

CHANGING DYNAMICS OF THE INNER CORE CITY OF VARANASI: THE RELATIONSHIP BETWEEN WATER AND MORPHOLOGY OF THE URBAN SETTLEMENT

Abstract

Traditional Indian cities offer a variety of knowledge systems to learn from and understand a sustainable way of life. Heritage itself is a result of evolution and change over time in the environment, people, and nature. Rivers have been instrumental in the creation of the heritage of places along it. This research attempts to evaluate qualitatively and quantitatively the aspects of Heritage Settlements evolved along the rivers in India and then provide a direction for future growth and dissemination of knowledge about their significance.

In today's context, these complex and diverse river systems of the past are a stepping-stone to formulating the framework for the preservation and reuse of new systems.

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Keywords

Regeneration, urban dynamics; heritage and water relationship, cultural landscapes, policy making

OBJECTIVE This research intends to link past practices to the present context and try to predict the future of sustainability using these two components: water and heritage.

METHOD It also plans to describe an alternative emerging present condition in which policymaking and design guidelines blend together to recognize and build on traditional knowledge and skills while imagining how such efforts will help us develop regenerative futures for cities and river landscapes presented through the religious and touristic urban center of India along the river Ganges: Varanasi (Ecology, Economy, and Heritage).

CONCLUSION The Research will emphasize the inter-relation of rivers and their historic settlements along with establishing the interface between urban form generated over the ages and the rivers with the vital research question: Why is value of cultural heritage and ecology not included in the economic policies?

Introduction

Rivers can give and take what they give: They have hence been the cradle and graveyard of civilizations over centuries. They have sustained societies, carved their course, developed cultures, given form and function to our Settlements, helped create socio-economic structures, and thus formed multifold and inter-layered narratives. The extensive and tangible network of this can be seen all through the country.

India has also seen such evolution and growth along riverfronts and the legacy left behind in tangible and intangible traces which aided in defining the way of life or culture as we have it today. Though this relationship between water and human settlements is quite extensively studied and documented — probably since ancient times, there is always a new perspective to be explored and challenged. While a lot of deep research and hard work has been put in by multiple experts in this field, there is always a siloed approach to water and heritage.

Heritage itself is a result of evolution and change over large periods of time in the environment, surroundings, people, and nature. Rivers have been instrumental in the creation of the heritage of places along them. This research attempts to study and evaluate qualitatively and quantitatively the aspects of Heritage Settlements that have evolved along the rivers in India and then provide a direction for future growth as well as dissemination of knowledge about their

significance. Some questions which arose in the process of understanding the research are as follows:

- Why is it that after the development of water and sanitation systems, we have started looking at rivers/ waterbodies as a backyard for dumping the effluents of the wastewater/sewage/industrial waste?
- Why is it that the symbolic and associational values of the river and the settlement along it holds no importance today?
- Why is this question not one of cultural identity, associational value, architectural imagery, creation of landmarks through riverfront architecture ever discussed or handled in a holistic manner and addressed in conjunction with the development/regulating bodies?
- Should we consider improving the conditions of the river and the settlements growing along it? Or should we just leave it as it is and let it have its own slow death?

The next decade is going to be a very crucial one for human survival and the most crucial issue would be related to water and human survival. This research attempts to decode these questions pragmatically and try to give direction for sustainable growth for a brighter future for the existence of humans as well as natural elements like water.

In my more than a decade of professional engagement with learning from Indian cities, I have come across examples of historic settlements/cities along the rivers and the disconnect between the two entities is very evident. To cite some examples, Varanasi, probably the oldest Indian living settlement has undergone tremendous changes and regeneration in all these years. Though the religious connection keeps millions of tourists and pilgrims coming to the waterfront and experiencing the river Ganges, the residents of the city are moving out of this zone. The riverfront and the urban form around it are also undergoing transformation, and more and more residents are experiencing their disconnect from the river due to multiple reasons.

