

Integrated Planning Framework for the Boatmen Community and Holistic Development Along the Assi–Dashashwamedh Stretch, Varanasi

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Abstract—The riverfront of Varanasi is one of the most significant cultural, religious, and tourism landscapes in India, attracting millions of visitors annually. River-based tourism plays a vital role in the local economy, with the boatmen community serving as a key stakeholder in providing tourism services and facilitating visitor experiences. Despite their contribution, the community continues to face socio-economic challenges including income instability, seasonal dependency, limited institutional support, governance exclusion, and inadequate livelihood diversification.

This study examines the existing tourism system and assesses the vulnerabilities affecting the boatmen community along the Varanasi riverfront. The research is based on field surveys, stakeholder interactions, socio-economic analysis, and spatial assessment of tourism activities. The findings reveal that while tourism growth has increased economic opportunities within the city, its benefits have not been equitably distributed among local stakeholders, particularly the boatmen community.

To address these challenges, the study proposes a Community-Led River Tourism and Boatmen Resilience Framework that integrates livelihood

development with sustainable tourism planning. The framework emphasizes institutional inclusion, tourism integration, skill development, social security, community infrastructure, and livelihood diversification as key strategies for strengthening the river economy. A spatial tourism structure and phased implementation framework have also been developed to support long-term and inclusive riverfront development.

The proposed framework aims to transform the existing informal tourism economy into a resilient and community-driven system that enhances livelihood security, promotes participatory governance, and supports sustainable tourism growth. The study concludes that integrating local communities into tourism planning is essential for achieving balanced riverfront development and ensuring the long-term sustainability of Varanasi's river tourism sector.

Index Terms—River Tourism, Boatmen Community, Livelihood Resilience, Community-Led Development, Inclusive Tourism, Riverfront Planning, Sustainable Tourism, Participatory Governance, Varanasi, River Economy.

I. INTRODUCTION



Figure: 01

1.0 Chapter Overview

This chapter introduces the overall context of the research and establishes the relationship between tourism growth, riverfront development, mobility systems, livelihood dependency, and governance challenges within Varanasi. The chapter explains how religious tourism acts as a major economic driver while simultaneously creating spatial and operational pressure on riverfront systems. It further discusses the significance of the Assi–Dashashwamedh stretch as a critical tourism and livelihood corridor and establishes the need for an integrated planning framework.

The chapter also defines the research problem, objectives, scope, methodology, and expected outcomes of the study.

1.1 Introduction to Tourism and Urban Development

Tourism has emerged as one of the most influential sectors contributing to urban and regional development across the world. It not only generates economic growth but also influences infrastructure development, employment generation, public space transformation, transportation systems, cultural exchange, and environmental management. In developing countries like India, tourism functions as a major catalyst for local economic development, especially within culturally and spiritually significant cities.

Urban tourism systems are closely connected with mobility infrastructure, public amenities, spatial organization, governance frameworks, and socio-economic networks. As tourism activities increase, cities experience growing pressure on roads, public spaces, transportation corridors, environmental systems, and public services. Therefore, tourism planning today is not limited to destination promotion but also includes urban management, carrying capacity regulation, environmental sustainability, mobility integration, and inclusive livelihood generation.

Religious tourism forms one of the strongest tourism sectors in India. Pilgrimage cities attract millions of

visitors every year and generate extensive informal and formal economic systems. However, the absence of integrated planning often creates congestion, environmental degradation, operational inefficiency, and infrastructure overload. Riverfront cities particularly experience greater pressure because tourism, mobility, rituals, public gatherings, and ecological systems coexist within limited spatial environments.

