



**COMPREHENSIVE DEVELOPMENT FRAMEWORK
REPORT OF KARNATAKA**

YOUTH PEACE AND DEVELOPMENT FORUM

NEW DELHI

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FOREWORD

Karnataka has emerged as one of India's most dynamic and rapidly developing states. Since its formation, the state has established itself as a national leader in information technology, life sciences, pharmaceuticals, innovation, digital governance, and industrial development. With Bengaluru serving as a globally recognized technology and research hub, Karnataka has demonstrated how visionary governance, strategic investments, and innovation-driven policies can accelerate economic growth while creating opportunities for millions. As India advances towards becoming a developed nation by 2047, Karnataka is uniquely positioned to play a transformative role in shaping the country's knowledge economy and technological future.

However, as we navigate the rapidly changing economic, technological, and environmental realities of the twenty-first century, it has become increasingly evident that Karnataka stands at an important stage in its development journey. While the state has achieved remarkable progress across multiple sectors, it also faces complex challenges that require long-term strategic planning. Balanced regional development, employment generation for a growing youth population, sustainable urbanization, water resource management, climate resilience, agricultural modernization, environmental conservation, and expanding innovation beyond metropolitan centres have become critical priorities for the coming decades.

To fully realize its immense potential, Karnataka must continue its transition towards a globally competitive, innovation-driven, environmentally sustainable, and inclusive economy. It is within this important context that The Comprehensive Development Framework Report of the State of Karnataka was conceived. When the Youth Peace and Development Forum, through its Council for Comprehensive Development Frameworks, entrusted me with the responsibility of leading this ambitious initiative, our objective was clear—to prepare a forward-looking, evidence-based, and actionable roadmap capable of guiding the state's long-term development.

Leading this extensive project has been both a privilege and an intellectually enriching experience. Over several months, our research team carefully examined the structural opportunities and emerging challenges that will shape Karnataka's future. From the outset, we recognized that sustaining high economic growth requires more than incremental policy improvements. It demands integrated planning, institutional innovation, data-driven governance, and coordinated reforms across every major sector of public administration and economic activity.

This document represents the culmination of rigorous research, comparative policy analysis, and extensive deliberations among researchers, young professionals, subject experts, and policy enthusiasts. Rather than serving merely as an assessment of existing systems, this framework has been designed as a practical blueprint for transformative action. The strategic

recommendations presented throughout this report seek to strengthen Karnataka's long-term competitiveness while ensuring inclusive and sustainable development.

Our recommendations place particular emphasis on strengthening higher education, research, and advanced skill development to build a globally competitive workforce; expanding innovation ecosystems in artificial intelligence, biotechnology, pharmaceuticals, semiconductors, aerospace, and information technology; accelerating industrial growth through advanced manufacturing; modernizing agriculture with precision farming and sustainable irrigation practices; improving healthcare systems; strengthening digital governance; expanding renewable energy; enhancing urban infrastructure; and developing climate-resilient cities and rural communities. Throughout this framework, we have remained committed to one guiding principle: economic progress must be accompanied by environmental sustainability, social inclusion, and equal opportunities for every citizen.

As the lead of this important initiative, I take immense pride in the dedication, professionalism, and commitment demonstrated by every member of our research and drafting team. We firmly believe that the youth of India should actively contribute to shaping public policy rather than merely observing it. The contributors to this report devoted countless hours to analysing developmental trends, studying international best practices, consulting policy literature, and evaluating innovative solutions to ensure that every recommendation presented here is both ambitious and practically achievable.

This report reflects our generation's vision for a future-ready Karnataka. We envision a state that combines world-class technological innovation with inclusive growth, rapid industrial expansion with environmental stewardship, global competitiveness with social equity, and economic excellence with a high quality of life. We aspire to build a Karnataka where innovation flourishes, entrepreneurship thrives, talented young people find meaningful opportunities, and every region of the state shares in the benefits of sustained development.

It is my sincere hope that this Comprehensive Development Framework will serve as a catalyst for informed discussion, constructive collaboration, and long-term strategic planning. We invite policymakers, administrators, academicians, industry leaders, civil society organizations, development practitioners, and citizens to engage thoughtfully with the ideas presented in this report. I invite you to read this report with an open mind, critically examine its recommendations, and join us in the collective endeavour to build a prosperous, innovative, sustainable, and globally competitive Karnataka for generations to come.

Dheeraj G. N.
Chairman
Youth Peace and Development (YPD) Forum
New Delhi

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The Youth Peace and Development Forum (YPD Forum) expresses its sincere gratitude to all individuals whose dedication, expertise, and commitment made the preparation of The Comprehensive Development Framework Report of the State of Karnataka possible.

This report forms part of a larger national initiative undertaken through the Council for Comprehensive Development Frameworks (CDF Council), constituted by the YPD Forum to facilitate the fast-track preparation of comprehensive development frameworks for all 28 States of India. The Council represents the Forum's commitment to promoting evidence-based policymaking, strategic planning, and long-term developmental thinking across the nation.

The Forum places on record its deep appreciation to Dheeraj G. N., Chairman of the Youth Peace and Development Forum, for his vision, leadership, and initiative in conceptualizing and guiding this ambitious project. The Forum also extends its heartfelt thanks to Aravind Saj, Vice Chairman of the Youth Peace and Development Forum, for his constant support and encouragement throughout the execution of this initiative.

Special appreciation is due to Aman Chauhan, Resource Person of the Council for Comprehensive Development Frameworks, for his valuable coordination support. The Forum further acknowledges the contributions of Monish Krishna, Secretary-General of the Youth Peace and Development Forum, whose administrative leadership, organizational support, and commitment have been instrumental in the successful implementation of the Council's activities.

The Youth Peace and Development Forum also records its appreciation for the dedicated incharges of the Council for Comprehensive Development Frameworks: Pranav P, Suraj Kumar, Akshit Dehariya, Meeth R, Mihikha Mathur, Rishi Gurug, Vishvesh, Kashinath Rajagopal, Siddhart Singh Solanki, and Tanvi Harivanam. Their research efforts, intellectual contributions, teamwork, and commitment to public policy and development studies have significantly strengthened the quality and substance of this report.

The Forum acknowledges the commitment, intellectual curiosity, and sense of responsibility demonstrated by each member of the Council. Through research, analysis, discussion, drafting, review, and continuous engagement with developmental issues, these members contributed significantly to the realization of the Council's objectives. Their willingness to dedicate their time and talents to a national developmental initiative reflects a commendable spirit of public service and constructive citizenship.

The Forum also recognizes that the preparation of a comprehensive development framework requires engagement with a wide range of ideas, perspectives, and sources of knowledge.

Accordingly, sincere appreciation is extended to all researchers, academicians, policy experts, development practitioners, government publications, statistical agencies, think tanks, and public institutions whose work provided valuable insights and reference material for this report. Their contributions to the broader body of knowledge on governance, economics, social development, environmental sustainability, infrastructure, education, healthcare, and public policy have enriched the quality and depth of this framework.

The Youth Peace and Development Forum is particularly grateful to the students, young researchers, and volunteers associated with the Forum who continue to demonstrate that youth can play a constructive role in addressing national challenges. Their enthusiasm, creativity, and commitment to public causes embody the ideals upon which the Forum was founded and reaffirm the importance of empowering younger generations to participate actively in nation-building.

The Forum further extends its appreciation to all well-wishers, supporters, advisors, and stakeholders who encouraged this initiative and contributed to its successful completion. Whether through guidance, feedback, consultation, or moral support, their contributions helped strengthen the quality and relevance of this work.

This report represents more than a policy document; it reflects a collective effort to envision a better future. It is the product of shared aspirations, collaborative research, and a common belief that informed planning and constructive dialogue can contribute to meaningful social, economic, and institutional progress. While the recommendations contained herein are intended to support the development of Karnataka, they also form part of a broader national effort to strengthen the foundations of a developed, inclusive, sustainable, and prosperous India.

As India advances towards the centenary of its independence in 2047, the Youth Peace and Development Forum remains committed to fostering research, dialogue, and innovation in support of national development. It is hoped that this report will serve as a useful resource for policymakers, administrators, researchers, civil society organizations, industry leaders, and citizens, and that it will contribute meaningfully to the ongoing pursuit of inclusive growth, good governance, and sustainable development.

With gratitude to all who contributed to this endeavour, the Youth Peace and Development Forum proudly presents this report as a modest contribution towards the shared vision of a stronger Karnataka and a developed India.

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PREFACE

This Comprehensive Development Framework Report of the State of Karnataka has been prepared as a structured, evidence-based examination of the state's development trajectory across twenty-one interlinked domains, ranging from geography and demography to fiscal architecture, economic structure, human development, infrastructure, environment, governance, and a long-term vision for 2047. It is offered in the same spirit as similar state-level frameworks prepared for comparative reference, as a working document intended to inform policymakers, researchers, students, and citizens rather than as a final or authoritative government publication.

Karnataka presents a particularly instructive case for this kind of exercise. The state ranks fifth among Indian states by Gross State Domestic Product, with output reaching approximately Rs 32.81 lakh crore in 2025-26 and growth of 8.1% at constant prices, ahead of the national average (Dailyhunt, 2026). Karnataka is home to nearly 69 million people spread across 31 districts and four administrative divisions, with a population projected to reach 71.7 million by 2036 (StatisticsTimes.com, 2026). Its capital, Bengaluru, has become synonymous with India's technology and innovation economy, yet the state's northern, coastal, and hill regions continue to register development indicators well below the state average. This combination of world-class metropolitan strength and persistent regional disparity is precisely the kind of complexity that a single-city or single-sector narrative cannot adequately capture, and it is the reason a chapter-by-chapter, sector-by-sector framework has been adopted here.

The methodology underlying this report draws primarily on government sources: the Karnataka Economic Survey, state budget documents placed before the Legislative Assembly, Census of India projections, and reports from bodies such as the NITI Aayog and the Reserve Bank of India, supplemented by peer-reviewed research and reputable secondary compilations where official data is unavailable or dated. Every statistic presented in this framework is cited using APA 7th edition conventions and dated to the year it pertains to, so readers can independently verify currency and trace figures back to their original source. Where reliable, recent data could not be located for a particular indicator, that gap has been noted explicitly rather than filled with estimation presented as fact.

This report follows a standardised structure common to comprehensive state development frameworks: a title page, this preface, an executive summary, and twenty-one substantive chapters organised around state profile, fiscal architecture, economic structure, investment climate, education, health, social justice, transport, energy, water and sanitation, urban development, rural development, environment, climate change, administrative governance, technology-enabled service delivery, innovation, agriculture, tourism, cross-cutting themes, and a concluding vision roadmap toward 2047. Development challenges rarely respect sectoral boundaries, and a framework that isolates health from nutrition, or fiscal policy from infrastructure investment, risks recommending solutions that work in theory but fail on implementation. By presenting each domain with consistent depth and cross-referencing related chapters where relevant, this report aims to give readers both a granular understanding of individual sectors and a coherent sense of how those sectors interact. It is worth stating plainly what this framework is not. It is not a substitute for the state's own planning documents, nor does it claim insider access to unpublished government data. It does not represent the official position of the Government of Karnataka or any political party. Its recommendations, where offered, are intended as contributions to public debate rather than binding policy prescriptions, and readers are encouraged to interrogate, challenge, and build upon the analysis presented here. A note on scope and limitations is also warranted. Development data in India is uneven in quality and timeliness across sectors and districts, and Karnataka is no exception. Some indicators, such as fiscal figures and GSDP estimates, are updated annually and relatively reliable. Others, including informal sector employment, mental health service coverage, and certain environmental metrics, are measured infrequently or inconsistently across districts, and this framework flags such gaps rather than concealing them behind confident-sounding averages.

Meeth. R

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EXECUTIVE SUMMARY

Karnataka enters the second half of the 2020s as one of India's most economically significant yet internally uneven states. Gross State Domestic Product reached approximately Rs 32.81 lakh crore in 2025-26, growing 8.1 percent at constant prices and lifting the state's share of national GDP to 9.19 percent, up from 8.9 percent the previous year, while per capita income rose 12.2 percent year-on-year to roughly Rs 4.33 lakh, well above the national average of Rs 2.19 lakh. The 2026-27 budget projects continued GSDP growth of 7 percent alongside a fiscal deficit target of 2.9 percent of GSDP and outstanding liabilities close to 25 percent of GSDP, even as NITI Aayog's Fiscal Health Index moved Karnataka from "Front-Runner" to "Performer" in its most recent edition, citing slight fiscal slippage. These strong headline numbers sit alongside a single structural fact this Framework documents across nearly every chapter: Bengaluru Urban district alone generates roughly 40.4 percent of state output while also recording the state's highest Human Development Index, and the remaining thirty districts, home to the overwhelming majority of the state's estimated 69 million residents and its entire agricultural workforce, together produce well under two-thirds of output.

This Bengaluru-versus-rest-of-state pattern recurs across the sectors this Framework examines. Karnataka's startup ecosystem, the largest and most mature of any Indian state with more than 4,000 active startups, 45 unicorns, and over 400 global research and development centres, remains heavily concentrated in Bengaluru despite Beyond Bengaluru cluster policies aimed at Mysuru, Hubballi-Dharwad, and Mangaluru. The state's constitutionally protected Kalyana Karnataka region, comprising six historically backward districts under Article 371J, has received close to Rs 31,000 crore in combined state and regional-board funding over the past decade, yet a 2022 Comptroller and Auditor General audit found the institutional mechanisms the provision requires, including its advisory council and expert committees, were simply not in place.

A second theme running through this Framework concerns the gap between institutional design and operational delivery. Karnataka pioneered several genuinely first-mover governance instruments, including the Sakala citizen service guarantee law, the Bhoomi land records digitisation system, and the State Institute for Transformation of Karnataka modelled explicitly on NITI Aayog, yet each has required judicial intervention, external civic pressure, or a multi-year staffing cycle to function as designed. The Karnataka Lokayukta, one of

India's oldest anti-corruption ombudsman institutions, has itself experienced extended vacancies and, as recently as December 2023, publicly disclosed 600 to 700 staff vacancies within its own office. This pattern, well-designed institutions requiring external correction to deliver consistently, surfaces again in education, where near-universal enrolment coexists with a widening rural learning-outcomes gap; in health, where strong maternal and under-five mortality indicators sit alongside concerning nutrition and sex-ratio-at-birth trends; and in water and sanitation, where the capital's sewage treatment capacity has missed every publicly announced deadline since 2018 even as two other Karnataka cities won national cleanliness recognition under the same governance framework.

Karnataka's urban governance itself underwent its most significant transformation in decades with the 2025 dissolution of the Bruhat Bengaluru Mahanagara Palike and its replacement by the Greater Bengaluru Authority and five new city corporations, a reform still awaiting its first elected mayors as of this Framework's research. Inter-state relations remain a genuine constraint on the state's water security, with the Cauvery, Krishna, and Mahadayi disputes each unresolved and periodically escalating to protest, litigation, or contempt proceedings, even as the state's industrial corridor cooperation with neighbouring states along the Chennai-Bengaluru and Bengaluru-Mumbai corridors proceeds comparatively smoothly. Karnataka's environmental position shows a similarly mixed picture: forest cover, at 20.47 percent of state area, sits below the national average and recorded the second-largest decline of any Indian state over the most recent assessment period, even as the state pursues an ambitious renewable energy expansion from 36,271 MW toward a targeted 60,000 MW of installed capacity.

Looking toward the state's long-term Vision 2047 ambitions, Karnataka's own planning documents have articulated a succession of trillion-dollar economy targets, from 2031 through 2032, alongside independent projections of a 2.1 to 3.7 trillion dollar economy by 2047, targets that a demographically ageing, below-replacement-fertility population base and an increasingly binding fiscal envelope will make genuinely challenging to sustain without deliberate, continued investment in human capital, decentralised governance capacity, and inter-district equity.

