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Policy Brief

SYNCHRONICITY OF NATURE AND CULTURE ALONG GANDAK RIVER

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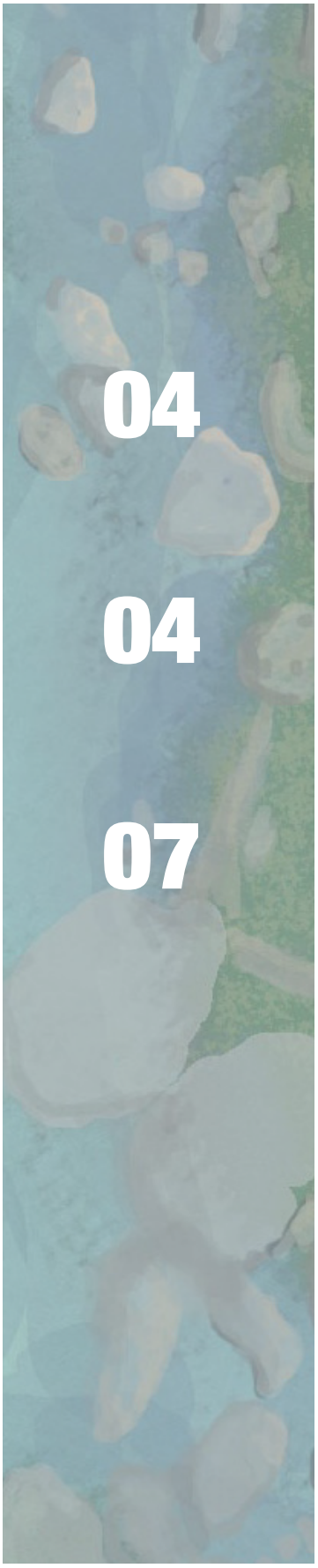

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Original Connection of the river and the sites

The Gandak, like every other river and water resource in the world, is a source of ecological sustenance. It is considered sacred and holds great cultural significance, and has inspired many cultural heritage sites located along its banks. The study has observed various connections and similarities among the three settlements (Valmiki Nagar, Hajipur, and Sonepur) as there is a striking linkage between the river and the identified sites. The riverfront development in these three towns, located on the banks of the Gandak, differed from the historic riverfront cities like Varanasi and Mathura.

The dynamics of the relationship between the Gandak and the cities located along its bank differed (Acharya & Prakash, 2018). Majority of the sites that developed along the river were Hindu and Buddhist places of worship (Singh, 2018). These sites were generally located on a higher ground, while the river was accessed only through certain points along the ghats. As opposed to continuous ghats, cities located along the Gandak had limited access points to the river. Most of the riverbank was covered in natural vegetation, and any development, such as the establishment of places of worship or traditional housing, was done with a barrier of vegetation/trees at the riverbank. This arrangement ensured the protection of the river as well as the land. Essentially, the foreground of the riverfront appeared to be lined with trees and few ghats, while the background was the silhouette of the identified sites.

This served two purposes: firstly, the view of the river from limited access points, while the whole riverbank was covered with vegetation, led to a sense of awe and an element of surprise. Secondly, the natural barrier diminished the destructive effects of the river during monsoons as it helped bind the silt and soil of the riverbank (Chaudhary P. C., 1962). This system of development ensured a symbiotic relation between nature and culture.

Eventually, these settlements, especially the town of Hajipur, saw a wave of construction. Through the records of gazetteers, it is evident that in British India several developments were made along the river. Sites like a school, a racecourse, and a dance club were established in Hajipur (Chaudhary P. R., 1962). This was done by disturbing the connection of the land with water, which eventually resulted in the river changing course. Everything except the school was submerged in the river, and further development along the river was stopped.

Current Situational Analysis

Considering the ecological and cultural importance of these towns for the locals, the places receive high footfall during certain months of the year. To cope with the demands of the ever-increasing visitor footfall, several uninformed developments have been made in these towns. Additionally, developments are also being made by the local authorities to attract visitors for generating revenue.