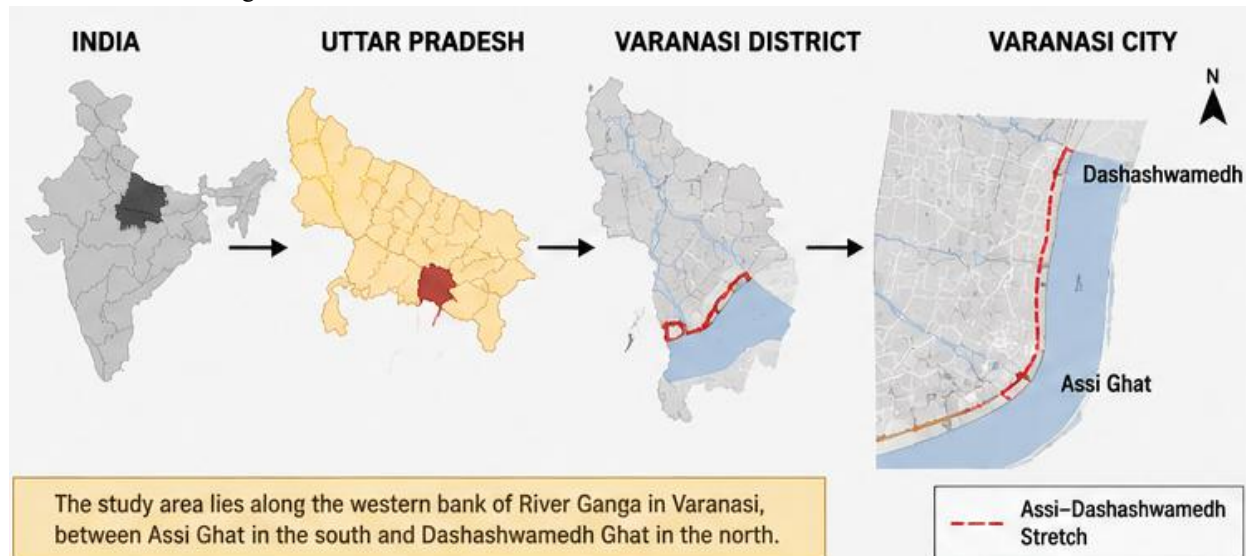
The relationship between tourism and urban development is therefore multidimensional. Tourism improves economic opportunities and infrastructure investment, but unmanaged tourism growth can negatively affect environmental quality, public accessibility, and local communities. Sustainable urban tourism planning requires a balance between economic development, cultural preservation, environmental protection, and social inclusion.

Tourism is one of the fastest-growing sectors globally and acts as a major driver of economic growth, employment generation, infrastructure development, and cultural exchange. In India, religious tourism forms a significant component of domestic tourism and contributes extensively to urban economies, local livelihoods, and regional development.

Cities with strong religious identities attract millions of visitors annually and generate large-scale economic activities through transportation, hospitality, cultural services, ritual functions, and informal economic systems. However, the growth of tourism also increases pressure on infrastructure, public spaces, environmental systems, and governance mechanisms.

Religious tourism corridors often experience overcrowding, congestion, mobility conflicts, waste generation, environmental degradation, and unequal distribution of economic benefits. Therefore, integrated planning becomes essential to ensure sustainable tourism development while protecting cultural identity and supporting local communities.

1.2 Varanasi as a Religious Tourism Hub



Varanasi, also known as Kashi or Banaras, is one of the oldest continuously inhabited cities in the world and represents the spiritual identity of India. Located along the western bank of the River Ganga in Uttar Pradesh, the city has immense religious, historical, cultural, and tourism significance. Varanasi is regarded as the spiritual capital of India and attracts pilgrims, tourists, researchers, spiritual seekers, and international visitors throughout the year.

The city is deeply associated with Hindu philosophy, rituals, traditions, cremation practices, spiritual learning, and sacred geography. The riverfront ghats of Varanasi form the most iconic and active public spaces within the city. These ghats are used for ritual bathing, religious ceremonies, evening Ganga Aarti, tourism activities, cultural performances, festivals, social interaction, and transportation.

