

TOURISM DEVELOPMENT PLAN FOR TRICHURAPALLI

A Thesis Project
submitted in partial fulfillment of the requirements for
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Bachelor of Planning

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May 2026

DECLARATION

I **REGASH K.** Scholar No **2211002143** hereby declare that the thesis titled **TOURISM DEVELOPMENT PLAN FOR TIRUCHIRAPPALLI** submitted by me in partial fulfilment for the award of degree of Bachelor of Planning, at Maulana Azad National Institute of Technology, Bhopal, India, is a record of Bonafide work carried out by me. The matter/result embodied in this thesis has not been submitted to any other University or Institute for the award of any degree or diploma.

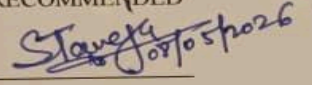

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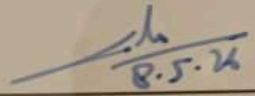
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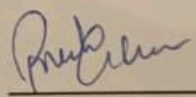
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सारांश

तिरुचिरापल्ली (ट्रिची), जो तमिलनाडु के भौगोलिक केंद्र में स्थित है, दक्षिण भारत के प्रमुख तीर्थ एवं विरासत पर्यटन स्थलों में से एक है। यह शहर कावेरी डेल्टा क्षेत्र का मुख्य केंद्र है और यहाँ विश्व प्रसिद्ध धार्मिक स्थल स्थित हैं, जिनमें श्रीरंगम का श्री रंगनाथस्वामी मंदिर शामिल है, जो 156 एकड़ क्षेत्र में फैला विश्व का सबसे बड़ा कार्यरत हिंदू मंदिर परिसर माना जाता है। इसके अतिरिक्त, कावेरी और कोल्लिडम नदियों के किनारे समृद्ध पारिस्थितिक पर्यटन संसाधन भी मौजूद हैं। इतनी महत्वपूर्ण पर्यटन संपत्तियों के बावजूद, ट्रिची अब तक एक स्वतंत्र पर्यटन गंतव्य के बजाय मुख्यतः एक ट्रांजिट नोड के रूप में कार्य करता रहा है, क्योंकि यहाँ एकीकृत पर्यटन योजना ढाँचे की कमी रही है।

यह शोध प्रबंध (थीसिस) तिरुचिरापल्ली के लिए एक “एकीकृत पर्यटन विकास योजना” (Integrated Tourism Development Plan – ITDP) प्रस्तुत करता है, जिसका उद्देश्य वर्ष 2045 तक शहर को विश्वस्तरीय, सतत एवं विरासत-आधारित पर्यटन गंतव्य के रूप में विकसित करना है। अध्ययन में ट्रिची की पर्यटन क्षमता को दर्शाने वाले पाँच प्रमुख स्थलों को शामिल किया गया है: रॉकफोर्ट मंदिर (धार्मिक विरासत), श्रीरंगम मंदिर (तीर्थ पर्यटन), सेंट लॉर्ड्स चर्च (औपनिवेशिक धार्मिक विरासत), मुक्कोम्बु बैराज (जल विरासत एवं इको-लीजर), तथा ट्रॉपिकल बटरफ्लाई कंजरवेटरी या बर्ड्स एंड बटरफ्लाई पार्क (इको-टूरिज्म एवं पर्यावरण शिक्षा)।

अध्ययन की कार्यप्रणाली एक संरचित एवं डेटा-आधारित योजना दृष्टिकोण पर आधारित है, जिसमें स्थानिक विश्लेषण, फील्ड सर्वेक्षण, पर्यटन रुझानों का सांख्यिकीय मूल्यांकन, अवसंरचना अंतराल विश्लेषण, तथा तमिलनाडु इंटीग्रेटेड टूरिज्म प्रमोशन प्रोजेक्ट (TNITPP) 2024, तिरुचिरापल्ली मास्टर प्लान 2045 और तमिलनाडु राज्य पर्यटन नीति 2023 जैसे नीति ढाँचों के साथ समन्वय शामिल है। पर्यटन आगमन के आँकड़ों के अनुसार, वर्ष 2023 में पर्यटकों की संख्या 2.49 करोड़ तक पहुँची, जिसमें 6.3 प्रतिशत की वार्षिक संयुक्त वृद्धि दर (CAGR) दर्ज की गई। अनुमान है कि 2045 तक यह संख्या 6.66 करोड़ तक पहुँच जाएगी, जिसके लिए अग्रिम अवसंरचना, स्थानिक एवं आवासीय योजना आवश्यक होगी।

योजना में वर्तमान चुनौतियों की पहचान की गई है, जिनमें 259 होटल कमरों की वर्तमान कमी (जो 2045 तक बढ़कर 21,204 हो सकती है), इको-टूरिज्म स्थलों तक अपर्याप्त अंतिम-मील कनेक्टिविटी, विरासत स्थलों पर भीड़भाड़, तथा पर्यटकों के लिए बिखरा हुआ अनुभव शामिल हैं। इन चुनौतियों के समाधान हेतु चार एकीकृत हस्तक्षेप प्रस्तावित किए गए हैं:

(P1) HOHO इलेक्ट्रिक बस सेवा सहित एकीकृत इको-हेरिटेज पर्यटन सर्किट,

(P2) कावेरी एवं कोल्लिडम नदी तट विकास और बाढ़ प्रबंधन,

(P3) AI-सक्षम भीड़ एवं विरासत प्रबंधन प्रणाली, तथा

(P4) इको-टूरिज्म अवसंरचना एवं आवास विकास।

योजना का कार्यान्वयन चरणबद्ध रणनीति के माध्यम से किया जाएगा, जो TNITPP के “फ्लैगशिप हब” दृष्टिकोण के अनुरूप है तथा सार्वजनिक-निजी भागीदारी (PPP) आधारित बहु-हितधारक प्रशासनिक ढाँचे द्वारा समर्थित है।

ABSTRACT

Tiruchirappalli (Trichy), located at the geographic heart of Tamil Nadu, is one of South India's foremost pilgrimage and heritage tourism destinations. The city anchors the Cauvery Delta region, hosting globally significant religious sites—including the Sri Ranganathaswamy Temple at Srirangam, which is the world's largest functioning Hindu temple complex spanning 156 acres—alongside rich ecological assets along the Cauvery and Kollidam rivers. Despite this remarkable concentration of tourism assets, the city has historically functioned more as a transit node than a destination in its own right, lacking a unified and integrated tourism planning framework.

This thesis presents an Integrated Tourism Development Plan (ITDP) for Tiruchirappalli, proposing a comprehensive, evidence-based framework for transforming the city into a world-class, sustainable heritage tourism destination by 2045. The study covers five key sites representing the full spectrum of Trichy's tourism potential: Rockfort Temple (sacred heritage), Srirangam Temple (pilgrimage), St. Lourdes Church (colonial-religious heritage), Mukkombu Barrage (hydraulic heritage and eco-leisure), and the Tropical Butterfly Conservatory or Birds and Butterfly Park (eco-tourism and environmental education).

The methodology adopts a structured, data-driven planning approach integrating spatial analysis, field-based surveys, statistical assessment of tourism trends, infrastructure gap analysis, and alignment with prevailing policy frameworks including the Tamil Nadu Integrated Tourism Promotion Project (TNITPP) 2024, the Tiruchirappalli Master Plan 2045, and the Tamil Nadu State Tourism Policy 2023. Tourist footfall data reveals that arrivals reached 2.49 crore in 2023 with a Compound Annual Growth Rate (CAGR) of 6.3 per cent, and projections indicate 6.66 crore visitors by 2045—necessitating proactive spatial, infrastructure, and accommodation planning.

The plan identifies critical challenges including a current deficit of 259 hotel rooms (escalating to 21,204 by 2045), inadequate last-mile connectivity to eco-tourism sites, overcrowding at heritage precincts, and a fragmented visitor experience. In response, four integrated intervention streams are proposed: (P1) a Unified Eco-Heritage Tourism Circuit with Hop-On Hop-Off (HOHO) Electric Vehicle bus service; (P2) Riverfront and Flood Management along the Cauvery and Kollidam; (P3) AI-enabled Crowd and Heritage Management systems; and (P4) Eco-Tourism Infrastructure and Accommodation development. Implementation follows a phased strategy aligned with TNITPP's Flagship Hub designation and is supported by a multi-stakeholder governance framework incorporating public-private partnerships.

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I would like to express my sincere gratitude to my thesis guide for their invaluable guidance, constant encouragement, and scholarly insights throughout the course of this research. Their expertise in the domain of urban planning and tourism development has been instrumental in shaping this thesis project into its present form.

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CHAPTER 1

INTRODUCTION

1.0 Introduction

Tourism has emerged as one of the most significant drivers of economic growth, cultural exchange, and urban development in the contemporary world. In the Indian context, tourism contributes approximately five per cent of the national Gross Domestic Product (GDP) and supports millions of livelihoods across both formal and informal sectors (Ministry of Tourism, 2022). The sector encompasses a wide spectrum of activities ranging from pilgrimage and heritage tourism to eco-tourism, adventure tourism, and medical tourism, each contributing to the socio-economic fabric of host communities in distinct ways.

Urban planning, as a discipline, plays a critical role in ensuring that tourism growth is spatially organised, environmentally sustainable, socially inclusive, and economically viable. Without a structured planning framework, tourism development often leads to ad hoc urbanisation, environmental degradation, overcrowding at sensitive sites, and inequitable distribution of benefits. The integration of tourism planning with urban development strategies is therefore essential to realise the full potential of tourism assets while safeguarding the interests of local communities and the integrity of heritage resources.

India's temple cities and heritage towns, particularly in South India, represent a unique category of tourism destinations where sacred geography, historical architecture, riverine ecology, and living cultural traditions converge. Tiruchirappalli, commonly known as Trichy, is one such city that exemplifies this convergence. Situated at the heart of Tamil Nadu along the banks of the River Cauvery, Trichy has served for millennia as a sacred, administrative, and commercial hub. The city is home to the Sri Ranganathaswamy Temple at Srirangam—the world's largest functioning Hindu temple complex at 156 acres—and the iconic Rockfort Temple perched on a 3.8-billion-year-old granite formation that rises dramatically above the urban landscape.

Despite these extraordinary tourism assets, Trichy has historically functioned more as a transit node—a stopover between Chennai, Madurai, and Thanjavur—rather than a destination in its own right. Visitors typically spend less than one day in the city, resulting in limited economic impact from tourism and underutilisation of the city's diverse cultural, ecological, and heritage resources. This thesis seeks to address this fundamental gap by proposing an Integrated Tourism Development Plan (ITDP) for Tiruchirappalli that aims to transform the city from a transit node into a world-class, sustainable heritage tourism destination by 2045.

1.1 Background

Tiruchirappalli is a Tier-II city and the fourth-largest urban agglomeration in Tamil Nadu, with a metropolitan population of approximately 10.22 lakh as per the 2011 Census. The city is strategically located at the geographic centre of Tamil Nadu, approximately 330 kilometres south of Chennai and 130 kilometres north of Madurai. It occupies a pivotal position at the confluence of the Cauvery and Kollidam (Coleroon) rivers, which bifurcate at the Upper Anicut (Grand Anicut) near Mukkombu before flowing through the fertile Cauvery Delta region.

The historical significance of Tiruchirappalli extends back to the early Chola period (circa 3rd century BCE) and encompasses successive periods of rule under the Pallavas, the medieval Cholas, the Pandyas, the Madurai Nayaks, the Marathas, the Nawabs of the Carnatic, and the British colonial administration. Each of these historical epochs has left an indelible imprint on the city's built environment, religious landscape, and cultural practices. The temple gopurams of Srirangam, the rock-cut cave temples of Rockfort, the colonial churches, and the Islamic architecture of the Nawabi period collectively constitute a layered heritage landscape of exceptional richness and diversity.

The city's tourism profile is anchored by its religious and pilgrimage assets, which attract both domestic and international visitors. The Sri Ranganathaswamy Temple at Srirangam, dedicated to Lord Vishnu in his reclining form, is one of the 108 Divya Desams (sacred Vaishnavite shrines) and draws millions of pilgrims annually, with peak footfall during the Vaikunta Ekadasi festival in December. The Rockfort Temple complex, dedicated to Lord Thayumanavar and Lord Ucchi Pillayar, offers panoramic views of the city and the surrounding riverine landscape from its summit. Beyond these primary sacred sites, Trichy also hosts St. Lourdes Church (also known as Our Lady of Lourdes Shrine)—an 1895 Indo-Gothic basilica that serves as a major Catholic pilgrimage centre—and several other heritage structures of architectural and historical significance.

In addition to its built heritage, Trichy possesses significant ecological tourism assets. The Mukkombu Barrage (Upper Anicut), a hydraulic engineering marvel originally constructed during the Chola period and subsequently rebuilt by the British in 1836, serves both functional (irrigation management) and recreational purposes, attracting approximately 2.3 million visitors annually as an eco-leisure destination. The Tropical Butterfly Conservatory, popularly known as the Birds and Butterfly Park, located near Srirangam, is one of Asia's largest butterfly parks and serves as an important eco-education hub promoting biodiversity awareness.

Post-COVID, Trichy has demonstrated exceptional tourism resilience, with tourist arrivals recovering strongly and recording a Compound Annual Growth Rate (CAGR) of 6.3 per cent between 2016 and 2023. Total tourist footfall reached 2.49 crore (24.9 million) in 2023. However, this growth has been largely unplanned and organic, leading to significant infrastructure deficits, fragmented visitor circuits, overcrowding at heritage sites, and underutilisation of peripheral ecological assets. These challenges underscore the urgent need for a comprehensive and integrated tourism planning framework.

1.2 Importance of Selected Sites

The five sites selected for detailed analysis in this study collectively represent the full spectrum of Tiruchirappalli's tourism potential, ranging from cultural and heritage assets to urban and experiential attractions. The selection encompasses three thematic categories: sacred tourism, eco-tourism, and heritage tourism. Each site possesses unique characteristics, visitor profiles, and planning challenges that necessitate site-specific interventions within an integrated circuit framework.

1.2.1 Rockfort Temple

The Rockfort Temple complex is a historic hilltop temple-fort perched on an ancient granite rock formation that rises approximately 83 metres above the surrounding plain. The rock itself is estimated to be 3.8 billion years old, making it one of the oldest geological formations in the world. The temple complex combines Pallava-period rock-cut cave temples (7th century CE) with Nayak-period structures and the remains of a former military fortification. The site attracts approximately 15 lakh (1.5 million) visitors annually and serves as the most iconic visual landmark of Tiruchirappalli. Key planning insights indicate that while the site benefits from strong accessibility and a central urban location that make it a primary tourism anchor, significant challenges remain in terms of crowd management during peak periods, accessibility for elderly and differently-abled visitors, inadequate amenities along the steep climb, and the need for safety infrastructure improvements including railings, lighting, and emergency evacuation routes.

1.2.2 St. Lourdes Church (Our Lady of Lourdes Shrine)

St. Lourdes Church, also known as the Our Lady of Lourdes Shrine, is a historic Indo-Gothic basilica constructed in 1895 and is one of the most prominent Christian pilgrimage centres in Tamil Nadu. The church is renowned for its architectural grandeur, featuring Gothic arches, stained glass windows, and a towering spire that dominates the urban skyline of Teppakulam area. The site attracts a consistent flow of pilgrims throughout the year, with heightened activity during Christmas and Easter festivities. From a planning perspective, the church is a well-maintained site with reliable pilgrimage flow; however, it requires better integration into the broader tourism circuit through improved pedestrian connectivity, heritage lighting for night tourism promotion, activation of the adjacent Teppakulam pond for cultural events, and provision of basic visitor amenities including information signage, drinking water facilities, and shaded resting areas.

1.2.3 Mukkombu Barrage (Upper Anicut)

The Mukkombu Barrage, also known as the Upper Anicut, is a major hydraulic structure located at the point where the River Cauvery bifurcates into the Cauvery and Kollidam (Coleroon) channels. Originally constructed during the Chola dynasty and subsequently rebuilt by Captain Caldwell of the British East India Company in 1836, the barrage serves critical irrigation functions for the entire Cauvery Delta region while also functioning as a popular eco-leisure and weekend tourism destination. The site attracted approximately 2.3 million visitors in 2025 and possesses high potential for eco-tourism development. However, key planning challenges include limited accessibility and last-mile connectivity, inadequate

parking and visitor infrastructure, safety concerns related to Cauvery river flooding during monsoon seasons, and the absence of organised recreational zoning that could enhance visitor experience while protecting ecological values.

1.2.4 Birds and Butterfly Park (Tropical Butterfly Conservatory)

The Tropical Butterfly Conservatory, popularly known as the Birds and Butterfly Park, is an ecological and conservation-based tourism site located near Srirangam. It is one of the largest butterfly parks in Asia and serves as an important hub for biodiversity conservation awareness and environmental education. The park supports a diverse range of butterfly species and their host plants, alongside avian habitats and nature trails. The site has strong eco-tourism potential and is particularly suited for educational tourism targeting school groups and nature enthusiasts. However, it currently lacks adequate infrastructure and connectivity, especially for larger visitor groups, and suffers from limited parking facilities, insufficient sanitation infrastructure, and poor directional signage from main transport nodes.

1.2.5 Srirangam Temple (Sri Ranganathaswamy Temple)

The Sri Ranganathaswamy Temple at Srirangam is the largest functioning Hindu temple complex in the world, encompassing approximately 156 acres within seven concentric prakarams (enclosure walls). Dedicated to Lord Ranganatha (Lord Vishnu in his reclining form), the temple is one of the most sacred of the 108 Divya Desams and attracts millions of pilgrims and tourists annually. The temple's architectural magnificence, featuring the iconic 21-storey Rajagopuram (the tallest temple tower in Asia), elaborate mandapams, and intricately carved pillared halls, makes it a site of outstanding cultural and architectural significance. The temple is on UNESCO's Tentative List for World Heritage Site designation. Key planning challenges include extremely high footfall with severe peak seasonal congestion (particularly during the 21-day Vaikunta Ekadasi festival in December-January), safety concerns including stampede risks, vehicular intrusion into inner prakarams, unregulated street vending, inadequate crowd management systems, and the need for heritage-sensitive infrastructure upgrades that balance conservation imperatives with visitor comfort.

1.3 Need for Integrated Tourism Planning

Despite being identified as a flagship tourism hub under the Tamil Nadu Integrated Tourism Promotion Project (TNITPP) across four state tourism trail categories, Tiruchirappalli faces several critical challenges that necessitate integrated planning intervention. The city's tourism infrastructure has developed in a piecemeal and reactive manner, resulting in significant gaps and inefficiencies that undermine the overall visitor experience and limit the economic potential of the tourism sector.

A systematic assessment reveals that only five of the city's fourteen-plus tourist sites are fully equipped with adequate visitor amenities including parking, sanitation facilities, drinking water, information kiosks, and accessibility features. The absence of a Hop-On Hop-Off (HOHO) bus service and a unified tour card system means that visitors must independently navigate between dispersed attractions using fragmented and often unreliable local transport options. Poor last-mile connectivity to key sites such as Mukkombu Barrage and the Birds and Butterfly Park further exacerbates the fragmented visitor experience.

