lights, with use of latest technologies in improving tourist facilities/amenities.
- Local capacity enhancement for inclusive heritage-based industry

7.2.1.4.2 'Adopt a Heritage' Scheme

It is a collaborative effort between the Ministry of Tourism, Ministry of Culture, Archaeological Survey of India (ASI), and State/UTs Governments. The project aims to develop synergy among all partners to effectively promote 'responsible tourism'. It was launched on 27 September 2017 (World Tourism Day) by the President of India (Ministry of Tourism, 2017).[29]

The aim of the program is to involve public sector companies, private sector companies, and corporate citizens/individuals to take up the responsibility for making our heritage and tourism more sustainable. It is to be done through the development, operation and maintenance of world-class tourist infrastructure and amenities at ASI/ State heritage sites and other important tourist sites in India.

8 Stakeholders of the RALs of Rajnagar - relationships

The RALs can be placed within the larger framework of relationships between the Nature-culture journey, climate change and local community. In line with the UNESCO global strategy, making the process more people centric and decentralizing the conservation and management and in the process training the local communities and learning from them is the way forward for the management of historical landscapes of India. Various stakeholders need to cooperate through an easy mechanism in order to allow heritage to act as a catalyst for sustainable development.

28 Ministry of Housing and Urban Affairs. (2015). *National Heritage City Development and Augmentation Yojana (HRIDAY): Scheme guidelines.* Government of India. https://mohua.gov.in/upload/uploadfiles/files/GuidelinesHRIDAY.pdf

29 Ministry of Tourism. (2017). Adopt a Heritage: *Apni Dharohar, Apni Pehchaan—Project overview.* Government of India. https://tourism.gov.in/sites/default/files/2020-08/adopt%20a%20Heritage%20Project%20Guidelines.pdf

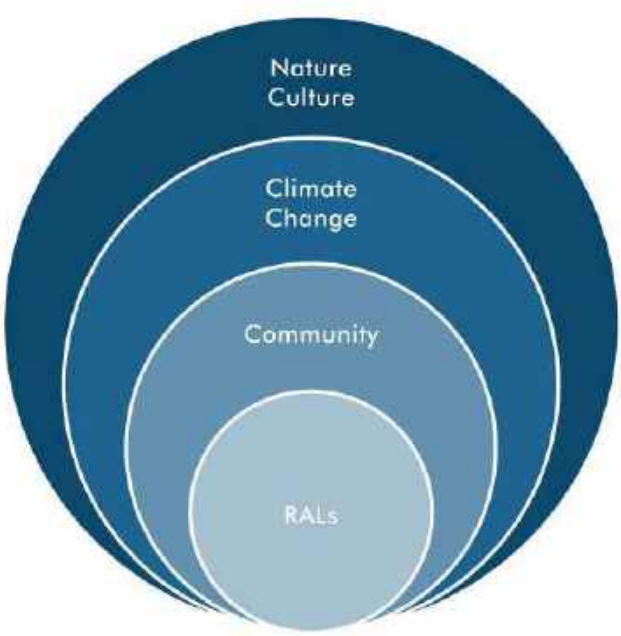

Figure 15: Schematic diagram placing the RALs in the larger cultural heritage conservation paradigm based on the research work undertaken; **Source:** Author

For a holistic mechanism of protection and conservation of RALs, the stakeholders directly and indirectly connected and to be engaged with are:

1. Local communities and farmers
2. Panchayats (local governance bodies)
3. Ministry of Culture. (both federal and state)
4. UNESCO
5. ICOMOS
6. Ministry of Environment and Climate Change. (both federal and state)
7. Department of Town and Country planning, Ministry of Urban Development. (both federal and state)
8. Ministry for Livelihoods. (both federal and state)
9. Ministry of Finance. (both federal and state)
10. Ministry of Water Management, Agriculture and Irrigation. (both federal and state)
11. Universities and Centres of Research on Heritage Conservation
12. Department for Disaster Risk Management
13. Civic societies, professional bodies and NGOs involved in heritage management
14. Global finance and funding agencies like World Bank, Asian Development Bank, Aga Khan Trust for Culture and Green Climate Fund.