Religious tourism in Varanasi contributes significantly to:

- A. Local employment generation
- B. Informal economic activities
- C. Transportation services
- D. Hotel and hospitality sectors
- E. Street vending and retail economy
- F. Boat tourism operations
- G. Cultural tourism activities

Recent infrastructure projects, tourism promotion schemes, improved transportation connectivity, and national religious tourism initiatives have significantly increased tourist inflow into the city. According to tourism estimates, Varanasi receives millions of visitors annually, making it one of India's

largest religious tourism destinations. However, this increasing tourism demand has also intensified pressure on:

- a. Riverfront infrastructure
- b. Public accessibility
- c. Boat operations
- d. Safety systems
- e. Environmental quality
- f. Public amenities
- g. Mobility systems
- h. Livelihood systems

The riverfront therefore functions not only as a sacred landscape but also as a high-pressure urban tourism corridor requiring integrated and sustainable management. Varanasi, located along the River Ganga in Uttar Pradesh, is regarded as the spiritual capital of India and one of the oldest continuously inhabited cities in the world. The city attracts millions of domestic and international visitors annually due to its religious significance, cultural heritage, ghats, temples, rituals, and spiritual environment.

The riverfront of Varanasi functions as the most important public and religious space in the city. The ghats act as centers for religious ceremonies, social interaction, tourism activities, ritual bathing, cultural performances, and economic activities. The Assi-Dashashwamedh stretch represents the most active and heavily utilized part of the riverfront. This stretch accommodates a large number of boat operations, ritual activities, tourism movement, and informal livelihood systems.

1.3 Background of the Study

2. STUDY AREA – ASSI TO DASHASHWAMEDH STRETCH



Figure-02

The Assi–Dashashwamedh stretch represents the most active section of the Varanasi riverfront. The stretch accommodates intense tourism activities, ritual functions, boating operations, informal vending, cultural events, and community-based livelihood systems. The corridor acts as a spatial, economic, cultural, and operational spine of riverfront tourism.

The rapid increase in tourism over the last decade has transformed the riverfront into a highly congested and operationally stressed environment. Boat density has increased substantially without corresponding improvements in navigation systems, docking infrastructure, operational regulation, or governance coordination. Major ghats experience severe

overcrowding during morning rituals and evening Ganga Aarti events.

The riverfront currently faces several interrelated challenges:

- 1.3.1 Spatial Challenges
- 1.3.2 Mobility Challenges
- 1.3.3 Environmental Challenges
- 1.3.4 Governance Challenges
- 1.3.5 Livelihood Challenges

The boatmen community forms the backbone of river tourism operations in Varanasi. Their livelihood is directly linked with tourism demand and boating activities. Despite their central role within the tourism system, the community continues to experience economic vulnerability and operational insecurity.