Safety and crowd management represent critical concerns, particularly at Srirangam Temple during peak festival periods and at Mukkombu during monsoon flooding. The projected accommodation deficit—from a current shortfall of 259 rooms to 21,204 rooms by 2045—poses a fundamental constraint on the city's capacity to absorb growing tourist volumes. Additionally, the lack of multilingual signage and integrated digital wayfinding systems limits the city's accessibility for non-Tamil-speaking domestic tourists and international visitors.

These interconnected challenges cannot be addressed through isolated, site-specific interventions alone. An integrated tourism development plan is required to coordinate spatial strategies, infrastructure investments, mobility improvements, accommodation development, heritage conservation measures, and governance frameworks across all five key sites and the broader urban context. Such integration is essential to create a coherent destination identity, optimise resource allocation, ensure equitable distribution of tourism benefits, and achieve sustainable growth that protects heritage and ecological values while enhancing the visitor experience.

1.4 Policy Context

This thesis is situated within a well-defined policy ecosystem that provides both the mandate and the framework for integrated tourism development in Tiruchirappalli. The plan is aligned with several key national and state-level policy instruments that collectively establish the strategic direction, institutional mechanisms, and funding pathways for tourism-led urban development.

1.4.1 Tamil Nadu Integrated Tourism Promotion Project (TNITPP) 2024

The TNITPP, supported by the Asian Development Bank (ADB), identifies Tiruchirappalli as a Flagship Tourism Hub and positions it as a key node across four thematic tourism trails: the Temple Trail, the Heritage Trail, the Eco-Tourism Trail, and the Cultural Trail. This designation enables Public-Private Partnership (PPP) investments and provides access to dedicated funding streams for tourism infrastructure development. The TNITPP framework emphasises integrated circuit development, heritage conservation, and sustainable tourism practices—principles that directly inform the proposals developed in this thesis.

1.4.2 Tiruchirappalli Master Plan 2045

The Tiruchirappalli Master Plan 2045, prepared by the Directorate of Town and Country Planning (DTCP), Tamil Nadu, provides the statutory land use framework and development control regulations for the city and its metropolitan area. The Master Plan identifies tourism zones, heritage precincts, and ecological corridors that align with the spatial strategies proposed in this thesis. Key provisions include the designation of heritage conservation zones around Srirangam and Rockfort, the identification of tourism accommodation nodes at Panjapur and other peripheral locations, and the protection of riverfront corridors along the Cauvery and Kollidam.

1.4.3 Tamil Nadu State Tourism Policy 2023

The Tamil Nadu State Tourism Policy 2023 articulates the state government's vision for making Tamil Nadu a leading global tourism destination. The policy emphasises the development of thematic tourism

circuits, the promotion of heritage and eco-tourism, the enhancement of tourist accommodation through diverse models including heritage homestays and boutique hotels, and the leveraging of digital technologies for visitor management and destination marketing. The policy provides the overarching strategic framework within which the site-specific and circuit-level proposals of this thesis are situated.

1.4.4 Other Relevant Policy Frameworks

Additional policy frameworks informing this study include the National Tourism Policy 2022 issued by the Ministry of Tourism, Government of India, which emphasises sustainable and responsible tourism development, community participation, and digital innovation; the Smart City Mission guidelines that provide frameworks for smart mobility, digital infrastructure, and data-driven urban management; and the Ancient Monuments and Archaeological Sites and Remains Act (AMASR Act) that governs heritage conservation requirements at protected monuments. The convergence of these policy instruments creates a supportive institutional environment for the integrated planning approach adopted in this thesis.

1.5 Aim of the Study

The aim of this thesis is to formulate an Integrated Tourism Development Plan (ITDP) for Tiruchirappalli that provides a comprehensive, evidence-based, and policy-aligned framework for transforming the city from a transit node into a world-class, sustainable heritage tourism destination by 2045. The plan seeks to achieve a balance between economic growth, heritage conservation, and environmental sustainability while ensuring long-term viability of tourism assets and equitable distribution of benefits to local communities.

1.6 Objectives

The study is guided by the following specific objectives:

First, to conduct a comprehensive spatial and infrastructure analysis of five key tourism sites in Tiruchirappalli—Rockfort Temple, St. Lourdes Church, Mukkombu Barrage, Birds and Butterfly Park, and Srirangam Temple—to identify existing gaps, constraints, and development potential.

Second, to analyse tourism trends, visitor footfall patterns, seasonal variations, and accommodation dynamics using statistical methods to establish an evidence base for demand-driven planning interventions.

Third, to formulate site-specific planning proposals for each of the five selected sites, addressing infrastructure deficits, accessibility improvements, heritage conservation needs, crowd management requirements, and visitor experience enhancement.

Fourth, to design an integrated tourism circuit connecting all five sites through a unified mobility framework incorporating HOHO EV bus services, digital wayfinding, and a common tour card system.

Fifth, to project accommodation requirements up to 2045 and propose a spatially distributed accommodation development strategy incorporating diverse typologies including star-rated hotels, budget accommodation, and heritage homestays.

Sixth, to develop a phased implementation roadmap with clear timelines, stakeholder responsibilities, governance mechanisms, and financing strategies for the realisation of the proposed interventions.

1.7 Research Questions

The study is framed around the following research questions that guide the analytical framework and ensure that all proposed interventions are grounded in real-world conditions, stakeholder needs, and site-specific challenges:

What are the existing spatial, infrastructural, and institutional gaps in Tiruchirappalli's tourism ecosystem that constrain its potential as a heritage tourism destination?

How can the five selected tourism sites be integrated into a unified and efficient tourism circuit that enhances visitor experience, improves mobility, and distributes economic benefits equitably?

What are the projected accommodation requirements for Tiruchirappalli up to 2045, and how can these requirements be met through spatially distributed and typologically diverse development strategies?

What governance mechanisms, financing models, and stakeholder partnerships are required to ensure the effective and sustainable implementation of the proposed tourism development plan?

1.8 Methodology

The study adopts a structured and data-driven planning approach that integrates spatial analysis, field-based surveys, and policy frameworks to formulate sustainable and context-responsive tourism development strategies. The methodology is organised into five sequential phases, each systematically structured to build upon the previous stage, enabling a logical progression from baseline analysis to the formulation of practical and implementable planning strategies.

Phase 1 (Literature Review and Policy Analysis) involved a comprehensive review of academic literature on tourism planning, heritage conservation, and sustainable tourism development, alongside a detailed analysis of relevant policy frameworks at the national, state, and local levels. This phase established the theoretical foundations and policy context for the study.

Phase 2 (Study Area Profiling) comprised the compilation and analysis of secondary data on Tiruchirappalli's demographic profile, geographic setting, administrative structure, economic base, transportation network, and existing land use patterns. Data sources included Census of India publications, DTCP reports, municipal records, and tourism department statistics.

Phase 3 (Site Analysis and Field Surveys) involved detailed site visits to all five selected tourism sites, during which primary data was collected through structured observation, photographic documentation,

infrastructure audits, visitor counts, and informal stakeholder interactions. Spatial analysis was conducted using available mapping resources to assess accessibility, connectivity, land use conflicts, and development potential at each site.

Phase 4 (Statistical and Data Analysis) encompassed the quantitative analysis of tourism footfall trends from 2016 to 2023, seasonal variation patterns, infrastructure gap assessment across sites, and accommodation demand projections using compound annual growth rate (CAGR) extrapolation methods aligned with state tourism targets.

Phase 5 (Plan Formulation) synthesised the findings from the preceding phases to develop site-specific proposals, an integrated tourism circuit plan, accommodation development strategies, and a phased implementation framework supported by governance and financing mechanisms.

1.9 Scope and Limitations

The scope of this study is limited to the five selected tourism sites within Tiruchirappalli and its immediate metropolitan area. While the city possesses additional tourism assets beyond these five sites, the selection was guided by representativeness across thematic categories (sacred, ecological, and heritage tourism), significance in terms of visitor footfall, and alignment with the TNITPP Flagship Hub framework. The study period for trend analysis covers 2016 to 2023, with projections extending to 2045.

Key limitations include the reliance on secondary data for certain demographic and tourism statistics where primary enumeration was not feasible within the thesis timeframe; the inability to conduct large-scale quantitative visitor surveys due to resource constraints; and the conceptual nature of certain proposals (such as the ropeway at Rockfort) that would require detailed feasibility studies, environmental impact assessments, and regulatory approvals beyond the scope of this academic exercise. Despite these limitations, the study provides a robust and actionable planning framework that can serve as a foundation for detailed project-level planning and implementation.

1.10 Organisation of the Report

This report is organised into thirteen chapters. Chapter 1 provides the introduction, background, objectives, and methodology. Chapter 2 presents a review of relevant literature. Chapter 3 profiles the study area. Chapter 4 contains detailed site analysis of all five selected sites. Chapter 5 presents statistical and data analysis. Chapter 6 discusses key issues and SWOT analysis. Chapter 7 articulates the vision and planning concept. Chapter 8 details site-specific proposals. Chapter 9 presents the tourism circuit plan. Chapter 10 addresses accommodation projections. Chapter 11 outlines phasing and implementation strategies. Chapter 12 discusses governance and financing. Chapter 13 concludes with a summary of findings and recommendations.

CHAPTER 2

LITERATURE REVIEW

2.0 Introduction

A comprehensive review of existing literature is essential to establish the theoretical foundations, conceptual frameworks, and empirical precedents that inform the formulation of an Integrated Tourism Development Plan for Tiruchirappalli. This chapter examines scholarly contributions across several interrelated domains: the conceptual evolution of tourism planning, heritage tourism and conservation, eco-tourism development, pilgrimage tourism, sustainable tourism frameworks, smart tourism technologies, tourism circuit planning, and accommodation planning. The review also examines relevant case studies from India and internationally that offer lessons for the Trichy context.

2.1 Conceptual Framework of Tourism Planning

Tourism planning as an academic and professional discipline has evolved significantly since the mid-twentieth century. Early approaches to tourism development were predominantly market-driven, focusing on maximising visitor numbers and revenue without adequate consideration of environmental, social, or cultural impacts (Gunn, 1988). The recognition that unplanned tourism growth could lead to environmental degradation, cultural commodification, and social displacement gave rise to more structured planning approaches beginning in the 1970s and 1980s.

Inskip (1991) provided one of the foundational texts on tourism planning, advocating for a comprehensive, integrated approach that considers the interrelationships between tourism development, infrastructure provision, environmental management, and community welfare. His framework emphasises the importance of aligning tourism development with broader regional and national development objectives—a principle that directly informs the methodology adopted in this thesis.

The concept of sustainable tourism, which emerged prominently following the Brundtland Report (1987) and the Rio Earth Summit (1992), further shaped tourism planning paradigms. The United Nations World Tourism Organization (UNWTO) defines sustainable tourism as "tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities" (UNWTO, 2005). This definition encapsulates the triple-bottom-line approach that guides the proposals developed in this study.

Butler's Tourism Area Life Cycle (TALC) model (1980) provides a useful analytical framework for understanding the developmental trajectory of tourism destinations. The model posits that destinations pass through stages of exploration, involvement, development, consolidation, stagnation, and either decline or rejuvenation. Applied to Tiruchirappalli, the city appears to be transitioning from the involvement to the development stage, with significant untapped potential that can be realised through strategic planning interventions before unsustainable patterns become entrenched.

2.2 Heritage Tourism and Conservation

Heritage tourism, defined as travel motivated by the desire to experience the places, artefacts, and activities that authentically represent the stories and people of the past and present (National Trust for Historic Preservation, 2015), constitutes a major segment of global tourism activity. In India, heritage tourism is intimately linked with pilgrimage, as many of the country's most significant heritage sites are also active places of worship. This dual character creates unique planning challenges that require balancing conservation imperatives with the functional requirements of living religious institutions.

Timothy and Boyd (2003) distinguish between tangible and intangible heritage, noting that effective heritage tourism planning must address both the physical fabric of heritage sites and the living cultural practices, rituals, and traditions that animate them. This distinction is particularly relevant to Srirangam Temple, where the architectural heritage of the seven prakarams coexists with daily religious rituals, seasonal festivals, and a vibrant bazaar culture that constitutes an essential component of the site's intangible heritage.

The concept of carrying capacity—the maximum number of visitors that a site can accommodate without unacceptable deterioration of the physical environment or the visitor experience—has been extensively discussed in heritage tourism literature (Coccossis and Mexa, 2004). Managing visitor flows within heritage precincts such as Srirangam and Rockfort requires the application of both physical carrying capacity assessments (related to spatial constraints and structural integrity) and perceptual carrying capacity evaluations (related to visitor satisfaction and the quality of the heritage experience).

The ICOMOS Charter for Cultural Tourism (1999) provides guiding principles for the management of heritage sites in the context of tourism, emphasising the primacy of conservation, the importance of community involvement, the need for sustainable economic returns, and the responsibility to present heritage authentically. These principles have been incorporated into the heritage management proposals for Srirangam and Rockfort developed in Chapter 8.

2.3 Eco-Tourism and Nature-Based Tourism

Eco-tourism, as defined by the International Ecotourism Society (TIES), is "responsible travel to natural areas that conserves the environment, sustains the well-being of the local people, and involves interpretation and education" (TIES, 2015). In the Indian planning context, eco-tourism has gained increasing policy attention as a strategy for diversifying tourism offerings, promoting biodiversity conservation, and generating livelihood opportunities in rural and peri-urban areas.

The Ministry of Environment, Forest and Climate Change (MoEFCC), Government of India, has issued comprehensive guidelines for eco-tourism in and around protected areas, emphasising the principles of minimal impact, environmental education, respect for local culture, and equitable benefit-sharing (MoEFCC, 2021). While Mukkombu and the Birds and Butterfly Park are not classified as protected areas, these principles provide a useful framework for developing eco-tourism infrastructure that is environmentally sensitive and educationally enriching.

Weaver (2001) distinguishes between "hard" eco-tourism (characterised by small groups, minimal infrastructure, and active environmental learning) and "soft" eco-tourism (characterised by larger groups, more developed infrastructure, and passive environmental appreciation). The proposals for Mukkombu and the Butterfly Park in this thesis adopt a balanced approach, incorporating elements of both hard and soft eco-tourism to cater to diverse visitor segments ranging from school educational groups to weekend leisure visitors.

Riverfront development as a form of nature-based tourism has received growing attention in Indian urban planning, with notable examples including the Sabarmati Riverfront in Ahmedabad and the proposed Chambal Riverfront in Kota. These projects demonstrate the potential of riverfront interventions to enhance urban amenity, create recreational spaces, improve flood management, and stimulate economic activity. The riverfront proposals for the Cauvery at Mukkombu draw upon these precedents while adapting design principles to the specific hydrological, ecological, and cultural context of Tiruchirappalli.

2.4 Pilgrimage Tourism in India

Pilgrimage tourism occupies a distinctive position in India's tourism landscape, accounting for a significant proportion of domestic tourist movements. Shinde (2012) notes that pilgrimage centres in India function as complex socio-spatial systems where sacred geography, urban morphology, commercial activity, and community life are deeply intertwined. The planning challenges at pilgrimage destinations are often distinct from those at secular tourism sites, involving issues of crowd management during peak festival periods, the spatial organisation of devotional circuits (pradakshina paths), the regulation of commercial activity in temple precincts, and the provision of basic amenities for large numbers of pilgrims from diverse socio-economic backgrounds.

The PRASAD (Pilgrimage Rejuvenation and Spiritual Heritage Augmentation Drive) scheme of the Ministry of Tourism, Government of India, provides both financial resources and planning guidelines for the development of infrastructure at major pilgrimage sites. Several aspects of the PRASAD scheme—including its emphasis on improved accessibility, sanitation, signage, security, and the development of pilgrim amenity centres—are reflected in the proposals for Srirangam Temple developed in this thesis.

Srirangam Temple presents a unique case study in pilgrimage tourism planning due to its scale (156 acres), its concentric spatial organisation (seven prakarams), the coexistence of residential neighbourhoods within the temple precinct, and the extreme seasonal variation in visitor flows between normal days and the 21-day Vaikunta Ekadasi festival. The literature on crowd management and safety at religious gatherings in India, including studies by Illiyas et al. (2013) on the Sabarimala pilgrimage and by Mehta et al. (2015) on Kumbh Mela crowd dynamics, provides relevant methodological insights for developing crowd management strategies at Srirangam.

2.5 Tourism Circuit Planning

The concept of a tourism circuit—a planned route connecting multiple attractions into a cohesive visitor experience—has been increasingly adopted in Indian tourism planning. The Swadesh Darshan scheme of the Ministry of Tourism has promoted circuit-based tourism development across fifteen thematic categories, including heritage circuits, spiritual circuits, eco-circuits, and coastal circuits. Circuit planning involves the integration of attractions, mobility networks, accommodation nodes, and support services into a seamless itinerary that enhances visitor experience, distributes economic benefits spatially, and encourages longer stays.

Lew and McKercher (2006) identify three typologies of tourist movement patterns within destinations: single-point patterns (where visitors focus on one attraction), base-camp patterns (where visitors use a single accommodation base to visit multiple sites), and circuit patterns (where visitors move sequentially through a planned route). The Integrated Tourism Circuit proposed for Tiruchirappalli aims to transform the predominantly single-point pattern (where visitors come primarily for Srirangam and depart) into a circuit pattern that encourages multi-site visitation and longer stays.

The concept of Hop-On Hop-Off (HOHO) bus services, widely adopted in European and Southeast Asian tourism destinations, provides a practical mobility solution for circuit-based tourism in cities with dispersed attractions. HOHO services in Indian cities such as Delhi, Agra, and Mumbai have demonstrated the viability of this model, though challenges related to route optimisation, frequency, pricing, and integration with existing public transport systems need to be carefully addressed in the Trichy context.

2.6 Smart Tourism and Digital Technologies

The application of digital technologies in tourism planning and management—commonly referred to as "smart tourism"—has emerged as a significant area of research and practice. Gretzel et al. (2015) define smart tourism as tourism supported by integrated efforts at a destination to find innovative ways to collect and aggregate data derived from physical infrastructure, social connections, and organisational sources, combined with the use of advanced technologies to transform that data into enhanced experiences and informed business decisions.

In the context of heritage and pilgrimage tourism, smart technologies offer particular value in crowd monitoring and management, digital wayfinding and navigation, real-time information dissemination, visitor behaviour analytics, and predictive capacity management. The AI-enabled crowd management system proposed for Srirangam in this thesis draws upon emerging applications of computer vision, IoT sensor networks, and machine learning algorithms for real-time crowd density estimation and flow prediction at mass gathering events.

Digital wayfinding systems, including multilingual mobile applications, interactive kiosks, and augmented reality (AR) navigation, can significantly enhance the visitor experience at complex heritage sites where spatial orientation is challenging. The implementation of a unified digital tour card system that integrates ticketing, transport access, and visitor information across all five sites would represent a significant step toward the smart tourism vision articulated in this plan.