Chapter 1: State Profile — Geography, Demography and Society

1.1 Geographic and Ecological Characteristics of the State

Karnataka is located in the southwestern part of the Indian peninsula, bordered by Maharashtra and Goa to the north and northwest, Andhra Pradesh and Telangana to the east, Tamil Nadu to the southeast, Kerala to the south, and the Arabian Sea to the west. The state is commonly divided into three broad physiographic regions: the coastal belt running along the Arabian Sea, the Western Ghats, known locally in parts of Karnataka as the Malnad region, and the Deccan plateau, which covers the bulk of the state's interior and is further divided into the relatively fertile Maidan region in the south and the drought-prone north Karnataka plateau. Karnataka is the seventh largest Indian state by area, covering approximately 191,791 square kilometres (Sarkarilist, 2025), a scale comparable to a mid-sized European country and larger than several nations in continental Europe.

The Western Ghats, a UNESCO-recognized biodiversity hotspot, run through Karnataka's western districts including Uttara Kannada, Shivamogga, Chikkamagaluru, Kodagu, and Dakshina Kannada, and are central to the state's forest cover, river origins, and rainfall patterns. This mountain chain functions as a climatic barrier, intercepting the southwest monsoon and generating some of the highest rainfall totals in peninsular India along its windward western slopes, while creating a distinct rain shadow effect immediately to its east, a topographic reality that directly produces the semi-arid conditions of the interior plateau districts discussed below. Karnataka is the source state for several major peninsular rivers, most notably the Kaveri, which originates at Talakaveri in Kodagu district and flows into Tamil Nadu, making inter-state river water sharing a recurring policy and legal issue for the state, addressed further in Chapter 21. Other significant rivers include the Krishna and its tributaries, the Tungabhadra and the Bhima, and the Sharavathi, which supports the Jog Falls hydroelectric project and the newer Sharavathi Pumped Storage Power Project discussed in Chapter 9.

Karnataka's coastline extends for roughly 320 kilometres along the Arabian Sea, supporting fishing communities, port infrastructure at Mangalore and other minor ports, and a distinct coastal cultural and linguistic identity, particularly in Dakshina Kannada and Udupi districts where Tulu and Konkani are widely spoken alongside Kannada. This coastline is also the focus of a 2025 World Bank-supported conservation project covering roughly 30,000 hectares of coastal and marine seascape, part of the state's broader environmental strategy discussed in Chapter 13 (Groklopedia, 2026).

Ecologically, Karnataka's north, particularly the districts of the Hyderabad-Karnataka region such as Kalaburagi, Raichur, Yadgir, and Bidar, sits in a semi-arid, drought-prone agro-climatic zone with erratic and comparatively low rainfall, in contrast to the high-rainfall Malnad and coastal regions. Karnataka has the second-largest extent of arid land among Indian states after Rajasthan (Wikipedia, 2026). This ecological asymmetry underlies much of the state's persistent north-south development gap discussed throughout this Framework,

since it directly shapes agricultural productivity, groundwater availability, and the viability of rain-fed versus irrigated cropping systems, and it is the fundamental physical driver behind the drought declarations across 236 of the state's 267 taluks recorded in 2024, discussed in Chapter 14.

1.2 Administrative Divisions: Districts, Divisions and Sub-State Units

Karnataka's administrative structure is organised into four revenue divisions, Bengaluru, Mysuru, Belagavi, and Kalaburagi, which together encompass the state's 31 districts as of 2025, further subdivided into 236 taluks, hoblis, and, at the grassroots level, 5,994 gram panchayats and 314 urban local bodies (Grokikipedia, 2026; The Better India, 2026). This administrative geography has been in active flux in recent years. The number of taluks rose from just 175 in the 1980s to 236 by 2025 (Jain College, 2025), reflecting successive rounds of sub-division intended to bring revenue and welfare administration closer to citizens. In January 2024, Chief Minister Siddaramaiah approved the formation of 33 additional taluks, building on earlier batches, with new notifications specifically prioritising areas facing Bengaluru's urban sprawl on one hand and northern districts' water scarcity administration needs on the other (Grokikipedia, 2026). By mid-2025, dedicated integrated taluk offices, known as Praja Soudhas, had been sanctioned for newly formed taluks in districts including Kalaburagi, intended to consolidate land records and welfare scheme administration under one roof (Grokikipedia, 2026).

This rapid taluk creation has not been without implementation friction, a fact directly relevant to any assessment of administrative governance quality for this Framework's ministerial audience. Reporting found that only nine of the 63 taluks created between 2017 and 2020 had their own dedicated administrative building years after their creation, forcing citizens in the remaining taluks to continue travelling to the headquarters of the undivided parent taluk for land records and other government services, with officials at the time estimating it would take a further four to five years for all such taluks to secure land and construct proper administrative buildings (Deccan Herald, cited in this chapter's research). This is a concrete, actionable governance finding: the political decision to create new taluks for administrative equity has, in a meaningful number of cases, outpaced the physical and staffing investment needed to make those new taluks functional, effectively creating a paper decentralisation that does not yet deliver the intended service-delivery improvement on the ground.

District reorganisation has followed a similar, sometimes contested, pattern. Vijayanagara, carved out of Ballari district in November 2020, became Karnataka's 31st district, named after the historic Vijayanagara Empire capital at Hampi (Sarkarilist, 2025). This decision revived a series of long-pending demands for further district creation, including proposals to trifurcate Belagavi district into Chikkodi and Gokak, to bifurcate Tumakuru district to form a new Madhugiri district, to separate Hunsur from Mysuru district, to separate Jamkhandi from Bagalkot, and to separate Sirsi from Uttara Kannada (Deccan Herald, cited in this chapter's research). Contemporary reporting at the time noted scepticism about the underlying motivations for some of these demands, with the Vijayanagara decision itself widely

understood to reflect political accommodation of a specific legislator alongside its stated administrative rationale (Deccan Herald, cited in this chapter's research). As recently as July 2025, the Karnataka Cabinet renamed Bengaluru Rural district as Bengaluru North district as part of continued administrative reorganization (Wikipedia, 2026), and in 2025 a proposal to merge Kanakapura taluk from Ramanagara district into Bengaluru Urban district drew political opposition from former Chief Minister H.D. Kumaraswamy, who characterized it as an urban-centric move risking inflated land prices and undermined rural autonomy, with Chief Minister Siddaramaiah subsequently clarifying that no formal boundary shift had been approved (Grokikipedia, 2026). For state leadership, this pattern suggests that future district and taluk reorganisation decisions should be paired upfront with a costed, time-bound infrastructure and staffing commitment, rather than being announced as standalone political decisions that then take years to become operationally real.

The Kalaburagi division, historically referred to as the Hyderabad-Karnataka region and granted special constitutional status under Article 371J for backward region development, includes several of the districts that consistently rank lowest on the state's own human development indicators, including Yadgir, Raichur, Kalaburagi, Bidar, Koppal, and Ballari (Nammakpsc, 2023). This special constitutional provision, unique among Karnataka's regions, reflects a long-standing formal recognition by both the state and the union government that the region requires differentiated fiscal and administrative treatment, including reserved recruitment quotas in state government jobs and a dedicated regional development board.

At the taluk level, human development analysis of Karnataka has documented substantial sub-district variation even within relatively prosperous districts, with Mangalore taluk in Dakshina Kannada district recording the state's highest taluk-level HDI at approximately 0.787, while Shahapur taluk in Yadgir district ranks at the bottom of the state's taluk-level rankings (Gowda and Kumar, as cited in ResearchGate, 2026). This taluk-level granularity is important for policy design, since district averages can obscure pockets of acute deprivation within otherwise better-performing districts, and vice versa, a point with direct implications for how the state should target the newly created taluks discussed above, particularly given that several of the underserved taluks flagged for water scarcity and administrative access issues sit within, or adjacent to, the districts already identified in this chapter as the state's most deprived.

1.3 Demographic Structure: Population, Density, Growth and Composition

Karnataka's demographic base, as established by the 2011 Census of India, the most recent decennial census available given the postponement of Census 2021, recorded the state's population at 61,130,704, making it India's eighth most populous state, with a decadal growth rate that, per subsequent trend analysis, is estimated at approximately 15 percent between 2011 and 2021 (Sarkarilist, 2025; Grokikipedia, 2026). Bengaluru Urban district is by a wide margin the most populous and most densely settled district in the state, and is also, notably, the smallest district in Karnataka by area even as it is the state's economic engine, reflecting

decades of in-migration driven by the city's role as a technology and services hub, while Kodagu district, known for coffee cultivation and hill-station tourism, is the state's smallest district by population (Jain College, 2025).

Karnataka's demographic transition has followed the broader southern Indian pattern of relatively early fertility decline compared to the national average, contributing to a total fertility rate of 1.7 by 2019-21, below replacement level and below the national figure of 2.0 for the same period (NITI Aayog, 2025), as introduced in Chapter 6. This advanced demographic transition has significant long-term fiscal and workforce planning implications: a state with below-replacement fertility will, over coming decades, see its working-age population share plateau and then decline relative to its elderly population, a dynamic that should inform long-range planning for the state's pension liabilities, discussed in Chapter 2, and its healthcare workforce planning, discussed in Chapter 6, well before that demographic shift becomes acute.

1.4 Linguistic, Ethnic, Religious and Cultural Profile

Kannada is the official language of the state and the mother tongue of the majority of Karnataka's population, with the state having been reorganised on linguistic lines on November 1, 1956, initially as Mysore State before being renamed Karnataka in 1973, to unify Kannada-speaking regions previously divided across the Mysore princely state, the Bombay and Madras presidencies, and the Hyderabad state (Sarkarilist, 2025). Significant linguistic minorities include Tulu and Konkani speakers concentrated in the coastal districts of Dakshina Kannada and Udupi, Kodava speakers in Kodagu, Urdu speakers concentrated in the northern districts reflecting the region's Hyderabad state history, and Marathi speakers along the Maharashtra border districts such as Belagavi, where the Chikkodi and Gokak trifurcation demand noted above is itself partly rooted in this district's distinct linguistic and administrative history along the Maharashtra frontier.

Religiously, Karnataka's population is predominantly Hindu, with significant Muslim and Christian minorities, the latter particularly concentrated in the coastal districts with a long history of Portuguese and later British-era Christian missionary presence. The state is also home to significant Jain communities, particularly in districts historically linked to the medieval Hoysala and Western Ganga dynasties, and to Lingayat and Vokkaliga communities that constitute two of the state's most politically significant social groups, whose regional concentration in different parts of the state has historically shaped both electoral geography and the internal politics of district and taluk reorganisation decisions described above.

Culturally, Karnataka's Tamil population, while a minority compared to the state's dominant Kannada identity, maintains an active community presence particularly in Bengaluru, reflecting the city's long history as a destination for inter-state migration from Tamil Nadu, a dynamic relevant to community cultural organizing such as Tamil Puthandu observances held on university campuses and elsewhere in the city, and a small illustration of the broader inter-state migration dynamics touched on in Chapter 20.

1.5 Human Development Index: State Ranking and Trend Analysis

Karnataka's Human Development Index rose from 0.429 in 1990 to 0.645 by 2019, an average annual growth rate of roughly 1.42 per cent, placing the state consistently above the national HDI average across this period (Nammakpsc, 2023, citing the Karnataka Human Development Report series). The Karnataka Human Development Report series itself, first published in 1999, making Karnataka the second Indian state after Madhya Pradesh to publish a dedicated state HDI report, has been updated in 2005, 2015, and most recently in 2022, with each edition shifting its analytical emphasis, from an initial UNDP-aligned assessment in 1999, to financing human development in 2005, to accelerating equitable development in 2015, and to bridging inequality gaps in its 2022 edition (Kumbar, 2023). This progression of titles is itself instructive: the state's own planning apparatus has explicitly moved its stated priority from raising the aggregate HDI figure toward addressing the internal inequality that this Framework has documented at nearly every level, state, district, and taluk.

The 2022 Karnataka Human Development Report placed particular emphasis on measuring a Gender Equality Index modelled on the NITI Aayog framework, covering fourteen indicators across education, health, empowerment, employment, and infrastructure at both the district and taluk level, reflecting a growing recognition within the state's own planning apparatus that aggregate HDI figures mask significant gender-based gaps in outcomes (Kumbar, 2023).

At the district level, Bengaluru Urban ranks first in the state with an HDI of approximately 0.738, while Dakshina Kannada and Chikkamagaluru districts occupy the second and third positions with HDI values of approximately 0.687 and 0.668 respectively (Gowda and Kumar, as cited in ResearchGate, 2026). Yadgir district ranks lowest among Karnataka's districts, with an HDI of approximately 0.538, while Chamarajanagara, Bidar, and Vijayapura districts also occupy positions near the bottom of the state ranking (Gowda and Kumar, as cited in ResearchGate, 2026). This district-level spread, from roughly 0.74 at the top to roughly 0.54 at the bottom, a gap of exactly two full decades of the state's own aggregate HDI progress, represents one of the widest intra-state HDI gaps among major Indian states and is a recurring theme across the fiscal, educational, and health chapters of this Framework.

1.6 Poverty, Inequality and Multidimensional Deprivation Indices

Karnataka is among the fourteen Indian states and union territories that recorded a National Multidimensional Poverty Index headcount ratio below 10 percent in the National Family Health Survey 2019 to 2021 round, a group that grew from seven states in the 2015 to 2016 round, Mizoram, Himachal Pradesh, Punjab, Sikkim, Tamil Nadu, Goa, and Kerala, to fourteen states by the time of the NITI Aayog 2023 progress review, with Karnataka joining alongside Telangana, Andhra Pradesh, Haryana, Maharashtra, Manipur, and Uttarakhand (NITI Aayog, 2023). This places Karnataka firmly within India's better-performing cohort on multidimensional poverty, alongside its southern and western peer states, and reflects the national picture in which the overall Indian MPI headcount ratio fell from 24.85 per cent in

2015 to 2016 to 14.96 per cent in 2019 to 2021 (NITI Aayog, 2023, as cited in Rau's IAS, 2023).

Within Karnataka, however, poverty and deprivation remain heavily concentrated in the northern districts. Ten districts, all located in north Karnataka, have been specifically flagged for a focused, package-based development approach to address health, education, and quality-of-life deprivations: Yadgir, Kalaburagi, Raichur, Koppal, Ballari, Bidar, Gadag, Bagalkot, Vijayapura, and Haveri (Nammakpsc, 2023). The same set of districts, along with an additional 102 taluks statewide, has been identified as facing a high incidence of malnutrition, requiring what the state's own Human Development Report describes as an integrated, holistic, multi-sectoral response (Nammakpsc, 2023).

1.7 Intra-State Disparities: Aspirational Districts and Backwards Region Identification

Karnataka's intra-state disparities are formally recognised through two overlapping mechanisms. First, the Article 371J constitutional provision designates the Hyderabad-Karnataka region, comprising the districts of Kalaburagi, Yadgir, Raichur, Bidar, Koppal, and Ballari, for special development status, including a dedicated regional development board and reserved quotas in state recruitment and educational admissions. Second, several of these same districts, notably Raichur and Yadgir, are designated Aspirational Districts under the NITI Aayog national programme, which targets convergence-based development support across health, nutrition, education, agriculture, and basic infrastructure indicators in India's most structurally lagging districts nationwide.

The overlap between the state's own constitutionally recognised backward region and the central government's nationally designated aspirational districts is a significant policy signal, indicating consistency between state-level and central-level assessments of where Karnataka's deepest development deficits lie. This convergence should, in principle, allow for more coordinated deployment of state and central resources toward the same geography, a theme revisited in the chapters on fiscal architecture and rural development.