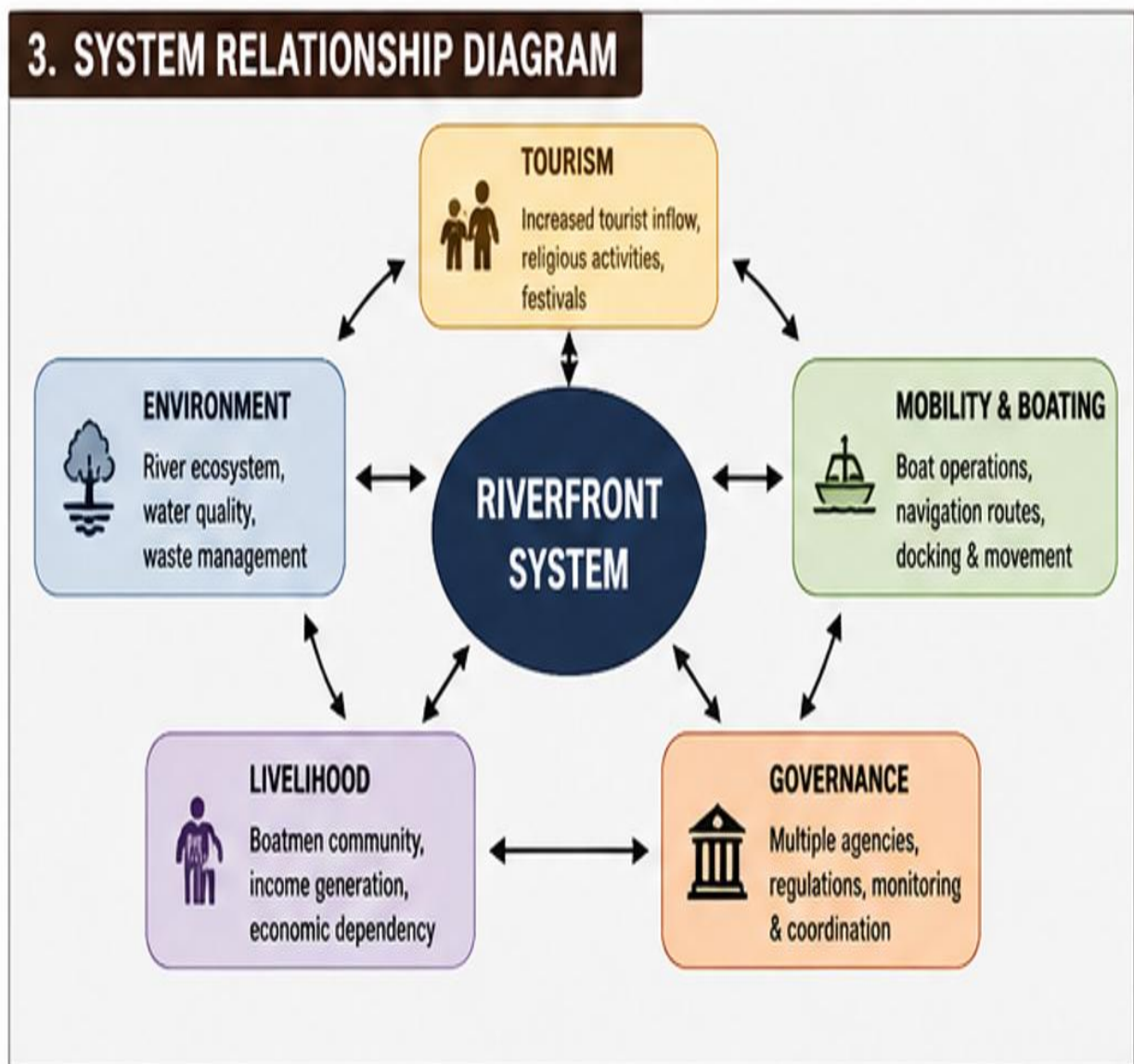


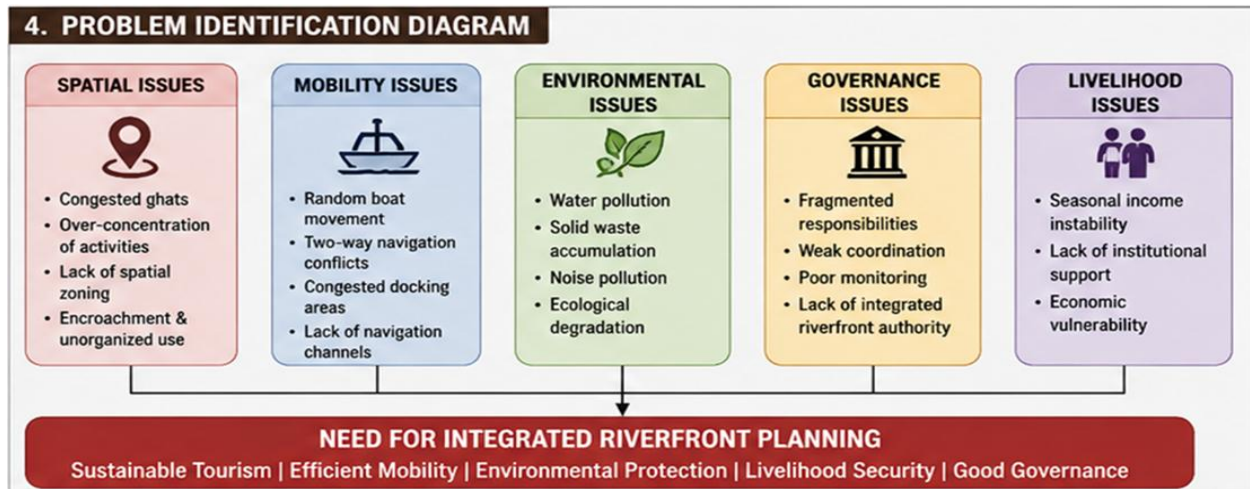
FIGURE:03

This study therefore attempts to understand the riverfront as a complex interconnected system and proposes an integrated planning framework that combines mobility management, tourism regulation, infrastructure planning, environmental sustainability, governance coordination, and livelihood protection. In recent years, tourism growth in Varanasi has increased significantly due to religious tourism promotion, infrastructure development projects, improved connectivity, and national-level initiatives. Although tourism has generated economic opportunities, the rapid increase in tourist footfall has also intensified pressure on the riverfront system.

1.4 Problem Statement

The Assi–Dashashwamedh riverfront stretch is operating under severe tourism and operational pressure due to increasing tourist demand, unregulated boat movement, inadequate infrastructure, fragmented governance systems, and absence of integrated riverfront management.

The lack of spatial zoning, navigation management, carrying capacity regulation, and coordinated institutional mechanisms has created multiple system failures affecting mobility efficiency, environmental quality, tourist experience, and livelihood sustainability.



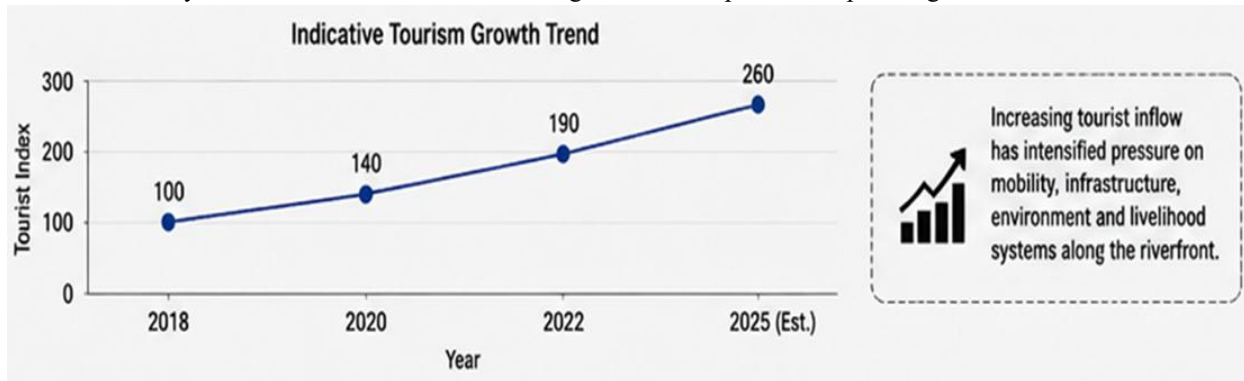
Source: Authors interpretation, Primary Survey

1.5 Need for the Study