2.7 Accommodation Planning for Tourism Destinations

Accommodation is a fundamental component of the tourism value chain, and its availability, diversity, quality, and spatial distribution significantly influence the economic impact, visitor experience, and environmental footprint of tourism at a destination. Smith (1994) notes that accommodation planning for tourism destinations must consider not only the quantum of rooms required but also the typological mix (luxury, mid-range, budget, and alternative accommodation), the spatial distribution (concentrated vs. distributed), and the relationship between accommodation nodes and attraction sites.

In the Indian context, the shortage of quality accommodation in Tier-II and Tier-III cities has been identified as a significant constraint on tourism growth (Ministry of Tourism, 2022). While metropolitan cities such as Delhi, Mumbai, and Bengaluru have well-developed hospitality sectors, heritage and pilgrimage towns such as Trichy, Hampi, and Varanasi often face acute accommodation deficits, particularly during peak festival periods. The concept of heritage homestays, promoted under the Tamil Nadu State Tourism Policy 2023, offers a promising model for expanding accommodation capacity while preserving built heritage and involving local communities in the tourism economy.

Demand projection methodologies for tourism accommodation typically employ a combination of trend analysis (using historical growth rates), benchmarking (comparing with similar destinations), and scenario planning (developing multiple growth scenarios based on different assumptions). The accommodation projection methodology adopted in this thesis uses CAGR-based extrapolation aligned with TNITPP targets, supplemented by typological and spatial distribution analysis to ensure that projected demand is met through a balanced mix of accommodation types distributed across multiple nodes rather than concentrated in the urban core.

2.8 Case Studies

2.8.1 Hampi Heritage Tourism Plan, Karnataka

The Hampi World Heritage Area Management Plan provides a relevant case study for heritage tourism planning in an Indian context. The plan addresses challenges similar to those faced at Srirangam, including the management of a large-scale heritage precinct, the regulation of commercial activity and encroachment, the provision of visitor infrastructure, and the balancing of conservation requirements with livelihood needs of local communities. Key lessons applicable to Trichy include the importance of buffer zone delineation, the use of pedestrian priority zones, the development of heritage interpretation centres, and the establishment of multi-stakeholder coordination mechanisms.

2.8.2 Sabarmati Riverfront Development, Ahmedabad

The Sabarmati Riverfront Development Project in Ahmedabad represents one of India's most ambitious riverfront transformation initiatives. The project converted degraded riverbanks into a vibrant public waterfront with promenades, parks, gardens, event spaces, and recreational facilities. While the scale and urban context differ from Mukkombu, the project offers valuable lessons in riverfront design, flood management integration, public space activation, and the use of PPP models for financing waterfront

development. The Mukkombu riverfront proposals developed in Chapter 8 draw upon these lessons while adapting design principles to the rural-peri-urban and ecological context of the Cauvery at Mukkombu.

2.8.3 Angkor Wat Visitor Management, Cambodia

The APSARA Authority's management of the Angkor Wat temple complex in Cambodia provides an international precedent for managing high-volume tourism at large-scale temple heritage sites. Key management strategies include zoned visitor access, timed entry systems, digital ticketing, heritage impact monitoring, community benefit-sharing mechanisms, and the integration of tourism management with archaeological conservation. The parallels between Angkor Wat and Srirangam—both being massive, active temple complexes with concentric spatial organisation and high visitor volumes—make this case study particularly instructive for the crowd and heritage management proposals developed for Srirangam.

2.9 Research Gap

The literature review reveals that while substantial scholarly attention has been devoted to individual dimensions of tourism planning—heritage conservation, eco-tourism, pilgrimage management, smart tourism technologies, and accommodation planning—there is a notable paucity of integrated studies that synthesise these dimensions into a comprehensive destination-level plan for Indian Tier-II cities. Most existing tourism development plans for Indian cities focus on either heritage conservation or infrastructure development in isolation, without adequately addressing the interconnections between sacred tourism, ecological assets, urban mobility, accommodation capacity, and digital management systems.

Tiruchirappalli, with its unique combination of sacred heritage, colonial-religious architecture, hydraulic engineering heritage, riverine ecology, and biodiversity conservation assets, represents an ideal case for demonstrating the value of an integrated planning approach. This thesis seeks to contribute to the literature by developing a comprehensive, multi-site, and multi-thematic tourism development plan that bridges the identified research gap and provides a replicable framework for similar Tier-II heritage cities in India.

2.10 Summary

This chapter has reviewed the relevant literature across multiple domains that inform the formulation of an Integrated Tourism Development Plan for Tiruchirappalli. The review establishes the theoretical foundations in sustainable tourism planning, heritage conservation, eco-tourism, pilgrimage management, circuit planning, smart tourism, and accommodation planning. Case studies from Hampi, Ahmedabad, and Angkor Wat provide practical precedents, while the identification of the research gap positions this thesis as a contribution to the emerging discourse on integrated tourism planning for Indian Tier-II heritage cities. The conceptual frameworks and empirical insights derived from this review inform the analytical approach, proposal formulation, and implementation strategies developed in the subsequent chapters.

CHAPTER 3

STUDY AREA PROFILE

3.0 Introduction

This chapter presents a comprehensive profile of Tiruchirappalli as the study area, covering its geographic setting, historical evolution, demographic characteristics, administrative structure, economic base, transportation network, land use patterns, climate, and existing tourism infrastructure. A thorough understanding of the study area context is essential for formulating planning proposals that are grounded in local realities and responsive to site-specific conditions.

3.1 Geographic Setting and Location

Tiruchirappalli (Trichy) is located at the geographic centre of Tamil Nadu at approximately 10.7905 degrees North latitude and 78.7047 degrees East longitude. The city occupies a strategic position in the Cauvery Delta region of South India, situated approximately 330 kilometres south-southwest of Chennai, 130 kilometres north of Madurai, and 60 kilometres west of Thanjavur. The city's location at the head of the Cauvery Delta—the point where the River Cauvery bifurcates into the Cauvery proper and the Kollidam (Coleroon)—has been the primary determinant of its historical, economic, and cultural significance.

The topography of Tiruchirappalli is predominantly flat, characteristic of the alluvial plains of the Cauvery Delta, with elevations ranging from approximately 78 metres to 88 metres above mean sea level. The most prominent topographic feature is the Rockfort—an isolated granite inselberg rising approximately 83 metres above the surrounding plain—which has served as a natural fortress and sacred site for millennia. The geological composition of the Rockfort is among the oldest exposed rock formations in the world, dated to approximately 3.8 billion years.

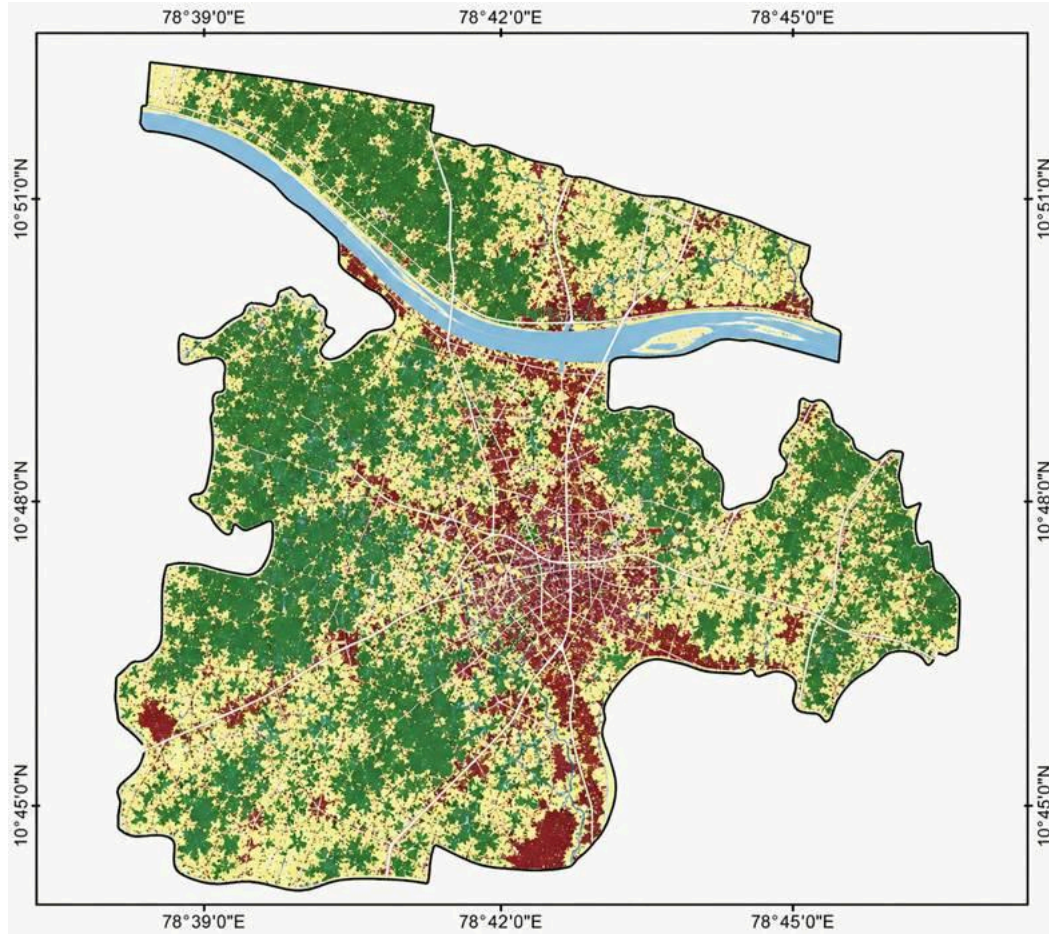


Fig. No. 3.1: Location Map of Tiruchirappalli in Tamil Nadu

Source: Prepared by Author based on Survey of India Toposheets

3.2 Historical Evolution

The historical evolution of Tiruchirappalli spans over two millennia and encompasses successive periods of rule by major South Indian dynasties and colonial powers. The earliest historical references to the city date to the Sangam period (circa 3rd century BCE to 3rd century CE), when it was known as "Uraiyur" and served as the capital of the early Chola dynasty. Archaeological evidence, including Roman coins and artifacts found in the region, attests to the city's ancient role as a centre of trade and commerce with connections extending to the Mediterranean world.

During the Pallava period (6th to 9th centuries CE), the Rockfort emerged as a significant religious and military site. The Pallava rulers carved rock-cut cave temples dedicated to Shiva on the Rockfort, which remain among the earliest surviving examples of Pallava rock architecture. The subsequent Chola dynasty (9th to 13th centuries CE) elevated Tiruchirappalli's significance as a sacred geography, with the expansion of the Srirangam Temple complex into one of the grandest Vaishnavite shrines in India.

The Nayak period (16th to 17th centuries CE) witnessed significant architectural contributions, including the construction of the iconic Rajagopuram (temple tower) at Srirangam and the development of the Rockfort Temple complex. The city subsequently came under Maratha, Nawabi, and British colonial rule, each period adding distinctive architectural and cultural layers to the urban fabric. The construction of St. Lourdes Church in 1895 during the British period represents the colonial-era contribution to the city's built heritage.

In the post-independence period, Tiruchirappalli developed as an important industrial and educational centre, hosting major public sector undertakings such as Bharat Heavy Electricals Limited (BHEL), Ordnance Factory Trichy, and Golden Rock Railway Workshop. The city's development as an educational hub, with institutions including the National Institute of Technology (NIT) Trichy, Bharathidasan University, and several engineering and medical colleges, has contributed to its demographic growth and economic diversification.

3.3 Administrative Structure

Tiruchirappalli is the administrative headquarters of Tiruchirappalli District, one of the 38 districts of Tamil Nadu. The city is governed by the Tiruchirappalli City Corporation, which was constituted as a municipal corporation in 1994. The Corporation area encompasses approximately 167.23 square kilometres and is divided into 65 wards. The Tiruchirappalli Metropolitan Area, as defined by the Tiruchirappalli Master Plan 2045, extends to approximately 1,072 square kilometres and includes the urban agglomerations of Srirangam, Golden Rock, and several peripheral towns and village panchayats.

The planning authority for the metropolitan area is the Tiruchirappalli Local Planning Authority (TLPA), which operates under the Directorate of Town and Country Planning (DTCP), Tamil Nadu. Tourism-related governance involves multiple agencies including the Tamil Nadu Tourism Development Corporation (TTDC), the District Tourism Office, the Hindu Religious and Charitable Endowments (HR&CE) Department (for temple management), and the Department of Archaeology (for heritage conservation). This multiplicity of institutional jurisdictions underscores the need for coordinated governance mechanisms in tourism planning.

3.4 Demographic Profile

According to the Census of India 2011, the Tiruchirappalli City Corporation had a population of 8,46,915 persons, while the Tiruchirappalli Urban Agglomeration recorded a population of 10,21,717 persons. The decadal population growth rate for the urban agglomeration between 2001 and 2011 was approximately 14.1 per cent. The sex ratio was 1,021 females per 1,000 males, which is higher than both the state and national averages, indicating relatively favourable gender demographics. The literacy rate stood at 92.65 per cent, reflecting the city's strong educational infrastructure.

Table No. 3.1: Demographic Profile of Tiruchirappalli (2011)

Parameter	Value
Total Population (Corporation)	8,46,915
Total Population (Urban Agglomeration)	10,21,717
Male Population	5,05,293
Female Population	5,16,424
Sex Ratio	1,021
Literacy Rate	92.65%
Decadal Growth Rate (2001-2011)	14.1%
Population Density (Corp. Area)	5,063 per sq. km

Source: Census of India, 2011

The demographic composition of Tiruchirappalli reflects a diverse urban population with representation across multiple religious communities, linguistic groups, and socio-economic strata. The predominant language is Tamil, with significant populations speaking Telugu, Urdu, and English. The religious composition is predominantly Hindu, with notable Christian and Muslim minorities. This diversity is reflected in the city's varied tourism assets, which span Hindu temple heritage, Christian pilgrimage sites, and Islamic architectural landmarks.

3.5 Economic Profile

Tiruchirappalli has a diversified economic base encompassing manufacturing, services, trade, and agriculture. The city is a major industrial centre in Tamil Nadu, with prominent establishments including Bharat Heavy Electricals Limited (BHEL), which is the city's largest employer and one of India's premier public sector heavy engineering companies; Ordnance Factory Trichy, which manufactures small arms and ammunition for the Indian Armed Forces; and the Golden Rock Railway Workshop, which is one of the oldest and largest railway workshops in South India.

The service sector has grown significantly in recent decades, with the expansion of educational institutions, healthcare facilities, banking and financial services, and information technology companies. The city's commercial core, centred around the Big Bazaar Street, NSB Road, and Chathiram Bus Stand area, supports a vibrant retail and wholesale trade sector. Agriculture continues to play a role in the broader metropolitan economy, particularly in the peripheral areas of the Cauvery Delta, where paddy cultivation remains the dominant land use.

Tourism's contribution to the local economy, while significant, remains below its potential. The predominantly day-trip or transit nature of tourism visits—with an average length of stay of approximately one day—limits tourism-related spending to basic expenditures on transportation, food, and temple offerings, with minimal contribution from accommodation, entertainment, and extended

recreational activities. The ITDP aims to increase the average length of stay to 2.5 days by 2045, which would substantially enhance tourism's economic multiplier effect.

3.6 Transportation Network

Tiruchirappalli is one of the best-connected Tier-II cities in Tamil Nadu, with robust multi-modal transportation infrastructure encompassing air, rail, and road networks.

3.6.1 Air Connectivity

The Tiruchirappalli International Airport (TRZ), located approximately 7 kilometres south of the city centre, is Tamil Nadu's second-busiest airport after Chennai. The airport serves both domestic and international destinations, with direct flights to major Indian cities including Chennai, Bengaluru, Delhi, Mumbai, Hyderabad, and Kolkata, as well as international services to Singapore, Kuala Lumpur, Colombo, Dubai, and Sharjah. The airport's international connectivity is particularly significant for the Tamil diaspora market, with strong passenger flows from Malaysia, Singapore, and Sri Lanka. The airport handled approximately 2.8 million passengers in 2023, and ongoing expansion plans aim to increase capacity to 5 million passengers per annum.

3.6.2 Rail Connectivity

Tiruchirappalli Junction is one of the most important railway junctions in South India, serving as a critical node on the Southern Railway network. The junction connects multiple broad-gauge lines radiating to Chennai, Madurai, Thanjavur, Karur, Dindigul, and Rameswaram. The station handles approximately 90 to 100 train services daily, including superfast expresses, mail trains, and passenger services. The proximity of the railway junction to the city centre (approximately 2 kilometres from Rockfort) makes rail an accessible mode of arrival for tourists. The Golden Rock Locomotive Workshop, located in the city, adds to Tiruchirappalli's railway heritage significance.

3.6.3 Road Connectivity

Tiruchirappalli is connected by National Highways (NH 45, NH 67, NH 210) and State Highways to all major cities in Tamil Nadu and neighbouring states. The city is served by multiple bus terminals, with the Chathiram Bus Stand and the Central Bus Stand providing intercity and intra-city bus services. The Tamil Nadu State Transport Corporation (TNSTC) operates extensive bus services connecting Trichy to Chennai, Madurai, Coimbatore, Thanjavur, and other destinations. The recently proposed Panjapur Integrated Bus Terminal (IBT) aims to consolidate intercity bus operations and improve connectivity to tourism sites.

3.7 Climate

Tiruchirappalli experiences a tropical wet and dry climate (Köppen classification Aw) characterised by hot summers, a distinct monsoon season, and mild winters. The average annual temperature ranges from 23 degrees Celsius to 37 degrees Celsius, with maximum temperatures exceeding 40 degrees Celsius during

the peak summer months of April and May. The city receives an average annual rainfall of approximately 830 millimetres, primarily from the northeast monsoon (October to December) and supplemented by the southwest monsoon (June to September).

Climate considerations are directly relevant to tourism planning. The extreme summer heat constrains outdoor tourism activity during April-May, while the northeast monsoon brings the risk of Cauvery river flooding that affects sites such as Mukkombu Barrage. The most favourable period for tourism is the winter season (November to February), which coincides with major festival seasons including the Vaikunta Ekadasi at Srirangam (December-January). Seasonal planning strategies, including the provision of shade infrastructure, mist-cooling systems, and climate-responsive design of public spaces, are essential components of the proposals developed in this thesis.

3.8 Existing Land Use

The existing land use pattern of the Tiruchirappalli Metropolitan Area, as documented in the Master Plan 2045, reveals a dominant share of agricultural and residential land uses, while tourism-supportive infrastructure and dedicated open spaces remain comparatively limited. Residential use accounts for the largest share of developed urban area, followed by commercial, industrial, and institutional uses. The heritage core areas around Srirangam and Rockfort exhibit a mixed land use character, with residential, commercial, and institutional uses co-existing within the temple precincts.