To understand the roles of stakeholders on a local level following analysis was undertaken:

Table 1: Rajnagar town stakeholders analysis; **Source:** Author

Stakeholder	Role/Responsibility	Interests	Level of Influence
Elected Representatives (Chairperson & Councilors)	Policy-making, budget approval, local governance, representing citizens	Development of wards, voter satisfaction, re-election prospects	**High**
Executive Officer (Chief Officer)	Administrative head, implements council decisions, manages departments	Efficient service delivery, compliance with rules, administrative efficiency	**High**
State Government / Urban Development Department	Supervisory authority, provides guidelines, funds, appoints officers	Effective urban governance, political stability, alignment with state policies	**High**

Urban Local Body Employees (engineers, clerks, health staff)	Execute programs, maintain infrastructure, deliver services	Job security, good working conditions, timely salaries	**Medium**
Citizens / Residents	Ultimate beneficiaries of municipal services	Quality public services, accountability, participation in decision-making	**Medium to High (depending on civic engagement of a scheme)**
Local NGOs / Civil Society Organizations	Advocacy, community mobilization, supplementing service delivery	Transparency, inclusion, sustainable development	**Medium**
Vendors / Small Business Owners	Economic value contributors, use municipal spaces and services	Business-friendly regulations, clean environment, space allocation	**Low to Medium**
Contractors / Private Service Providers	Implement municipal projects (e.g. road works, sanitation)	Timely payments, fair contracts, continued work	**Medium**
Ward Committees / Resident Welfare Associations (RWAs)	Participate in ward-level planning and monitoring (where applicable)	Localized problem-solving, improved services	**Medium**
Media (Local Press & Social Media)	Disseminate information, highlight issues	Transparency, accountability, newsworthiness	**Medium to High**
Planning and Finance Committees of the Rajnagar Nagar Parishad (Internal)	Advise on urban planning, budgeting, development projects	Efficient planning and fund allocation	**Medium**

The relationships among the stakeholders in Rajnagar can be understood also via a socio-cultural lens in a more subjective way. As the aforementioned rational analysis of the stakeholders' relationship was undertaken it was also observed over a period of time that the rationality of this analysis often does not hold to the ground reality. The decision making was often defined by a series of social, cultural and economical events or backdrops. The seat for the elected representative, the chairman of Rajnagar, is a reserved seat for women. This was an attempt made by the central government to reduce gender inequality and empower women.

It was observed over time that the local tacit dynamics within the stakeholders often defined the outcome of various decision making and landscape stewardship. Local and national politics both played a vital role in guiding that decision making.

9 Conclusions

The historical produce gardens of Rajnagar successfully represent the larger ecosystem of RALs in the region and share the same level of complexity of management and conservation when viewed as cultural assets for the local identities.

The research emphasized that the entropy of the RALs initially resists any external changes being imposed even if its a program which in principle may lead to increase in the well being of the local communities. The success rate of a scheme or program intended for RALs entirely relies upon the level of localized detailing for its implementation and navigation through possible conflicts. It also depends on a rather long term trust building approach to ensure that the intended program is well grounded in the community with an exit strategy of the local communities taking over.

The RALs serves as a constant source of wellbeing for the local communities and understanding them at localized levels within a broader framework can allow a more sensitive approach in the stewardship of the landscape for the future generations and state or country level schemes. Such an approach can also greatly enhance the resilience of the RALs against natural disasters and contribute to climate action at regional levels.

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Annexure

Orchha, Madhya Pradesh, Photo Credit: Nishant Upadhyay

Annexure

I

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Nishant Upadhyay is a conservation architect trained at KU Leuven, Belgium as a recipient of the Erasmus Mundus EXPERT scholarship. He is a TEDx Speaker & a member of ICOMOS International Scientific Committee on Cultural Landscapes and Cultural Tourism and has been a specialist to UNESCO New Delhi, Dhaka and Jakarta offices on cultural heritage matters. He is the founder of DHARATAL, an Indo Belgian design & research atelier with focus on local communities, their heritage, cultural landscapes and climate action. He has also been regularly involved in teaching as a visiting faculty or assessor at KULeuven, NID Ahmedabad, INTACH Heritage academy and CEPT Ahmedabad and is a member of board of studies for Faculty of Architecture and planning at AKTU, Uttar Pradesh, India.