1. **The DISCONNECTION of nature and culture — lack of awareness among policy makers, local authorities, and the community**

While the sacred and cultural significance of Gandak and the identified sites is well understood by the policy makers, local authorities, and the community, it has always proved difficult to translate that on paper or on the ground. It is evident that the river, its ecology, and the cultural landscape are interlinked, and it would not be sensible to look at these aspects through different lenses. The current situation clearly indicates that people understand the significance of the river and the cultural landscape as different entities and have completely bypassed the deep relation between nature and culture. In the absence of a holistic understanding, several on-ground blunders have materialised which, if left unchecked, could have a lasting impact.

2. Absence of development plans for cities/ towns, and gaps in the existing Master Plan and City Development Plans

Presently, apart from Hajipur, no developmental plans have been prepared for Sonepur, Valmiki Nagar, or any other cities/towns located along the stretch of the Gandak. This is a big gap in itself as haphazard development schemes are proposed and approved in the absence of any development plan. In terms of regional planning, Hajipur and Sonepur have been considered in the Patna Metropolitan Area, but there is no clear mandate on riverfront development.

Even the City Development Plan (CDP) of Hajipur has failed to identify significant cultural heritage sites and the association of some of those sites with the Gandak. Here also, ecology and culture have been separated, and no common ground has been devised to understand that connection. The plan mentions strategies like the creation of cultural complexes and community centres to safeguard and promote heritage sites. In no way does it address the rich urban heritage of Hajipur or the historic fabric of the riverfront (Ernst & Young, 2009).

Even though the city of Patna is not a part of this case study, the master plan prepared for this city showcases the major issues which are now prevailing in the entire region. As per the report titled Comparison and Contrast of River Consideration in the Master Plans of Selected Cities (NIUA, 2020), there are eleven parameters based on which the planning of urban river management is done:

a. River-sensitive Vision/ Objectives
b. River Background
c. River Zone Delineation
d. Urban Flooding
e. Land Use, Use Zone, and Use Premise
f. Development Control Regulations
g. Groundwater Augmentation
h. River Water Extraction for city use
i. River Pollutants and Pollution Level
j. River Navigation
k. River Ecology/ Environmental Services

The Master Plan of Patna 2031 only addresses four parameters out of the eleven listed above, without adding any details. The three major parameters i.e., river-sensitive vision/objectives, river zone delineation, and river ecology is not addressed in the master plan, while the development control regulations are vague and incoherent (Urban Development & Housing Department Patna, Bihar, 2015). This has resulted in proposals of several poorly planned development and infrastructure projects, majorly focused on riverbanks, which are currently in the process of being executed on ground. These projects are discussed in detail in the next section.

3. The 'planned' developmental approach

Several projects have materialised over the years that have had a lasting impact on the ecology and cultural landscape of the region. In the absence of any policies or management plans aimed at safeguarding the interest of this delicate fabric, local authorities have made huge constructional blunders. Some of them are:

a. **Marine Drive of Valmiki Nagar** – In order to increase the visitor footfall, the forest department and local authorities of Valmiki Nagar constructed a vehicular roadway along the river in 2019. The idea behind this development was to let the visitors enjoy the views of the mountains of Nepal while driving along the river (Dharmendra, 2020). However, to facilitate this construction, the connection between land and the river was interrupted and hundreds of trees were cut down. Conversation with the locals has disclosed that this has disturbed the course of not just the Gandak, but the Panchnad and the Sonha as well, because of which the sangam or meeting point of the three rivers has retreated by a few hundred metres. Moreover, this has also affected the movement of wildlife in the forests of Valmiki Nagar and the trash generated by the visitors is disturbing the ecology of the river.

b. **Walkway on Gandak, Sonepur** – An awkward construction in the form of a concrete walkway was built in Sonepur to link the Kali Mandir with the Naulakha Mandir, further connecting it to the old Sonepur-Hajipur Bridge. With concrete pillars embedded in the riverbed of the Gandak, the walkway was constructed with the idea of appreciating the view of the river. Instead, it has severed the original connection of land with the river. Until a few years ago, the view of Sonepur from Hajipur had huge trees lining the bank of the Gandak, with occasional sites popping out of the tree line. Today, this walkway has become the centre of attraction. Like the case of Valmiki Nagar, elements which were supposed to be in the foreground have become the background, while the immaculate tree lined riverbank is being turned into a dump yard.