1.8 State's Position in National Rankings Across Key Development Indicators

Karnataka has consistently ranked among India's leading states on innovation and competitiveness metrics. In the India Innovation Index rankings, Karnataka ranked highest among major states in its category, a position it has held alongside Manipur and Chandigarh leading their respective state groupings (Vajiram and Ravi, 2026). On fiscal health specifically, however, Karnataka's national ranking trajectory has shown recent slippage rather than consistent strength. NITI Aayog's Fiscal Health Index 2025, its first edition, found that while Karnataka performs well across most sub-indices, it ranks among the three "aspirational," or bottom-tier, states specifically on the Debt Sustainability sub-index (Business Standard, 2025), a more precise and more concerning finding than the simple debt-to-GSDP ratio comparison discussed in Chapter 2 might suggest on its own, since it

reflects the trajectory and quality of debt management rather than only its current absolute level. This was reinforced by the Fiscal Health Index 2026, the index's second edition, which found that Karnataka and Telangana had both moved from the "Front-Runner" category down to "Performer," reflecting what the report explicitly termed slight fiscal slippage, even as the state continues to maintain debt levels within the 19 to 38 percent of GSDP range typical of India's largest state economies (Drishti IAS, 2026; IndiaSpend, 2025).

This combination, strong on innovation and per capita income rankings, described in Chapters 3 and 4, yet flagged specifically on debt sustainability trajectory in successive national fiscal health assessments, is the clearest possible illustration of this Framework's central argument: Karnataka's growth story and its governance story are not moving in lockstep, and a state vision built only around the state's genuine economic strengths risks overlooking a fiscal trajectory that the state's own apex planning body has now flagged twice in as many years.

Chapter 2: Fiscal Architecture of the State

2.1 Revenue Framework: Own Tax Revenue, Non-Tax Revenue and Devolution

Karnataka's revenue base rests on three pillars: its own tax revenue, its own non-tax revenue, and transfers from the Union government in the form of tax devolution and grants-in-aid. For 2026-27, the state's total receipts, excluding borrowings, are estimated at Rs 3,15,240 crore, an increase of 14 per cent over the revised estimate for 2025-26, following a 13 per cent increase the previous year, when receipts excluding borrowings stood at Rs 2,92,647 crore against a GSDP of Rs 30,70,103 crore (PRS Legislative Research, 2025, 2026).

Karnataka's own-tax revenue to GSDP ratio has historically tracked close to the national median for major states, at roughly 6.4 per cent of GSDP as of 2022-23, comparable to the median state's own-tax revenue share (NITI Aayog, 2025). Karnataka's combined non-tax revenue and central transfers, however, are notably weaker than typical: together these amount to only about 3.1 per cent of GSDP, much lower than the median major state (NITI Aayog, 2025), meaning the state's overall revenue architecture leans more heavily on its own tax effort, and correspondingly less on Union transfers, than most other large Indian states. This reflects Karnataka's relatively strong tax administration and its large formal economy, particularly its services and technology sector, which generates substantial state excise, sales tax and VAT, and stamp duty and registration revenue even though GST has subsumed a large share of what was previously state-level indirect tax.

On devolution, Karnataka has been vocal about what it characterises as a structural disadvantage under the current Finance Commission formula. The state's economic advisor has stated that Karnataka's share of central taxes fell by approximately Rs 65,000 crore over the course of the Fifteenth Finance Commission period (2021 to 2026), and Karnataka's revenue minister has noted that while the state contributes roughly Rs 4 lakh crore annually in taxes and cess to the Union, it receives back only about Rs 70,000 crore through devolution and grants combined (Takshashila Institution, 2024). This asymmetry is rooted in the income distance criterion used for horizontal devolution, which allocates a larger share to lower per capita income states, a criterion carrying 45 per cent weight under the Fifteenth Finance Commission (Takshashila Institution, 2024), which structurally disadvantages higher income states like Karnataka regardless of their tax effort.

The Fifteenth Finance Commission fixed vertical devolution, the share of the divisible pool of central taxes going to all states combined, at 41 per cent for the 2021 to 2026 period, down from 42 per cent under the Fourteenth Finance Commission (Vajiram and Ravi, 2026). A further structural concern raised repeatedly by Karnataka's leadership is the exclusion of cess and surcharge from the divisible pool, which is estimated at around 23 per cent of the Union government's gross tax receipts for 2024-25 and is not shared with states at all (Drishti IAS, 2024).

The state has begun formally presenting its case to the Sixteenth Finance Commission, constituted to govern the 2026 to 2031 period, seeking a higher share of GST revenue, at least 60 percent by one proposal, and a share of Union cesses (Takshashila Institution, 2024).

2.2 Expenditure Profile: Composition, Quality and Efficiency

Total expenditure, excluding debt repayment, for 2026-27 is estimated at Rs 4,12,688 crore, a 12 percent increase over the revised estimate for 2025-26, following a similar 12 percent increase the previous year when expenditure stood at Rs 3,83,075 crore (PRS Legislative Research, 2025, 2026). Within this, the 2025-26 budget allocated Rs 40,954 crore to education, Rs 18,690 crore to health, and Rs 22,186 crore to irrigation (IJSART, 2025), reflecting the state's welfare-oriented spending priorities under its guarantee schemes, including the free bus travel scheme for women.

A persistent structural concern is the scale of committed expenditure. Salaries, pensions, and interest payments together account for approximately 58 percent of the state's revenue receipts, a level that meaningfully constrains fiscal flexibility for new capital or welfare spending (IJSART, 2025). This finding sits alongside a specific, quantified historical illustration: state Medium Term Fiscal Plan projections tabled before the 2023 elections estimated salary expenditure alone rising from Rs 38,430 crore to Rs 41,288 crore the following year, and to Rs 66,251 crore by 2025, an increase attributed at the time to the potential adoption of Seventh Pay Commission recommendations (Deccan Herald, cited in this chapter's research, originally reported circa 2022). This roughly 72 percent projected increase in the state's salary bill within a three-year window, if realized as projected, represents exactly the kind of committed-expenditure growth that NITI Aayog's macro-fiscal assessment identifies as crowding out capital spending, and reinforces the case for the expenditure rationalization priority raised in this chapter's concluding section.

Analysts studying the 2025-26 budget have specifically flagged that despite headline increases, spending in education and health as a share of the budget remains below national benchmark averages, and have recommended rationalizing salary and pension growth and improving monitoring of welfare program efficiency to free up resources for capital investment (IJSART, 2025).

2.3 Capital Expenditure: Infrastructure Investment and Asset Creation

Karnataka's 2025-26 budget allocated Rs 68,172 crore to capital outlay against total budgeted expenditure of Rs 4,09,549 crore, with Rs 3,11,739 crore directed to revenue expenditure (IJSART, 2025). The relatively modest share of capital outlay in the overall expenditure envelope, roughly 16.6 percent of total budgeted expenditure, is consistent with the broader finding that committed revenue expenditure, salaries, pensions, and interest, crowds out capital spending, a dynamic identified as a key fiscal risk by researchers analyzing the state's recent budgets (IJSART, 2025).

The central government has also extended interest-free capital expenditure loans to states with a 50-year tenure; Karnataka's allocation under this facility is estimated at Rs 4,500 crore for 2026-27, equivalent to about 0.1 percent of GSDP, following Rs 5,296 crore, or 0.2 percent of GSDP, in 2024-25 actuals (PRS Legislative Research, 2026). These loans are excluded from the state's fiscal deficit borrowing ceiling calculation, giving Karnataka some additional headroom for capital spending without breaching its fiscal responsibility targets, and represent a specific, quantifiable lever the state finance department could seek to expand in its ongoing engagement with the Union Finance Ministry.

2.4 Fiscal Deficit, Primary Deficit and Debt Sustainability

Karnataka's fiscal deficit for 2026-27 is targeted at 2.9 percent of GSDP, or Rs 97,448 crore, marginally below the 2025-26 revised estimate of 3 percent of GSDP (PRS Legislative Research, 2026). This follows a fiscal deficit of 2.9 percent of GSDP, or Rs 90,428 crore, budgeted for 2025-26, which was revised upward during the year (PRS Legislative Research, 2025, 2026). The Sixteenth Finance Commission has recommended a fiscal deficit target of 3 percent of GSDP for all states for the 2026 to 2031 period, meaning Karnataka's 2026-27 target sits marginally within this ceiling (PRS Legislative Research, 2026).

On revenue balance, Karnataka's revenue deficit is estimated at 0.7 percent of GSDP, or Rs 22,957 crore, for 2026-27, an improvement in absolute discipline terms from the 0.8 percent of GSDP revenue deficit recorded in the 2025-26 revised estimate, though the 2025-26 revenue deficit itself came in 32 percent higher than originally budgeted (PRS Legislative Research, 2026). Earlier, in 2022-23, Karnataka ran a comparatively low revenue deficit of just 0.3 percent of GSDP, better than the median major state's 0.4 percent (NITI Aayog, 2025), and Comptroller and Auditor General data show the state achieved an outright revenue surplus in three of the five years between 2017-18 and 2021-22 (NITI Aayog, 2025).

On debt, Karnataka's debt-to-GSDP ratio stood at 23.9 percent in 2022-23, lower than the median major state, and its contingent liabilities, at 1.7 percent of GSDP, were roughly in line with the median state (NITI Aayog, 2025). By the end of 2026-27, outstanding liabilities are projected to reach approximately 25 percent of GSDP, broadly unchanged from the 2025-26 revised estimate (PRS Legislative Research, 2026). In absolute rupee terms, historical Medium Term Fiscal Plan projections tabled before the state assembly estimated total outstanding liabilities rising from Rs 4.58 lakh crore in 2021-22 to a projected Rs 5.91 lakh crore in 2023-24, Rs 6.60 lakh crore in 2024-25, and Rs 7.38 lakh crore in 2025-26 (Deccan Herald, cited in this chapter's research, originally reported circa 2022), a projection that, if it has materialized broadly as forecast, is consistent with the 25 percent of GSDP figure now being cited for 2026-27, given the scale of GSDP growth recorded in the intervening years and documented in Chapter 3. Cross-state comparative data places Karnataka among the five states, alongside Tamil Nadu, Maharashtra, Uttar Pradesh, and West Bengal, that consistently report the highest total outstanding liabilities in absolute terms nationally, though because these are also India's largest state economies, their debt-to-GSDP ratios remain moderate, generally between 19 and 38 percent (IndiaSpend, 2025).

NITI Aayog's own debt sustainability analysis for Karnataka projects that under a baseline scenario in which the state's ten-year average debt level, primary deficit, real growth, and real effective interest rate persist, the debt-to-GSDP ratio would rise by only about 0.3 percentage points going forward, though absorption of currently off-budget contingent liabilities could add close to 2 percentage points to that trajectory (NITI Aayog, 2025). This baseline reassurance should, however, be read alongside the more concerning finding introduced in Chapter 1: NITI Aayog's Fiscal Health Index specifically flagged Karnataka as one of only three "aspirational," or bottom-tier, states on the Debt Sustainability sub-index in the index's first 2025 edition, and recorded further slippage from "Front-Runner" to "Performer" status in the 2026 edition (Business Standard, 2025; Drishti IAS, 2026). The two findings are not necessarily contradictory, a moderate debt-to-GSDP level can still reflect a deteriorating trajectory or weaker debt management quality relative to peer states, but the combination should be read by state leadership as an early warning rather than dismissed on the strength of the more reassuring debt-to-GSDP comparison alone.

The primary deficit, which excludes interest payments from the fiscal deficit calculation and is a cleaner measure of the state's current fiscal effort, stood at 1.4 percent of GSDP in 2022-23, again below the median major state's 2.7 percent (NITI Aayog, 2025).

2.5 State's Borrowings, Guarantees and Off-Budget Liabilities

Net borrowings for 2026-27 are estimated at Rs 96,684 crore, financing the gap between total expenditure of Rs 4,12,688 crore and receipts, excluding borrowings, of Rs 3,15,240 crore, with an additional Rs 35,316 crore of existing debt scheduled for repayment during the year (PRS Legislative Research, 2026). This follows net borrowings of Rs 89,526 crore in 2025-26, alongside Rs 26,474 crore in debt repayment that year (PRS Legislative Research, 2025).

Contingent liabilities, which arise principally from state government guarantees extended to public sector undertakings and corporations, stood at 1.7 percent of GSDP as of 2022-23, at par with the median major Indian state (NITI Aayog, 2025). While this level is not currently a source of acute fiscal stress, NITI Aayog's own debt sustainability modeling flags that full absorption of these contingent liabilities onto the state's balance sheet would push the debt-to-GSDP ratio meaningfully higher over the medium term (NITI Aayog, 2025), underscoring the importance of continued monitoring of guarantees extended to state-owned entities, particularly in the power distribution sector, a recurring source of contingent liability risk across Indian states generally and one this Framework was unable to quantify precisely for Karnataka specifically given the absence of confirmed, current, entity-level guarantee data in the sources reviewed.

2.6 Finance Commission Awards: Allocation and Utilisation

Karnataka's experience across successive Finance Commissions illustrates the volatility a single state can face under India's periodic devolution formula resets. The Fourteenth Finance

Commission's increase in vertical devolution from 32 percent to 42 percent produced a 61 percent increase in Karnataka's tax devolution revenues, giving the state substantially greater untied fiscal space, which it used to prioritize social and economic sector spending and expand capital outlay (Takshashila Institution, 2024). The Fifteenth Finance Commission reversed this trend for Karnataka specifically: in relative terms, Karnataka was the single biggest loser among major states in its share of tax devolution, to the point that its projected transfer for 2020-21 was lower in absolute terms than its 2019-20 transfer, prompting the Commission to recommend a special grant of Rs 5,495 crore that the Union government ultimately did not accept (Takshashila Institution, 2024).

More recent Union government data, provided in response to a Lok Sabha question, show Karnataka's total transfers from the Centre rising from Rs 95,926 crore in GST and cess or surcharge collections in 2021-22 to Rs 1,59,563 crore in 2024-25, with cumulative devolution, grants-in-aid, and special assistance to the state over this period reaching Rs 1,56,005 crore in devolution, Rs 23,811 crore in grants, and Rs 13,026 crore in special assistance (Taxguru, 2025). The Union government has also confirmed that no Finance Commission-recommended special assistance grant remains pending for release to Karnataka, and that it has no current proposal for an alternative compensation mechanism for GST-related revenue loss to producing states such as Karnataka (Taxguru, 2025).

2.7 GST Implementation: Revenue Impact and Compensation Status

As a major manufacturing, services, and consumption hub, Karnataka is among the larger contributors to the national GST pool, with its gross GST and cess or surcharge collections rising from Rs 95,926 crore in 2021-22 to Rs 1,59,563 crore in 2024-25, an increase of roughly 66 percent over three years (Taxguru, 2025). Despite this strong collection performance, Karnataka's leadership has continued to argue that the state, as a large producing and consuming state, does not receive commensurate returns through the current devolution and compensation architecture, and the Union government has explicitly stated it does not intend to devise an alternative mechanism to compensate producing states like Karnataka for post-GST compensation revenue loss now that the original five-year GST compensation guarantee period has lapsed (Taxguru, 2025).

A further structural point raised in Karnataka's submissions to the Sixteenth Finance Commission concerns the treatment of exports within GSDP. Since exports are zero-rated and exempt from GST, a state with a large export-oriented GSDP component, as Karnataka has through its technology and services exports documented in Chapter 3, can show strong GSDP growth without a corresponding increase in state tax capacity, which in turn can depress its income distance score and reduce its horizontal devolution share even as its economy grows (Takshashila Institution, 2024). This is arguably Karnataka's single strongest and most technically defensible argument to the Sixteenth Finance Commission, since it identifies a genuine structural flaw in how the income distance criterion interacts with an export-led growth model, rather than simply arguing for a larger share on equity grounds alone.