The riverfront of Varanasi represents a complex urban system where tourism, mobility, ritual functions, livelihoods, governance, and environmental systems are interconnected. Existing

development approaches primarily focus on beautification and infrastructure creation without addressing operational and systemic challenges.

This study attempts to bridge these gaps through a comprehensive planning framework.



Source: Authors interpretation, Primary Survey

1.6 Aim

To develop an integrated planning framework for the boatmen community and holistic riverfront development along the Assi–Dashashwamedh stretch in Varanasi.

1.7 Objectives

1. To analyze the spatial structure and tourism dynamics of the riverfront.
2. To study boat operations, mobility patterns, and navigation conflicts.
3. To assess socio-economic conditions of the boatmen community.
4. To identify governance, infrastructure, and environmental challenges.
5. To propose an integrated riverfront planning framework for sustainable tourism and livelihood development.

1.8 Scope of the Study

The study focuses on:

- a. Riverfront tourism systems
- b. Boat mobility and navigation
- c. Spatial and activity analysis
- d. Livelihood conditions of boatmen
- e. Infrastructure gaps
- f. Governance mechanisms
- g. Sustainable planning strategies.

1.9 Limitation of the Study

- a. Limited availability of real-time operational data.
- b. Seasonal variation in tourism patterns.
- c. Time constraints for large-scale primary surveys.
- d. Dependence on secondary institutional reports.