c. **Concretization of Riverbank** – With the increase in population, the demand to access the river has also increased, especially during festivities. To meet these demands, the local authorities have been on a spree to make concrete ghats along the river. Though the need to build such amenities is understandable, the construction of these ghats is being done without proper assessment of the land or flow of river. This has resulted in degradation of concretised ghats only a few years after their construction and has also led to several accidents.

d. **Demolition of Heritage Sites –** While no such measures have been taken in the three settlements, the inclusion of Hajipur and Sonepur in the Patna Metropolitan Area gives an indication of a forthcoming disaster. Recently, a Dutch building located on the banks of the River Ganga was demolished in order to make way for a flyover (Kumar, 2023). Many such incidents have occurred in Patna and other historic cities of the region in the last few years. Just like the Marine Drive of Valmiki Nagar, the Marine Drive of Patna or the JP Ganga Path was inaugurated this year in June. Located along the bank of the Ganga and with a length of 20.5 km, the stretch has become a favoured hangout spot for the locals (Tripathi, 2022). Large piers have been raised along the riverbank and on the riverbed of the Ganga to create this stretch which has completely compromised the floodplain of the river and hence its ecology.

With these kinds of projects in the pipeline, one can only wonder whether, in the absence of stringent policies and development plans, riverfronts of these towns would suffer the same fate.

Strategies and recommendations

The strategies and recommendations for policy consideration should be addressed at two levels to protect the sanctity of this cultural landscape i.e., regional level and settlement level. These strategies are discussed in detail in the following sections.

A. Regional Plan

The strategies and recommendations for policy consideration should be addressed at two levels to protect the sanctity of this cultural landscape i.e., regional level and settlement level. These strategies are discussed in detail in the following sections.

1. Designation of Cultural Landscape of the Gandak River – A joint strategy for protecting the ecological and cultural heritage of the region

The micro-climate, hydrological system, and regional topography of the Gandak river has resulted in a landscape which is rich in ecological resources. Human intervention in this ecological landscape has provided a cultural perspective to the region, leading to the evolution of this cultural landscape. ICOMOS defines cultural landscapes as the cultural properties that represent 'combined works of nature and man'. It means that the ecological feature of the region has cultural and religious nuances attached to them, and therefore no planning or conservation strategies should be proposed in isolation.

The strategy should also include the protection and conservation of the **historic cultural route** located along the river and all the sites related to it.

2. Reviving the historic landscape at the land-water interface

As discussed in the above sections, the historic land-water interface was lined with trees of native species which protected the riverbanks and checked erosion. The revival process should begin with the delineation of the river zone, which would further help in marking prohibited, restricted, and regulated areas.

Prohibited activities zone - This zone extends from the riverbank to the outer edge of the floodplain and beyond. These zones are the areas which are subjected to frequent flooding and are most vulnerable to the adverse impacts of human activities. If the foodplain is marked by the presence of ecologically sensitive and fragile watersheds, heritage sites, areas with outstanding beauty, areas which are genetically diverse and important for rare and endangered species, national parks, biosphere reserves, wildlife sanctuaries etc., then the whole area will be included under this zone irrespective of the above criteria (Town and Country Planning Organisation, 2021).

Restricted activities zone - Restricted activities zone includes the floodplain areas which are less frequently affected by the floods and lie farther from the river.

Regulated activities zone - This zone extends up to 3 km from the outer limits of the restricted activities zone. Certain activities will be permitted in this zone. Activities which are not permitted are: bunding, dumping of solid waste, construction of new embankment, land reclamation, storage of inflammable and toxic materials, and withdrawing water for commercial purposes other than hydro power and irrigation projects (Town and Country Planning Organisation, 2021).