Table No. 3.2: Existing Land Use Distribution, Tiruchirappalli Corporation Area

Land Use Category	Area (sq. km)	Percentage
Residential	52.10	31.2%
Commercial	8.35	5.0%
Industrial	18.40	11.0%
Institutional/Public-Semi Public	15.05	9.0%
Transportation	20.10	12.0%
Parks and Open Spaces	5.85	3.5%
Agricultural/Vacant	38.55	23.1%
Water Bodies	8.83	5.2%
Total	167.23	100%

Source: DTCP, Tamil Nadu; Tiruchirappalli Master Plan 2045

The land use analysis highlights the limited allocation of land for tourism-supportive uses, including parks, open spaces, and dedicated tourism zones. The identification of potential tourism accommodation nodes at Panjapur, Madakudi, Udayanpatti, Thirunagar, and Kumbakudi in the Master Plan provides spatial opportunities for accommodation development that are explored in the accommodation projection chapter of this thesis.

3.9 Existing Tourism Infrastructure

The current state of tourism infrastructure in Tiruchirappalli reflects a pattern of uneven development, where centrally located heritage sites are relatively better served than peripheral eco-tourism destinations. The city possesses approximately 190 hotels with a combined room inventory of approximately 6,500 rooms, ranging from a small number of star-rated properties to a larger number of budget lodges and pilgrim rest houses (chatrams). The hotel room inventory is concentrated in the city centre, particularly along Williams Road, Dindigul Road, and the area surrounding the Central Bus Stand.

Tourism support services, including information kiosks, multilingual signage, digital wayfinding aids, guided tour services, and organised transportation options for tourists, remain limited and fragmented. The absence of a centralised visitor information centre, a unified tour card system, and a hop-on hop-off (HOHO) bus service constrains the ability of tourists—particularly first-time and international visitors—to navigate the city's dispersed tourism assets efficiently.

The Tamil Nadu Tourism Development Corporation (TTDC) operates a limited number of facilities in Trichy, including a tourist information counter at the railway junction and a hotel property. However, the scale of TTDC operations is insufficient to serve the city's growing tourism volumes. Private sector tourism services, including licensed tour operators, taxi services, and accommodation providers, operate largely independently without coordination under a unified destination management framework.

3.10 Summary

The study area profile of Tiruchirappalli reveals a city with exceptional tourism potential anchored by its strategic geographic location, rich historical heritage, diverse religious landscape, significant ecological assets, robust multi-modal transportation connectivity, and a growing urban economy. However, the profile also highlights critical gaps in tourism-specific infrastructure, accommodation capacity, visitor management systems, and institutional coordination that constrain the realisation of this potential. The subsequent chapters build upon this contextual understanding to develop detailed site analyses, evidence-based proposals, and implementation strategies for transforming Tiruchirappalli into a world-class heritage tourism destination.

CHAPTER 4

SITE ANALYSIS

4.0 Introduction

This chapter presents a detailed site analysis of the five key tourism sites selected for this study: Rockfort Temple, St. Lourdes Church, Mukkombu Barrage, Birds and Butterfly Park, and Srirangam Temple. The analysis covers the physical setting, historical significance, spatial organisation, accessibility, existing infrastructure, visitor profile, and key planning insights for each site. The findings from this analysis form the empirical basis for the site-specific proposals developed in Chapter 8.

4.1 Rockfort Temple

4.1.1 Physical Setting and Historical Significance

The Rockfort Temple complex is situated on an ancient granite inselberg at the geographic centre of Tiruchirappalli, rising approximately 83 metres above the surrounding alluvial plain. The rock formation, estimated to be approximately 3.8 billion years old, is one of the oldest exposed geological formations in the world and constitutes a landscape feature of exceptional natural heritage value. The temple complex combines multiple historical layers: Pallava-period rock-cut cave temples dating to the 7th century CE, Nayak-period structural temples, and the remains of a fortification that was successively used by the Nayaks, Marathas, Nawabs, and British during the Carnatic Wars of the 18th century.

The two principal temples within the complex are the Thayumanavar Temple (dedicated to Lord Shiva as Thayumanavar, meaning "the one who became the mother") located midway along the ascent, and the Ucchi Pillayar Temple (dedicated to Lord Ganesha) perched at the summit. The climb to the summit involves approximately 437 steps carved into the rock face and offers increasingly dramatic panoramic views of the city, the Srirangam island, and the Cauvery and Kollidam rivers. The complex also houses the Sri Manikka Vinayagar Temple and the Pallava-era rock-cut Lalithankura Pallaveswaram cave temple.

4.1.2 Accessibility and Connectivity

Rockfort is well-connected to the city's transportation network, located approximately 11 kilometres from Tiruchirappalli International Airport, 5 kilometres from Tiruchirappalli Railway Junction, and 5 kilometres from the Central Bus Stand. The site is accessible by city buses, auto-rickshaws, and taxis. However, the immediate approach roads are narrow, congested with mixed traffic, and inadequately designed for pedestrian safety, particularly along the commercial streets leading to the temple base. The absence of organised vehicular drop-off and pick-up areas creates traffic conflicts during peak visitation periods.

4.1.3 Existing Infrastructure Assessment

The existing infrastructure at Rockfort includes basic ticketing facilities, limited toilet blocks, a few drinking water points, and minimal directional signage. The climb itself lacks adequate safety infrastructure: railings are discontinuous, lighting is insufficient for evening visitors, and there are no emergency call points or defined evacuation routes. The steep gradient and the absence of alternative access systems (such as a ropeway or inclined lift) effectively exclude elderly visitors and persons with disabilities from accessing the summit temples and viewpoints. Shaded resting areas along the climb are inadequate, particularly during the summer months when temperatures regularly exceed 40 degrees Celsius.

Table No. 4.1: Infrastructure Assessment – Rockfort Temple

Infrastructure Parameter	Status	Adequacy
Ticketing Counter	Available	Adequate
Parking	Limited street parking	Inadequate
Toilets	Available (2 blocks)	Partially adequate
Drinking Water	Limited	Inadequate
Directional Signage	Minimal	Inadequate
Safety Railings	Discontinuous	Inadequate
Lighting	Basic	Inadequate
Accessibility (PwD)	Not available	Absent
Emergency Systems	Not available	Absent
Visitor Information	Not available	Absent

Source: Field Survey by Author, 2025

4.1.4 Key Planning Insights

Rockfort's central urban location, iconic visual identity, and strong heritage significance make it a primary tourism anchor for Tiruchirappalli. However, the realisation of its full potential requires comprehensive interventions addressing accessibility for all user groups (including alternative access systems), safety infrastructure along the climb, visitor amenities at the base and along the ascent route, traffic management and pedestrian safety in the surrounding streets, and the development of the base area as an organised urban plaza with clear wayfinding and visitor services.

4.2 St. Lourdes Church

4.2.1 Physical Setting and Historical Significance

St. Lourdes Church, formally known as the Our Lady of Lourdes Shrine, is a historic Indo-Gothic basilica located in the Teppakulam area of central Tiruchirappalli. Constructed in 1895 during the British colonial period, the church is one of the most architecturally distinguished religious structures in the city. The Indo-Gothic design features pointed arches, ribbed vaulting, flying buttresses, stained glass windows, and a soaring central spire that is a landmark on the city skyline. The church serves as a major Catholic pilgrimage centre, attracting devotees from across Tamil Nadu and neighbouring states throughout the year, with significantly heightened activity during Christmas and Easter celebrations.

The church is situated adjacent to the historic Teppakulam (temple tank), a large rectangular water body that has traditionally served as the venue for the annual float festival (Teppam) associated with the nearby Vinayagar Temple. The juxtaposition of the church and the Hindu temple tank creates a unique multi-faith cultural landscape that reflects the religious plurality of Tiruchirappalli's urban history.

4.2.2 Accessibility and Existing Infrastructure

St. Lourdes Church is centrally located and accessible by multiple modes of urban transport. The church compound is generally well-maintained by the parish administration, with clean premises, basic seating for devotees, and a small information display area. However, the site lacks several elements necessary for effective integration into a broader tourism circuit: visitor information signage in multiple languages is absent, basic tourist amenities (drinking water stations, dedicated toilet facilities for visitors, shaded resting areas) are limited, and there is no formal pedestrian connection to the adjacent Teppakulam pond that would allow visitors to experience the church and pond as an integrated cultural precinct.

4.2.3 Key Planning Insights

St. Lourdes Church is a well-maintained pilgrimage site with consistent visitor flow, but it remains largely isolated from the broader tourism circuit. Key planning opportunities include the creation of a forecourt plaza with landscaping and flexible gathering space, activation of the Teppakulam pond area for cultural events and heritage walks, introduction of heritage lighting for safe and attractive night tourism, development of a pedestrian bridge connecting the church to the pond, and the inclusion of the church as a designated stop on the urban heritage walk circuit and the HOHO bus route.

4.3 Mukkombu Barrage

4.3.1 Physical Setting and Historical Significance

The Mukkombu Barrage, also known as the Upper Anicut, is located approximately 18 kilometres west of the Trichy city centre at the point where the River Cauvery divides into two major distributaries: the Cauvery proper and the Kollidam (Coleroon). The original anicut was constructed during the Chola dynasty for irrigation management and was subsequently rebuilt by Captain Caldwell of the East India Company in 1836 as a modern barrage structure. The barrage serves a vital hydraulic function, regulating water distribution to the Cauvery Delta irrigation network that supports rice cultivation across one of India's most productive agricultural regions.

Beyond its functional significance, Mukkombu has evolved into one of the most popular eco-leisure destinations in the Trichy region, attracting approximately 2.3 million visitors annually. The site's appeal derives from its scenic riverfront setting, with expansive views of the Cauvery river, tree-lined banks, and a relatively tranquil environment that contrasts with the congestion of the city centre. The site is particularly popular for weekend recreation, family picnics, and nature-based leisure activities.

4.3.2 Accessibility and Existing Infrastructure

Mukkombu's location 18 kilometres from the city centre, combined with poor last-mile connectivity, represents a significant accessibility constraint. While the site is reachable by private vehicles and auto-rickshaws, public bus services are infrequent and do not provide convenient connections from major tourist nodes such as Srirangam or Rockfort. The existing infrastructure at Mukkombu includes a basic entrance area, limited parking space, a few vendor stalls, and minimal sanitation facilities. There is no organised recreational zoning, visitor information centre, or environmental interpretation facility.

4.3.3 Safety Concerns

A critical safety concern at Mukkombu is the risk of flooding during the monsoon season when the Cauvery receives heavy inflows from upstream catchments. Flash floods and sudden water level rises have historically endangered visitors who wade into the river or sit on the barrage structure. The absence of adequate warning systems, lifeguard stations, protective barriers, and emergency response infrastructure elevates the safety risk significantly. These safety concerns must be addressed as a priority in any eco-tourism development proposal for the site.

4.3.4 Key Planning Insights

Mukkombu possesses strong eco-tourism potential, anchored by its hydraulic heritage significance, scenic riverfront setting, and existing popularity as a leisure destination. However, its full potential is constrained by poor accessibility, inadequate infrastructure, safety risks, and the absence of organised recreational programming. Key planning opportunities include the development of Mukkombu as a zoned eco-recreation park with separate picnic, silent eco, and activity zones; the introduction of eco-friendly riverfront elements such as boardwalks, viewing decks, and controlled water-access points; the implementation of robust safety infrastructure; and the improvement of connectivity through shuttle services from Srirangam and the proposed HOHO circuit.

4.4 Birds and Butterfly Park

4.4.1 Physical Setting and Ecological Significance

The Tropical Butterfly Conservatory, popularly known as the Birds and Butterfly Park, is located near Srirangam on the banks of the Cauvery River. The park was established with the objective of promoting biodiversity conservation awareness and environmental education, focusing on butterfly species native to the Cauvery Delta region and their host plant ecosystems. The conservatory houses multiple butterfly species in enclosed and semi-open habitats, alongside bird habitats, nature trails, and botanical displays. It is one of the largest butterfly parks in Asia and represents a unique eco-tourism asset in the Trichy tourism portfolio.

4.4.2 Accessibility and Existing Infrastructure

The Birds and Butterfly Park is located approximately 15 kilometres from the Trichy city centre, in a relatively peripheral location that suffers from poor last-mile connectivity. Public transport services to the park are infrequent and unreliable, necessitating the use of private vehicles or hired transportation for most visitors. The existing infrastructure includes a basic entrance and ticketing facility, walking paths through the conservatory, minimal interpretive displays, limited parking for approximately 20 to 30 vehicles, basic toilet facilities, and a small refreshment area.

Table No. 4.2: Infrastructure Assessment – Birds and Butterfly Park

Infrastructure Parameter	Status	Adequacy
Ticketing	Available	Adequate
Parking	Small lot (~25 vehicles)	Inadequate
Toilets	Basic (1 block)	Inadequate
Drinking Water	Limited	Inadequate
Interpretive Displays	Minimal	Inadequate
Guided Tours	Not regularly available	Absent
Cycling/Nature Trails	Not developed	Absent
Public Transport Access	Infrequent buses	Inadequate
Signage from Main Roads	Limited	Inadequate
Educational Facilities	Not developed	Absent

Source: Field Survey by Author, 2025

4.4.3 Key Planning Insights

The Birds and Butterfly Park has strong eco-tourism and educational tourism potential but currently operates well below its capacity due to infrastructure deficiencies and connectivity constraints. Key planning opportunities include the creation of an interactive learning centre with exhibits on butterfly life cycles and host plant ecology, the development of guided nature trails with themed routes and short educational walks, the introduction of battery-operated shuttle services from Srirangam, the development of an eco-branded cycling route with rentals and safe cycle lanes, the design of school tour packages combining the conservatory with Srirangam visits, and the hosting of an annual Butterfly Fest to promote conservation awareness.

4.5 Srirangam Temple

4.5.1 Physical Setting and Architectural Significance

The Sri Ranganathaswamy Temple at Srirangam is the largest functioning Hindu temple complex in the world, encompassing approximately 156 acres (63 hectares) within seven concentric prakarams (enclosure walls). The temple is situated on the island of Srirangam, formed by the bifurcation of the Cauvery and Kollidam rivers, which invests the site with profound sacred significance in the Vaishnavite tradition. The temple is dedicated to Lord Ranganatha (Vishnu in his reclining form on the serpent Adishesha) and is the foremost of the 108 Divya Desams—the most sacred Vaishnavite pilgrimage sites celebrated in the hymns of the Alwar saints.

The temple's architectural significance is extraordinary. The seven prakarams, constructed and expanded over a period spanning from the 10th to the 17th centuries CE, create a concentric spatial organisation that is unique in world temple architecture. The outermost prakaram (7th) functions effectively as a town,

accommodating residential neighbourhoods, commercial streets, and community facilities. The Rajagopuram (main gateway tower) of the southern entrance, standing at 73 metres (236 feet), is the tallest temple gopuram in Asia and the second tallest in the world. The temple complex contains 21 gopurams in total, 39 pavilions (mandapams), numerous pillared halls with intricate sculptural programmes, sacred tanks, and gardens.

4.5.2 Visitor Profile and Footfall

Srirangam Temple attracts millions of visitors annually, making it the highest-footfall tourism site in Tiruchirappalli. The visitor profile is predominantly domestic pilgrims from Tamil Nadu and other South Indian states, supplemented by a small but growing segment of international tourists and diaspora visitors. The most significant peak period is the 21-day Vaikunta Ekadasi festival (December-January), during which daily footfall can exceed 2 to 3 lakh visitors, creating extreme congestion within the temple prakarams and surrounding streets.

4.5.3 Existing Infrastructure and Challenges

The temple precinct has basic infrastructure managed by the HR&CE Department and the temple administration, including darshan queue management systems, basic sanitation facilities, drinking water stations, and CCTV surveillance at key points. However, the infrastructure is inadequate relative to the scale of visitor flows, particularly during festival periods. Critical challenges include vehicular intrusion into the inner prakarams (prakarams 1 through 4 should ideally be pedestrian-only zones but currently allow two-wheeler and auto-rickshaw access), unregulated and encroaching street vending that narrows pedestrian pathways, inadequate crowd management systems to prevent dangerous crush situations, insufficient sanitation capacity during peak periods, poor directional signage and wayfinding within the complex, and the absence of peripheral parking facilities with shuttle connections to reduce vehicular pressure within the temple precinct.

4.5.4 Heritage Conservation Concerns

The temple is on UNESCO's Tentative List for World Heritage Site designation, and its conservation requires adherence to established heritage management principles. Key conservation concerns include structural deterioration of ancient mandapams and gopurams due to weathering and inadequate maintenance, visual pollution from unregulated signage, cable wires, and incompatible construction within the temple precinct, the impact of vehicular vibrations on stone structures, the threat of commercialisation that may compromise the spiritual ambience and heritage character, and the need for a comprehensive heritage management plan that integrates conservation measures with visitor management and community livelihood considerations.

4.5.5 Key Planning Insights

Srirangam Temple's extraordinary scale, architectural significance, sacred importance, and massive visitor volumes make it both the most important and the most challenging tourism site in Tiruchirappalli. The key planning insight is that interventions at Srirangam must be heritage-sensitive, prioritising pedestrian movement, strengthening the concentric street structure, reducing vehicular intrusion in the inner

prakarams, and improving the arrival experience through better public space design, movement management, and street-edge control. A comprehensive heritage and pilgrim management plan that integrates pedestrianisation, peripheral parking with shuttle access, organised movement through street zoning, heritage-sensitive street design, and digital crowd management systems is essential for the sustainable management of this extraordinary site.

4.6 Comparative Site Assessment

Table No. 4.3: Comparative Assessment of Five Tourism Sites

Parameter	Rockfort	St. Lourdes	Mukkombu	Birds Park	Srirangam
Tourism Type	Sacred Heritage	Religious Heritage	Eco-Leisure	Eco-Education	Pilgrimage
Annual Footfall	~15 lakh	Moderate	~23 lakh	Low-Moderate	Very High
Accessibility	Good	Good	Poor	Poor	Moderate
Infrastructure	Basic	Good	Poor	Poor	Basic-Moderate
Safety	Moderate Risk	Low Risk	High Risk	Low Risk	High Risk
Circuit Integration	Low	Very Low	Very Low	Very Low	Low
Development Potential	High	Moderate	Very High	Very High	Very High

Source: Compiled by Author based on Field Survey, 2025

4.7 Summary

The site analysis reveals a pattern of significant untapped potential across all five tourism sites, constrained by common challenges of infrastructure inadequacy, poor inter-site connectivity, safety concerns, and the absence of integrated circuit planning. While centrally located sites (Rockfort and St. Lourdes Church) benefit from better accessibility, peripheral sites (Mukkombu and Birds Park) possess greater development potential but suffer from connectivity and infrastructure deficits. Srirangam, as the city's primary pilgrimage anchor, faces the most complex planning challenges related to crowd management, heritage conservation, and the balancing of sacred functions with tourism development. These findings inform the site-specific proposals and integrated circuit strategies developed in the subsequent chapters.