1.10 Research Methodology



Source: Authors interpretation, Primary Survey

II. STUDY AREA PROFILE AND SITE ANALYSIS

2.0 Chapter Overview

This chapter presents a detailed profile of the study area including spatial structure, tourism characteristics, activity distribution, boat operations, environmental conditions, accessibility systems, and governance context. The chapter establishes the physical and operational character of the Assi–Dashashwamedh stretch and identifies major spatial and functional challenges.

2.1 Introduction

The study area includes the Assi–Dashashwamedh stretch located along the River Ganga in Varanasi. This stretch is the most active tourism and boating corridor within the Varanasi riverfront system.

2.2 Study Area Delineation

Stretch Length: Approximately 2.5–3 km

Number of Ghats: 15–18 major ghats.

Number of Boats: Approximately 500–700 boats during peak season.

Major Activities

2.3 Why this Stretch was selected
Source : Vda, Upt

The Assi–Dashashwamedh stretch was selected because:

2.4 Spatial Structure

The riverfront functions as a continuous linear public edge with interconnected activity zones.

The ghats display hierarchical and functional variation:

2.5 Visitor Dynamics

Tourism activities are concentrated around:

This creates temporal imbalance and localized congestion.

2.6 Boat Operations

Boat operations are concentrated near major ghats.

Key issues include:

2.7 Infrastructure Analysis

Existing infrastructure gaps include:

2.8 Environmental Conditions

The riverfront experiences:

2.9 Governance Structure

Multiple agencies are involved in riverfront management including:

2.10 Study Area Conclusion The Assi–Dashashwamedh stretch represents a high-pressure

tourism corridor requiring integrated planning intervention.

III. PROPOSAL FRAMEWORK

3.0 Introduction

The previous chapters established that the Assi–Dashashwamedh riverfront stretch is one of the most active tourism corridors in Varanasi. The area experiences high tourism demand, intense boat activity, significant livelihood dependence, and increasing environmental and governance challenges.

3.1 PROPOSAL – I

Proposal Framework: Integrated River Tourism Management Plan (IRTMP–2045)

3.1.1 Introduction to Proposal Framework

The proposal framework forms the foundation of IRTMP–2045 and integrates six major components: Tourism Management, Mobility Management, Infrastructure Development, Governance Integration, Livelihood Integration, and Environmental Management. These components work collectively to achieve sustainable river tourism development.

3.1.2 Tourism Management Framework

The tourism management framework focuses on improving visitor experience and reducing tourism pressure on major ghats. Strategies include carrying-capacity assessment, visitor flow management, tourism diversification, digital ticketing systems, and development of alternative tourism nodes.

The framework aims to distribute tourists more evenly across the riverfront and reduce congestion at Assi and Dashashwamedh Ghats.

3.1.3 Mobility Management Framework

The mobility framework seeks to regulate river transport and improve connectivity. Designated navigation corridors, structured boat routes, organized boarding facilities, and integrated pedestrian networks are proposed to improve operational efficiency and safety.

3.1.4 Infrastructure Development Framework

Infrastructure interventions include floating jetties, information centers, waiting areas, signage systems, lighting improvements, sanitation facilities, and universal accessibility measures.

These facilities are intended to improve visitor comfort and support future tourism growth.

3.1.5 Governance Integration Framework

The governance framework establishes mechanisms for coordination among tourism authorities, municipal agencies, environmental institutions, and local stakeholders. A unified management structure is proposed to streamline planning and implementation processes.

3.1.6 Livelihood Integration Framework

The proposal recognizes boatmen as key stakeholders in river tourism. Skill development, financial inclusion, tourism training, and livelihood diversification programs are proposed to strengthen socio-economic resilience.

3.1.7 Environmental Management Framework

Environmental interventions focus on pollution control, waste management, river conservation, ecological restoration, and climate resilience. Sustainable tourism practices and environmental awareness programs are also proposed.