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Dr. Anjaneya Sharma is an architect, landscape historian, and academician working in the domain of landscape and heritage conservation. Born and raised in Bundelkhand, Central India, he has extensively researched the region's 18th-century gardens, establishing their typology through his doctoral work at IIT Roorkee. He worked for the conservation of these historical gardens in collaboration with Dharatal and ITRHD Belgium. He is presently working as an Asst. Prof and Associate Dean at Faculty of Architecture and Planning, AKTU, Lucknow. He has presented on several forums, published in peer-reviewed journals, and advised academic & conservation initiatives. He is an alumnus of Leon Levy Documentation and Imaging Program and been working since long for heritage documentation using photogrammetry. Dr. Sharma's current interests explore intersections of heritage, ecology, and contemporary urban challenges, with a commitment to international dialogue and cross-disciplinary partnerships.

II

Conference Programme – Details
Friday, 19th November 2021

09:00 am	Webinar room open (registration etc)
09:45 – 09:55 am	Opening and welcome by Mr. Nishant Upadhyay, ICOMOS India Central Zone representative and Coordinator, ICOMOS India Scientific Symposium 2021
09:55 – 10:15 am	Dr. Navin Piplani, ICOMOS India President note
10:15 – 10:25 am	Dr. Vandana Sehgal, Dean, FoAP, AKTU note
10:25 – 10:35 am	Address by the Chief Guest (tbc FOAP, AKTU)
11: 00 – 11:45 am	Padma Bhushan Prof. Ar. B.V. Doshi in conversation with Dr. Navin Piplani, ICOMOS India President
11: 45 am – 12: 45 pm	Session 1 (4 papers + Q/A)

Architectural language and methodology of landscapes
Session Chair - Dr. Jyoti Rohilla Rana
Rapporteur - Ms. Niyati Jigyasu

Author/s	Time	Title of Presentation
Partha Sarathi Mishra & Soumi Muhuri	11:45 am - 11:53 am	Assessment of Multi-Dimensional Value for Architectural Heritage using Multi-Objective Optimization on the basis of Ratio Analysis Method
Dhanya Mariam Shaji & Jivantika Satyarthi	11:54 am - 12:02 pm	Understanding the Cultural Transformation of Paravur: A Case of Chendamangalam Weaving Community
Meenakshi Dubey & Thushara Koraprath	12:03 pm - 12:11 pm	Re- Interpreting the cultural landscape of Kozhikode: Spice As An Agent To Decode The Material And Cultural Expressions Of The City:An Academic Approach
Kamini Singh & Anant Pratap Singh	12:12 pm - 12:20 pm	Ephemeral Landscapes of a Living City: A Critical Analysis of Spatial Transformation in Chandani Chowk
	12:22 pm - 12:45 pm	Discussion

1: 30 pm - 2: 00 pm	Keynote – Dr. Jyoti Hosagrahar, Deputy Director, World Heritage Centre, UNESCO

2: 00 – 3: 00 pm Session 2 (4 papers + Q/A)

Space and cultural landscapes
Session Chair - Dr. Gitanjali Rao
Rapporteur - Ms. Priyanka Singh

Author/s	**Time**	**Title of Presentation**
Kalpana pandit, Tarush Chandra & Rina Surana	2:00 pm - 2:08 pm	Ingrained Urban Social Spaces : Courtyards of Haveli temples in walled city of Jaipur
Yashaswini Jayadevaiah	2:09 pm - 2:17 pm	Actor-Network Theory's (ANT) potential as a practice theory to understand and align archaeological and non-archaeological components of complex cultural sites
Neha G Verma	2:18 pm - 2:27 pm	Urban myths and intangible narratives: An approach to study, understand the evolving, and living cultural Heritage and its perception in Lucknow
Sunena Maju & Shebin Jawahar	2:28 pm - 2:36 pm	A New Narrative for Urban Public Spaces: Translating The Relation of a City to Its Cultural Landscape
	2:38 pm - 3:00 pm	Discussion

3: 20 – 4: 20 pm Session 3 (4 papers + Q/A)

Communities and transformations of their landscapes
Session Chair - Dr. Sanghamitra Basu
Rapporteur - Ms. Ananya Bhattacharya

Author/s	**Time**	**Title of Presentation**
Nishant Upadhyay	3:20 pm - 3:28 pm	Exploring Indian rural agricultural landscapes as shared heritage of the local communities, the systems that govern its intrinsic values & its relation with the management of its transformation. Case of Rajnagar, Bundelkhand.
Siddhartha Mukherjee	3:29 pm - 3:37 pm	The Imitation game of Urban Community Spaces
Bhawana Vasudeva	3:38 pm - 3:46 pm	Cultural Heritage Resources in a Rapidly Industrializing Region: Opportunities and Challenges
Monica Chaudhary	3:47 pm - 3:55 pm	Heritage in Neighbourhood Role of community, History and Culture in shaping the Historic Urban Environment
	3:58 pm - 4:20 pm	Discussion

4: 20 – 4: 50 pm Reflections from the prequel events by Mr. Rishabh Sharma, Emerging Professional (EP) Central Zone Representative and Ms. Saranya Darshini, National EP Representative, ICOMOS India.