CHAPTER 5

DATA AND STATISTICAL ANALYSIS

5.0 Introduction

This chapter presents a comprehensive statistical assessment of tourism trends, visitor footfall patterns, seasonal variations, land use dynamics, and infrastructure gaps in Tiruchirappalli. The analysis employs quantitative methods to establish an evidence base for the demand-driven planning interventions proposed in subsequent chapters. Data sources include the Tamil Nadu Tourism Department, Census of India, DTCP records, and primary field survey observations.

5.1 Tourist Footfall Trends (2016-2023)

An analysis of tourist footfall data for Tiruchirappalli from 2016 to 2023 reveals a trajectory of steady growth punctuated by a significant disruption during 2020-2021 due to the COVID-19 pandemic, followed by a strong recovery phase. The data indicates that total tourist arrivals grew from approximately 1.62 crore in 2016 to 2.49 crore in 2023, representing a Compound Annual Growth Rate (CAGR) of approximately 6.3 per cent over the seven-year period.

Table No. 5.1: Tourist Footfall in Tiruchirappalli (2016-2023)

Year	Domestic Tourists (Lakh)	Foreign Tourists (Lakh)	Total (Lakh)	Growth Rate (%)
2016	159.8	2.2	162.0	-
2017	170.5	2.4	172.9	6.7%
2018	181.2	2.5	183.7	6.3%
2019	190.8	2.7	193.5	5.3%
2020	72.4	0.3	72.7	-62.4%
2021	105.6	0.5	106.1	46.0%
2022	195.3	2.1	197.4	86.1%
2023	246.2	2.8	249.0	26.1%

Source: Tamil Nadu Tourism Department; District Tourism Office, Tiruchirappalli

The data reveals several important characteristics of Tiruchirappalli's tourism dynamics. First, domestic tourism constitutes the overwhelming majority of arrivals, accounting for approximately 98.9 per cent of total footfall in 2023, while international tourists represent only about 1.1 per cent. This domestic dominance is characteristic of pilgrimage destinations in India and reflects the sacred tourism character of Trichy's primary attractions.

Second, the post-COVID recovery has been remarkably strong, with tourist arrivals not only recovering to pre-pandemic levels by 2022 but exceeding them significantly by 2023. This resilience underscores the

enduring appeal of pilgrimage and heritage tourism, which tends to exhibit greater post-crisis recovery compared to leisure and business tourism segments.

Third, the consistent CAGR of 6.3 per cent, if sustained, implies substantial future growth that will necessitate proactive planning for infrastructure capacity, accommodation supply, crowd management, and environmental carrying capacity. Projections based on this growth rate indicate that total tourist footfall could reach approximately 4.48 crore by 2035 and 6.66 crore by 2045.

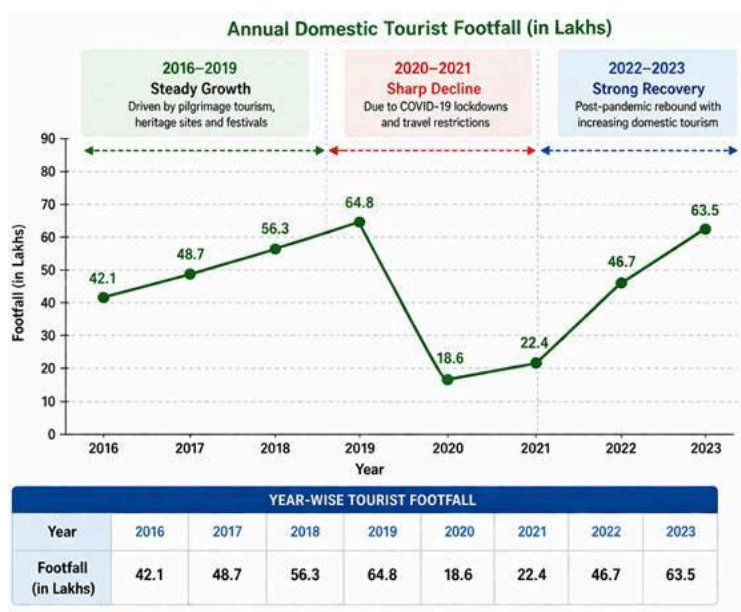


Fig. No. 5.1: Tourist Footfall Trend in Tiruchirappalli (2016-2023)

Source: Compiled by Author from Tamil Nadu Tourism Department Data

5.2 Tourism Projections (2023-2045)

Tourism demand projections for Tiruchirappalli have been developed using a CAGR-based extrapolation methodology aligned with the targets established in the TNITPP Flagship Hub framework. The projection assumes a sustained CAGR of 6.3 per cent for domestic tourism and 8.0 per cent for international tourism, reflecting the expected impact of improved infrastructure, enhanced connectivity, and targeted destination marketing efforts.

Table No. 5.2: Projected Tourist Footfall (2023-2045)

Year	Domestic (Lakh)	International (Lakh)	Total (Lakh)	Daily Average
2023 (Base)	246.2	2.8	249.0	68,219

2025	278.5	3.3	281.8	77,205
2030	379.0	4.8	383.8	1,05,151
2035	515.8	7.1	522.9	1,43,260
2040	702.0	10.4	712.4	1,95,178
2045	655.6	10.4	666.0	1,82,466

Source: Projected by Author based on CAGR Analysis and TNITPP Targets

The projections indicate that Tiruchirappalli needs to prepare for a near-tripling of current tourist volumes over the next two decades. This growth trajectory has profound implications for accommodation capacity, transportation infrastructure, crowd management at heritage sites, environmental carrying capacity, and the governance and financing of tourism development. The subsequent chapters address each of these dimensions through specific planning proposals and implementation strategies.

5.3 Seasonal Variation Analysis

An analysis of monthly tourist footfall data reveals significant seasonal variation in visitor flows, with peak activity concentrated during the winter and festival months and reduced activity during the hot summer months. The peak tourism season extends from October to February, coinciding with the northeast monsoon (which brings cooler temperatures), the Navaratri and Deepavali festivals (October-November), and the critically important Vaikunta Ekadasi festival at Srirangam (December-January).

Table No. 5.3: Monthly Distribution of Tourist Footfall (Representative Year)

Month	Share of Annual Footfall (%)	Season Category
January	10.5	Peak
February	8.2	Moderate
March	7.8	Moderate
April	6.5	Lean
May	5.8	Lean
June	6.2	Lean
July	7.5	Moderate
August	8.0	Moderate
September	7.8	Moderate
October	9.5	Peak
November	9.8	Peak
December	12.4	Peak

Source: Tamil Nadu Tourism Department; Analysis by Author

The seasonal analysis has important implications for tourism planning. The concentration of peak demand in the October-February period necessitates the design of infrastructure and management systems that can accommodate significantly higher volumes during these months while remaining economically viable during lean periods. Additionally, strategies to promote monsoon tourism, summer heritage walks during cooler evening hours, and off-season cultural programming can help distribute visitor flows more evenly throughout the year.

5.4 Land Use Analysis

A comprehensive analysis of land use distribution within the Tiruchirappalli Metropolitan Area reveals a pattern dominated by agricultural and residential uses, with tourism-supportive infrastructure and dedicated recreational spaces representing a comparatively small share of the total developed area. The land use data, derived from the Tiruchirappalli Master Plan 2045, indicates that residential use accounts for approximately 31.2 per cent of the Corporation area, followed by agricultural and vacant lands (23.1 per cent), transportation (12.0 per cent), and industrial use (11.0 per cent). Parks and open spaces account for only 3.5 per cent of the total area, which is significantly below the recommended standards for a city of this size.

The limited allocation of land for recreational and tourism-supportive uses constrains the development of visitor amenities, public spaces, and accommodation facilities within the urban core. However, the identification of peripheral land parcels in the Master Plan—particularly at Panjapur, Madakudi, Udayanpatti, Thirunagar, and Kumbakudi—provides spatial opportunities for tourism accommodation and infrastructure development outside the congested city centre.

5.5 Infrastructure Gap Analysis

The infrastructure gap analysis evaluates the availability, adequacy, and distribution of essential visitor amenities across the five identified tourism sites. The assessment employs a matrix approach, evaluating each site against a standardised set of infrastructure parameters including parking, sanitation, drinking water, signage, accessibility features, safety systems, visitor information services, and connectivity.

Table No. 5.4: Infrastructure Gap Assessment Matrix

Parameter	Rockfort	St. Lourdes	Mukkombu	Birds Park	Srirangam
Parking	Poor	Moderate	Poor	Poor	Poor
Sanitation	Moderate	Good	Poor	Poor	Moderate
Drinking Water	Poor	Moderate	Poor	Poor	Moderate
Signage	Poor	Poor	Poor	Poor	Poor
PwD Access	Absent	Moderate	Absent	Poor	Poor
Safety Systems	Poor	Good	Poor	Moderate	Poor

Information	Absent	Poor	Absent	Poor	Poor
Public Transport	Good	Good	Poor	Poor	Moderate

Source: Field Survey by Author, 2025

The assessment reveals a clear disparity in infrastructure provision, where centrally located heritage sites (Rockfort and St. Lourdes Church) are relatively better equipped, while peripheral eco-tourism sites (Mukkombu Barrage and Birds and Butterfly Park) exhibit significant deficiencies across multiple parameters. This infrastructure inequality directly influences visitor experience, accessibility, and overall tourism potential, highlighting the need for balanced and targeted investment across all five sites.

5.6 Key Analytical Insights

The statistical and data analysis yields several key insights that inform the planning proposals developed in subsequent chapters. First, the strong and resilient growth trajectory of tourism demand necessitates proactive capacity planning rather than reactive responses to congestion and overcrowding. Second, the overwhelming dominance of domestic pilgrimage tourism presents both a strength (stable demand base) and a limitation (narrow economic impact) that can be addressed by diversifying the tourism product and increasing the average length of stay. Third, the significant seasonal variation requires infrastructure and management systems that are scalable and adaptable to fluctuating demand. Fourth, the infrastructure gap analysis confirms the need for substantial and targeted investment across all five sites, with priority attention to peripheral eco-tourism destinations that currently lag behind centrally located heritage sites.

5.7 Summary

This chapter has established the quantitative evidence base for the Integrated Tourism Development Plan through comprehensive analysis of tourist footfall trends, demand projections, seasonal patterns, land use distribution, and infrastructure gaps. The analysis confirms that Tiruchirappalli faces a significant planning challenge: managing projected growth from 2.49 crore visitors in 2023 to 6.66 crore by 2045 while addressing existing infrastructure deficits, distributing visitor flows across multiple sites, and ensuring sustainable heritage and environmental outcomes. The findings from this analysis directly inform the issues identification, vision formulation, and proposal development presented in the following chapters.

CHAPTER 6

ISSUES IDENTIFICATION AND SWOT ANALYSIS

6.0 Introduction

This chapter synthesises the findings from the site analysis, data assessment, and infrastructure gap evaluation presented in the preceding chapters to identify the key issues confronting tourism development in Tiruchirappalli. The issues are organised thematically and are complemented by a comprehensive SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis that provides a strategic framework for the formulation of planning proposals.

6.1 Key Issues Identified

6.1.1 Infrastructure Deficit

The most pervasive issue confronting Tiruchirappalli's tourism sector is the significant deficit in visitor-oriented infrastructure across most tourism sites. The infrastructure gap analysis presented in Chapter 5 demonstrates that only a limited number of the city's fourteen-plus tourist sites are fully equipped with adequate visitor amenities. Critical deficiencies include inadequate parking infrastructure, particularly at the Birds and Butterfly Park, Mukkombu Barrage, and the approaches to Srirangam Temple; insufficient sanitation facilities relative to visitor volumes, especially during peak festival periods; limited drinking water availability at peripheral sites; and the near-complete absence of accessibility features for persons with disabilities and elderly visitors.

The accommodation deficit represents a particularly acute infrastructure challenge. With approximately 190 hotels offering a combined inventory of 6,500 rooms, the city already faces a shortfall of approximately 259 rooms during peak demand periods. Projections indicate that this deficit will escalate dramatically to approximately 21,204 rooms by 2045 if supply growth does not keep pace with demand expansion. This accommodation constraint directly limits the average length of tourist stay and, consequently, the economic impact of tourism on the local economy.

6.1.2 Fragmented Visitor Experience

A second critical issue is the fragmented nature of the tourism experience in Tiruchirappalli. The five key tourism sites are geographically dispersed across the metropolitan area, and the absence of a unified mobility framework means that visitors must independently navigate between sites using a combination of auto-rickshaws, city buses, and hired taxis. There is no hop-on hop-off (HOHO) bus service, no unified tour card or integrated ticketing system, and no centralised visitor information centre that could facilitate multi-site itinerary planning.

This fragmentation results in most visitors concentrating their activity at one or two primary sites (typically Srirangam and/or Rockfort) and departing without experiencing the city's broader tourism offerings. The lack of multilingual directional signage and integrated digital wayfinding systems further

compounds the navigational challenges, particularly for non-Tamil-speaking domestic tourists and international visitors. The consequence is a truncated visitor experience that fails to capture the full diversity and richness of Tiruchirappalli's tourism assets.

6.1.3 Crowd Management and Safety Concerns

Safety and crowd management constitute critical issues at several of the selected tourism sites. At Srirangam Temple, the extreme concentration of pilgrims during the Vaikunta Ekadasi festival period creates dangerous crowd density conditions, with the risk of stampede incidents particularly elevated in narrow passages between prakarams and at key darshan (deity viewing) points. The coexistence of vehicular traffic within the inner prakarams exacerbates safety risks and conflicts with pedestrian movement.

At Mukkombu Barrage, the risk of sudden flooding during the monsoon season poses a direct threat to visitor safety, compounded by the absence of adequate warning systems, lifeguard stations, protective barriers, and emergency response infrastructure. At Rockfort Temple, the steep and lengthy climb, combined with discontinuous safety railings, insufficient lighting, and no emergency access or evacuation provisions, creates safety vulnerabilities particularly for elderly visitors and during periods of high footfall.

6.1.4 Heritage Conservation Challenges

The heritage conservation challenges at Tiruchirappalli's key sites are multifaceted and require integrated solutions. At Srirangam Temple, the principal conservation concerns include structural deterioration of ancient mandapams and gopurams, visual pollution from unregulated signage and incompatible construction, the impact of vehicular vibrations on stone structures, and the gradual erosion of the spiritual ambience due to commercialisation. The temple's position on UNESCO's Tentative List for World Heritage Site designation adds urgency to these conservation imperatives.

At Rockfort Temple, the natural geological heritage of the rock formation and the Pallava-era cave temples require protection from weathering, vandalism, and the potential impacts of any proposed accessibility infrastructure. Balancing heritage conservation with the imperative to improve visitor access and safety is a key planning challenge that requires heritage-sensitive design solutions.

6.1.5 Connectivity and Last-Mile Access

Poor last-mile connectivity is a significant constraint for the peripheral tourism sites. Mukkombu Barrage, located 18 kilometres from the city centre, and the Birds and Butterfly Park, located 15 kilometres away, are both inadequately served by public transport. The infrequent and unreliable bus services to these sites effectively restrict access to visitors with private vehicles, excluding a significant segment of potential visitors including budget travellers, student groups, and international tourists relying on public transport.

The proposed Panjapur Integrated Bus Terminal (IBT), once operational, could serve as a mobility hub for connecting tourists to dispersed sites, but its integration with a dedicated tourism circuit remains to be planned. The development of last-mile connectivity solutions—including dedicated shuttle services,

eco-branded cycling routes, and the proposed HOHO EV bus circuit—is essential for unlocking the tourism potential of peripheral sites.

6.2 SWOT Analysis

6.2.1 Strengths

Tiruchirappalli possesses several inherent strengths that provide a strong foundation for tourism development. The city has a world-class pilgrimage circuit anchored by Srirangam Temple and Rockfort Temple, which together constitute one of the most significant sacred landscapes in South India. The city enjoys strong multi-modal connectivity through rail, air, and road networks, with Tiruchirappalli International Airport providing direct international services to key diaspora markets in Southeast Asia and the Middle East.

The TNITPP Flagship Hub designation provides institutional recognition, policy support, and access to dedicated funding streams for tourism infrastructure development. Domestic tourism growth has remained consistent and resilient, even recovering strongly from the COVID-19 pandemic disruption. The city's unique eco-tourism assets—Mukkombu Barrage and the Birds and Butterfly Park—offer diversification potential beyond the traditional pilgrimage segment. The strong Tamil diaspora linkages with Malaysia, Singapore, and Sri Lanka represent an established international visitor base that can be further cultivated.

6.2.2 Weaknesses

The key weaknesses constraining Tiruchirappalli's tourism development include the significant accommodation deficit that limits overnight stays and economic impact; the fact that only a limited number of tourism sites have full visitor amenities; the inadequacy of parking infrastructure at several key attractions; the limited multilingual and directional signage across the tourism network; the narrow streets that reduce accessibility in heritage core areas like Rockfort and Srirangam; the absence of a unified tour card or hop-on hop-off bus service; and the overall fragmented visitor experience that results from the lack of integrated circuit planning.

6.2.3 Opportunities

Significant opportunities exist for enhancing Tiruchirappalli's tourism potential. Srirangam's position on UNESCO's Tentative List can, if pursued through a comprehensive nomination dossier, strengthen its heritage tourism appeal and attract international attention. The proposed HOHO bus and EV infrastructure can substantially improve internal connectivity and create a seamless multi-site visitor experience. Festival-based tourism offers potential for further development and promotion, with events such as Vaikunta Ekadasi, Pongal, and Navaratri attracting large visitor volumes that can be channelled to multiple sites.

The Tamil diaspora market in Malaysia, Singapore, Sri Lanka, and the wider global Tamil community offers strong potential for international tourism growth. Heritage homestays and PPP-based accommodation models can expand the available accommodation options while preserving built heritage

and involving local communities. Mukkombu has strong potential for eco-tourism circuit development, and the proposed Panjapur IBT development can significantly improve visitor access and mobility.

6.2.4 Threats

Several external threats pose risks to the sustainable development of tourism in Tiruchirappalli. Mukkombu is exposed to flood risk due to periodic Cauvery River overflow during intense monsoon events, which can disrupt tourism activity and endanger visitor safety. Extreme summer temperatures, which regularly exceed 40 degrees Celsius, reduce outdoor tourism activity during April-May and may be exacerbated by climate change impacts.

Overcrowding at Srirangam during peak festival periods creates safety concerns, including stampede risk, that require proactive crowd management interventions. The threat of biodiversity loss at the Birds and Butterfly Park due to habitat degradation, pollution, and climate change could undermine the ecological value that constitutes the site's primary tourism asset. Global shocks such as pandemic-like events can severely affect tourism flows, as demonstrated by the COVID-19 experience. Rapid commercialisation may weaken the heritage character of sacred sites. Mobile network congestion during festivals can affect real-time visitor management and communication systems.