2.8 Public Financial Management Reforms and Audit Compliance

Karnataka operates under the Karnataka Fiscal Responsibility Act, 2002, which sets annual targets for progressively reducing outstanding liabilities, the revenue deficit, and the fiscal deficit (PRS Legislative Research, 2026). The Act's fiscal deficit ceiling has been revised multiple times since its original 3 percent of GSDP target for 2006: raised temporarily to 3.5 percent and then 4 percent of GSDP during 2008-09 and 2009-10 respectively, adjusted to 3.44 percent from 2011 through 2020, and raised further to 5 percent in the 2021 amendment in response to the COVID-19 pandemic, before being brought back down to 4 percent in 2021-22 (NITI Aayog, 2025). The debt ceiling under the same framework targeted total liabilities not exceeding 25 percent of GSDP by 2014-15, later reset to 25.2 percent by the 2011 amendment (NITI Aayog, 2025), a target the state has remained broadly consistent with, given its 23.9 percent debt-to-GSDP ratio recorded in 2022-23 and its projected roughly 25 percent figure for 2026-27.

On audit compliance, Comptroller and Auditor General State Finances Audit Reports have tracked Karnataka's performance against these fiscal responsibility benchmarks over successive years, finding the state's overall fiscal indicators, revenue balance, primary deficit, and debt-to-GSDP ratio, consistently at or better than the median major state during the 2017-18 to 2022-23 period (NITI Aayog, 2025). Broader national research on state-level fiscal rule compliance found that Indian states as a group follow their own self-imposed fiscal rules only about 60 percent of the time on average, with compliance higher for fiscal deficit targets, at 67 percent, and debt targets, at 61 percent, than for revenue deficit targets, at 50 percent (NCAER working paper, cited via NITI Aayog, 2025), providing useful national context against which Karnataka's own compliance record, described above as consistently at or better than the median, can be read as a genuine and creditable relative strength, notwithstanding the debt sustainability trajectory concerns raised earlier in this chapter.

2.9 Centre-State Fiscal Relations: Trends and Themes

The overarching theme in Karnataka's Centre-state fiscal relationship over the past decade has been a growing tension between the state's strong own-revenue generation and technology-led economic growth on one hand, and a devolution formula that channels a shrinking relative share of central transfers back to the state on the other. This tension is not unique to Karnataka among India's higher-income states, Tamil Nadu has voiced closely related concerns and was itself flagged as slipping from "Performer" to "Aspirational" status in the Fiscal Health Index 2026 (Drishti IAS, 2026), but Karnataka's case is particularly pronounced given the scale of the state's GST contribution relative to what it receives back (Takshashila Institution, 2024).

Looking toward the 2026 to 2031 period under the Sixteenth Finance Commission, Karnataka's stated priorities include a higher effective GST revenue share, inclusion of cess

and surcharge within the shared divisible pool, and a reconsideration of how export-heavy GSDP is treated within the income distance criterion for horizontal devolution (Takshashila Institution, 2024). How the Sixteenth Finance Commission responds to these submissions will materially shape the fiscal room available to any incoming Karnataka government for the capital expenditure and welfare commitments discussed throughout the remaining chapters of this Framework, and should be treated by state leadership as the single highest-leverage external fiscal negotiation currently underway, given that it will govern the terms of Centre-state fiscal relations for the entire remainder of this decade.

Chapter 3: Economic Structure, Growth and Sectoral Performance

3.1 Gross State Domestic Product: Trends, Growth Rate and Sectoral Share

Karnataka's Gross State Domestic Product reached Rs 32,81,065 crore at current prices for 2025-26, according to the state's own Economic Survey 2025-26, released in March 2026, a growth rate of 12.9 percent over the previous year's figure of Rs 29.06 lakh crore (Deccan Herald, 2026; Scribd, 2026). At constant prices, GSDP grew 8.1 percent year-on-year, from Rs 15.94 lakh crore to Rs 17.23 lakh crore, outpacing the national real GDP growth rate of 7.4 percent for the same period (Dailyhunt, 2026). This continues a longer-run trend documented by NITI Aayog, which found that Karnataka's real GSDP grew at an average annual rate of 7.4 percent between 2012-13 and 2021-22, consistently above the national average over that decade (NITI Aayog, 2025).

Karnataka's share of India's overall GDP rose to 9.19 percent in 2025-26, up from 8.9 percent in 2024-25 (Deccan Herald, 2026), continuing a long upward trajectory from 6.6 percent in the early 1990s to 8.4 percent by 2021-22 (NITI Aayog, 2025). The Economic Survey 2025-26 explicitly flagged that this growth has been increasingly services-led, with the shares of agriculture and industry in the state's output shrinking even as their absolute output continued to grow (Deccan Herald, 2026). This roughly three-and-a-half decade climb, from a 6.6 percent to a 9.19 percent share of national output, represents one of the more sustained relative gains posted by any major Indian state over that period, and is the single clearest quantitative expression of Karnataka's transformation from a diversified but middling regional economy into a services-and-technology-led growth leader.

3.2 Per Capita Income and Purchasing Power Analysis

Karnataka's per capita income rose 12.2 percent year-on-year in 2025-26, from Rs 3.86 lakh to Rs 4.33 lakh, against a national average of roughly Rs 2.19 lakh, meaning the state's per capita income stands at close to double the national figure (Dailyhunt, 2026). Karnataka now ranks third among Indian states on per capita income, behind only Delhi and Telangana (Dailyhunt, 2026), a marked change from its sixth-place ranking noted in earlier state economic profiles (Wikipedia, 2026). NITI Aayog's macro-fiscal assessment similarly found Karnataka's nominal per capita income to be roughly 70 percent higher than the national average as of 2021-22 (NITI Aayog, 2025), and the gap has evidently widened further since.

This aggregate figure, however, conceals wide internal variation. Only five districts recorded per capita income above the state average in the 2025-26 Economic Survey, led by Bengaluru Urban at Rs 8.55 lakh and Dakshina Kannada at Rs 6.26 lakh (Dailyhunt, 2026), meaning most of Karnataka's districts fall well below the headline state figure, a disparity discussed further in Chapter 1 and revisited in the context of district-level fiscal contribution in section 3.9 below. The gap between Bengaluru Urban's Rs 8.55 lakh per capita figure and the state average of Rs 4.33 lakh is itself nearly two-fold, meaning the single most economically

productive district in the state outperforms even its own state's already India-leading average by close to 100 percent, a concentration ratio with few parallels among other major Indian states.

3.3 Primary Sector: Agriculture, Horticulture, Animal Husbandry and Fisheries

Agriculture remains the dominant occupation for Karnataka's rural population even as its share of state output continues to shrink. As of 2022-23, agriculture, forestry, and fishing accounted for the largest single share of the state's working population, at 45.8 percent, well ahead of services at 33.9 percent, manufacturing at 10.4 percent, and construction at 9.3 percent (NITI Aayog, 2025, citing Periodic Labour Force Survey 2022-23). This stands in sharp contrast to agriculture's much smaller and declining share of GSVA, underscoring the productivity gap between the sector's employment share and its output share, a structural feature common to Indian state economies but particularly pronounced in Karnataka given its large technology-driven services sector.

Karnataka cultivates roughly 123,100 square kilometers of land, about 64.6 percent of its total geographical area, though only around 26.5 percent of the sown area benefits from irrigation, leaving the bulk of the state's cropped area dependent on the southwest monsoon (Wikipedia, 2026). Karnataka has the second-largest extent of arid land among Indian states after Rajasthan, a constraint that concentrates agricultural vulnerability disproportionately in the drought-prone districts of north Karnataka discussed in Chapter 1 (Wikipedia, 2026). The state operates three agricultural seasons: Kharif from April to September, Rabi from October to December, and a summer season from January to March, with principal crops including rice, ragi, jowar, maize, and pulses such as tur and gram, alongside cash crops including cashews, coconut, arecanut, cardamom, chillies, cotton, sugarcane, and tobacco (Wikipedia, 2026). Karnataka is India's largest producer of coarse cereals, coffee, raw silk, and tomatoes among all states (Wikipedia, 2026), and its horticultural crops span roughly 16,300 square kilometers with annual production of about 9.58 million tonnes (Wikipedia, 2026).

Recent Economic Survey data illustrates the volatility this monsoon dependence creates: the agriculture sector's growth rate swung from 2.8 percent growth in 2022-23 to a contraction of 1.8 percent in 2023-24 due to severe drought conditions, with agriculture's share of GSDP falling correspondingly from 13.66 percent to 13.04 percent over the same period (Nammakpsc, 2026, citing Karnataka Economic Survey). This near four-and-a-half percentage point growth swing within a single year, from positive 2.8 percent to negative 1.8 percent, is a useful quantitative illustration for ministerial briefing of just how exposed roughly 45 percent of the state's workforce remains to a single monsoon season's outcome, reinforcing the irrigation investment case developed further in Chapter 10 and Chapter 18.

3.4 Secondary Sector: Industry, Manufacturing and Mining

The industry sector, comprising mining and quarrying, manufacturing, construction, and electricity and water supply, contributed 21.5 percent of Karnataka's GSVA as of 2021-22, notably below the average major state's 29.3 percent industry share (NITI Aayog, 2025), reflecting Karnataka's comparatively services-heavy economic structure. Within industry, manufacturing is the largest sub-component at 13.7 percent of GSVA, followed by construction (NITI Aayog, 2025). More recent Economic Survey data for 2023-24 show industry growing 7.5 percent, a recovery from 3.8 percent growth the previous year attributed to post-pandemic normalization, even as industry's overall GSDP share edged down slightly from 20.92 percent to 20.24 percent, reflecting the sector's slower relative growth compared to services (Nammakpsc, 2026).

Karnataka has historically served as a manufacturing base for several of India's largest public sector industrial undertakings, and preliminary surveys have identified lithium deposits in Mandya district, a potentially significant development given the mineral's importance to battery and electric vehicle supply chains (Wikipedia, 2026), though the scale and commercial viability of these deposits would require verification against subsequent Geological Survey of India assessments before being treated as an established resource base.

3.5 Tertiary Sector: Trade, Finance, Real Estate and Services

Services is unambiguously the dominant sector in Karnataka's economy, contributing 69.87 percent of GSVA in 2025-26, up from 69.16 percent the previous year, even though the sector's own growth rate of 8.1 percent trailed the 8.4 percent it recorded a year earlier (Dailyhunt, 2026). This aligns with the longer-run picture from NITI Aayog, which found services contributing 63.2 percent of Karnataka's GSVA as of 2021-22, compared with a 51 percent average across major states, making Karnataka one of India's most services-concentrated state economies (NITI Aayog, 2025). Within services, the largest contributors are real estate, ownership of dwellings, and business services, at 34.4 percent of the services sector, followed by trade, hotels, and restaurants at 9.9 percent (NITI Aayog, 2025). A more granular 2023-24 breakdown attributes 38.32 percent of services GSVA to real estate, professional services, and ownership of dwellings, 28.16 percent to computer-related services and research and development, and 8.61 percent to trade and repair services (Nammakpsc, 2026), underscoring the centrality of Bengaluru's information technology cluster to the state's overall growth story.

This centrality can be quantified with considerable precision. NASSCOM has stated that the technology sector alone contributes 25 percent of Karnataka's entire GDP, houses roughly a quarter of India's digital talent pool, and hosts over 11,000 startups along with 30 percent of the world's global capability centres located in India (Deccan Herald, cited in this chapter's research, 2024). More recent figures from Chief Minister Siddaramaiah place the state's startup count higher still, at over 18,300 startups and more than 45 unicorns as of late 2025 (Deccan Herald, cited in this chapter's research, 2025). Bengaluru specifically draws an

estimated 150,000 to 200,000 new tech workers annually, representing roughly 40 to 45 percent of all technology hiring across India, and the city is now home to approximately half of India's entire AI and machine learning talent pool, positioning it as the world's second-largest AI talent hub after only Silicon Valley by one industry assessment, and the fifth-ranked global AI city more broadly (CB Insights, cited in this chapter's research, 2026; Deccan Herald, cited in this chapter's research, 2026). The state has moved to build on this base through its first state-level Quantum Technology Roadmap in India, with an explicitly stated ambition to become Asia's leading Quantum Innovation Hub by 2035, targeting a \$20 billion quantum economy (Deccan Herald, cited in this chapter's research, 2026). Bengaluru has also recorded the highest number of patents filed in computer science, electronics, and communications of any Indian city between 2020 and 2023, and hosts a particularly strong concentration of engineering talent supporting mid-market global capability centres, alongside emerging strength in chip design, aerospace, space technology, and biotechnology (CB Insights, cited in this chapter's research, 2026).

This concentration of India's technology economy within Karnataka has, however, become a source of genuine inter-state economic friction rather than an uncontested asset. The passage of the Karnataka State Employment of Local Industries Factories Establishment Act Bill in 2024, which proposed reservation quotas for Kannadigas in private sector jobs, drew a sharply worded public statement from NASSCOM expressing what it described as deep concern and disappointment on behalf of its member companies, explicitly warning that such restrictions could push companies to relocate as access to skilled local talent narrowed (Deccan Herald, cited in this chapter's research, 2024). Neighbouring Andhra Pradesh moved quickly to capitalize on this controversy, with its Information Technology and Industries Minister publicly inviting NASSCOM member companies to expand or relocate their operations to Andhra Pradesh's own IT cluster in Visakhapatnam (Deccan Herald, cited in this chapter's research, 2024). This episode is directly relevant to the investment climate discussion in Chapter 4 and illustrates a genuine policy tension for state leadership: labour market interventions intended to protect local employment opportunities carry a documented, quantifiable risk of undermining the very talent-agglomeration advantage, described above in considerable statistical detail, that has made Karnataka's technology sector the engine of the state's entire growth story.

3.6 Informal Economy: Size, Significance and Integration Challenges

Karnataka's labour market data show a persistent gap between the formal, high-productivity services economy centered on Bengaluru and a much larger informal and agrarian workforce. With agriculture, forestry, and fishing employing 45.8 percent of the state's workers as of 2022-23 against a much smaller and declining share of output, a substantial portion of Karnataka's working population remains outside the high-productivity formal economy that drives the state's headline growth figures (NITI Aayog, 2025). National Periodic Labour Force Survey data indicate that self-employment, much of it informal, still accounted for 56.2 percent of workers nationally in 2025, down marginally from 57.5 percent in 2024, with regular wage or salaried employment rising correspondingly from 22.4 percent to 23.6

percent (Press Information Bureau, 2025); Karnataka-specific informal sector estimates at this level of granularity were not identified in the sources reviewed for this chapter and would need to be drawn directly from the state's own Economic Survey or Labour Department reports for precise figures.

3.7 Labour Market: Employment, Unemployment and Workforce Quality

The labour market tension flagged briefly in the earlier version of this chapter warrants full treatment given its direct bearing on Karnataka's technology-led growth model. On July 15, 2024, the Karnataka state cabinet approved the draft Karnataka State Employment of Local Candidates in the Industries, Factories and Other Establishments Bill, 2024, mandating that private industries, factories, and establishments reserve 50 percent of management-category positions and 75 percent of non-management-category positions for local candidates, with the local share not permitted to fall below 25 percent in management and 50 percent in non-management roles even where sufficient local talent was unavailable (Careers360, cited in this chapter's research, 2024). Candidates lacking a secondary school certificate demonstrating Kannada proficiency would be required to pass a dedicated language test, and the bill proposed empowering a government-appointed officer to monitor compliance directly within private recruitment processes (Careers360, cited in this chapter's research, 2024; Outlook India, 2024). Non-compliant employers faced penalties ranging from Rs 10,000 to Rs 25,000, and establishments unable to source sufficient local candidates were required to apply to the state government for a case-by-case relaxation, with the government's decision on any such application described in the bill as final (Careers360, cited in this chapter's research, 2024). Karnataka's Labour Minister, Santosh Lad, defended the bill's rationale by noting that many private firms benefit from state government subsidies and establishment incentives, and that the government's objective was to give hiring priority to locally available skilled Kannadigas rather than to exclude non-local talent outright, with training-and-employ arrangements to be worked out over a three-year window where local skills gaps existed (Careers360, cited in this chapter's research, 2024).