The attempt of the research would be to understand these parameters which affect the changing dynamics of the urban city core of Varanasi and develop a model which is sustainable and an economic generator of the local population. Based on the study of the existing models of data analysis and assessment, I would like to develop a model for the case examples I would be studying. It would also have a broader framework that would be able to be followed on multiple similar cases across India, to begin with, and eventually attempt a global model.

Source	Summary	Interpretation Method	Supporting References
Archives	The understanding of the origin and growth of river settlements is only possible to be traced via the cartographic references	Exploratory	Prinsep, James (1834) "Benares, Illustrated in a series of Drawings 3 volumes" from the collection of the British Library, London, reprinted in Benares in 1996
Archaeological survey of India		Using multiple sources — triangulation method for the sources of evidence gathering	
Remote sensing data authority	The study of the geography and regional characteristics of the riverfront settlements will also be leading to an understanding of the pattern of growth	Comparative and cross-case analysis to develop the base for the formulation and assessment of the historic value of the thesis	Cunningham, Alexander "Report of Tours in the Gangetic Provinces from Badaon to Bihar in 1875-76 and 1877-78," Calcutta, Archaeological Survey of India
Satellite imagery			

Figure 1: Chart showing Exploratory Method of learning from Case Studies. (Source: Author.)

Source	Summary	Interpretation Method	Supporting References
Theories on placemaking	The various literary sources will reiterate the aspects of: value, heritage, intangible	Descriptive: describing the various theories and explaining the various definitions	Acciavatti, Anthony (2015) "Ganges Water Machine: Designing New India's Ancient River" Applied Research + Design Publishing
Heritage assessment and interpretation of values	The concepts on how to tackle the public realm	Understanding the policies around water/ivers	Eck, Diana L. (1982) "Banaras: The City of Light" New York
Intangible sources of heritage travelogues	Thoughts of various researchers on aspects of imageability		
Research papers in journals	Exploring the research on water and heritage settlements along it		
Policies around rivers and water bodies			

Figure 2: Chart showing Descriptive Method of learning from Case Studies. (Source: Author.)

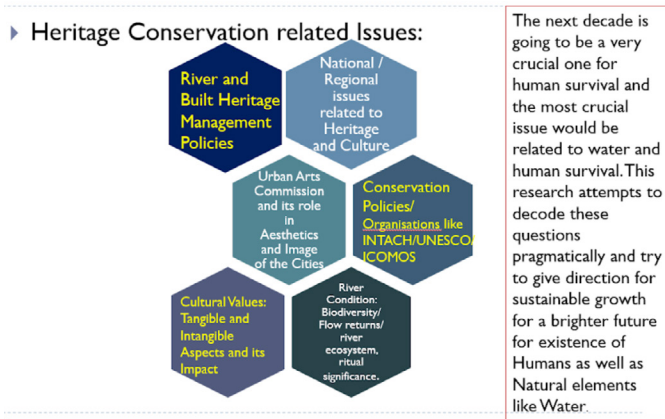


Figure 3: Chart showing Research Framework for Water and Heritage Settlements in India. (Source: Author.)

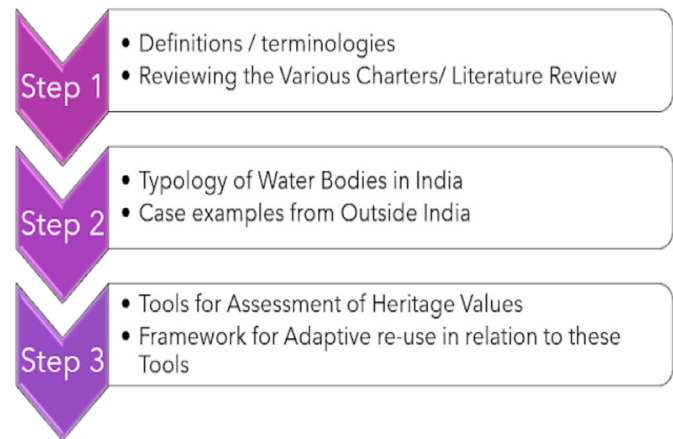


Figure 4: Chart showing steps to be taken or Methodology to be adapted for Research. (Source: Author.)

