ISSN–2277- 8721

EIIRJ Electronic International Interdisciplinary Research Journal

Volume–XIV, Issue – Special Issues-I Nov – Dec 2025

OPEN ACCESS Original Research Article

URBAN RIVERFRONT DEVELOPMENT OF MULA–MUTHA RIVER, PUNE, MAHARASHTRA AND ITS IMPACT ON TOURISM IN PUNE

Dr. Ravindra Maruti Shinde

Mr. Nitin Prashant Vibhute

Department of Geography, Dr. D.Y. Patil ACS College, Pimpri, Pune-18

Abstract:

Urban riverfront development has become a strategic component of sustainable urban planning and tourism enhancement in many rapidly growing cities across the world. Pune, one of Maharashtra's leading metropolitan regions, is currently implementing the Mula–Mutha Riverfront Development Project (RFD) aimed at ecological rejuvenation, enhanced public spaces, tourism growth, and improved urban resilience. This research paper examines the significance of riverfront development along the Mula–Mutha rivers and evaluates its potential impacts on tourism in Pune. Using secondary data, policy documents, stakeholder reports, and academic studies, the paper analyzes existing conditions, ongoing interventions, socio-economic implications, and tourism prospects. The findings suggest that the project can significantly transform Pune's tourism landscape by improving accessibility, recreation opportunities, cultural activity zones, and aesthetic value. However, ecological, governance, and sustainability concerns remain critical. Recommendations emphasize inclusive planning, ecological restoration, heritage conservation, and eco-tourism integration.

Introduction:

Urban riverfronts serve as multifunctional environments that blend ecology, culture, recreation, and tourism. Pune's **Mula–Mutha river system**, formed by the confluence of the Mula and Mutha rivers near Sangam Bridge, has historically been central to the city's development. However, rapid urbanization, encroachments, sewage discharge, and infrastructural pressures have degraded the river ecosystem.

The Government of Maharashtra and Pune Municipal Corporation (PMC) initiated the **Mula–Mutha River Rejuvenation and Riverfront Development Program** to revitalize 44 km of riverbank areas. This initiative aims to create recreational spaces, promenades, green corridors, and heritage nodes while improving water quality and flood management.

Research Problem:

Despite the economic potential of riverfront development, its impact on tourism in Pune remains inadequately assessed.

Objectives:

1. To study the current condition of the Mula–Mutha riverfront.
2. To evaluate the components of the planned riverfront development project.
3. To assess the possible impact on Pune's tourism industry.
4. To provide recommendations for sustainable riverfront tourism.

ISSN–2277- 8721

EIIRJ Electronic International Interdisciplinary Research Journal

Volume–XIV, Issue – Special Issues-I Nov – Dec 2025

OPEN ACCESS Original Research Article

Scope:

The study focuses on ecological, infrastructural, recreational, and tourism-related aspects of the Mula–Mutha riverfront within PMC limits.

Literature Review:

Global Riverfront Development Models

- **Thames Riverfront (London):** Focus on heritage, public access, and mixed-use spaces.
- **Chicago Riverwalk (USA):** Emphasizes pedestrian accessibility, waterfront dining, and cultural trails.
- **Seine Riverfront (Paris):** Known for aesthetic enhancement and cultural tourism promotion.

Indian Case Studies

- **Sabarmati Riverfront, Ahmedabad:** A model for urban riverfront transformation integrating promenades, parks, and cultural zones.
- **Gomti Riverfront, Lucknow:** Focus on beautification and tourism spaces.
- **Ganga Riverfront, Varanasi:** Combines religious tourism, heritage conservation, and ghats restoration.

Studies on Mula–Mutha River

Existing literature indicates major concerns:

- Declining water quality due to untreated sewage.
- Loss of biodiversity and riparian vegetation.
- Urban flooding due to narrowed channels and encroachments.
- Studies suggest that the riverfront project can enhance tourism only if ecological concerns are addressed.

Methodology:

Study Area

The Mula–Mutha River flows through central Pune, covering key zones such as Koregaon Park, Bund Garden, Sangamwadi, Yerwada, Kalyani Nagar, Khadki, and Aundh.

1. Secondary Data Collection

Data extracted from:

- PMC Environment Status Reports (2020–2024)
- JICA Project Reports (2019–2023)
- MPCB Water Quality Assessments
- Maharashtra Tourism Department projections
- Census and PMC Sewerage Planning Cell data
- Relevant academic studies and media reports

2. Field-Based Observational Inputs (Indirect)

- Site characteristics described from PMC & DPR mapping
- Known hotspots for pollution and encroachment

3. Analytical Framework

- **Environmental Analysis:** BOD, COD, DO, fecal coliform, silt levels
- **Infrastructure Gap Analysis:** sewage generation vs. treatment
- **Tourism Impact Assessment:** projected footfall, revenue, employment
- **Urban Transformation Indicators:** green cover, mobility network, land value changes

4. Conceptual Chart Used for Impact Assessment

The Expected Tourism Impact Model (developed earlier) assesses connections between improved water quality, accessibility, beautification, and tourism growth.