The bill triggered an immediate and unusually intense backlash from the technology industry, whose scale in the state was documented in the original version of this chapter. NASSCOM issued a formal statement expressing deep concern and disappointment on behalf of its member companies, explicitly warning that restrictions of this kind could compel companies to relocate operations as access to skilled local talent became artificially constrained (Deccan Herald, cited in this chapter's research, 2024). Prominent industry figures went further in their public criticism: PhonePe founder and CEO Sameer Nigam publicly questioned the bill on social media, noting that his company alone had created over 25,000 jobs across India and asking rhetorically whether his own children would be denied employment in their home city under such a framework (Outlook India, 2024). Mohandas Pai, former chief financial officer of Infosys, described the bill in considerably starker terms as "discriminatory," "regressive," and unconstitutional, and characterized it as reminiscent of totalitarian control over private hiring decisions (Careers360, cited in this chapter's research, 2024). Notably, criticism of the bill was not confined to industry or opposition voices; sitting Congress Working Committee

member and Lok Sabha MP Shashi Tharoor, a member of the same party governing Karnataka, publicly described the bill as "unconstitutional" and "unwise," pointing specifically to a prior Supreme Court rejection of a broadly similar domicile-based hiring law attempted by the Haryana government, and warning that businesses could relocate to neighbouring Tamil Nadu or Kerala if Karnataka proceeded with the law as drafted (Deccan Herald, cited in this chapter's research, 2024).

Faced with this scale of cross-party and cross-industry opposition within 48 hours of cabinet approval, Chief Minister Siddaramaiah announced on social media that the bill had been "temporarily put on hold," to be revisited following further cabinet discussion, notably deleting an earlier post in which he had described the government's intent as securing "100 percent reservation" for Kannadigas in Group C and D private-sector posts specifically (Tribune India, 2024; Careers360, cited in this chapter's research, 2024). As of the most recent reporting reviewed for this chapter, the bill remained in this suspended, unresolved status rather than either being formally withdrawn or passed into law, meaning the underlying policy question, and the underlying tension it exposes between protecting local employment opportunity and preserving the talent-agglomeration model that has made Bengaluru's technology cluster India's leading one, remains open rather than settled.

This episode carries three specific implications worth stating plainly for the ministerial reader building on this Framework. First, it demonstrates that Karnataka's technology sector advantage, while extraordinarily strong on the metrics catalogued earlier in this chapter, is not insulated from state-level policy risk, and industry's reaction showed a willingness to publicly threaten relocation that neighbouring states, as shown by Andhra Pradesh's Nara Lokesh actively courting NASSCOM members in the bill's immediate aftermath, are prepared to exploit. Second, the fact that criticism came from within the governing party itself, not only from opposition or industry, suggests the policy did not have full internal alignment even at the point of cabinet approval, a coordination failure worth noting alongside the inter-departmental coordination themes discussed in Chapter 15. Third, the underlying grievance the bill was responding to, concern among Kannadiga job seekers that the state's own extraordinary technology sector growth was not translating into proportionate local employment opportunity, has not been resolved simply because the bill was paused; the labour market mismatch this Framework documents throughout Chapter 3, a small, highly productive, and by some measures substantially non-local technology workforce generating 25 percent of state GDP alongside a much larger, lower-productivity agricultural workforce comprising 45.8 percent of all workers, is the structural condition that produced this political flashpoint, and it will very likely produce another one in some future form unless addressed through the skill-development and workforce-alignment channels discussed in Chapter 17, rather than through blunt hiring quotas of the kind attempted in 2024.

3.8 Inflation, Price Stability and Consumer Welfare

Karnataka's state-specific inflation performance can now be assessed with reasonable currency. Karnataka's combined Consumer Price Index inflation rate stood at 3.94 percent in

June 2026, based on Ministry of Statistics and Programme Implementation data, notably below the all-India combined CPI inflation rate of 4.38 percent recorded for the same month (Press Information Bureau, 2026; social media compilation of MoSPI state-wise data, cited in this chapter's research, 2026). This places Karnataka in a comparatively favourable position relative to its immediate southern neighbours: Tamil Nadu recorded the highest state-level inflation in this comparison at 5.15 percent, followed by Andhra Pradesh at 4.80 percent and Kerala at 4.67 percent, while Karnataka's 3.94 percent was closer to, though still above, Telangana's 3.68 percent (social media compilation of MoSPI state-wise data, cited in this chapter's research, 2026). Earlier in 2026, however, a broader analysis of April 2026 state-wise inflation data had specifically flagged Karnataka, alongside Telangana, Andhra Pradesh, Tamil Nadu, and Rajasthan, as among the states most affected by rising inflation that month, driven by a combination of persistent food price pressure and rising transportation and fuel costs (Trade Brains, cited in this chapter's research, 2026). Read together, these two data points suggest Karnataka's inflation position, while comparatively favourable against the national average and against several South Indian peers by mid-2026, has shown some volatility earlier in the same year, and should be tracked monthly rather than assumed stable given the demonstrated month-to-month swings across 2026 in the national data underlying these comparisons. Nationally, food inflation, at 5.32 percent year-on-year in June 2026, has consistently run higher than headline CPI inflation, at 4.38 percent, throughout 2026 (Press Information Bureau, 2026), a pattern with particular relevance for Karnataka's lower-income rural households, especially in the north Karnataka districts identified in Chapter 1 as facing the state's highest poverty and malnutrition burden.

3.9 Growth Corridors: Engines of Economic Expansion

District-level Domestic Product data from the 2025-26 Economic Survey confirms that Bengaluru Urban remains overwhelmingly the state's primary growth engine, contributing Rs 11,73,574 crore, or 40.4 percent of total state output, followed by Dakshina Kannada at 5.3 percent and Belagavi at 3.9 percent (Dailyhunt, 2026). The Economic Survey's own analysis found that districts with a stronger presence in services and industry recorded higher output growth, while districts more dependent on agriculture underperformed overall (Dailyhunt, 2026), reinforcing the pattern of regional divergence documented throughout this Framework. Overall exports from the state rose 13.78 percent year-on-year in 2025-26 (Dailyhunt, 2026), with Karnataka continuing to rank among India's leading states for service exports and foreign direct investment inflows, particularly across information technology, biotechnology, and agriculture-linked sectors (Scribd, 2026). Set against the sectoral employment data in section 3.7, this concentration of growth in Bengaluru Urban, at 40.4 percent of state output from a single district out of 31, is the economic mirror image of the human development concentration documented in Chapter 1, where the same district also recorded the state's highest HDI.

Chapter 4: Investment, Industry and Private Sector Development

4.1 Investment Climate Assessment and Ease of Doing Business

Karnataka has consistently ranked among the leading Indian states in national assessments of business friendliness. Under the Business Reforms Action Plan (BRAP), the Union Government's principal instrument for evaluating state-level regulatory reform, Karnataka has been placed in the "Top Achievers" category alongside Andhra Pradesh, Gujarat, Haryana, Punjab, Tamil Nadu, and Telangana, reflecting sustained progress in areas such as single-window clearances, labour reform, and construction permit simplification (The Federal, 2022). The state's Department of Industries and Commerce operates the Karnataka Udyog Mitra single-window agency alongside a Single Window System portal that consolidates sectoral incentive information, zonal classification tools, and an incentive calculator to help investors navigate the state's regulatory landscape (Invest Karnataka, 2025). The state has also introduced digital tools such as a chatbot-based advisory service to reduce the information burden on first-time investors.

Nationally, India itself has continued to reform its investment climate, with the Department for Promotion of Industry and Internal Trade pursuing the Jan Vishwas (Amendment of Provisions) Bill, 2025, which proposes to decriminalise 288 regulatory provisions across sixteen central Acts, building on a similar reform passed in 2023 (Press Information Bureau, 2025). India is scheduled to participate in the World Bank's new B-Ready assessment framework, the successor to the discontinued Doing Business Report, with results expected in 2026, a development that will for the first time in several years provide an internationally benchmarked comparison point for state-level reform efforts, including Karnataka's (Press Information Bureau, 2025).

Despite these gains, Karnataka's investment climate has not been without criticism. Historical assessments have noted periods in which the state's ranking slipped due to bureaucratic delays and an underperforming single-window mechanism, with one assessment describing the state's single-window agency as functioning inconsistently despite investor interest (Deccan Herald, n.d.-a). Industrialists have also flagged frequent changes to Goods and Services Tax administration as a source of compliance uncertainty (Deccan Herald, n.d.-a). These findings suggest that while Karnataka's policy framework compares favourably on paper, effective delivery, particularly around land allotment timelines, environmental clearances, and labour compliance, remains an area requiring sustained administrative attention rather than one-time policy announcements.

A further dimension of Karnataka's investment climate is its historical concentration around Bengaluru. Former Minister for Large and Medium Industries Jagadish Shettar acknowledged that industrial development in the state has traditionally been Bengaluru-centric, resulting in elevated land and labour costs in the capital region even as significant potential in Tier 2 and Tier 3 cities remains under-tapped (Deccan Herald, n.d.-a). This observation has directly shaped the design of the state's most recent industrial policy, which introduces zone-based

incentive structures explicitly intended to redirect investment toward less industrialised regions of the state, discussed further in Section 4.2.

Karnataka's investment promotion architecture also extends to sector-specific facilitation bodies that operate alongside the general single-window system. The Karnataka State Industrial and Infrastructure Development Corporation functions as the state's principal financing and project-structuring agency for large industrial and infrastructure investments, frequently taking a lead role in structuring public-private partnership transactions, while the Karnataka Industrial Areas Development Board handles land acquisition, development, and allotment for industrial use. This institutional division of labour, financing and structuring through one agency, land development through another, and regulatory clearance through the single-window system, has generally served larger investors well, though smaller domestic investors and first-generation entrepreneurs have at times reported greater difficulty navigating the resulting multiplicity of touchpoints, a concern the state's dedicated MSME policy, discussed in Section 4.2, is intended to partially address.

Investor perception surveys and industry association feedback consistently identify skilled workforce availability, particularly in engineering, software, and precision manufacturing disciplines, as Karnataka's most durable competitive advantage, one that is comparatively insulated from the incentive competition that characterises the relationship between Indian states on tax and subsidy terms alone. This talent advantage, anchored by Bengaluru's dense concentration of engineering colleges, research institutions, and returning global talent, continues to differentiate Karnataka's investment proposition from states competing primarily on land cost or fiscal incentive scale, even as those states, including Telangana and Tamil Nadu, have themselves developed increasingly sophisticated single-window and incentive systems of their own.

4.2 Industrial Policy Framework and MSME Development

The Karnataka Industrial Policy 2025-30, notified with effect from 8 February 2025, represents the state's current overarching framework for industrial promotion and succeeds the Karnataka Industrial Policy 2020-2025 (Grant Thornton, 2025). The policy sets an explicit target of achieving 12% annual growth in the manufacturing sector, attracting approximately Rs 7,50,000 crore in cumulative investment, and generating twenty lakh new jobs by 2030 (Grant Thornton, 2025; KIP Financial Consultancy, 2025). It positions Karnataka as an aspiring global hub for high-technology manufacturing, with particular emphasis on electronics system design and manufacturing, aerospace and defence, future mobility including electric vehicles, medical technology, space technology, semiconductor manufacturing, and renewable energy (Grant Thornton, 2025).

A defining structural feature of the 2025-30 policy is its geographically differentiated incentive architecture. Karnataka's talukas are classified into three zones, Zone 1, Zone 2, and Zone 3, based on their existing level of industrial development, with Zone 1 and Zone 2 areas, generally corresponding to less industrialised districts such as those in the Kalyana

Karnataka and Kittur Karnataka regions, eligible for the most generous incentives (IIFL, 2026). These include up to 100% stamp duty exemption on loan agreements, mortgage deeds, and lease transactions, alongside registration charge concessions of Rs 1 for every Rs 1,000, while Bengaluru Urban and Bengaluru Rural districts, classified as Zone 3, receive comparatively limited fiscal incentives, reflecting a deliberate policy choice to disincentivise further industrial concentration in the capital region (KIP Financial Consultancy, 2025; IIFL, 2026).

For large, mega, and ultra-mega enterprises, the policy offers a choice between a capital expenditure subsidy, ranging from 10% to 25% of fixed asset value depending on zone, or a production-linked subsidy, allowing companies to select the mechanism best suited to their business model (Lexology, 2025). Investments exceeding Rs 1,000 crore are eligible for customised incentive packages negotiated on a case-by-case basis, taking into account the strategic importance and employment potential of the proposed investment (Grant Thornton, 2025). Existing enterprises undertaking capital expenditure expansion of at least 25% also qualify for incentives, extending the policy's reach beyond greenfield investment alone (Grant Thornton, 2025).

Employment conditions attached to these incentives reflect ongoing debates over local hiring preferences in Karnataka's industrial workforce. The policy retains a requirement, carried over from the 2020-2025 policy, that new industrial projects ensure a minimum of 70% Kannadiga employment overall, rising to 100% for Group D, non-managerial positions (Lexology, 2025). This requirement should be read alongside the Karnataka State Employment of Local Candidates Bill, 2024, which had proposed a 50% reservation for local candidates in private sector employment before facing significant pushback from industry associations concerned about its implications for the state's technology sector (Lexology, 2025).

MSMEs receive enhanced consideration under the new policy framework, including capital subsidies of up to 30% of fixed asset value, power subsidies, and stamp duty exemptions, with an increased incentive cap of Rs 35 lakh for MSMEs employing individuals from special categories, including Scheduled Castes and Scheduled Tribes, women, minorities, persons with disabilities, and ex-servicemen, up from a Rs 30 lakh cap under the previous policy (Lexology, 2025). Recognising that MSMEs face distinct challenges from large enterprises, the state's Industries and Commerce Department, through the Karnataka Council for Technological Upgradation, has separately initiated the drafting of Karnataka's first dedicated MSME policy, benchmarking the state's approach against MSME ecosystems in Gujarat, Telangana, Maharashtra, and Tamil Nadu (India Shipping News, 2025). This dedicated policy is intended to complement the umbrella Industrial Policy 2025-30 with a more granular package of MSME-specific incentives, credit access support, and technology adoption assistance.

Sector-specific incentive stacking has also emerged as a notable feature of the policy landscape, particularly for electric vehicle and electronics manufacturing. MSMEs operating

in these sectors can combine incentives under the Industrial Policy 2025-30 with Karnataka's EV Policy 2.0 and central Production Linked Incentive schemes, potentially achieving land reimbursement of up to 50%, capped at Rs 50 crore, alongside capital subsidies of 25% to 30% on plant and machinery for greenfield units, up to Rs 100 crore (KredX, 2025). The Bengaluru-Tumakuru EV Corridor has emerged as a particular focus area for this stacked incentive structure, alongside the state's broader electronics system design and manufacturing ecosystem.

4.3 Large and Anchor Industries: Sectoral Analysis

Karnataka's industrial base is anchored by a diverse set of large enterprises spanning information technology, aerospace and defence, automotive components, biotechnology, and precision engineering. The state hosts over four hundred multinational corporations operating global research and development centres, spanning sectors including IT and IT-enabled services, machine tools, aerospace and defence, electronics system design and manufacturing, biotechnology, and engineering design, positioning Bengaluru as a genuine global innovation hub rather than merely a cost-arbitrage outsourcing destination (Karnataka Industrial Areas Development Board, n.d.).

The information technology and IT-enabled services sector remains Karnataka's most globally recognised industrial strength, with Bengaluru continuing to be described as the Silicon Valley of India, home to a dense concentration of software services firms, global capability centres, and an expanding base of deep-technology and artificial intelligence startups (Trade Brains, 2025). Within GSDP, computer-related services contribute the single largest share of the state's services output, a pattern that has held consistently over the past several economic surveys, and this concentration has meaningfully shaped the composition of the state's export base and skilled employment market.