Research Question: Why is the value of cultural heritage and ecology not included in economic policies?

After the evaluation of definitions and terminologies from various sources and reviewing the various charters and models which have been attempted to work on regenerating and valorising Heritage qualitatively and quantitatively, I tried to narrow down on three types of Assessment Models based on the Life Beyond Tourism Model which was subscribed to by ICOMOS at the ICOMOS General Assembly in Quebec in 2008 for assessment of the Heritage Value of a place. I am attempting to take one model or integrate multiple models from the ones shortlisted by me and then adapt it for the Indian scenario, specifically for my Case Study area: Varanasi City Core.

The following three models adopted are:

CONCEPTUAL FRAMEWORK OF TECHNITAS (ZANCHETI & SIMILĂ, 2012) method valuing the significance of LHTR (Local Heritage of Technology Resource) involves two steps: the first is valorising, which is a comprehensive examination of cultural values of the accumulated since the dawn of the object, resulting in a valorisation — narrative describing methodically recognized attributes of individual values and their indicators.

The preparation of the investment project intended for the LHTR and planned in such a way as to maintain its cultural values while taking into account the dynamic potential of the functional utility of historic substance and objectives, intentions, and needs of all stakeholders, including representation of the community local or industry-related identity (as a community) with the cultural values.

The basis of proprietary technofacts valuation methodology are three leading concepts:

- Value expresses the meaning assigned to the technofact by the investigator-conservator;
- its rank is variable and depends on the method of judgment and the context of various past, present, and future circumstances;
- it obviously depends on the investigator's sophistication and the accuracy of the site inspection, depending on the time spent and accessibility of the researched object.

“RESEARCHING ENERGY EFFICIENCY FOR EUROPEAN HISTORIC URBAN DISTRICTS” IS THE GOAL OF THE PROJECT ENERGY EFFICIENCY FOR EU HISTORIC URBAN DISTRICTS’ SUSTAINABILITY (EFFESUS) (SZMYGIN, 2015), which has been funded by the European Union (EU) through its Seventh Framework Program (Szmygin, 2015) for research, technological development, and demonstration. EFFESUS is a 2012–2016 initiative with 23 partners from 13 different European nations. A software tool is being created as part of the project to assist in the decision-making process for the site-specific retrofit of historic districts and structures.

THE NATIONAL TRUST’S TRIPLE BOTTOM LINE TOOL (ZANCHETI & SIMILĂ, 2012), which measures the impact of conservation efforts on people, money, and the environment, is one of the few approaches that takes environmental impacts into account as evaluation criterion. The theoretical foundations of this strategy come from frameworks for sustainable development, especially those established by the World Commission on Environment and Development, which defines sustainable development as “development

that meets the needs and aspirations of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development, 1987, p. 43).

Observations/Conclusions:

After reviewing the Three Techniques of Assessment for Value of Living Heritage, some Conclusions/Observations were noted:

- The core city has a strong linkage with the River Ganges and many of the religious and recreational activities are performed on the riverfront. The micro-economy of the area is heavily dependent on the River and associated activities and decision on any one of these activities may result in the disruption of the economic model of the place.
- The Stock of the old structures define them in four categories:
 - Buildings not maintained and left to deteriorate
 - Buildings reused for catering to religious or touristic purposes.
 - Buildings still maintaining their age-old residents and functions.
 - Buildings which have been totally modified as per modern needs.
- The City Level study defines the concept of inter-dependencies on the various activities for the functioning of one typology of structure.
- The ownership pattern of the buildings also defines the willingness of the owner to generate capital of a self-sustaining model building.
- Various Government policies related to Cleaning River Ganges, developing a no development Zone 200 meters from the river edge, HRIDAY scheme for Core Historic/Heritage Zones, PRASADA scheme for developing the inner core cities in India, Smart City Mission for the Cities of India, and various other such policies have been studied and evaluated for their potentials and shortcomings by me. I have concluded that the trio of Ecology, Economy, and Heritage needs to be tied up in one string of thought and policy, if the inner core regeneration is to be guided in the right direction where we can preserve the essence of the value and identity of the place effectively.