4: 50 - 5: 50 pm Session 4 (4 papers + Q/A)

Water, urban ecology and transformations
Session Chair - Dr. Harveen Bhandari
Rapporteur - Mr. Shriyak Singh

Author/s	Time	Title of Presentation
Mayukh Ch. Sadhukhan & Sonal Tiwari	4:50 pm - 4:58 pm	Revitalizing the Integrity of Sacred Cultural Landscape of Old Bhubaneswar through green infrastructure development
Aakanksha Tated & Samiksha Purohit	4:59 pm - 5:07 pm	Evolving maritime heritage in urban cultural landscape A case of revival in Mumbai Koliwadas
Ayushi Dhar, Ankit Kumar Senapati & Swaraj Bose	5:08 pm - 5:16 pm	Cultural landscape of North Kolkata: Spatial Morphology and Transformations in Urban Ecology
Neha Chandel	5:17 pm - 5:25 pm	Historic Water Systems of Jammu
	5:27 pm - 5:50 pm	Discussion

6: 00 pm End of day

7: 00 pm – 10: 00 pm Public Screening of Ar. B.V. Doshi in conversation with ICOMOS India President; Cultural evening and Gala dinner at FoAP, AKTU campus.

Saturday, 20th November 2021

6: 30 am – 8: 30 am Heritage walk in Lucknow.

9: 30 am Webinar room open

10: 15 am – 11: 15 am Session 5 (4 papers + Q/A)

Sustainability (SDGs) and managing cultural landscapes. (Sustainability as a measure and methodology for managing transformations).
Session Chair - Dr. Jana Chaudhuri
Rapporteur - Ms. Madhu Vottery

Author/s	Time	Title of Presentation
Neha Tambe & Prashant Banerjee	10:15 am - 10:23 am	Baolis at the Qutb Shahi Heritage Park – Sustainability, Conservation, and Urban Transformations
Priyanka Panjwani	10:24 am - 10:32 am	Sustainable development of industrial (rail) landscapes: Navigating the Matheran Light Railway in Western India.
Nirzary Pujara	10:33 am - 10:41 am	The Backward Forwardness': Taking historic humanized landscapes back (to Sustainability) in order to develop ahead Managing Heritage, Managing Change: A case of the historic city of Bundi, Rajasthan
Chandrani Bandopadhyay & Ashish Verma	10:42 am - 10:50 am	Building Resilience of Historic Urban Landscapes to Cascading Risks: A Framework for Sustainability
	10:52 am - 11:15 am	Discussion

11: 30 am - 12: 30 pm Session 6 (4 papers + Q/A)

Historic vernacular landscapes (Vernacular landscapes as references for indigenous sustainable practices).
Session Chair - Dr. Ritu Gulati
Rapporteur - Ms. Poorva Patil

Author/s	Time	Title of Presentation
Asavari vare	11:30 am - 11:38 am	Historic vernacular landscapes as inspiration for sustainable practices
Nishtha Joshi	11:39 am - 11:47 am	Bastar- A historic vernacular landscape of world Importance
Deepa William	11:48 am - 11:56 am	Homestead Farms of Kerala: A Dying Epitome of Sustainability
Lalit Akash Verma & Farheen Bano	11:57 am - 12:05 pm	Socio-Environmental Sustainability of Traditional Courtyard houses of Lucknow and Varanasi
	12:07 pm - 12:30 pm	Discussion

1: 15 pm - 2: 15 pm Session 7 (4 papers + Q/A)

Sacred landscapes. (Spiritual landscapes as a source of divine inspiration and community wellbeing).
Session Chair - Mr. Ashish Trambadia
Rapporteur - Ms. Rakhi Mariam