Aerospace and defence manufacturing constitutes a second major anchor sector, with Bengaluru serving as headquarters to major public sector aerospace enterprises alongside a growing cluster of private aerospace component manufacturers. The state government has prioritised further development of this sector, including the development of a dedicated hi-tech defence and aerospace park in Bengaluru under the Industrial Policy 2025-30 (Grant Thornton, 2025). The Karnataka Industrial Areas Development Board has similarly established a dedicated aerospace special economic zone in Bengaluru, reflecting the sector's strategic importance to the state's industrial identity (SlideShare, n.d.).

Automotive and automotive component manufacturing forms a third significant pillar, particularly in the Bengaluru-Mysuru and Bengaluru-Tumakuru corridors, where established manufacturers and their extended supplier ecosystems have historically driven employment and export activity. This sector is now undergoing a structural transition toward electric vehicle manufacturing, supported by the state's EV Policy 2.0 and its integration with the broader Industrial Policy 2025-30 incentive architecture, with the Bengaluru-Tumakuru

corridor specifically identified as a priority zone for EV supply chain localisation, including battery packs, power electronics, and charging infrastructure components (KredX, 2025).

Biotechnology and pharmaceutical manufacturing represent a fourth notable anchor sector, with Karnataka historically home to a significant share of India's biotechnology enterprises, spanning vaccine manufacturing, biopharmaceuticals, and agricultural biotechnology. This strength has been complemented by emerging pharmaceutical manufacturing investment in North Karnataka, where the state has developed dedicated land parcels near Raichur specifically to attract pharmaceutical companies relocating from neighbouring Telangana, with more than thirty pharmaceutical units reported to have shifted to the Kadaichur area near Raichur, drawn by comparatively lower land and labour costs (Deccan Herald, n.d.-a). A proposed central government-supported pharma park in the same location, for which the state has offered 1,000 acres, is intended to further strengthen this emerging cluster in the Kalyana Karnataka region (Deccan Herald, n.d.-a).

Beyond these principal sectors, the state's industrial base includes machine tools and precision engineering, textiles and apparel manufacturing, and fast-moving consumer goods production, the latter increasingly locating in Hubballi-Dharwad, Davangere, Mysuru, Vijayapura, and Kalaburagi, indicating gradual, if still limited, diversification of industrial activity beyond the Bengaluru metropolitan region (Deccan Herald, n.d.-a). The Koppal toy manufacturing cluster, for which the state laid its foundation stone as part of efforts to promote industrialisation in the Kalyana Karnataka region, has been projected to generate between twenty thousand and thirty thousand jobs upon full development, illustrating the kind of labour-intensive manufacturing investment the state is seeking to attract to its less industrialised districts (Deccan Herald, n.d.-a).

4.4 Special Economic Zones, Industrial Corridors and Clusters

The Karnataka Industrial Areas Development Board serves as the principal statutory body responsible for developing industrial land and infrastructure across the state, having established over 170 industrial areas spanning nearly all of Karnataka's districts, with core sectoral clusters including Peenya, Bommasandra, Electronic City, and Whitefield in the Bengaluru region, alongside a Hebbal industrial area in Mysuru spanning approximately 3,000 acres (Karnataka Industrial Areas Development Board, n.d.; Enosh Infra, n.d.). Industrial areas developed by the Board are classified by pollution potential into Red, Orange, and Green zones, a system intended to align sectoral siting decisions with environmental compliance requirements, with Red zones typically hosting heavy manufacturing such as chemicals, pharmaceuticals, and cement production, and Green zones hosting lighter assembly and e-commerce-linked logistics operations (Enosh Infra, n.d.).

Karnataka has developed several sector-specific special economic zones under the Board's oversight, including a textile SEZ and a pharmaceutical SEZ at Hassan, a food processing and agro-based SEZ also at Hassan, an information technology and IT-enabled services SEZ at Mangalore, and an aerospace SEZ at Bengaluru (SlideShare, n.d.). These sectoral SEZs are

intended to provide duty-free enclave status for export-oriented production, alongside the infrastructure and regulatory streamlining associated with SEZ designation under national law.

At a supra-state scale, Karnataka is a participant in the Chennai-Bengaluru Industrial Corridor, one of eleven national industrial corridors under implementation through the National Industrial Corridor Development and Implementation Trust, structured as a public-private partnership spanning Tamil Nadu, Karnataka, and Andhra Pradesh (Blackridge Research, 2026). Within Karnataka, the corridor's principal node is the Tumakuru Industrial Node, spanning approximately 8,484 acres under a three-phase development plan, with the Prime Minister laying its foundation stone in February 2023 (Blackridge Research, 2026). As of early 2026, the Tumakuru node is reported to be advancing toward operational readiness, alongside the corresponding Krishnapatnam node in Andhra Pradesh, whose foundation stone was laid in January 2025 (Blackridge Research, 2026). The corridor is expected to reduce travel time between Chennai and Bengaluru from approximately five hours to under three hours upon completion of associated highway and dedicated freight corridor infrastructure, and is anticipated to strengthen southern India's automotive and electronics supply chains (Geotic, 2025; Legacy IAS Academy, 2026).

Karnataka has also secured in-principle state government approval for integrated township development along both the Bengaluru-Mumbai and Bengaluru-Chennai industrial corridors, with the Chief Minister's Mega Integrated Industrial Townships programme envisaging 500-acre developments in each corridor under a public-private partnership structure, to be planned by the Karnataka State Industrial and Infrastructure Development Corporation with land availability assessed by the Karnataka Industrial Areas Development Board (Deccan Herald, n.d.-b). A further freight corridor connecting Chennai to Goa, passing through Bengaluru, Davangere, Hubli-Dharwad, and Belagavi, has also been proposed under a public-private partnership structure, with the potential to further integrate Karnataka's northern industrial hubs into national logistics networks (Deccan Herald, n.d.-c).

4.5 Foreign Direct Investment: Inflows, Sectoral Distribution and Policy

Karnataka's foreign direct investment performance has strengthened markedly in recent years, culminating in the state's emergence as India's leading FDI destination during FY 2024-25. According to data released by the Department for Promotion of Industry and Internal Trade, Karnataka attracted USD 6.62 billion in FDI equity inflows during FY 2024-25, equivalent to approximately Rs 50,107 crore, representing roughly 20% of India's total FDI inflows for the year and, in the state government's own account, surpassing Maharashtra for the top position (Deccan Herald, 2025). National-level DPIIT data presented across differing time windows within the same fiscal year has shown Karnataka's share fluctuating between 13% and 20% of national inflows depending on the reporting period and whether reinvested earnings and other capital are included alongside pure equity inflows, a methodological nuance worth noting when comparing sources (Insights on India, 2025; Press Information Bureau, 2025). Regardless of the precise figure, Karnataka and Maharashtra together accounted for

approximately 51% of India's total FDI inflows in FY 2024-25, underscoring the degree to which foreign capital in India remains concentrated in a small number of states with mature industrial and services ecosystems (Business Standard, 2025).

Officials and independent commentators attribute this concentration to substantial infrastructure improvements, policy stability, and the maturity of Maharashtra's and Karnataka's industrial ecosystems relative to competing states (Business Standard, 2025). A Karnataka MSME Export Promotion Council study further reported that the state secured over Rs 12 lakh crore in new investment commitments between FY 2021-22 and FY 2024-25 across various sectors, reinforcing its position as a preferred investment destination even prior to formal FDI equity inflows being realised on the ground (Deccan Herald, 2025).

At the national level, FDI into the services sector emerged as the single largest recipient category in FY 2024-25, attracting 19% of total inflows and growing 40.77% year-on-year, followed by computer software and hardware at 16% and trading at 8%, a sectoral distribution that aligns closely with Karnataka's own economic strengths in information technology and business services (Press Information Bureau, 2025). Manufacturing FDI nationally grew 18% during the same period, reaching USD 19.04 billion, a trend Karnataka's Industrial Policy 2025-30 is explicitly designed to capture through its electronics, aerospace, and future mobility incentive structures (Press Information Bureau, 2025).

Karnataka's FDI performance has also shown intra-year momentum. During the first quarter of FY 2024-25, the state climbed from third position in FY 2023-24 to second position nationally in FDI inflows, surpassing Gujarat, attracting USD 2.2 billion in that quarter alone, a shift the state government attributed to bold reforms including revised stamp duties, excise duties, and user fees that had remained unchanged for years, alongside improved coordination in the mining sector's revenue administration (Deccan Herald, n.d.-d). India's national FDI policy framework, which permits 100% foreign ownership through the automatic route in most sectors, continues to provide the enabling regulatory backdrop against which Karnataka competes for investment, with the number of source countries investing in India rising from 89 in FY 2013-14 to 112 in FY 2024-25, reflecting a broadening global investor base from which Karnataka draws (Press Information Bureau, 2025).

4.6 Public Sector Undertakings: Performance and Reform Agenda

Karnataka maintains a substantial portfolio of state public sector undertakings spanning power transmission and distribution, road transport, industrial infrastructure development, and a range of sector-specific corporations. According to a Comptroller and Auditor General audit report, as of 31 March 2019, Karnataka had 114 PSUs under CAG audit jurisdiction, including six statutory corporations and thirteen non-working government companies, of which only one was listed on a stock exchange (Comptroller and Auditor General of India, 2020). While more recent consolidated figures were not available at the time of this framework's preparation, this baseline illustrates the scale and complexity of the state's public enterprise sector, and the audit's own findings regarding non-working companies with

accumulated arrears point to a persistent reform agenda around rationalising loss-making or dormant entities.

The power sector represents one of the most consequential areas of PSU performance and reform. Following the passage of the Karnataka Electricity Reforms Act, the erstwhile Karnataka Electricity Board was corporatised in 1999 into the Karnataka Power Transmission Corporation Limited, subsequently divided in 2002 into four geographically distinct distribution companies alongside the transmission entity (JETIR, 2015). KPTCL today serves approximately 146 lakh consumers across an operational area of 1.92 lakh square kilometres, operating nearly 684 substations and approximately 28,000 kilometres of high-voltage transmission lines alongside roughly 1,30,000 kilometres of lower-voltage distribution infrastructure (JETIR, 2015). The corporation remains subject to ongoing performance review by the Karnataka Electricity Regulatory Commission, with annual performance reviews filed for regulatory scrutiny, reflecting a continuing institutional emphasis on tariff rationalisation and operational efficiency within the sector (Karnataka Power Transmission Corporation Limited, n.d.).

Karnataka's road transport undertakings offer a comparatively positive performance narrative. The state's four State Transport Undertakings, the Karnataka State Road Transport Corporation, the Bengaluru Metropolitan Transport Corporation, the Kalyana Karnataka Road Transport Corporation, and the North Western Karnataka Road Transport Corporation, collectively won five National Public Bus Transport Excellence Awards for 2022-23 from the Association of State Road Transport Undertakings, recognised for innovative branding, personnel welfare, innovative electric bus operations, and road safety practices (Deccan Herald, n.d.-e). The Bengaluru Metropolitan Transport Corporation's recognition for its Astra electric bus operations in particular signals a broader transition within Karnataka's public transport PSUs toward electrification, consistent with the state's wider EV policy priorities.

Karnataka's approach to public procurement and PSU governance has also been modernised through the Karnataka Public Procurement Portal, which since May 2025 has mandated two-factor authentication for all users and serves as the unified digital platform through which government departments, public sector undertakings, autonomous bodies, and local authorities publish tenders and manage the bidding and contract award process (IndiaTenders, 2026). This digital consolidation is intended to improve transparency and reduce opportunities for irregularity in PSU-linked procurement, complementing broader public financial management reforms discussed in Chapter 2 of this framework.

The reform agenda facing Karnataka's PSU sector going forward centres on three priorities evident from the preceding discussion: rationalising the state's stock of non-working or loss-making companies identified in successive CAG audits, continuing the financial and operational restructuring of the power distribution sector to reduce transmission and distribution losses, and extending the digital procurement and governance reforms already evident in the transport and e-governance sectors across the wider PSU portfolio.

Beyond these three priorities, Karnataka's PSU reform trajectory will also need to address the question of capital structure and financing autonomy for its larger operating entities, particularly within the power sector, where tariff-setting authority rests with an independent regulator, the Karnataka Electricity Regulatory Commission, but where distribution companies continue to depend on periodic state budgetary support to manage revenue shortfalls arising from subsidised agricultural and below-poverty-line consumer tariffs. Balancing the social welfare objectives embedded in Karnataka's power subsidy regime against the commercial sustainability of its distribution companies remains one of the more difficult structural tensions within the state's public enterprise sector, and one not unique to Karnataka among Indian states. Similarly, the state's road transport corporations, despite their recent recognition for service quality and electrification progress, continue to operate within a fare structure that does not always cover operating costs, requiring periodic government support to sustain services on socially necessary but commercially unviable rural and semi-urban routes. Addressing these structural financing questions, rather than service quality alone, will likely determine the medium-term sustainability of Karnataka's PSU reform programme.

4.7 Public-Private Partnership Framework and Pipeline

Karnataka has structured a substantial share of its infrastructure investment pipeline around public-private partnership models, spanning industrial townships, freight and industrial corridors, and urban infrastructure. As discussed in Section 4.4, the state's participation in the Chennai-Bengaluru Industrial Corridor is itself structured as a public-private partnership under the National Industrial Corridor Development and Implementation Trust, with the Tumakuru node representing Karnataka's principal committed investment within this framework (Blackridge Research, 2026).

The Chief Minister's Mega Integrated Industrial Townships initiative, approved in principle for both the Bengaluru-Mumbai and Bengaluru-Chennai corridors, represents a further significant PPP commitment, with the Karnataka State Industrial and Infrastructure Development Corporation tasked with developing the partnership structure and the Karnataka Industrial Areas Development Board responsible for identifying suitable land banks, while the state's MSME directorate analyses the industry mix appropriate for each 500-acre township (Deccan Herald, n.d.-b). This project, first announced in the 2021-22 state budget, illustrates the multi-year gestation period typical of large-scale Karnataka PPP infrastructure, from budgetary announcement through in-principle approval to eventual implementation.

At the national level, the broader National Industrial Corridor Development Programme, of which Karnataka's Tumakuru node forms a part, saw twelve additional projects approved in August 2024 at a total cost of Rs 28,602 crore, indicating continued central government commitment to expanding the PPP-based industrial corridor model in which Karnataka is a participant (Legacy IAS Academy, 2026). The proposed Chennai-Goa freight corridor, projected to require over Rs 35,000 crore in investment under a public-private partnership structure, would, if implemented as proposed, meaningfully extend PPP-based freight

infrastructure into Karnataka's northern industrial hubs of Davangere, Hubli-Dharwad, and Belagavi, alongside Bengaluru itself (Deccan Herald, n.d.-c).

Karnataka's PPP pipeline is not without execution risk. Industrial corridor projects of this scale typically require sustained inter-state coordination, given that corridors such as the Chennai-Bengaluru Industrial Corridor span three states, alongside central ministry alignment across commerce, railways, road transport, and environment portfolios, a coordination burden that has historically extended project timelines, as evidenced by the more than decade-long gestation of the Chennai-Bengaluru corridor itself, first conceptualised around 2011 and only reaching foundation-stone stage for its Karnataka node in 2023 (Blackridge Research, 2026; Big Property, 2024). Strengthening the state's institutional capacity for PPP project preparation, risk allocation, and contract management, potentially through a dedicated PPP cell with cross-departmental authority, represents an area meriting further attention as the state's PPP pipeline expands in scale and complexity over the coming years.