It would be particularly interesting to generate a cultural and ecological value-based assessment model which can help in regenerating Indian Cities. It would certainly be worthwhile to take a comprehensive view of the growth of the city core, which has seen generations of change and adaptation. The old city core has also been instrumental in preserving and maintaining the identity of the place as well as associational value with the ecology around it.

The tangible fabric of a place and the intangible aspects that give it meaning are inseparable. To discuss Living Heritage in terms of proximity to water and understanding the importance of values, I have selected heritage places where I have personally experienced this relationship and can narrate the stories with tangible and intangible values working here. They represent different periods and comprise built heritage, cultural landscapes, and living heritage places. According to the case studies and the focus of research along the Living Heritage settlements along the rivers, most of the sites have a strong relationship with the religious and spiritual aspects of traditional communities. Therefore, it is essential that the

study of these heritage sites needs to emphasize not only the physical structure of heritage buildings but also the relationship of the heritage buildings to the lifestyles of local people in communities who live and use heritage buildings in their daily lives.

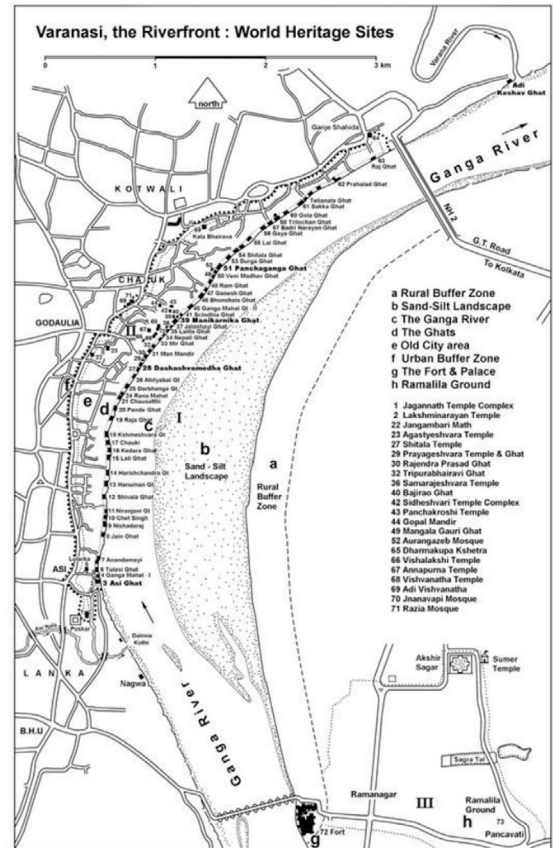


Figure 5: Map of Varanasi showing the various Ghats along the River Ganges. (Source: Dr. P.B. Rana, 1994.)

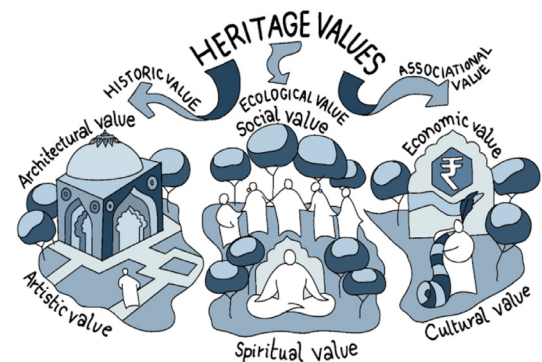


Figure 6: Classification of Heritage Values in Historic Settlements along the River. (Source: Rishikant Patra.)