6.3 Summary

The issues identification and SWOT analysis presented in this chapter reveal a complex but navigable set of challenges and opportunities for tourism development in Tiruchirappalli. The city's formidable strengths—world-class heritage assets, strong connectivity, resilient tourism demand, policy support, and diaspora linkages—provide a solid foundation upon which to address the identified weaknesses in infrastructure, accommodation, circuit integration, and visitor management. The opportunities for UNESCO inscription, digital innovation, eco-tourism diversification, and community-based tourism models offer pathways for transformation, while the threats from climate risks, overcrowding, and commercialisation underscore the need for proactive, sustainable, and resilient planning approaches. The vision and planning concept developed in the following chapter responds directly to these strategic findings.

CHAPTER 7

VISION AND PLANNING CONCEPT

7.0 Introduction

This chapter articulates the overarching vision and planning concept for the Integrated Tourism Development Plan for Tiruchirappalli. The vision emerges from the synthesis of the study area analysis, site assessments, statistical findings, and strategic SWOT evaluation presented in the preceding chapters.

It provides a directional framework that guides the formulation of all subsequent proposals, ensuring coherence, intentionality, and alignment with both local aspirations and policy objectives.

7.1 Vision Statement

The vision for the Integrated Tourism Development Plan is articulated as follows: "Transform Tiruchirappalli from a transit node into a world-class, sustainable heritage tourism destination by 2045, linking ecology, spirituality, culture, and community through integrated planning, smart infrastructure, and inclusive economic development."

This vision statement encapsulates several critical dimensions of the desired future state. The transformation from a transit node to a destination implies a fundamental shift in how Tiruchirappalli is perceived and experienced by visitors—from a brief stopover to a multi-day, immersive engagement with the city's diverse offerings. The emphasis on sustainability signals a commitment to development that conserves natural ecosystems and safeguards cultural heritage for future generations. The integration of ecology, spirituality, culture, and community reflects the thematic diversity of Trichy's tourism assets and the aspiration to create a holistic destination experience. The reliance on smart infrastructure and inclusive economic development indicates the means through which this transformation will be achieved.

7.2 Vision Framework Pillars

The vision is operationalised through six interconnected pillars that together constitute the planning concept framework. Each pillar addresses a distinct but interrelated dimension of sustainable tourism development and informs the specific proposals and interventions developed in subsequent chapters.

7.2.1 Sustainability

Sustainability constitutes the foundational pillar of the planning concept. In this context, sustainability means shaping tourism in a way that conserves natural ecosystems and safeguards cultural heritage, so that both remain intact and enjoyable for future generations. This pillar guides proposals related to environmental management at eco-tourism sites, heritage-sensitive design at temple precincts, climate-responsive infrastructure design, waste management, and energy-efficient transportation systems. The adoption of electric vehicle (EV) technology for the proposed HOHO bus circuit, the implementation of plastic bans at eco-sensitive sites, and the design of flood-resilient infrastructure at Mukkombu are concrete expressions of the sustainability pillar.

7.2.2 Integration

Integration seeks to link all five key tourism sites into a coherent circuit, with coordinated services and wayfinding, so visitors experience Tiruchirappalli as one connected destination rather than separate, isolated spots. This pillar drives the proposals for the unified eco-heritage tourism circuit, the HOHO EV bus service, the common tour card system, the integrated digital wayfinding platform, and the coordinated branding and marketing strategy. The principle of integration extends beyond physical connectivity to

encompass thematic coherence, temporal coordination of events and festivals, and institutional alignment among the multiple agencies involved in tourism governance.

7.2.3 Inclusivity

Inclusivity aims to design tourism spaces, mobility, and services so that elderly people, persons with disabilities, transgender individuals, and other vulnerable groups can access and enjoy attractions safely, comfortably, and with dignity. This pillar informs proposals for barrier-free pathways, alternative access systems at Rockfort (ropeway or inclined lift), accessible sanitation facilities, multilingual signage, tactile and audio wayfinding aids, and gender-sensitive design of public spaces and amenities. The commitment to inclusivity reflects both the ethical imperative of universal access and the practical recognition that accessible tourism facilities expand the potential visitor base.

7.2.4 Community

Community focuses on placing local residents at the centre of tourism—engaging them as decision-makers, service providers, and entrepreneurs, and ensuring that a fair share of tourism income and opportunities flows back into neighbourhoods and livelihoods. This pillar supports proposals for community-based tourism enterprises, heritage homestay programmes, local artisan and food vendor integration into tourism circuits, community participation in governance structures, and skills development programmes that enable local residents to benefit from tourism growth. The principle of community centrality ensures that the tourism development plan serves the interests of Tiruchirappalli's residents alongside those of its visitors.

7.2.5 Resilience

Resilience is about planning tourism infrastructure and operations to withstand floods, rising temperatures, extreme events, and crowd surges, so that visitor safety, heritage assets, and local communities are protected in the face of climate and disaster risks. This pillar drives proposals for flood-resilient design at Mukkombu, heat mitigation infrastructure (shade structures, mist-cooling, green infrastructure), crowd management systems at Srirangam, emergency evacuation planning at all sites, and the integration of climate adaptation considerations into all infrastructure design standards. The experience of the COVID-19 pandemic further underscores the importance of building resilience into tourism systems to ensure rapid recovery from external shocks.

7.2.6 Smart Growth

Smart Growth promotes using digital tools and artificial intelligence—such as real-time crowd monitoring, adaptive wayfinding, and data-driven decision systems—to manage visitor flows, reduce congestion, and continuously improve the performance and sustainability of the tourism system. This pillar supports proposals for AI-enabled crowd management at Srirangam, digital queue management systems, real-time route optimisation for the HOHO bus circuit, IoT-based environmental monitoring at eco-tourism sites, and a comprehensive destination management platform that integrates data from multiple sources to support evidence-based planning and operational decisions.

7.3 Spatial Concept

The spatial concept for the integrated tourism plan organises Tiruchirappalli's key attractions into three complementary thematic zones connected by a unified mobility corridor. This concept is expressed as the "Sacred, Eco, and Heritage Integrated Tourism Corridor" that structures the destination experience into three legible and complementary themes.

The Sacred Tourism Zone encompasses Srirangam Temple and Rockfort Temple, representing the city's core pilgrimage and sacred heritage assets. The Eco-Tourism Zone encompasses Mukkombu Barrage and the Tropical Butterfly Conservatory, representing the city's nature-based and ecological tourism assets. The Heritage Tourism Zone encompasses St. Lourdes Church and the broader urban core, representing the city's colonial-religious and urban heritage assets.

These three thematic zones are connected through a coordinated mobility system comprising the HOHO EV bus circuit, dedicated shuttle services, eco-branded cycling routes, and enhanced pedestrian networks. The spatial concept ensures that visitors can experience the full thematic diversity of Tiruchirappalli's tourism offerings through a structured and navigable framework that encourages multi-site visitation and extended stays.

7.4 Four Integrated Intervention Streams

The vision and spatial concept are translated into action through four integrated intervention streams that collectively address the full spectrum of planning challenges identified in the preceding analysis.

7.4.1 P1: Unified Eco-Heritage Tourism Circuit

The first intervention stream proposes the development of a unified tourism circuit connecting all five sites through the HOHO EV bus service, supported by a common tour card system, digital wayfinding kiosks, and a real-time route map application. This stream addresses the fragmentation issue by creating seamless physical and informational connectivity across the tourism network.

7.4.2 P2: Riverfront and Flood Management

The second stream focuses on the development and management of riverfront areas along the Cauvery and Kollidam rivers, with particular attention to Mukkombu Barrage. It encompasses the design of eco-friendly riverfront infrastructure, flood-resilient visitor facilities, safety systems, and the integration of riverfront spaces into the broader tourism circuit.

7.4.3 P3: AI-Enabled Crowd and Heritage Management

The third stream proposes the deployment of AI-enabled crowd monitoring and management systems at Srirangam Temple and other high-footfall sites. It encompasses digital queue management, real-time crowd density monitoring, predictive capacity management, heritage impact monitoring, and the integration of these digital systems into a comprehensive destination management platform.

7.4.4 P4: Eco-Tourism Infrastructure and Accommodation Development

The fourth stream addresses the development of eco-tourism infrastructure at Mukkombu and the Birds and Butterfly Park, alongside the broader accommodation development strategy to address the projected deficit of 21,204 rooms by 2045. It encompasses the design of interpretive and educational facilities, nature trail infrastructure, accommodation node development, and the promotion of diverse accommodation typologies including heritage homestays.

7.5 Summary

The vision and planning concept presented in this chapter provides the strategic direction and organisational framework for all subsequent proposals. The vision of transforming Tiruchirappalli into a sustainable, integrated, and smart heritage tourism destination by 2045 is operationalised through six pillars (Sustainability, Integration, Inclusivity, Community, Resilience, and Smart Growth) and translated into action through four intervention streams and a three-zone spatial concept. The following chapters develop detailed proposals within this framework, beginning with site-specific interventions in Chapter 8.

CHAPTER 8

PROPOSALS: SITE-SPECIFIC INTERVENTIONS

8.0 Introduction

This chapter presents detailed site-specific planning proposals for each of the five key tourism sites in Tiruchirappalli. The proposals are formulated within the strategic framework of the Sacred, Eco, and Heritage Integrated Tourism Corridor concept presented in Chapter 7, and are organised under four intervention streams: Unified Eco-Heritage Tourism Circuit (P1), Riverfront and Flood Management (P2), AI-Enabled Crowd and Heritage Management (P3), and Eco-Tourism Infrastructure and Accommodation Development (P4). Each site proposal includes a context statement, a proposal statement, specific interventions, and expected impacts.

8.1 Srirangam Temple Proposals

8.1.1 Context and Proposal Statement

Srirangam Temple, as the world's largest functioning Hindu temple complex, presents the most complex and consequential planning challenge among the five selected sites. The temple precinct serves simultaneously as a sacred space for millions of pilgrims, a heritage site of outstanding architectural significance, an active residential and commercial neighbourhood, and a major tourism attraction. The proposal for Srirangam aims to reorganise the temple precinct as a heritage-sensitive and

pedestrian-priority zone by strengthening the concentric street structure, reducing vehicular intrusion in the inner prakarams, and improving the arrival experience through better public space design, movement management, and street-edge control.

The proposal statement is: "Develop a comprehensive heritage and pilgrim management plan for Srirangam Temple by pedestrianising the inner prakarams, introducing peripheral parking with shuttle access, organising movement through street zoning, and improving the spiritual environment through heritage-sensitive street design and digital crowd management systems."

8.1.2 Heritage and Pedestrian Improvements

The pedestrianisation strategy for Srirangam is designed around the concentric prakaram structure of the temple. The inner three prakarams (1st to 3rd) are proposed to be fully pedestrianised, with complete prohibition of motorised vehicles. The 4th and 5th prakarams would operate as restricted vehicular zones with time-based access controls, permitting vehicular movement only during designated early morning and late evening hours for residents and essential services. The 6th and 7th prakarams, which accommodate denser residential and commercial activities, would retain vehicular access but with traffic calming measures, speed restrictions, and designated pedestrian priority crossings.

The street design within the pedestrianised prakarams would incorporate heritage-sensitive elements including traditional stone paving, shaded colonnaded walkways, heritage-style lighting, landscaped pause points, and clearly demarcated vendor zones along street edges. The organised, licensed vendor shops along the edges would replace the current pattern of encroaching and unregulated street vending, improving pedestrian flow while maintaining the commercial vibrancy that is integral to the temple precinct's character.

Barrier-free pathways with tactile paving, gentle ramps, and audio wayfinding aids would be integrated into the pedestrian network to ensure universal accessibility. Multilingual directional signage in Tamil, English, Hindi, and key international languages would be installed at all major intersections and decision points within the temple precinct.

8.1.3 Crowd and Heritage Management

The crowd management proposal for Srirangam employs a multi-layered approach combining physical design interventions with digital technology solutions. AI-based crowd monitoring systems, utilising a network of CCTV cameras with real-time computer vision analytics, would provide continuous crowd density estimation across all prakarams and key bottleneck points. When crowd density approaches predetermined threshold levels, the system would trigger automated alerts to management staff and activate crowd dispersal protocols including redirected pedestrian flows, activated overflow pathways, and real-time public announcements through a distributed speaker network.

Digital queue management systems would be implemented for darshan (deity viewing) and key ritual services, allowing pilgrims to book time slots through a mobile application or at physical kiosks. This system would reduce unstructured waiting, minimise crowding at temple entrances, and enable more equitable distribution of visitor flows throughout the day.

Planned evacuation routes would be clearly marked and maintained for emergency situations, with designated assembly points, emergency access lanes, and communication systems. Regular crowd management drills, particularly before major festival seasons, would be conducted in coordination with local police, fire services, and disaster management authorities.

8.1.4 Peripheral Parking and Shuttle System

A system of peripheral parking facilities would be developed at designated locations around the outer prakarams and at a satellite parking area approximately 1 to 2 kilometres from the temple complex. Battery-operated shuttle services would provide frequent connections between parking areas and the temple entrance, ensuring that visitors can access the temple conveniently without driving into the inner precinct. The shuttle system would be integrated with the broader HOHO EV bus circuit, allowing seamless transfer between the city-wide circuit and the temple shuttle network.

8.1.5 Expected Impact

The implementation of these proposals is expected to significantly reduce congestion within the temple prakarams, enhance the pilgrim and visitor experience by restoring the spiritual ambience of the inner precincts, improve safety by eliminating vehicular-pedestrian conflicts and establishing effective crowd management systems, and preserve the heritage character of the temple precinct by controlling incompatible development and visual pollution. The proposals also support Srirangam's potential UNESCO World Heritage Site nomination by demonstrating a commitment to heritage-sensitive management practices.

8.2 Rockfort Temple Proposals

8.2.1 Context and Proposal Statement

Rockfort Temple, as the most iconic visual landmark of Tiruchirappalli, occupies a central position in the city's tourism identity. The principal planning challenge is to improve accessibility and safety for all visitor categories while preserving the geological and architectural heritage of the site. The proposal encompasses the redevelopment of the base area, the enhancement of the climb experience, the exploration of alternative access systems, and the implementation of comprehensive safety measures.

8.2.2 Base Area Redevelopment

The base of Rockfort is proposed to be redeveloped as an organised urban plaza that serves as the primary arrival point and orientation space for visitors. The plaza design would incorporate clear ticketing counters with digital payment facilities, shaded waiting zones with seating, visitor information kiosks with multilingual content, organised pick-up and drop-off areas for taxis, auto-rickshaws, and the HOHO bus, public toilet facilities, a small heritage interpretation display introducing the history and significance of the site, and designated space for local artisan stalls selling heritage-themed souvenirs and traditional crafts.

The surrounding streets would be redesigned with wider pedestrian pathways, traffic calming measures, heritage-style street furniture, and improved lighting to create a safe and attractive approach to the temple complex.

8.2.3 Climb Experience Enhancement

The climb to the summit, which involves approximately 437 steps, would be enhanced through a series of interventions designed to improve comfort, safety, and interpretive value. Shaded rest points would be provided every 50 to 70 steps, incorporating seating, mist-cooling or drinking water points, and interpretive panels describing the geological, historical, and architectural features visible at each elevation. Viewpoint platforms would be constructed at strategically selected points along the ascent, offering curated panoramic views of the city, the rivers, and the Srirangam island, with orientation displays identifying key landmarks.

8.2.4 Alternative Access System

To ensure inclusive access for elderly visitors, persons with disabilities, and other mobility-constrained groups, the proposal explores the feasibility of an alternative access system in the form of a ropeway or inclined lift (subject to detailed feasibility assessment, heritage impact evaluation, and environmental clearances). If technically and environmentally feasible, such a system would provide dignified access to the summit temples and viewpoints for visitors who cannot navigate the steep climb, significantly expanding the site's visitor base and aligning with the inclusivity pillar of the vision framework.

8.2.5 Safety Infrastructure

A comprehensive safety plan would be implemented encompassing continuous railings along the entire climb route, adequate LED lighting for safe evening access, CCTV surveillance at all key points, emergency call points at regular intervals, defined evacuation routes for festival peaks, and first-aid stations at the base and midway points. These safety measures are essential for managing the risks inherent in the steep ascent and for building visitor confidence.

8.3 St. Lourdes Church Proposals

8.3.1 Context and Proposal Statement

St. Lourdes Church represents an important but underutilised component of Tiruchirappalli's tourism portfolio. The proposals aim to integrate the church into the broader heritage tourism circuit while enhancing the visitor experience through public space improvements, cultural activation of the adjacent Teppakulam pond, and the development of heritage walking routes.

8.3.2 Forecourt Plaza and Public Space Design

A forecourt plaza is proposed in front of St. Lourdes Church, designed as a flexible gathering space that serves both daily visitors and special events. The plaza design would incorporate landscaped seating areas with shade trees and ornamental planting, flexible paving that can accommodate temporary stages and

exhibition setups for cultural events, heritage lighting that highlights the architectural features of the church facade and creates an attractive evening ambiance, drinking water fountains and public toilet facilities, and visitor information displays with content about the church's architectural history and religious significance.

8.3.3 Teppakulam Pond Activation

The historic Teppakulam pond adjacent to the church is proposed to be activated as a cultural waterfront space. Interventions include the restoration and cleaning of the pond, the development of a landscaped promenade along the pond edges, the installation of amphitheatre-style seating for cultural performances, the provision of well-managed food stalls and cafe spaces, and the hosting of periodic events including music festivals, heritage storytelling sessions, and seasonal celebrations. This activation transforms the pond from a passive landscape element into an active cultural venue that extends visitor dwell time and creates a distinctive sense of place.

8.3.4 Pedestrian Bridge and Connectivity

A pedestrian bridge is proposed to connect St. Lourdes Church directly to the Teppakulam pond, ensuring safe and direct movement between the two elements of the cultural precinct. The bridge would reduce traffic conflict, improve accessibility, and enhance the visual and experiential connection between the church and the waterfront. The bridge design would be heritage-sensitive, using materials and forms that complement the Indo-Gothic architecture of the church.

Unobstructed pedestrian pathways and traffic-calming measures around the church would improve walkability and ensure safe access during events and regular services. The church would be included as a designated stop on both the urban heritage walk circuit and the HOHO EV bus route, integrating it into the broader tourism network.

8.4 Mukkombu Barrage Proposals

8.4.1 Context and Proposal Statement

Mukkombu Barrage presents the greatest eco-tourism development potential among the five selected sites. The proposals aim to develop Mukkombu as a zoned eco-recreation park that balances recreational use with ecological conservation and safety management, while significantly improving connectivity and visitor infrastructure.

8.4.2 Zoned Eco-Recreation Park

The Mukkombu area is proposed to be developed as a zoned eco-recreation park with three distinct zones. The Picnic Zone would accommodate family recreation, children's play areas, food courts, and event spaces, designed with durable, eco-friendly materials and adequate shade infrastructure. The Silent Eco Zone would be a nature appreciation area with boardwalks, bird-watching hides, botanical trails, and interpretive signage, designed for minimal environmental impact and quiet nature experiences. The

Activity Zone would accommodate managed water-access points for controlled recreational interaction with the river, cycling and jogging trails, and outdoor fitness facilities.