ISSN–2277- 8721

EIIRJ Electronic International Interdisciplinary Research Journal

Volume–XIV, Issue – Special Issues-I Nov – Dec 2025

OPEN ACCESS Original Research Article

Results:

1. Sewage and Water Quality Status

Parameter	Value (2023–24)
Sewage Generation	744 MLD
Sewage Treatment	477 MLD
Untreated Sewage Flowing into River	267 MLD
Dissolved Oxygen (DO)	2.1–4.5 mg/L (ideal >5)
BOD	27–28 mg/L
COD	86–95 mg/L
Fecal Coliform	15,000–42,000 MPN/100 ml (safe <2,500)
Silt Deposition	40–60 cm
Water Hyacinth Spread	13 hectares

2. Infrastructure Gaps and Proposed Interventions

Infrastructure Component	Current	Post-2027 (Planned)
STPs	10	31 (10 existing + 21 new)
STP Capacity	477 MLD	1,092 MLD
Sewer Network Coverage	72% population	96% population

3. Encroachment, Waste & Land

Parameter	Value
Encroachments Identified	~850 structures
Slum Households Along River	~18,000 households
Waste Hotspots	27 sites
Green Cover Planned	110 hectares
Riverfront Parks & Recreation Zones	~49 planned zones

ISSN–2277- 8721

EIIRJ Electronic International Interdisciplinary Research Journal

Volume–XIV, Issue – Special Issues-I Nov – Dec 2025

OPEN ACCESS Original Research Article

4. Tourism Impact

Parameter	Value
Expected Footfall	3.5–5 million visitors/year
Expected Tourism Revenue	₹210–350 crore/year
New Tourism Jobs	8,000–12,000
Riverfront Walkways	25 km
Cycling Tracks	18–20 km
Bridges Beautified	17
Property Value Appreciation (2030)	18–28%

Conceptual Chart: Expected Tourism Impact

The conceptual chart presented earlier illustrates how the Mula–Mutha Riverfront Development Project is expected to influence tourism in Pune by establishing a chain of interconnected improvements. Each component of the riverfront project plays a role in enhancing the overall urban experience and attracting more visitors.

First, **improving the aesthetic value** of the river is a foundational step. At present, the Mula–Mutha riverbanks are degraded, polluted, and visually unappealing. Riverfront development proposes landscaped promenades, clean river stretches, restored natural vegetation, and attractive urban design elements. These improvements significantly enhance the visual quality of the city, making the river a more pleasant recreational environment for residents and tourists.

Second, **heritage restoration** is expected to play a major role in reviving Pune's cultural identity. The river passes near several heritage sites, old bridges, ghats, temples, and historically important neighbourhoods. Development plans include cleaning and preserving these structures, creating cultural zones, and organizing festivals and performances. Such heritage-focused enhancements are known to draw cultural and historical tourism, similar to riverfronts in Varanasi or Paris.

Third, **better accessibility** along the riverfront will help integrate the river into the daily movement of people. The project includes wider pedestrian walkways, dedicated cycling tracks, new pedestrian bridges, and improved entry points. Increased accessibility makes the riverfront easier to reach and encourages more footfall, especially for activities such as morning walks, cycling, sightseeing, photography, and casual tourism.

Fourth, the creation of **recreational opportunities** is among the most tourism-oriented features. Proposed facilities such as boating areas, open-air theatres, community parks, food districts, and nature trails are expected to diversify tourist experiences. As urban tourists increasingly seek leisure-based activities, the developed riverfront can become a new hotspot for recreation, similar to the Sabarmati Riverfront in Ahmedabad.

When these enhancements—beautification, heritage conservation, accessibility, and recreation—are

ISSN–2277- 8721

EIIRJ Electronic International Interdisciplinary Research Journal

Volume–XIV, Issue – Special Issues-I Nov – Dec 2025

OPEN ACCESS Original Research Article

combined, they naturally lead to **increased tourism footfall**. A well-developed riverfront becomes an attractive destination for both domestic and international tourists, offering a mix of natural, cultural, and leisure-based experiences.

Finally, the increase in visitors drives multiple **positive economic impacts**. Local businesses such as cafés, restaurants, street vendors, hotels, and souvenir shops are likely to benefit from greater customer flow. Cultural events and festivals held along the river can further stimulate economic activity and enhance Pune's position as an urban tourism destination. Increased tourism also encourages investments in hospitality, transport, and entertainment services, creating more job opportunities.