This would further require afforestation activities along the riverbank; the planting palette should be decided as per historic accounts and should only include native species in the absence of any account. Moreover, remnants of historic groves should be protected and connected according to the dendritic pattern of all stream orders in the cultural landscape.

3. **Urban and infrastructure development of the region apart from riverbanks to be guided by existing topography, geology, natural drainage, and traditional water management system**

In order to ensure that proposed/ongoing urban and infrastructure developments do not pose any permanent damage to the ecology of the region, it is extremely vital to understand the existing topography, geology, natural drainage, watershed, and traditional water management system of the entire region. This can be explained through a few cases, the first one being the development of roads, canals, or dams. Proposals for any such development should be done after a careful survey of topography, geology, and natural drainage.

4. **Notification of cultural heritage and ecological resources in the Master Plan as a part of cultural landscape**

The cultural heritage resources should be identified in the master plan, where significance of its connection should also be highlighted. Ecological resources such as forests, riparian zones, groves, and water bodies etc should be notified as ecological hotspots, biodiversity zones, or significant open space systems – depending on the characteristics of the resources.

5. **Preparation of a regional interpretation strategy to create public awareness and**

6. **A nodal agency to be proposed under an institutional framework of different departments of the state which would include multidisciplinary experts**

   The cell will be constituted with experts like ecologists, wildlife biologists, landscape architects, environment planners, urban planners, conservation architects, hydrologists, archaeologists, transport and mobility planners, sociologists, GIS experts, legal and litigation experts, representatives of key stakeholders (such as nagar panchayat, municipal corporations, forest department, local community, state archaeology, ASI, etc.) etc.

   This strategy will ensure that a multi-disciplinary approach is followed for the preparation of regional plans and development plans. Furthermore, the agency will be responsible for the approval of any project after a thorough impact (environmental, heritage etc) assessment. This will ensure that the development projects do not have any adverse impact on the natural and cultural heritage of the region.

   The cell should be the key agency in working towards the mapping of natural and cultural (tangible and intangible) heritage resources, which should eventually lead to their protection or notification in the master plan. The cell will be responsible for awareness creation and educational programs, organising promotional programs, etc. The cell will also be responsible for monitoring the execution of works on site.

7. **Safeguarding of intangible cultural assets through notifications in the Master Plan**

8. **Inclusion of a Risk Preparedness Plan in the regional plan**

B. City/town level Development Plans

The settlement level plan will include strategies which will address issues at micro-level i.e., the settlements located along the river and in the cultural landscape. The recommendations for city development plans are listed below.

1. **To maintain the interlinkages and interaction at the land-water interface to safeguard the cultural practices and retain the historic urban fabric**

   Rivers are the source for habitation and a thriving culture. Any planning policy and intervention should respect and acknowledge the river as a valuable asset and reverse the idea of the city turning their back on the river. On the one hand, we have riverfront development schemes which mostly don't consider the ecology of the river, and on the other hand, most of the sewage and waste gets discharged into the river. In order to ensure that the interlinkages and interaction at the land-water interface are maintained, strict guidelines and bye-laws prohibiting any kind of disruption at this interface should be in place.

2. **Identification of heritage beyond isolated monuments and structures to 'significant areas rich in ecological and cultural heritage resources'** (International Charter for the Conservation and Restoration of Monuments and Sites (The Venice Charter, 1964),

3. Notification of Cultural Heritage Resources in the Master Plan

4. Risk Preparedness Plan for the Historic Cores to be included in the development plans

Risk Preparedness Plan involves measures designed either to prevent hazards from creating risks or to lessen the distribution, intensity or severity of hazards. It also involves planning of long-term activities whose goals are to strengthen the overall capacity and capability of a community to efficiently manage all types of emergencies and bring about an orderly transition from relief through recovery. Formulation of the preparedness plan is necessary, as the river is prone to flooding, and the region is situated in Zone IV of high-risk earthquake zones in India. Other possible threats for the region are forest fires and armed conflict. This is essential not only for the residents of this region but also because of the large number of tourists that visit each year.

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