8.4.3 Eco-Friendly Riverfront Infrastructure

The riverfront design at Mukkombu would incorporate eco-friendly elements including raised boardwalks that minimise ground disturbance, timber viewing decks positioned at scenic viewpoints, controlled water-access points with safety features (steps, railings, depth markers), riparian vegetation restoration along riverbanks, and natural drainage systems. All construction materials and methods would be selected to minimise environmental impact and harmonise with the natural landscape character.

8.4.4 Safety and Flood Management

Given the documented flood risk at Mukkombu, a comprehensive safety infrastructure package is proposed including automated water level monitoring with real-time public alert systems, lifeguard stations at all water-access points, protective barriers at high-risk locations along the barrage, clear and visible safety signage in multiple languages, emergency response points with first-aid facilities, and designated safe assembly areas above the flood line. A flood evacuation plan would be developed and regularly drilled, with clear protocols for temporary site closure during extreme water level events.

8.4.5 Waste Management

A smart-bin based waste management system is proposed, incorporating sensor-equipped waste bins that signal when full for prompt emptying, segregation at source with clearly labelled bins for organic, recyclable, and non-recyclable waste, a strict plastic ban enforced through signage and vendor licensing conditions, regular cleaning schedules, and visitor awareness campaigns promoting responsible waste behaviour.

8.5 Birds and Butterfly Park Proposals

8.5.1 Context and Proposal Statement

The Birds and Butterfly Park (Tropical Butterfly Conservatory) has significant potential as an eco-education and nature-based tourism destination. The proposals aim to transform the park into a well-connected, interpretively rich, and educationally engaging facility that complements the sacred tourism circuit with a distinctive ecological experience.

8.5.2 Interactive Learning Centre

An interactive learning centre is proposed within the park, featuring simple but engaging exhibits on butterfly life cycles, metamorphosis, host plant ecology, pollination, and biodiversity conservation. The centre would incorporate physical exhibits, digital interactive displays, specimen collections, and a small theatre for educational films and presentations. The learning centre would serve as the starting point for guided tours, providing visitors with context and understanding that enhances their subsequent experience of the live butterfly habitats.

8.5.3 Guided Nature Trails

A network of guided nature trails with themed routes is proposed, including a Butterfly Trail focusing on butterfly species identification and behaviour, a Bird Trail for avian observation with designated bird-watching points, a Botanical Trail highlighting the ecological relationships between host plants and butterfly species, and a Riverine Trail along the Cauvery bank for riparian ecosystem appreciation. Each trail would be equipped with interpretive signage, resting points, and wayfinding markers. Trained nature guides would be available for guided walks, with audio guide options for self-guided visitors.

8.5.4 Connectivity Improvement

To address the critical connectivity constraint, a battery-operated shuttle service is proposed from key Srirangam locations (including the temple entrance and the peripheral parking areas) to the conservatory. An eco-branded cycling route with rental facilities and safe cycle lanes would be developed connecting Srirangam to the park, offering an environmentally sustainable and experientially attractive alternative for active visitors. The shuttle service would be integrated with the HOHO circuit and the common tour card system.

8.5.5 Eco-Tourism Branding and Programming

A comprehensive eco-tourism branding and programming strategy is proposed, including the design of school tour packages combining the conservatory visit with Srirangam temple experience, the establishment of an annual "Butterfly Fest" with nature walks, photography contests, workshops, and conservation pledges, partnerships with universities and research institutions for citizen science programmes, and the development of eco-merchandise and conservation-themed souvenirs that generate revenue for park maintenance and expansion.

8.6 Cross-Cutting Proposals

8.6.1 HOHO EV Bus Circuit

A city-wide Hop-On Hop-Off (HOHO) Electric Vehicle bus circuit is proposed to serve as the primary mobility backbone of the integrated tourism corridor. The circuit would connect all five tourism sites along a planned route with designated stops at each site as well as at key transport hubs (airport, railway station, central bus stand) and accommodation clusters. The HOHO buses would operate at 30 to 45 minute frequencies during peak tourism season and 60-minute frequencies during lean periods, with extended evening services during major festival periods.

8.6.2 Unified Tour Card System

A unified tour card (smart card or mobile-based) is proposed that integrates access to the HOHO bus service, entry tickets for applicable sites, shuttle services, and selected concessions at participating restaurants and shops. The tour card would simplify the visitor experience, reduce cash transactions, generate valuable visitor flow data for planning purposes, and create a branded touchpoint that reinforces the integrated destination identity.

8.6.3 Digital Wayfinding and Information

A comprehensive digital wayfinding system is proposed comprising a multilingual mobile application with real-time route maps, site information, and navigation assistance; physical digital kiosks at major nodes and transport hubs; multilingual directional signage at all major intersections and decision points; and an integrated destination website and social media presence for pre-visit planning and real-time information sharing.

8.7 Summary

This chapter has presented detailed, site-specific planning proposals for each of the five key tourism sites, complemented by cross-cutting proposals for the HOHO EV bus circuit, unified tour card, and digital wayfinding systems. The proposals are designed to address the specific challenges and opportunities identified at each site while contributing to the integrated vision of a connected, sustainable, and smart heritage tourism destination. The following chapters develop the tourism circuit plan, accommodation projections, and implementation strategies that operationalise these proposals.

CHAPTER 9

TOURISM CIRCUIT PLAN

9.0 Introduction

This chapter presents the detailed design of the integrated tourism circuit for Tiruchirappalli, translating the spatial concept of the Sacred, Eco, and Heritage Integrated Tourism Corridor into a specific route plan with defined stops, schedules, and supporting infrastructure. The circuit plan aims to transform the predominantly single-point visitor pattern into a multi-site circuit experience that encourages extended stays, distributes visitor flows across all five sites, and creates a cohesive destination identity.

9.1 Circuit Design Principles

The tourism circuit design is guided by five operational principles. First, comprehensive coverage: the circuit must connect all five key tourism sites as well as major transport hubs and accommodation clusters. Second, time efficiency: the total circuit travel time must be manageable within a half-day framework, encouraging completion of the full circuit. Third, frequency and reliability: services must operate at consistent frequencies to minimise waiting times and ensure visitor confidence. Fourth, accessibility and comfort: vehicles and stops must be designed for universal accessibility, climate comfort, and a premium visitor experience. Fifth, environmental sustainability: the use of electric vehicles ensures zero tailpipe emissions and alignment with the sustainability pillar of the vision framework.

9.2 Circuit Route Description

The primary HOHO EV bus circuit follows a loop route connecting the five tourism sites and key urban nodes. The route is designed to provide logical sequencing of thematic experiences while minimising travel time between stops. The proposed circuit route proceeds as follows: Tiruchirappalli Railway Junction (Start/End) to Rockfort Temple (Stop 1, approximately 2 kilometres, 8 minutes travel time), then to St. Lourdes Church and Teppakulam (Stop 2, approximately 1.5 kilometres, 6 minutes), then to Srirangam Temple main entrance (Stop 3, approximately 5 kilometres, 15 minutes), then to Birds and Butterfly Park (Stop 4, approximately 4 kilometres, 12 minutes), then to Mukkombu Barrage (Stop 5, approximately 6 kilometres, 18 minutes), and returning to Tiruchirappalli Railway Junction via Panjapur (approximately 12 kilometres, 25 minutes).

The total circuit distance is approximately 30.5 kilometres with a full loop travel time of approximately 84 minutes (excluding stop dwell times). With an average dwell time of 10 minutes at each stop and 5 minutes at the terminal, the total circuit cycle time is approximately 2 hours and 20 minutes, which is consistent with HOHO service standards in comparable Indian and international tourism destinations.

Table No. 9.1: HOHO EV Bus Circuit Route Details

Stop	Location	Distance (km)	Travel Time (min)	Theme
Terminal	Railway Junction	0	0	Transport Hub
Stop 1	Rockfort Temple	2.0	8	Sacred Heritage
Stop 2	St. Lourdes Church	1.5	6	Heritage Tourism
Stop 3	Srirangam Temple	5.0	15	Pilgrimage
Stop 4	Birds & Butterfly Park	4.0	12	Eco-Education
Stop 5	Mukkombu Barrage	6.0	18	Eco-Leisure
Return	Railway Junction	12.0	25	Transport Hub

Source: Prepared by Author



Fig. No. 9.1: Proposed HOHO EV Bus Circuit Route Map

Source: Prepared by Author

9.3 Service Operations Plan

The HOHO EV bus service is proposed to operate with differentiated frequency schedules based on seasonal demand. During peak season (October to February), buses would operate at 30-minute headways from 7:00 AM to 9:00 PM, with extended services until 11:00 PM during the Vaikunta Ekadasi festival period. During the moderate season (March, July to September), buses would operate at 45-minute headways from 7:30 AM to 8:00 PM. During the lean season (April to June), services would operate at 60-minute headways from 8:00 AM to 7:00 PM.

The fleet size is estimated at 8 to 10 electric buses, each with a capacity of 30 to 35 passengers, to maintain the proposed service frequencies. The buses would be equipped with air conditioning, multilingual audio commentary, USB charging ports, wheelchair accessibility features, and real-time GPS tracking integrated with the mobile wayfinding application.

9.4 Thematic Sub-Circuits

In addition to the primary HOHO circuit, three thematic sub-circuits are proposed to cater to visitors with specific interests and varying time constraints.

9.4.1 Sacred Circuit

The Sacred Circuit connects Srirangam Temple, Rockfort Temple, and associated Hindu temples in the city core. This sub-circuit is designed for pilgrimage-focused visitors and would operate using smaller shuttle vehicles with higher frequencies during festival periods. The circuit includes stops at the Jambukeswarar Temple (Thiruvanaikaval), the Samayapuram Mariamman Temple, and the Thayumanavar Temple, creating a comprehensive pilgrimage itinerary.

9.4.2 Eco Circuit

The Eco Circuit connects Mukkombu Barrage, the Birds and Butterfly Park, and the Cauvery riverfront areas. This sub-circuit is designed for nature enthusiasts and would operate using battery-operated mini-buses and cycling options. The circuit includes stops at riverside viewpoints, botanical areas, and nature interpretation nodes, creating an immersive eco-tourism experience.

9.4.3 Heritage Walk Circuit

The Heritage Walk Circuit is a pedestrian-based circuit within the urban core connecting St. Lourdes Church, Teppakulam, Rockfort, the Big Bazaar Street heritage precinct, and the Nawab's Palace area. The circuit is designed as a guided walking tour of approximately 4 to 5 kilometres duration (2 to 3 hours), highlighting the multi-layered architectural and cultural heritage of the urban core from the Nayak period through the colonial era.

9.5 Circuit Integration Infrastructure

The effective functioning of the tourism circuit requires supporting infrastructure at each stop. Each HOHO stop would be equipped with a covered waiting shelter with seating and climate-appropriate design, a digital display showing real-time bus arrival information, a wayfinding kiosk with site information and circuit maps, a tour card reader for boarding and alighting, accessible design features including ramps, tactile markers, and audio announcements, secure bicycle parking for visitors using the eco-cycling routes, and drinking water and basic sanitation facilities.

9.6 Summary

The tourism circuit plan provides the operational framework for connecting Tiruchirappalli's dispersed tourism assets into a coherent and navigable visitor experience. The primary HOHO EV bus circuit, supplemented by three thematic sub-circuits and supported by integrated stop infrastructure, addresses the fragmentation issue identified in the earlier analysis and creates the conditions for multi-site visitation, extended stays, and enhanced economic impact. The circuit plan is designed to be scalable, with provisions for route extension and frequency enhancement as demand grows toward the 2045 horizon.

CHAPTER 10

ACCOMMODATION PROJECTION AND REQUIREMENTS

10.0 Introduction

This chapter presents a detailed analysis of the current accommodation supply in Tiruchirappalli, projects future accommodation demand based on the tourism growth trajectory established in Chapter 5, identifies the quantum and typological composition of the accommodation deficit, and proposes a spatially distributed accommodation development strategy to meet projected requirements through 2045.

10.1 Current Accommodation Supply

The current accommodation supply in Tiruchirappalli consists of approximately 190 hotel properties with a combined room inventory of approximately 6,500 rooms. The accommodation stock is heavily skewed toward the budget and economy segments, with a limited number of star-rated properties and no internationally branded luxury hotels. The spatial distribution of accommodation is concentrated in the city centre, particularly along Williams Road, Dindigul Road, and the area surrounding the Central Bus Stand and Railway Junction.

Table No. 10.1: Current Accommodation Supply by Category (2022)

Category	Number of Properties	Room Inventory	Share (%)
5-Star / Premium	2	250	3.8%
3-4 Star	8	680	10.5%
Budget Hotels	85	3,200	49.2%
Lodges / Guest Houses	65	1,500	23.1%
Pilgrim Rest Houses (Chatrams)	30	870	13.4%
Total	190	6,500	100%

Source: District Tourism Office, Tiruchirappalli; Hotel Association Data

The analysis reveals several characteristics of the existing accommodation supply. The dominance of budget and economy accommodation reflects the predominantly pilgrimage-oriented visitor profile, where cost-conscious domestic pilgrims constitute the majority of overnight visitors. The limited availability of premium and mid-range accommodation constrains the city's ability to attract higher-spending domestic leisure tourists and international visitors. The pilgrim rest houses (chatrams), while historically significant and culturally appropriate, generally lack the standards of comfort and hygiene expected by modern tourists.

10.2 Accommodation Demand Projection

Accommodation demand projection is based on the tourist footfall projections developed in Chapter 5, combined with assumptions regarding the proportion of visitors requiring overnight accommodation, the average length of stay, and the peak factor (ratio of peak day demand to average daily demand). The key assumptions used in the projection are: the share of tourists requiring overnight accommodation is estimated at 25 per cent of total visitors (based on current patterns and the expected increase as the destination develops); the average length of stay is projected to increase from 1.0 day in 2023 to 2.5 days by 2045; the average hotel room occupancy rate is assumed at 70 per cent; and the peak factor is estimated at 1.5.

Table No. 10.2: Accommodation Demand Projection (2022-2045)

Year	Total Tourists (Lakh)	Overnight Visitors (Lakh)	Avg Stay (Days)	Rooms Required (Peak)
2022 (Base)	197.4	49.4	1.0	6,759
2025	281.8	70.5	1.2	9,857
2030	383.8	96.0	1.5	14,967
2035	522.9	130.7	1.8	20,521
2040	712.4	178.1	2.2	26,150
2045	666.0	166.5	2.5	27,704

Source: Projected by Author based on CAGR Analysis

The projections indicate that peak day room demand will increase from approximately 6,759 rooms in 2022 to 27,704 rooms by 2045. Against the current supply of 6,500 rooms, this represents a current deficit of approximately 259 rooms (during peak periods) that is projected to escalate to approximately 21,204 rooms by 2045. This deficit constitutes one of the most significant infrastructure challenges confronting the city's tourism development aspirations.

10.3 Proposed Accommodation Development Strategy

The accommodation development strategy proposes a spatially distributed approach that locates new accommodation nodes at multiple locations across the metropolitan area rather than concentrating supply in the already congested city centre. The strategy incorporates a diverse typological mix to serve different market segments and visitor preferences.

10.3.1 Accommodation Nodes

Five primary accommodation development nodes are proposed at locations identified in the Tiruchirappalli Master Plan 2045 that offer adequate land availability, transportation connectivity, and proximity to tourism sites.

Table No. 10.3: Proposed Accommodation Development Nodes

Node	Location	Approx. Area (Acres)	Proposed Typology	Capacity (Rooms)
Node 1	Panjapur	35	5-Star, 3-Star, Business	5,500
Node 2	Madakudi	25	3-Star, Budget, Homestay	4,200
Node 3	Udayanpatti	22	Budget, Homestay, Hostel	3,800
Node 4	Thirunagar	20	3-Star, Budget	4,000
Node 5	Kumbakudi	16	Eco-Resort, Homestay	3,700

Source: Proposed by Author based on Master Plan 2045 land availability

The total proposed capacity of approximately 21,200 rooms across the five nodes, combined with the existing supply of 6,500 rooms, would meet the projected peak demand of approximately 27,700 rooms by 2045. The distribution across multiple nodes ensures that accommodation development does not overburden any single location and provides visitors with choices of accommodation located near different tourism sites.

10.3.2 Typological Mix

The proposed typological mix is designed to serve diverse market segments. Premium (5-star and boutique) accommodation is proposed primarily at the Panjapur node to attract high-spending domestic and international tourists. Mid-range (3-4 star) accommodation is distributed across Panjapur, Madakudi, and Thirunagar nodes. Budget hotels and hostels are proposed at all nodes to serve the dominant pilgrim and budget traveller segments. Heritage homestays are proposed primarily at Madakudi and Kumbakudi, leveraging the traditional built form and involving local communities in the accommodation economy. Eco-resorts at Kumbakudi would cater to nature-oriented visitors seeking proximity to Mukkombu and the Butterfly Park.

10.4 Heritage Homestay Programme

A dedicated heritage homestay programme is proposed, aligned with the Tamil Nadu State Tourism Policy 2023's provisions for alternative accommodation models. The programme would identify and register suitable traditional houses in heritage settlements near tourism sites, provide financial assistance and technical guidance for upgrading facilities to meet minimum hospitality standards while preserving heritage character, develop a quality certification and grading system for heritage homestays, integrate homestay listings into the unified digital booking platform, and provide training for homestay operators in hospitality management, food safety, and cultural interpretation.

10.5 Summary

The accommodation projection analysis confirms that Tiruchirappalli faces a substantial and growing accommodation deficit that, if unaddressed, will severely constrain tourism growth and economic impact. The proposed accommodation development strategy addresses this deficit through a spatially distributed, typologically diverse approach that locates approximately 21,200 new rooms across five development nodes while promoting heritage homestays and eco-resorts as distinctive accommodation typologies. The implementation of this strategy requires coordinated action between the government (through land allocation, regulatory facilitation, and incentives) and the private sector (through investment in hotel development and homestay operations), as detailed in the governance and financing chapter.

CHAPTER 11

PHASING AND IMPLEMENTATION STRATEGY

11.0 Introduction

This chapter presents the phased implementation roadmap for the Integrated Tourism Development Plan, detailing the sequencing of interventions across three time horizons: short-term (2025-2030), medium-term (2030-2035), and long-term (2035-2045). The phasing strategy ensures that foundational infrastructure is established first, building the platform upon which more complex and capital-intensive interventions are subsequently implemented.

11.1 Phasing Rationale

The phasing of interventions follows a logic of sequential dependency and incremental capacity building. Short-term interventions focus on addressing critical safety issues, establishing basic infrastructure, initiating the HOHO circuit pilot, and launching institutional coordination mechanisms. Medium-term interventions build upon this foundation by expanding infrastructure, completing circuit integration, and initiating accommodation node development. Long-term interventions encompass the full build-out of accommodation capacity, the deployment of advanced smart tourism systems, and the achievement of the destination-level transformation envisioned for 2045.