3.1.8 Integrated Systems Approach

The six strategic components are interconnected and operate as part of a unified planning system. Improvements in tourism management influence mobility efficiency, while governance reforms support infrastructure development and environmental protection

3.2 Expected Outcomes of the Framework

The framework is expected to improve visitor satisfaction, reduce congestion, strengthen livelihoods, improve environmental quality, and establish efficient governance mechanisms.

3.3 Phase-wise Development Framework

3.3.1 Need for Phased Development

Given the complexity of the riverfront system, implementation must occur gradually. A phased approach enables efficient allocation of resources, institutional capacity building, and progressive achievement of long-term objectives.

3.3.2 Phase I (2025–2030): System Stabilization and Operational Regulation

This phase focuses on establishing basic regulatory and management systems. Key interventions include carrying-capacity assessment, boat registration, navigation regulation, crowd management measures, and initial infrastructure improvements.

Pilot projects for smart monitoring and digital information systems shall also be introduced.

3.3.3 Phase II (2030–2038): Integrated Tourism and Mobility Development

The second phase emphasizes expansion of tourism infrastructure and mobility systems. Secondary tourism nodes shall be developed, navigation corridors strengthened, and tourism redistribution strategies implemented.

Environmental management systems and digital tourism services shall be expanded during this phase.

3.3.4 Phase III (2038–2045): Resilient and Sustainable River Tourism Corridor

The final phase focuses on advanced tourism management systems, climate-resilient infrastructure, ecological restoration, and adaptive governance mechanisms.

The objective is to establish a globally competitive and sustainable river tourism destination.

3.3.5 Phase-wise Outcomes

The phased development strategy will ensure gradual transformation of the riverfront while minimizing disruption to existing activities and livelihoods.

3.4 Strategy Matrix

3.4.1 Unregulated Boat Movement and Navigation Conflicts

Integrated river mobility management is proposed to regulate boat movement through designated navigation corridors and organized docking facilities.

3.4.2 Over-Concentration at Major Ghats

A multi-node tourism development strategy is proposed to distribute tourism activities across multiple ghats and reduce excessive pressure on primary tourism destinations.

3.4.3 Weak Tourism Infrastructure

The proposal recommends development of integrated tourism infrastructure, including floating jetties, information centers, waiting areas, and public amenities.

3.4.4 Fragmented Governance

A unified governance framework is proposed to improve coordination among institutions and streamline implementation processes.

3.4.5 Vulnerable Boatmen Economy

Livelihood enhancement programs, training initiatives, and community participation mechanisms are proposed to strengthen economic security.

3.4.6 Environmental Degradation
Eco-sensitive tourism management strategies shall be implemented to improve environmental quality and ecological resilience.

3.4.7 Strategic Outcomes
The Strategy Matrix provides a roadmap for achieving balanced tourism growth, improved governance, stronger livelihoods, and environmental sustainability.

3.5 Strategic Spatial Structure Plan – 2045

This section translates the planning vision into a physical development framework.

The spatial structure plan establishes a hierarchy of tourism nodes, mobility corridors, tourism infrastructure zones, ecological buffers, and heritage conservation areas. Assi Ghat and Dashashwamedh Ghat function as primary tourism nodes, while intermediate ghats support tourism diversification and local economic development.

The plan proposes a continuous pedestrian heritage spine, river mobility corridor, jetty development network, and environmental protection zones. Together, these interventions create a structured and accessible riverfront corridor capable of supporting future tourism demand.

3.6 Implementation and Governance Framework

The implementation framework identifies institutional responsibilities, funding mechanisms, and monitoring systems required for successful execution of the proposal.

A Unified River Tourism Management Authority is proposed as the nodal institution responsible for planning, coordination, monitoring, and stakeholder engagement. Government agencies, local authorities, tourism organizations, environmental institutions, and community groups shall work collaboratively under this framework.

The proposal also emphasizes public-private partnerships, community participation, and performance-based monitoring systems to improve accountability and implementation efficiency.

3.7 Expected Impacts of IRTMP–2045

The implementation of IRTMP–2045 is expected to generate significant tourism, economic, social, environmental, and governance benefits.