Author/s	Time	Title of Presentation
Ridhu Dhan Gahalot & Charlie Gupta	1:15 pm - 1:23 pm	Regenerating and Reclaiming the Contested Spaces in Sacred Landscapes
Abhishek Bhardwaj	1:24 pm - 1:32 pm	The Sacred ecology of Govardhan Hill, Mathura
Amita Sinha	1:33 pm - 1:41 pm	Reclaiming Ramjanambhoomi as a Narrative Landscape in Ayodhya
Yash Gupta & Jigna Desai	1:42 pm - 1:50 pm	Questions of Authenticity: The Case of Sacred Landscape of Jain Communities in the Walled City of Ahmedabad
	1:52 pm - 2:15 pm	Discussion

2: 15 pm - 3: 15 pm Session 8 (4 papers + Q/A)

Historic urban landscapes (HUL as an approach to heritage-led development).
Session Chair - Dr Rohit Jigyasu
Rapporteur - Ms. Juwairia Qamruddin

Author/s	Time	Title of Presentation
Ashfina T., Pushplata & Chani PS	2:15 PM - 2:23 PM	Historic Urban Landscape approach as a new paradigm for the conservation of cultural landscapes in Indian cities
Nitya Khendry	2:24 PM - 2:32 PM	Historic Urban Landscape in Practice: Jaipur City
Roshini Muralidhara	2:33 PM - 2:41 PM	Regeneration of the historic market precincts of Bengaluru

Tanya Chaturvedi Vegad	2:42 PM - 2:50 PM	A Study of Policy & Legislation For Infrastructure Upgradation In Historic Urban Landscapes
	2:50 PM - 3:15 PM	Discussion

3: 45 pm – 4: 45 pm	Panel lead by Session Chairs - moderated by ISC Bureau member from ICOMOS India
4: 45 pm – 5:00 pm	Summarization of the symposium by Dr. Arun Menon, NSC Counsellor ICOMOS India
5: 00 pm - 5: 45 pm	ISC CL and NSC CL dialogue (Dr. Elizabeth Brabec, Secretary General ISC CL and Prof Dr Rana PB Singh, Coordinator NSC CL) moderated by Dr. GSV Suryanarayana Murthy, South Zone Representative and NSC CL Co-Cordinator
5: 45 pm	Concluding remarks by Dr. Rima Hooja, Vice President, ICOMOS India.
5: 50 pm	Vote of thanks (FoAP, AKTU)
5: 55 pm	Vote of thanks by Ms. Shalini Dasgupta, Secretary ICOMOS India
6: 15 pm	End of Symposium
6:30 pm - 8:00 pm	ICOMOS India Executive Committee Meeting

III

Conference Committees and Session Chairs

Conference Committees:

- Ms. Ananya Bhattacharya ICOMOS India
- Ms. Anuradha Chaturvedi ICOMOS India
- Mr. GSV Suryanarayana Murthy ICOMOS India
- Mr. Nishant Upadhyay ICOMOS India
- Ms. Nupur Prothi Khanna ICOMOS India
- Dr. Rima Hooja ICOMOS India
- Dr. Ritu Gulati FOAP, AKTU
- Dr. Vandana Sehgal FOAP, AKTU

Session Chairs:

- Dr. Jyoti Rohilla Rana
- Dr. Gitanjali Rao
- Dr Sanghamitra Basu
- Dr. Harveen Bhandari
- Dr. Jana Chaudhuri
- Dr. Ritu Gulati
- Mr. Ashish Trambadia
- Dr Rohit Jigyasu

IV

Full List of Papers Presented at the Symposium

SESSION 1: Architectural language and methodology of landscapes

1. Assessment of Multi-Dimensional Value for Architectural Heritage using Multi-Objective Optimization on the basis of Ratio Analysis Method
   Partha Sarathi Mishra & Soumi Muhuri

2. Understanding the Cultural Transformation of Paravur: A Case of Chendamangalam Weaving Community
   Dhanya Mariam Shaji & Jivantika Satyarthi

3. Re-Interpreting the Cultural Landscape of Kozhikode: Spice as An Agent to Decode the Material and Cultural Expressions of The City- An Academic Approach
   Meenakshi Dubey & Thushara Koraprath

4. Ephemeral Landscapes of a Living City: A Critical Analysis of Spatial Transformation in Chandani Chowk
   Kamini Singh & Anant Pratap Singh

SESSION 2: Space and cultural landscapes

5. Ingrained Urban Social Spaces: Courtyards of Haveli temples in walled city of Jaipur
   Kalpana pandit, Tarush Chandra & Rina Surana