11.2 Short-Term Phase (2025-2030)

The short-term phase prioritises interventions that address immediate safety risks, establish the institutional framework for integrated tourism management, and initiate visible improvements that build stakeholder confidence and public support.

Table No. 11.1: Short-Term Interventions (2025-2030)

S.No.	Intervention	Site/Scope	Priority
1	Safety infrastructure upgrade (railings, lighting, CCTV)	Rockfort, Mukkombu	Critical
2	Flood warning and safety system at Mukkombu	Mukkombu	Critical
3	Crowd management pilot system at Srirangam	Srirangam	High
4	HOHO EV bus circuit pilot (3-4 buses)	City-wide	High
5	Multilingual signage installation at all 5 sites	All sites	High
6	Pedestrianisation of inner prakarams (Phase 1)	Srirangam	High
7	Rockfort base plaza redevelopment	Rockfort	Medium
8	St. Lourdes forecourt plaza design and construction	St. Lourdes	Medium
9	Tourism circuit mobile app and digital platform launch	City-wide	Medium
10	Heritage homestay pilot programme (50 units)	Madakudi, Kumbakudi	Medium
11	Establishment of Tourism Coordination Committee	Institutional	Critical

12	Unified tour card system development	City-wide	Medium
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Source: Proposed by Author

The estimated capital investment for the short-term phase is approximately 150 to 200 crore rupees, to be mobilised through a combination of TNITPP funding, Smart City Mission allocations, state tourism department budgets, and initial PPP arrangements. The short-term phase is expected to yield visible improvements in safety, connectivity, and visitor experience, establishing momentum for the subsequent phases.

11.3 Medium-Term Phase (2030-2035)

The medium-term phase focuses on the expansion and deepening of interventions initiated in the short-term phase, alongside the commencement of major infrastructure and accommodation development projects.

Table No. 11.2: Medium-Term Interventions (2030-2035)

S.No.	Intervention	Site/Scope	Priority
1	Full HOHO EV bus fleet deployment (8-10 buses)	City-wide	High
2	AI-enabled crowd management full deployment	Srirangam	High
3	Mukkombu zoned eco-recreation park development	Mukkombu	High
4	Birds Park interactive learning centre and trails	Birds Park	High
5	Srirangam peripheral parking and shuttle system	Srirangam	High
6	Accommodation Node 1 (Panjapur) development	Panjapur	High
7	Accommodation Node 2 (Madakudi) development	Madakudi	Medium

8	Rockfort alternative access feasibility study	Rockfort	Medium
9	Teppakulam pond activation and pedestrian bridge	St. Lourdes	Medium
10	Heritage homestay programme expansion (200 units)	Multiple	Medium
11	Thematic sub-circuits operationalisation	City-wide	Medium
12	Eco-branded cycling route development	Srirangam-Birds Park	Medium

Source: Proposed by Author

The estimated capital investment for the medium-term phase is approximately 400 to 550 crore rupees, with a greater share of private sector investment expected through PPP models for accommodation development and tourism infrastructure. By the end of this phase, the tourism circuit should be fully operational, major site-specific interventions should be substantially complete, and accommodation capacity should begin to expand significantly.

11.4 Long-Term Phase (2035-2045)

The long-term phase completes the full build-out of the tourism development plan, addressing remaining accommodation capacity requirements, deploying advanced smart tourism technologies, and achieving the destination-level transformation envisioned in the 2045 vision.

Table No. 11.3: Long-Term Interventions (2035-2045)

S.No.	Intervention	Site/Scope	Priority
1	Accommodation Nodes 3-5 development	Udayanpatti, Thirunagar, Kumbakudi	High
2	Rockfort alternative access implementation (if feasible)	Rockfort	Medium
3	Full smart destination management platform	City-wide	High
4	Complete heritage street design in Srirangam	Srirangam	Medium

5	Circuit extension to secondary tourism sites	City-wide	Medium
6	International tourism marketing campaign	Institutional	High
7	Heritage homestay programme at scale (500+ units)	Multiple	Medium
8	Annual Butterfly Fest and cultural calendar at scale	Birds Park, All sites	Medium
9	UNESCO World Heritage nomination support	Srirangam	High
10	Comprehensive monitoring and evaluation	City-wide	High

Source: Proposed by Author

The estimated capital investment for the long-term phase is approximately 800 to 1,200 crore rupees, with private sector investment expected to constitute the majority share, particularly for accommodation development. By 2045, Tiruchirappalli should have achieved the transformation from a transit node to a world-class heritage tourism destination with comprehensive infrastructure, an integrated circuit network, adequate accommodation capacity, and advanced smart management systems.

11.5 Outcome Indicators

Table No. 11.4: Outcome Indicators – Growth Roadmap (2023-2045)

Indicator	2023 (Baseline)	2030 (Target)	2035 (Target)	2045 (Target)
Annual Tourist Footfall (Crore)	2.49	3.84	5.23	6.66
Hotel Room Capacity	6,500	11,500	18,000	27,700
Sites with Full Amenities	5/14	9/14	12/14	14/14
Average Length of Stay (Days)	1.0	1.5	1.8	2.5+
International Tourist Share (%)	0.4%	1.2%	2.0%	3.7%

Operational Tourism Circuits	0	4	8	11
HOHO Network Status	None	Pilot (4 buses)	Full (10 buses)	Extended
Safety Incidents (Major)	High Risk	Reduced	Minimal	Zero Target
AI Monitoring Coverage	None	Srirangam pilot	All major sites	Full network

Source: Projected by Author based on TNITPP Targets and Plan Proposals

11.6 Summary

The phased implementation strategy provides a realistic and sequenced roadmap for translating the ITDP proposals into on-ground reality. The three-phase approach ensures that critical safety and institutional interventions are prioritised in the short term, major infrastructure and circuit development are accomplished in the medium term, and full capacity build-out and destination transformation are achieved in the long term. The strategy is designed to be adaptive, with provisions for accelerating or adjusting interventions based on demand trends, funding availability, and emerging opportunities.

CHAPTER 12

GOVERNANCE AND FINANCING

12.0 Introduction

This chapter addresses the governance framework and financing strategy required for the effective implementation of the Integrated Tourism Development Plan. Given the multi-site, multi-agency nature of the plan, institutional coordination, clear role definition, and sustainable financing mechanisms are critical success factors.

12.1 Governance Framework

12.1.1 Multi-Stakeholder Coordination

The implementation of the ITDP involves multiple government agencies, departments, and institutions, each with distinct jurisdictions and mandates. The principal stakeholders include the Tamil Nadu Tourism Department and TTDC (destination marketing, tourism policy, and TTDC-operated facilities), the District Administration and Tourism Office (local coordination, permits, and monitoring), the Tiruchirappalli City Corporation (urban infrastructure, sanitation, road maintenance, and local planning), the HR and CE

Department (management and conservation of Hindu temples including Srirangam and Rockfort), the DTCP and TLPA (land use planning, development control, and Master Plan implementation), the Department of Archaeology (heritage conservation at protected monuments), the Transport Department and TNSTC (public transport, HOHO bus operations, and road safety), the Tamil Nadu Pollution Control Board (environmental compliance at eco-tourism sites), and the police and disaster management authorities (crowd management, safety, and emergency response).

12.1.2 Proposed Tourism Coordination Committee

To address the institutional fragmentation that currently characterises tourism governance in Tiruchirappalli, the establishment of a dedicated Tourism Coordination Committee (TCC) is proposed. The TCC would serve as the apex coordination body for all tourism development activities, with membership drawn from all principal stakeholder agencies, private sector representatives (hotel association, tour operators association, transport operators), community representatives, and subject matter experts in heritage conservation, eco-tourism, and smart city technologies.

The TCC would be chaired by the District Collector and would have a dedicated secretariat staffed by professional tourism planning and management personnel. The committee's functions would include coordinating the implementation of ITDP interventions across agencies, monitoring progress against the phased implementation roadmap, resolving inter-agency conflicts and jurisdictional overlaps, mobilising and allocating funding from various sources, reviewing and approving development proposals within the tourism circuit, and conducting periodic evaluation of tourism outcomes against the defined indicators.

12.2 Financing Strategy

12.2.1 Funding Sources

The financing strategy for the ITDP draws upon multiple funding sources to mobilise the estimated total investment of approximately 1,350 to 1,950 crore rupees over the 2025-2045 implementation period.

Table No. 12.1: Proposed Funding Sources and Allocation

Funding Source	Applicable Interventions	Estimated Share (%)
TNITPP (ADB-supported)	Tourism infrastructure, circuit development	20-25%
Smart City Mission	Digital systems, smart mobility, wayfinding	10-15%
State Tourism Department	Signage, branding, homestay programme	8-10%
PRASAD Scheme (GoI)	Pilgrimage infrastructure at Srirangam, Rockfort	10-12%
City Corporation Budget	Roads, sanitation, street lighting, maintenance	8-10%

PPP Investment	Accommodation, eco-park, HOHO operations	30-35%
CSR and Philanthropic	Heritage conservation, community programmes	3-5%

Source: Estimated by Author based on scheme guidelines and precedents

12.2.2 Public-Private Partnership Models

PPP models are proposed for several components of the ITDP where private sector efficiency, investment, and operational expertise can complement public sector planning and regulatory functions. Specific PPP applications include the HOHO EV bus service (operated by a private concessionaire under a service-level agreement with the Transport Department), the accommodation node development (land allocated by the government, hotel development and operation by private investors under long-term lease agreements), the eco-recreation park at Mukkombu (designed by the government, operated and maintained by a private eco-tourism operator), and the digital tourism platform and tour card system (developed and operated by a technology partner under a revenue-sharing arrangement).

12.2.3 Revenue Generation

The tourism development plan incorporates several revenue generation mechanisms to ensure financial sustainability of the implemented interventions. These include tourism cess or contribution levied on hotel room tariffs in the metropolitan area, HOHO bus ticket revenue and tour card sales, entry fees at the eco-recreation park and conservatory, parking fees at peripheral and site parking facilities, vendor licensing fees at organised vendor zones within tourism precincts, advertising and sponsorship revenue from the digital platform and physical signage, and revenue from heritage walk tours and cultural event programming.

12.3 Stakeholder Roles and Responsibilities

Table No. 12.2: Stakeholder Roles and Responsibilities

Stakeholder	Role	Key Responsibilities
Tamil Nadu Tourism Dept.	Lead Agency	Policy direction, marketing, TNITPP coordination
District Administration	Coordination	Inter-agency coordination, monitoring, permits
City Corporation	Infrastructure	Roads, sanitation, street lighting, maintenance
HR&CE Department	Temple Management	Temple conservation, crowd management, facilities

DTCP / TLPA	Planning	Land use regulation, development control, approvals
Transport Department	Mobility	HOHO operations, public transport integration
Private Sector	Investment & Operations	Hotels, eco-park, digital platform, HOHO
Local Communities	Participation	Homestays, artisan enterprises, cultural programming
Tourism Coordination Committee	Apex Coordination	Overall coordination, monitoring, evaluation

Source: Proposed by Author

12.4 Summary

The governance and financing framework presented in this chapter provides the institutional architecture and financial strategy required for effective implementation of the ITDP. The proposed Tourism Coordination Committee addresses the challenge of institutional fragmentation, the diversified funding strategy mobilises resources from multiple government schemes and private investment, and the clear delineation of stakeholder roles and responsibilities establishes accountability for implementation. The PPP models proposed for specific components leverage private sector efficiency while maintaining public sector oversight and regulatory control.

CHAPTER 13

CONCLUSION

13.0 Introduction

This concluding chapter summarises the key findings, proposals, and contributions of the Integrated Tourism Development Plan for Tiruchirappalli. It reflects on the vision of transforming the city from a transit node into a world-class, sustainable heritage tourism destination by 2045 and discusses the broader implications of the study for tourism planning in Indian Tier-II cities.

13.1 Summary of Key Findings

The study has established that Tiruchirappalli possesses exceptional and diverse tourism assets spanning sacred heritage (Srirangam Temple, Rockfort Temple), colonial-religious heritage (St. Lourdes Church),

hydraulic heritage and eco-leisure (Mukkombu Barrage), and ecological conservation (Birds and Butterfly Park). Tourist footfall reached 2.49 crore in 2023 with a CAGR of 6.3 per cent, demonstrating strong and resilient demand growth. However, this growth is largely unplanned, with critical deficits in accommodation (projected shortfall of 21,204 rooms by 2045), infrastructure, inter-site connectivity, crowd management, and heritage conservation that constrain the city's potential as a destination.

13.2 Summary of Proposals

The ITDP proposes a comprehensive set of interventions organised under four streams. The Unified Eco-Heritage Tourism Circuit (P1) connects all five sites through a HOHO EV bus service, common tour card, and digital wayfinding. The Riverfront and Flood Management (P2) stream develops Mukkombu as a zoned eco-recreation park with safety infrastructure. The AI-Enabled Crowd and Heritage Management (P3) stream deploys digital crowd monitoring and queue management at Srirangam. The Eco-Tourism Infrastructure and Accommodation Development (P4) stream enhances the Birds and Butterfly Park and develops 21,200 new hotel rooms across five spatially distributed nodes.

Site-specific proposals address the unique challenges and opportunities at each site: heritage-sensitive pedestrianisation and crowd management at Srirangam; base plaza redevelopment, climb enhancement, and alternative access at Rockfort; forecourt plaza and Teppakulam activation at St. Lourdes Church; zoned eco-recreation and safety infrastructure at Mukkombu; and interactive learning centres, nature trails, and connectivity improvements at the Birds and Butterfly Park.

13.3 Implementation Roadmap

The phased implementation strategy sequences interventions across short-term (2025-2030), medium-term (2030-2035), and long-term (2035-2045) horizons, with a total estimated investment of 1,350 to 1,950 crore rupees mobilised through a combination of TNITPP funding, Smart City allocations, PRASAD scheme resources, state tourism budgets, PPP investments, and CSR contributions. The governance framework proposes a Tourism Coordination Committee to address institutional fragmentation and ensure coordinated implementation.

13.4 Vision 2045

By 2045, the implementation of this plan envisions Tiruchirappalli as South India's foremost sustainable, inclusive, and smart heritage tourism destination. Annual tourist footfall is projected to reach 6.66 crore, supported by 27,700 hotel rooms, 14 fully equipped tourism sites, 11 operational tourism circuits, and a fully integrated HOHO transport network. The average length of stay is expected to increase from 1.0 to 2.5 or more days, the international tourist share from 0.4 per cent to 3.7 per cent, and the safety environment from high-risk conditions to zero major incident levels. This transformation will link ecology, spirituality, culture, and community through integrated planning, smart infrastructure, and inclusive economic development, ensuring that tourism growth benefits all sections of society while preserving the city's extraordinary heritage and natural assets for future generations.

13.5 Contribution and Recommendations for Future Research

This thesis contributes to the emerging discourse on integrated tourism planning for Indian Tier-II heritage cities by demonstrating a comprehensive, multi-site, and multi-thematic planning approach that synthesises heritage conservation, eco-tourism, pilgrimage management, smart technologies, and accommodation planning within a unified framework. The study provides a replicable methodology that can be adapted for similar heritage destinations including Madurai, Thanjavur, Hampi, and Varanasi.

Recommendations for future research include detailed feasibility studies for the proposed ropeway or inclined lift at Rockfort, environmental impact assessments for the Mukkombu eco-recreation park, a comprehensive visitor survey to establish quantitative baselines for visitor satisfaction, spending patterns, and willingness to pay, detailed architectural conservation assessments for Srirangam Temple to support UNESCO World Heritage nomination, and carrying capacity studies for each of the five sites to establish science-based visitor limits.

REFERENCES

- Butler RW (1980), The Concept of a Tourist Area Cycle of Evolution: Implications for Management of Resources, *Canadian Geographer*, Vol 24 No. 1, pp 5-12.
- Census of India (2011), District Census Handbook: Tiruchirappalli, Directorate of Census Operations, Tamil Nadu.
- Coccossis H and Mexa A (2004), *The Challenge of Tourism Carrying Capacity Assessment*, Ashgate Publishing, Aldershot.
- DTCP Tamil Nadu (2020), Tiruchirappalli Master Plan 2045: Draft Report, Directorate of Town and Country Planning, Chennai.
- Government of India (2022), National Tourism Policy 2022, Ministry of Tourism, New Delhi.
- Government of Tamil Nadu (2023), Tamil Nadu State Tourism Policy 2023, Department of Tourism, Chennai.
- Government of Tamil Nadu (2024), Tamil Nadu Integrated Tourism Promotion Project (TNITPP): Project Document, Tourism Department, Chennai.
- Gretzel U, Sigala M, Xiang Z and Koo C (2015), Smart Tourism: Foundations and Developments, *Electronic Markets*, Vol 25 No. 3, pp 179-188.
- Gunn CA (1988), *Tourism Planning: Basics, Concepts, Cases*, 2nd ed., Taylor and Francis, New York.
- ICOMOS (1999), *International Cultural Tourism Charter: Managing Tourism at Places of Heritage Significance*, ICOMOS, Paris.
- Illiyas FT, Mani SK, Pradeepkumar AP and Mohan K (2013), Human Stampedes During Religious Festivals: A Comparative Review of Mass Gathering Emergencies in India, *International Journal of Disaster Risk Reduction*, Vol 5, pp 10-18.
- Inskoop E (1991), *Tourism Planning: An Integrated and Sustainable Development Approach*, Van Nostrand Reinhold, New York.
- Lew A and McKercher B (2006), Modeling Tourist Movements: A Local Destination Analysis, *Annals of Tourism Research*, Vol 33 No. 2, pp 403-423.
- Mehta P et al. (2015), Crowd Management at Kumbh Mela: An Integrated Approach, *Procedia Engineering*, Vol 125, pp 739-744.

Ministry of Tourism, Government of India (2022), India Tourism Statistics at a Glance 2022, Market Research Division, New Delhi.

MoEFCC (2021), Guidelines for Ecotourism in and Around Protected Areas, Ministry of Environment, Forest and Climate Change, New Delhi.

National Trust for Historic Preservation (2015), Heritage Tourism: A Resource Guide, Washington DC.

Shinde KA (2012), Policy, Planning, and Management for Religious Tourism in Indian Pilgrimage Sites, Journal of Policy Research in Tourism, Leisure and Events, Vol 4 No. 3, pp 277-301.

Smith SLJ (1994), The Tourism Product, Annals of Tourism Research, Vol 21 No. 3, pp 582-595.

Tamil Nadu Tourism Development Corporation (2023), Annual Report 2022-23, TTDC, Chennai.

Timothy DJ and Boyd SW (2003), Heritage Tourism, Pearson Education, Harlow.

UNWTO (2005), Making Tourism More Sustainable: A Guide for Policy Makers, United Nations World Tourism Organization, Madrid.

Weaver DB (2001), Ecotourism, John Wiley and Sons, Milton.

Wikipedia (2025), Rockfort Temple, Tiruchirappalli, <http://en.wikipedia.org/wiki/Rockfort>. (Accessed on 15 March 2025).