Financing structures for Karnataka's PPP pipeline have also evolved to accommodate the scale of investment required. Where earlier state-level PPP projects, such as individual toll roads or single industrial parks, could typically be structured through conventional build-operate-transfer arrangements with a single private concessionaire, the current generation of multi-node industrial corridors and integrated townships increasingly involves layered financing, combining state equity contributions, central government viability gap funding, multilateral development bank support in some instances, and private developer capital, a structure that demands correspondingly more sophisticated project appraisal and monitoring capacity within the implementing agencies.

4.8 Regional Cooperation: Shared Region and Growth

Karnataka's industrial future is increasingly shaped by cooperation with neighbouring states rather than by policy decisions made in isolation. The Chennai-Bengaluru Industrial Corridor exemplifies this shift, structured explicitly to achieve accelerated development and regional industry agglomeration across Tamil Nadu, Karnataka, and Andhra Pradesh, with each state contributing distinct nodes intended to leverage its particular sectoral and geographic strengths, Tumakuru in Karnataka, Krishnapatnam in Andhra Pradesh, and Ponneri in Tamil Nadu (National Industrial Corridor Development Corporation, n.d.). The Japan International Cooperation Agency's technical assistance in preparing the corridor's Comprehensive Integrated Master Plan further situates Karnataka's regional industrial cooperation within a broader framework of international development partnership, coordinated through a monitoring committee chaired at the level of the Prime Minister's Office alongside the Embassy of Japan (JICA, 2013).

Beyond the Chennai-Bengaluru axis, Karnataka's proposed participation in Bengaluru-Mumbai corridor development points toward a second major regional cooperation frontier, linking the state's industrial base with Maharashtra's manufacturing and financial services ecosystem, while the proposed Chennai-Goa freight corridor, routed through

Bengaluru and Karnataka's northern industrial towns, suggests a third emerging axis of regional integration extending toward the western coast (Deccan Herald, n.d.-b, n.d.-c).

These regional corridors carry implications extending well beyond industrial output figures. By design, they are intended to integrate southern and western India's manufacturing, logistics, and port infrastructure into more coherent supply chains, reducing the extent to which individual states compete for the same categories of investment through incentive escalation alone, and instead encouraging a degree of sectoral specialisation across the region. For Karnataka specifically, deeper regional integration also offers a mechanism for extending industrial development beyond Bengaluru toward Tumakuru, Hubli-Dharwad, Belagavi, and other nodes positioned along these corridors, complementing the zone-based incentive architecture of the Industrial Policy 2025-30 discussed in Section 4.2.

Taken together, the evidence presented across this chapter points to a Karnataka investment and industry ecosystem that combines genuine global-calibre strength, most visibly in Bengaluru's technology and aerospace clusters and in the state's current standing as India's leading FDI destination, with structural imbalances that the state's own policy architecture increasingly acknowledges rather than obscures. Whether these instruments succeed will depend less on the ambition of the policies themselves, which compares favourably with peer states, and more on sustained implementation capacity within the delivery institutions, an implementation question that recurs across nearly every chapter of this framework.

Chapter 5: Education — Access, Quality and Future Readiness

5.1 Elementary Education: Enrolment, Retention, Dropout and Learning Outcomes

Karnataka's elementary education system presents strong access indicators alongside a widening quality gap. The state records enrolment ratios exceeding 100 percent at the primary, upper primary, and elementary levels, near universal Aadhaar seeding at 92.6 percent against a national average of 89.4 percent, and full primary retention in the 2024-25 academic year (Mehta, 2026).

Enrolment at the foundational stage is also encouraging in demographic terms. Karnataka is among a small group of states, alongside Gujarat, Maharashtra, Kerala, and Nagaland, where pre-primary enrolment among eligible children exceeds 90 percent, and a district-level analysis found that more than 95 percent of four-year-olds and 90 percent of five-year-olds in the state are enrolled in some pre-primary institution (ASER Centre, 2025; Bangalore Education News, 2025a).

However, foundational learning outcomes in rural Karnataka have deteriorated sharply relative to the national trend. Where ASER 2024 found a national recovery in reading and arithmetic proficiency following pandemic-era learning loss, Karnataka moved in the opposite direction. 84.1 percent of rural Class III students in the state cannot read a Class II level textbook, against a national average of 72.9 percent, and 66 percent of Class V students cannot read a Class II text, against 51.2 percent nationally. Arithmetic outcomes follow the same pattern, with 77.1 percent of rural Class III children unable to perform simple subtraction, compared with a national average of 66.3 percent, and 79.1 percent of Class V children unable to perform simple division, against 69.3 percent nationally. These figures place rural Karnataka behind states more commonly flagged as educationally disadvantaged, trailing even Chhattisgarh, where 75.1 percent of Class III and 45.6 percent of Class V children cannot read Class II texts (EducationWorld, 2025).

Enrolment composition is also shifting away from government schools. Enrolment in Karnataka's government schools declined from 76 percent in 2022 to 71 percent in 2024, even as national data show the opposite trend of families returning to government schools after the pandemic (ASER Centre, 2025; Bangalore Education News, 2025a).

Dropout at the elementary stage remains comparatively contained. Primary-level dropout in Karnataka stands at 1.9 percent and upper-primary dropout at 5.2 percent, both considerably below the secondary-level attrition discussed in section 5.2, a pattern attributed to the protective effect of the Right to Education Act's coverage up to age 14 (The News Minute, 2025).

Nationally, UDISE+ 2024-25 data recorded broad improvement in retention and teacher supply, with the number of teachers in India crossing one crore for the first time, comprising

23.4 percent at the foundational and preparatory level, 28.6 percent at the middle level, and 48 percent at the secondary level (Parthiban, 2025b). Karnataka's own elementary infrastructure additionally carries an efficiency problem worth flagging for policy attention: 270 schools in the state have zero enrolment yet still carry 308 teachers on their rolls, indicating scope for rationalisation of the school network (Mehta, 2026).

Access to elementary education in Karnataka is also shaped directly by an amendment the state made to the Right to Education framework that diverges from the national default. In 2018, Karnataka introduced Section 12(1)(c) of the RTE Act in a form that favours government institutions over private ones: where a government or aided school is available within the notified neighbourhood radius, a child cannot claim an RTE seat in a private unaided school instead. This is a materially different rule from the framework several other states operate under, and it narrows the practical choice available to economically weaker families in localities where a government school technically exists nearby, even where that government school's own infrastructure or learning outcomes, as documented above, may be weaker than those of the private school the family would otherwise have chosen (The Federal, 2025). The equity implications of this provision are discussed further in section 5.8.

The administrative machinery for RTE admissions in Karnataka nonetheless remains active and reasonably well-documented year on year. For the 2025-26 academic year, the Karnataka School Education Department issued admission guidelines on March 25, 2025, published a provisional list of neighbourhood schools, government, aided, and unaided, on March 28, 2025, and opened an objection window before finalising the list of eligible private unaided schools and their available 25 percent quota seats. Seat allocation where demand exceeds supply is conducted through a lottery mechanism, with exemptions extended to children from specifically disadvantaged groups, and the process is administered through the state's centralised Student Achievement Tracking System and Sevasindhu portals rather than through paper-based applications at the school level (Study Minds, 2025). Successful RTE entrants receive free education from the pre-primary stage through Class 8, along with access to the same facilities as fee-paying students, including computer education, sports infrastructure, and in many cases transport and uniform support, with the state government reimbursing participating private schools for the seats they provide under the quota (Right to Education, n.d.; Study Minds, 2025).

5.2 Secondary and Senior Secondary Education: Transition and Achievement

Karnataka's most acute education policy challenge lies at the secondary stage, where the state has recorded the highest dropout rate among major south Indian states and one of the highest nationally. UDISE+ 2023-24 data placed Karnataka's Class 9 and 10 dropout rate at 22.09 percent, worse than every major south Indian neighbour and only marginally better than Bihar at 25.63 percent and Assam at 25.07 percent, against a national average of 14.1 percent. The regional contrast is instructive: Kerala's secondary dropout rate stood at 3.41 percent, Tamil Nadu's at 7.68 percent, Telangana's at 11.43 percent, and Andhra Pradesh's at 12.48 percent in the same reporting year (The News Minute, 2025).

The subsequent 2024-25 cycle showed improvement nationally but continued to single out Karnataka for concern. Karnataka's secondary dropout rate for 2024-25 stood at 18.3 percent, well above the national figure of 11.5 percent, and this figure was explicitly named in the Ministry of Education's own analytical commentary as requiring urgent retention intervention. Comparative state data from the same release show that Karnataka's rate placed it in a cohort with West Bengal at 20.0 percent, Mizoram at 17.4 percent, and Arunachal Pradesh at 18.3 percent, among the states with the most severe secondary-stage retention problems in the country (Education for All in India, 2026; Mehta, 2025).

National-level secondary retention data provide useful context for interpreting Karnataka's position. National secondary retention improved from 45.6 percent to 47.2 percent between 2023-24 and 2024-25, an improvement attributed to growth in the number of schools offering higher secondary education, alongside a decline in national dropout rates at the preparatory stage to 2.3 percent from 3.7 percent, at the middle stage to 3.5 percent from 5.2 percent, and at the secondary stage to 8.2 percent from 10.9 percent. Karnataka's persistently elevated dropout figure against this improving national backdrop indicates that state-specific structural factors, rather than a general national trend, are driving the state's underperformance (Mehta, 2025; Parthiban, 2025a).

The scale of Karnataka's secondary attrition problem is thrown into sharper relief by the terminal Class 10 board examination results the state's own students produce at the end of this stage, which reveal both an unusually volatile pass rate and a set of demographic performance gaps that likely feed directly into the dropout figures documented above. The Karnataka Secondary Education Examination Board's Secondary School Leaving Certificate results collapsed from a pass percentage of 73.40 percent in 2024 to just 62.34 percent for regular candidates in the March-April 2025 sitting, a decline of more than 11 percentage points that reversed several years of steady improvement, since the board had recorded an 85.63 percent pass rate as recently as 2022 (Careers360, 2022, 2025a). Of the 8,42,173 students who sat the 2025 Exam 1, only 5,24,984 passed, a scale of first-attempt failure that, even accounting for the state's subsequent supplementary examination opportunities discussed below, represents several hundred thousand fourteen and fifteen year olds facing an uncertain transition into senior secondary education in a single examination cycle (Shiksha.com, 2026).

The 2025 SSLC results reveal demographic performance gaps that closely mirror the structural concerns documented elsewhere in this chapter. Girls substantially outperformed boys, passing at a rate of 74.00 percent against 58.07 percent for boys, a gap of nearly 16 percentage points that was consistent with the pattern recorded in preceding years (Careers360, 2025b; JIS Exams, 2026). More striking still, government school students passed at a rate of only 62.7 percent, compared with 75.59 percent for private school students, a gap of nearly 13 percentage points that provides a direct, terminal-examination counterpart to the enrolment shift away from government schools documented in section 5.1, since the same NFHS and ASER data showing families moving toward private schools now sit alongside board examination evidence that private school students are indeed clearing the

Class 10 board examination at a meaningfully higher rate (Careers360, 2025c). By contrast, the gap between rural and urban candidates was comparatively narrow, at 65.47 percent for rural students against 67.05 percent for urban students, suggesting that geographic location is a considerably weaker predictor of Karnataka's terminal secondary outcomes than the gender and school-management-type divides documented above (Shiksha.com, 2026).

Karnataka's examination board has responded to this volatility with a structural reform to the SSLC assessment calendar itself. As of the 2025-26 academic year, the Karnataka School Examination and Assessment Board replaced its older supplementary examination system with a three-attempt structure, comprising a main Exam 1 sitting in March or April, an Exam 2 sitting scheduled for May 18 to 25, and a further Exam 3 opportunity in July, explicitly designed to give students who do not clear individual subjects in the first sitting multiple further opportunities to do so within the same academic year, with fresh regular students who receive a Not Completed result in Exam 1 exempted from the Exam 2 fee (JIS Exams, 2026; Shiksha.com, 2026). This reform carries direct significance for the secondary dropout data discussed earlier in this section, since a single failed sitting under the state's previous examination structure represented a more consequential terminal setback than it does under the new three-attempt model, and to the extent that some share of Karnataka's historically elevated Class 9 and 10 dropout rate reflected students who left school altogether after failing to clear SSLC on their first attempt, the multi-sitting reform is designed specifically to reduce that channel of attrition, though its effect on the state's dropout statistics will only become measurable in subsequent UDISE+ reporting cycles.

The introduction of this reformed examination structure has itself required judicial intervention to implement consistently. For the 2025-26 academic year, the Karnataka High Court directed that SSLC examinations be evaluated according to the existing rules already in place rather than being switched to a new grading system midway through the academic year, and specifically ordered that third-language subjects be assessed using numerical marks rather than letter grades, indicating that even a reform intended to ease the consequences of examination failure for students has itself become a source of procedural dispute requiring court oversight to resolve (Careers360, 2026). Coastal districts, particularly Dakshina Kannada and Tumkur, have traditionally recorded pass percentages above the state average in successive SSLC cycles, a regional performance pattern that broadly mirrors the district-level forest cover and Western Ghats geography documented in Chapter 13, though the underlying drivers of this specific educational advantage, whether rooted in historically stronger literacy traditions, denser private school availability, or other district-specific factors, would benefit from more granular research than the sources reviewed for this chapter allow (JIS Exams, 2026).

Achievement data at the senior secondary level continue to be released through Karnataka's own board examinations, and the Second Pre-University Course results process has recently incorporated a formal objection mechanism, with students permitted to raise objections against model answers using their registration number through the state examination board's

official portal, a modest but meaningful step toward examination transparency (Careers360, 2025d).

Karnataka's secondary education access is additionally shaped by the cost environment families face outside the RTE quota discussed in section 5.1, an environment that has become an increasingly visible source of public grievance heading into the 2026-27 academic year. As private school admissions for 2026-27 opened in parallel with the SSLC results discussed above, parents across the state reported annual fee increases ranging from around 5 percent at some schools to 10 to 15 percent at others, with schools citing rising teacher salaries and maintenance costs, and with parents additionally alleging that separate charges are being levied under headings such as tuition, uniforms, books, and transport that compound the visible burden beyond the headline tuition figure quoted at admission (The Federal, 2026a). In the absence of a dedicated statutory fee regulation committee of the kind Tamil Nadu operates, affected parents in Karnataka have explicitly called on the state government to adopt a comparable regulatory model, arguing that the current system leaves families with little formal recourse against annual increases they consider arbitrary (The Federal, 2026a). This pressure builds on an earlier round of parent mobilisation in 2025, following which the Department of School Education issued a circular requiring schools to publicly display detailed admission notifications, reservation policies, and complete fee structures, and to establish functioning grievance redressal systems, with field education officers instructed to review and resolve parent complaints promptly, a transparency-oriented response that falls short of the binding fee-fixation committee model parents have continued to request (Business Standard, 2025).

This unresolved private school fee regulation question sits in direct tension with the two other private-versus-government schooling dynamics documented elsewhere in this chapter: the RTE Section 12(1)(c) restriction documented in section 5.1, which limits economically weaker families' ability to access private schools even when local government schools underperform, and the SSLC pass-rate gap documented earlier in this section, which shows private school students clearing the Class 10 board examination at a meaningfully higher rate than their government school counterparts. Taken together, these three findings describe a state in which government policy constrains poorer families' access to the private schooling option that its own board examination data suggest performs better, while simultaneously leaving the families who do access private schools, whether through the RTE quota or as full fee payers, without a mature regulatory mechanism to contain the cost of that access, a combination that leaves neither the equity nor the affordability half of Karnataka's schooling market fully addressed by current policy.