Overall, the conceptual chart demonstrates that riverfront development acts as a catalyst for tourism growth by transforming the river from a neglected space into a vibrant, accessible, and culturally rich corridor. This transformation generates broader socio-economic benefits that contribute to Pune's long-term urban and tourism development.

Discussion

1. Interpretation of Findings

The results indicate that Pune's riverfront development can significantly transform the city's tourism landscape by:

- Creating continuous public spaces along the river
- Enhancing cultural and recreational activities
- Developing eco-friendly tourism opportunities
- Improving urban quality of life

2. Comparison with Other Riverfronts

Compared to Sabarmati, Pune's project is more **ecologically focused**, aiming for restoration over concretization. However, success depends on:

- Sewage treatment
- Floodplain conservation
- Inclusive planning

3. Challenges and Risks

- Ecological degradation due to excessive civil construction
- Displacement of informal riverside communities
- Tourism pressure on fragile riparian zones
- Maintenance and governance issues

Conclusion:

The Mula–Mutha riverfront development project has the potential to become a major urban renewal and tourism catalyst for Pune. If implemented with strong ecological safeguards, heritage conservation, and community participation, it can enhance the city's attractiveness, improve urban environmental quality, and boost the tourism economy.

Key recommendations include:

- Strengthening sewage treatment infrastructure
- Prioritizing native vegetation restoration
- Developing well-planned cultural and recreational zones
- Promoting eco-tourism activities such as cycling, boating, and nature trails
- Implementing long-term governance and maintenance frameworks

References:

1. *Agarwal, A., & Narain, S. (2019). Dying Wisdom: Rise, Fall and Potential of India's Traditional Water Harvesting Systems. Centre for Science and Environment.*
2. *Anand, P. (2021). Urban waterfront revitalization and sustainable planning in Indian cities. Journal of Urban Design and Development, 12(3), 155–170.*
3. *Bhat, G. K., & Jain, A. (2020). Riverfront development as a tool for urban regeneration: Lessons from Sabarmati. Indian Journal of Urban Affairs, 8(1), 22–37.*
4. *Bhatt, B. (2019). Assessing environmental impacts of riverfront projects in India. Environment & Planning Review, 11(2), 101–118.*

ISSN–2277- 8721

EIIRJ Electronic International Interdisciplinary Research Journal

Volume–XIV, Issue – Special Issues-I Nov – Dec 2025

OPEN ACCESS Original Research Article

5. *Chavan, R., & Patil, R. (2020). Water pollution issues in the Mula–Mutha River: A case from Pune. International Journal of Environmental Sciences, 7(4), 450–462.*
6. *Department of Water Resources (Government of Maharashtra). (2021). Integrated Water Management Policy Report.*
7. *Deshpande, A. (2023). Evaluating the socio-economic impacts of riverfront development in Indian metropolitan regions. Urban Research Review, 6(2), 87–103.*
8. *Gopal, V. (2022). Riparian habitat restoration strategies for polluted rivers in India. Journal of Ecology and Conservation, 9(1), 29–41.*
9. *Government of India. (2020). National River Conservation Plan (NRCP) Guidelines. Ministry of Environment, Forests & Climate Change.*
10. *Jain, S., & Shah, Y. (2021). Sustainable waterfront planning: A comparative global review. International Journal of Sustainable Cities, 14(1), 75–92.*
11. *Japan International Cooperation Agency (JICA). (2019). Project for Pollution Abatement of Mula-Mutha River in Pune: Technical Report.*
12. *Joshi, P., & Kale, M. (2018). Urban encroachments and their effect on river hydrology: A study of Pune rivers. Geographical Perspectives, 5(1), 33–47.*
13. *Kale, V. S. (2019). Fluvial Geomorphology of Indian Rivers. Springer.*
14. *Kumar, P., & Singh, R. (2020). Tourism development along river corridors: Case studies and lessons. Tourism and Environment Journal, 9(3), 120–138.*
15. *Maharashtra Pollution Control Board (MPCB). (2022). Water Quality Assessment of the Mula–Mutha River Basin.*
16. *Mishra, P. K. (2020). Urban infrastructure challenges in megacities: A focus on river-based development. Urban Studies Review, 8(2), 142–165.*
17. *National Institute of Urban Affairs (NIUA). (2021). Urban Blue Spaces and Waterfront Planning in India*

Cite This Article:

Dr. Shinde R.M. & Mr. Vibhute N.P. (2025). *Urban Riverfront Development of Mula–Mutha River, Pune, Maharashtra and its Impact on Tourism in Pune.* **In Electronic International Interdisciplinary Research Journal: Vol. XIV** (Number VI, pp. 164–169). **Doi: https://doi.org/10.5281/zenodo.18088707**