Tourism impacts include improved visitor experience, increased tourism diversification, and reduced congestion. Economic impacts include employment generation, increased local income, and expansion of tourism-related businesses. Social impacts include stronger community participation and improved quality of life. Environmental impacts include enhanced river health, pollution reduction, and ecological restoration. Governance impacts include improved institutional coordination and evidence-based decision-making.

3.8. Conclusion

The Integrated River Tourism Management Plan (IRTMP–2045) provides a comprehensive framework for transforming the Assi–Dashashwamedh riverfront into a sustainable, inclusive, and resilient tourism corridor. Through the integration of tourism management, mobility planning, infrastructure development, governance reforms, livelihood enhancement, and environmental conservation, the proposal addresses the key challenges identified during the study.

The successful implementation of the proposed framework will not only improve tourism operations and visitor experience but also strengthen local livelihoods, protect environmental resources, and preserve the cultural identity of Varanasi for future generations.

3.9. Introduction

River tourism plays a significant role in the socio-economic structure of Varanasi, with the boatmen community acting as one of its most important stakeholders. Despite their contribution to the tourism experience, boatmen continue to face challenges related to income instability, seasonal dependence, limited institutional support, and exclusion from decision-making processes. In response to these issues, the Community-Led River Tourism and Boatmen Resilience Framework is proposed to strengthen livelihood security.

3.10. Need for the Proposal

The vulnerability assessment revealed that tourism growth along the ghats has not resulted in proportional socio-economic benefits for the boatmen community. Existing tourism activities largely operate through informal systems, resulting in limited

economic security and weak institutional representation. The dependence on seasonal tourism further increases livelihood vulnerability and restricts opportunities for long-term development. These conditions highlight the need for a planning framework that integrates boatmen into formal tourism systems while ensuring greater participation, resilience, and access to economic opportunities. While promoting inclusive and sustainable tourism development along the riverfront.

3.11. Inclusive River Economy Framework

The proposed framework is based on the concept of a community-led river economy that places local stakeholders at the center of tourism development. The framework promotes governance inclusion, tourism integration, skill enhancement, livelihood diversification, social security, and community infrastructure development as interconnected components of a resilient tourism system. Through these interventions, the proposal seeks to transform the existing tourism economy into a more inclusive structure where local communities actively participate in and benefit from tourism growth.

3.12. Spatial Community Tourism Structure

To support the framework, a spatial tourism structure has been developed along the Assi–Dashashwamedh riverfront stretch. The strategy identifies Assi Ghat as a cultural tourism node, intermediate ghats as community interaction spaces, and Dashashwamedh Ghat as a major tourism hub. These nodes are connected through a continuous river economy corridor that strengthens tourism movement, community participation, and local economic activities. Organized boarding facilities and tourism support infrastructure are proposed to improve operational efficiency, visitor experience, and overall tourism management.

3.13. Phase-wise Development Framework

The implementation strategy is structured as a phased development process extending to the year 2045. The first phase focuses on institutional integration through registration, governance inclusion, and capacity-building initiatives. The second phase emphasizes tourism diversification by promoting community tourism hubs, cultural tourism activities, and infrastructure improvements. The final phase

focuses on establishing a resilient river economy through participatory governance systems, smart tourism management, and long-term economic sustainability measures. This gradual approach ensures a realistic and achievable transition from an informal tourism system to a community-led and resilient tourism economy.

3.14. Expected Outcomes

The implementation of the proposed framework is expected to improve livelihood security, strengthen institutional participation, and create new economic opportunities for the boatmen community. The proposal will contribute to a more balanced distribution of tourism activities along the riverfront while enhancing the quality of tourism services and infrastructure. In the long term, it will support the development of a resilient river economy that promotes social inclusion, economic stability, and sustainable tourism growth.

3.15. Conclusion

The Community-Led River Tourism and Boatmen Resilience Framework provides a strategic approach for integrating boatmen into the formal tourism economy of Varanasi. By combining institutional reforms, spatial planning interventions, and community participation mechanisms, the proposal aims to create a more inclusive, resilient, and sustainable river tourism system. The framework not only addresses existing vulnerabilities but also establishes a foundation for long-term socio-economic development and sustainable riverfront management.

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