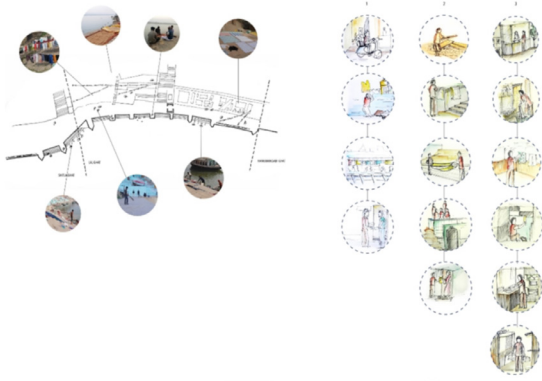


Figure 7: Case Example of a Ghat/Land and Water Interface: Lal Ghat, Varanasi/Benares. (Source: Author.)



Figure 8: Illustration showing Government Policies and its impact on the River and Heritage Settlements with case example of Varanasi as a Regenerative City. (Source: Rishikant Patra.)

- Example of Living Heritage Places: In Varanasi, the intangible activity of basket weaving by the womenfolk staying along the river Ganges and using the banks of the river to engage in the act of generating a micro-economy — the act of weaving baskets which are sold in the nearby market for various activities give a socio-economic connotation to the spatial activity performed near the river Ganges.
- Example of Cultural Landscape: The ritual of death has a close association with the river in the Hindu religion as well as various other rituals which need to be performed on the banks of the river can also be considered as examples of Living Heritage as they associate the activity with the historic, sacred place.
- Example of Built Heritage: The relation between the river and the land is explored in Varanasi in multiple ways as per the function of the place, neighborhood characteristics, social structure of the community living there and the activities associated with it all reflect the Living Heritage aspect which is quite inclusive and relatable to the people-centric bottom-up approach to heritage conservation in traditional Indian cities.

As the research work is still under progress, the findings may not be the final outcomes of the research, but surely form an important stepping stone in the process of developing a framework for future policy development in the city of Varanasi. The old city fabric of Varanasi on one hand is part of the Smart City Mission initiatives and on the other hand has been nominated to be included as a World Heritage City. It will be interesting to understand through this process of research how Varanasi as a city along the banks of the Ganges river will regenerate and evolve for future generations.

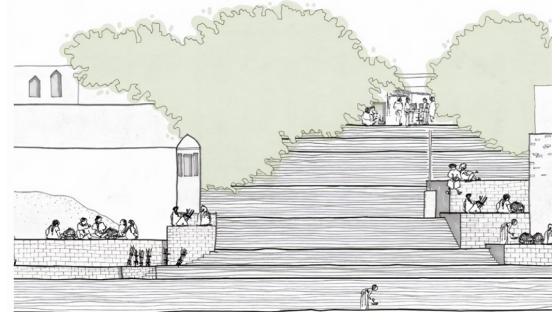


Figure 9: Sketch View and Photo showing Sakha Ghat, Varanasi where the ghat becomes an interface between land and river as well as an extension of activities such as basket weaving. (Source: Author.)

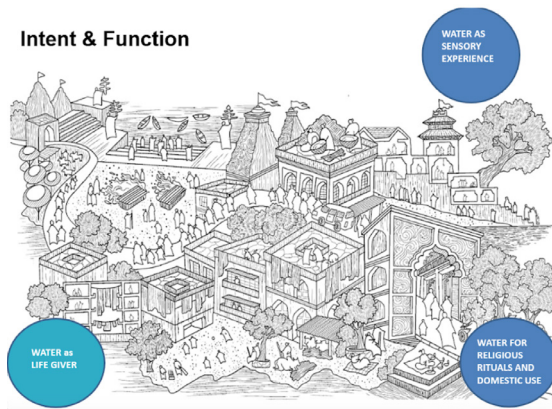


Figure 10: Illustration showing the Intent and Function of the River and Heritage Settlements with case example of Varanasi as a Regenerative City. (Source: Rishikant Patra.)

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