6. Actor-Network Theory's (ANT) potential as a practice theory to understand and align archaeological and non-archaeological components of complex cultural sites
   Yashaswini Jayadevaiah

7. Urban myths and intangible narratives: An approach to study, understand the evolving and living cultural Heritage and its perception in Lucknow
   Neha G Verma

8. A New Narrative for Urban Public Spaces: Translating the Relation of a City to Its Cultural Landscape
   Sunena V. Maju & Shebin Jawahar

SESSION 2: Space and cultural landscapes

9. Exploring Indian rural agricultural landscapes as shared heritage of the local communities, the systems that govern its intrinsic values & relation with management of its transformation: Case of Rajnagar, Bundelkhand
   Nishant Upadhyay

10. The Imitation game of Urban Community Spaces
    Siddhartha Mukherjee

11. Cultural Heritage Resources in a Rapidly Industrializing Region: Opportunities and Challenges
    Bhawana Vasudeva

12. Heritage in Neighbourhood: Role of community, History & Culture in shaping Historic Urban Environment
    Monica Chaudhary

SESSION 4: Water, urban ecology and transformations

13. Revitalizing the Integrity of Sacred Cultural Landscape of Old Bhubaneswar through green infrastructure development
    Mayukh Ch. Sadhukhan & Sonal Tiwari

14. Evolving maritime heritage in urban cultural landscape A case of revival in Mumbai Koliwadas
    Aakanksha Tated & Samiksha Purohit

15. Cultural landscape of North Kolkata: Spatial Morphology and Transformations in Urban Ecology
    Ayushi Dhar, Ankit Kumar Senapati & Swaraj Bose

16. Historic Water Systems of Jammu
    Neha Chandel

SESSION 5: Sustainability (SDGs) and managing cultural landscapes: Sustainability as a measure and methodology for managing transformations

17. Baolis at the Qutb Shahi Heritage Park – Sustainability, Conservation and Urban Transformations
    Neha Tambe & Prashant Banerjee

18. Sustainable development of industrial(rail) landscapes: Navigating Matheran Light Railway in Western India
    Priyanka Panjwani

19. 'The Backward Forwardness': Taking historic humanized landscapes back (to Sustainability) in order to develop ahead- Managing Heritage, Managing Change: A case of the historic city of Bundi, Rajasthan
    Nirzary Pujara

20. Building Resilience to Cascading Risks: An Approach to Sustainability in Historic Urban Landscapes
    Chandrani Bandopadhyay & Ashish Verma

SESSION 6: Historic vernacular landscapes: Vernacular landscapes as references for indigenous sustainable practices

21. Integrated Cultural and Architectural Landscape of Murud Janjira
    Asavari vare

22. Indigenous Cultural Landscapes: A case study of Bastar
    Nishtha Joshi

23. Homestead Farms of Kerala: A Dying Epitome of Sustainability
    Deepa William

24. Socio-Environmental Sustainability of Traditional Courtyard houses of Lucknow and Varanasi
    Lalit Akash Verma & Farheen Bano

SESSION 7: Sacred landscapes: Spiritual landscapes as a source of divine inspiration and community wellbeing

25. Regenerating and Reclaiming the Contested Spaces in Sacred Landscapes
    Ridhu Dhan Gahalot & Charlie Gupta

26. The Sacred ecology of Govardhan Hill, Mathura
    Abhishek Bhardwaj

27. Reclaiming Ramjanambhoomi as a Narrative Landscape in Ayodhya
    Amita Sinha

28. Questions of Authenticity: The case of sacred Jain landscape of the walled city of Ahmedabad
    Yash Gupta & Jigna Desai

SESSION 8: Historic urban landscapes: HUL as an approach to heritage-led development

29. Historic Urban Landscape approach- a new paradigm for conservation of cultural landscapes in Indian cities
    Ashfina T., Pushplata & Chani PS

30. Historic Urban Landscape in Practice: Jaipur City
    Nitya Khendry

31. Regeneration of the historic market precincts of Bengaluru
    Roshini Muralidhara

32. A Study of Policy & Legislation for Infrastructure Upgradation in Historic Urban Landscapes
    Tanya Chaturvedi Vegad

V

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- Meenakshi Dubey
- Kamini Singh
- Kalpana Pandit
- Yashaswini Jayadevaiah
- Neha G Verma
- Sunena V. Maju
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- Siddhartha Mukherjee
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