5.3 Higher Education: Institutional Capacity, Gross Enrolment and Quality

Karnataka possesses one of the largest and densest higher education systems in India, though enrolment growth is now moderating in step with a national slowdown. The state recorded 27.6 lakh students enrolled in higher education per AISHE 2023-24 data, released by the Union Ministry of Education on July 8, 2026, placing it fifth among Indian states behind

Uttar Pradesh, Maharashtra, Tamil Nadu, and Madhya Pradesh. On institutional capacity, Karnataka ranks third nationally with 4,529 colleges, behind only Uttar Pradesh and Maharashtra (APAC News Network, 2026).

Karnataka has historically led the country on college density, having recorded the highest number of colleges per lakh population among all Indian states, at 59 against a national average of 30, a distinction dating to the 2019-20 AISHE cycle, with Bengaluru Urban district alone historically hosting the largest concentration of colleges of any district in the country (Careers360, 2021).

The national Gross Enrolment Ratio for the 18-23 age cohort stood at 27.3 percent as of the most recent AISHE cycle reported, up from 25.6 percent in 2019-20, though Karnataka's own GER was not separately isolated in the sources reviewed for this chapter (IAS Gyan, n.d.). Enrolment growth in Karnataka has nonetheless been essentially flat in recent cycles, with the state's higher education enrolment standing at 24,36,540 students in 2021-22 against 24,40,437 in 2020-21, a marginal decline of just 0.15 percent, in contrast to steeper declines recorded in states such as Uttarakhand and Manipur in the same period (Chettri, 2024).

The state government has responded to enrolment stagnation at the collegiate level with an active administrative push. The Department of Collegiate Education has directed government degree colleges that filled less than 75 percent of admission seats in 2025-26 to take corrective steps to reach at least 75 percent occupancy, while colleges that already met this threshold have been asked to increase enrolment by a further 10 percent for 2026-27, indicating that a meaningful share of government degree college capacity remains under-utilised (Deccan Herald, 2026).

National discipline-level enrolment patterns, which broadly hold for Karnataka's own distribution, show Arts accounting for the largest undergraduate discipline share at 33.5 percent, followed by Science at 15.5 percent, Commerce at 13.9 percent, and Engineering and Technology at only 11.9 percent, a mix still weighted toward general education relative to technical and professional streams (IAS Gyan, n.d.).

A quality dimension that sits alongside Karnataka's strong raw capacity numbers is the continuous cycle of faculty recruitment institutions are running to keep pace with enrolment and accreditation requirements. Through 2026, a steady stream of faculty recruitment notifications has come from Karnataka's engineering and general degree colleges, including drives for Professor, Associate Professor, and Assistant Professor posts at institutions such as AMC College in Bengaluru and New Horizon College of Engineering in Bengaluru's IT corridor, both of which advertise their National Board of Accreditation and NAAC standing prominently as part of their institutional identity (FacultyPlus, 2026a, 2026b). Central and state universities are running parallel cycles: the Central University of Karnataka issued rolling advertisements in 2025 for Assistant Professor, Associate Professor, and Professor posts across its academic departments, alongside non-teaching recruitment, illustrating that

faculty vacancy replenishment is an ongoing structural feature of the system rather than a one-time exercise (Faculty Tick, 2025).

This pattern of continuous faculty hiring needs to be read against the national quality benchmark the University Grants Commission has historically set for higher education institutions, which asks universities and colleges to keep teacher vacancies at or below 10 percent of sanctioned strength at any point in time, alongside targets for graduate employability and industry-linked social engagement during study (Anand, 2018). Karnataka's dense network of 4,529 colleges means that even a modest percentage vacancy rate translates into a large absolute number of unfilled teaching posts across the system at any given time, and the frequency of recruitment notifications across both private and public institutions in 2025 and 2026 suggests that faculty supply, much like school-level teacher supply discussed in section 5.5, remains a persistent rather than a resolved constraint on the quality of Karnataka's higher education expansion.

5.4 Technical, Vocational Education and Training (TVET) Ecosystem

Karnataka has undertaken the most significant restructuring of its vocational education architecture in over a decade with the approval of a long-horizon skilling policy. The Karnataka Skill Development Policy 2025-32 focuses on integrating vocational education into schools, colleges, and universities through credit-based programmes, alongside stronger industry collaboration through apprenticeships and ITI adoption, with special interventions for women, persons with disabilities, marginalised communities, the urban poor, and the informal workforce, and 5 percent of scheme budgets earmarked for monitoring and evaluation (The South First, 2025).

The policy also consolidates Karnataka's fragmented skilling landscape, with the Chief Minister's Kaushalya Karnataka Yojane 2.0 positioned as an umbrella scheme unifying existing programmes such as Kalike Jothege Kaushalya, Nanna Vrutti Nanna Ayke, and the Recognition of Prior Learning initiative under a single life-cycle approach (The South First, 2025).

Infrastructure gaps within the existing ITI network are acknowledged directly within the policy. Of Karnataka's 271 government ITIs, 26 currently lack proper buildings, and the policy recommends modern infrastructure upgrades, curricula in automation, robotics, advanced manufacturing, renewable energy, and cybersecurity, and Training, Counselling, and Placement Cells in all ITIs. On gender access, the policy targets 33 percent women's enrolment in ITIs, backed by fee waivers and scholarships for girl trainees (NammaKPSC, 2025).

At the school level, vocational integration remains linked to the centrally sponsored Samagra Shiksha programme, under which students from Classes 9 to 12 are offered vocational subjects such as information technology, agriculture, and tourism and hospitality, an approach that predates and now runs in parallel with Karnataka's own skilling policy. The state's Junior Technical School network is also being expanded, with six government and six private

schools currently offering foundational technical education and plans for at least one per district (IDR, 2023; NammaKPSC, 2025).

5.5 Teacher Recruitment, Training and Professional Development

Teacher supply has become an urgent state priority in 2026, following years of accumulated vacancies in government schools. The Karnataka government approved the recruitment of 15,000 teachers for government schools at both the primary and secondary levels, under an order issued by the School Education and Literacy Department on July 14, 2026, stemming from a commitment made under the state's 2026-27 Budget Speech, with the drive designed to cover both the Kalyana Karnataka and non-Kalyana Karnataka regions (Free Press Journal, 2026).

This drive follows an already active recruitment cycle earlier in the year. The Karnataka Residential Educational Institutions Society announced 1,087 teacher posts across its residential school network in July 2026, spanning subjects including Kannada, English, Hindi, Mathematics, Science, Social Science, Computer Science, Physical Education, and Drawing, processed through the Karnataka Examinations Authority portal, with a further cycle covering Primary, Upper Primary, and High School Teacher posts expected to be notified separately (Karnatakacareer.org, 2025; Sahi Sarkari Jobs, 2026).

These recruitment pushes must be read against the scale of the national teacher vacancy problem. Despite the number of teachers nationally crossing one crore in 2024-25, a rise of 6.7 percent over the preceding three years, the Parliamentary Standing Committee has separately flagged vacancy rates of 30 to 50 percent in some central government institutions, establishing the national backdrop against which Karnataka's own vacancy-clearing drive should be evaluated (Parthiban, 2025b).

National pupil-teacher ratios showed improvement through 2024-25, standing at 10 for the foundational stage, 13 for preparatory, 17 for middle, and 21 for secondary, all within the National Education Policy's benchmark of 30 to 1, though Karnataka's own ratios were not isolated separately in the sources reviewed (Parthiban, 2025a).

A large one-time recruitment intake of the kind Karnataka is undertaking in 2026 also carries an induction and professional development obligation that is easy to overlook in the recruitment announcements themselves. New recruits entering government service under the 15,000-post and 1,087-post drives will need structured orientation on curriculum delivery, classroom assessment, and the specific foundational literacy and numeracy gaps documented in section 5.1, since simply filling vacant posts does not by itself resolve the learning outcome gap unless accompanied by adequate induction training and ongoing in-service support delivered through the state's teacher training infrastructure under the Samagra Shiksha framework (Free Press Journal, 2026; Sahi Sarkari Jobs, 2026). The scale of this year's recruitment therefore places a proportionate demand on Karnataka's District Institutes of Education and Training and allied teacher-training bodies, a capacity question the state's

own implementation reports will need to address as the new recruits join classrooms over the 2026-27 academic year.

5.6 Digital Education, EdTech Integration and ICT in Schools

Karnataka's digital education infrastructure lags behind its reputation as India's technology hub. The state's schools report computer availability of 55.7 percent and internet penetration of 50.7 percent, both below corresponding national averages, despite the state's global standing in the information technology sector (Education for All in India, 2026).

This finding echoes the broader national pattern in which digital readiness trails basic infrastructure. While over 90 percent of Indian schools have basic amenities such as electricity and gender-specific toilets, only 57.2 percent have functional computers and 53.9 percent have internet access nationally, meaning Karnataka's digital access figures sit close to, and in some measures below, the national baseline rather than ahead of it (Rau's IAS, 2025).

The accessibility gap compounds when digital infrastructure is assessed jointly with disability inclusion. Karnataka's schools report critically low coverage of Children with Special Needs friendly toilets, at 19.7 percent against a national average of 35.6 percent, indicating that digital and physical accessibility gaps are compounding rather than offsetting one another (Education for All in India, 2026).

ASER's rural household survey additionally tracks digital literacy and smartphone access among older students, specifically evaluating smartphone access, usage, and safety awareness among 14 to 16 year olds nationally, reflecting a growing recognition that digital literacy now sits alongside foundational reading and arithmetic as a core outcome to be tracked (Insights on India, 2025).

5.7 Special Education: Children with Disabilities and Inclusive Schooling

Inclusive education in Karnataka operates within the national Samagra Shiksha framework's Children with Special Needs (CWSN) provisions, but state-specific infrastructure data reveal significant unmet need. Karnataka's CWSN-friendly toilet coverage of 19.7 percent trails the national average of 35.6 percent by a substantial margin, a basic accessibility indicator that constrains the practical inclusion of children with mobility-related disabilities in mainstream schools regardless of policy intent (Education for All in India, 2026).

At the national level, the scale of the CWSN cohort under Samagra Shiksha is considerable. The scheme's inclusive education component was designed to cover all children with special needs from Class I to XII, with an outlay of 1,023.50 crore rupees approved for the education of 21,00,918 CWSN students in the 2018-19 cycle, including financial support for 15,909 resource teachers and special educators. Its Inclusive Education for Disabled at Secondary

Stage component specifically aimed to enable students with disabilities completing eight years of elementary schooling to access four further years of inclusive secondary schooling in the general education system (Ministry of Education, Samagra Shiksha, n.d.).

Examination-stage inclusion has advanced through digital administrative reform at the national board level, offering a template Karnataka's own state board could adapt. The Central Board of Secondary Education launched a dedicated CWSN portal allowing schools to request examination facilities entirely online, with approved facilities reflected automatically on admit cards, reducing paperwork and last-minute arrangement failures (AMK Resource World, 2025).

Vocational and livelihood-linked education for CWSN remains under-resourced nationally. Of an estimated 3 crore persons with disabilities in India, only 34 lakh have secured employment across all sectors, and educators have flagged persistent challenges in designing appropriate vocational approaches for neurodiverse children within the CWSN cohort. Karnataka's Skill Development Policy 2025-32 explicitly names persons with disabilities among its target groups for special skilling interventions, though implementation data are not yet available given the policy's recent approval (IDR, 2023; The South First, 2025).

5.8 State-Specific Educational Challenges and Reform Priorities

Karnataka's most consequential and distinctive education reform in recent years is its formal departure from the National Education Policy (NEP) 2020 in favour of a state-authored framework. The Karnataka State Education Policy (SEP) 2025 was unveiled on August 8, 2025, under the leadership of Prof. Sukhadeo Thorat, moving away from NEP 2020 toward a framework centred on inclusivity, equity, and regional identity, developed through consultations with 379 experts and 35 task forces across 132 meetings, culminating in a 2,197-page, three-volume report submitted on August 9, 2025. Its central structural change is a new 2+8+4 schooling model, extending Right to Education coverage from ages 4 to 18 and standardising the Class 1 admission age at 6 years, with a tolerance of plus or minus three months (Education for All in India, 2025).

Language policy is the most contested element of the reform. The SEP 2025 adopts a two-language formula of Kannada or mother tongue plus English for approximately 90 percent of schools, replacing the NEP's three-language formula, and mandates Kannada or the mother tongue as the medium of instruction up to Class 5, with a preference for extending this through Class 12 across all boards, applying to government, aided, and private schools with exceptions for linguistic minority institutions (Bangalore Education News, 2025b).

The policy commission has been openly critical of the framework it replaces. It moves away from NCERT textbooks in favour of a localised Comprehensive Curriculum for School Education emphasising experiential learning and local culture, and has described elements of NEP 2020 as unscientific and as undermining federalism, citing concerns over the perceived imposition of Hindi and a centralised curriculum overlooking state-specific needs (Bangalore Education News, 2025b, 2025c).

The historical policy reversal is significant for continuity planning. Karnataka was the first state in India to adopt NEP 2020, doing so in higher education in August 2021, before the incoming government announced in 2023 that the NEP would be scrapped from the following academic year and replaced by a dedicated State Education Policy (Deccan Herald, 2023).

As of the close of 2025, however, implementation of the school-level provisions of SEP 2025 had not yet begun. While a committee had been formed to progress higher education reforms, no concrete steps had been taken for school education, and stakeholders were hoping for a rollout beginning in the 2026-27 academic year, with delays raising concerns about timely execution (Bangalore Education News, 2025c).

A further equity-related reform priority arises from the interaction between Karnataka's 2018 RTE amendment and the foundational learning gaps documented in section 5.1. Because Section 12(1)(c) blocks a private-school RTE claim wherever a government or aided school exists nearby, families in localities where the local government school has weak learning outcomes have less legal recourse to opt into a better-performing private school under the quota than families in states that did not adopt this restriction. Given that ASER 2024 places Karnataka's rural foundational learning outcomes behind even educationally disadvantaged states, this provision arguably narrows school choice precisely where the case for choice is strongest, and merits review alongside the state's broader foundational learning strategy (EducationWorld, 2025; The Federal, 2025).

Taken together, the evidence in this chapter points to six reform priorities for the state. First, foundational literacy and numeracy in rural government schools requires an intervention of NIPUN Bharat-style intensity, given that Karnataka's Class III and V outcomes now trail even educationally disadvantaged states. Second, secondary-stage dropout, at nearly double the national rate, requires targeted retention measures around the upper-primary to secondary transition, a priority the state's new three-attempt SSLC examination structure is beginning to address but whose effect on dropout statistics remains to be measured. Third, the digital and disability accessibility gap in schools needs direct capital investment, given that a state marketed as India's technology capital under-performs national averages on computer, internet, and CWSN-friendly infrastructure. Fourth, the state must resolve the implementation timeline of SEP 2025 without further delay, since prolonged uncertainty over curriculum, medium of instruction, and school structure carries direct costs for the retention and learning outcomes the policy is meant to improve. Fifth, the state's own RTE Section 12(1)(c) restriction warrants a fresh equity review, so that school choice policy and foundational learning policy are not working at cross purposes. Sixth, the absence of a statutory private school fee regulation mechanism comparable to Tamil Nadu's model leaves families outside the RTE quota without formal recourse against annual fee increases, a gap that sits in direct tension with the very SSLC pass-rate advantage private schools currently demonstrate over their government counterparts (Education for All in India, 2026; EducationWorld, 2025; The Federal, 2025, 2026a).

Chapter 6: Health, Nutrition and Population

6.1 Public Health Infrastructure: Facilities, Human Resources and Gaps

Karnataka's public health system is built around a three-tier network of Primary Health Centres, Community Health Centres, and district hospitals administered by the Department of Health and Family Welfare, supplemented by newer Ayushman Arogya Mandirs that function as health and wellness centres staffed by Community Health Officers who provide primary care and health counselling at the village level (MySarkariNaukri, 2026).

State budget allocations in recent years have prioritised upgrading this network, particularly in rural and taluk-level facilities. In the 2024-25 budget, the Karnataka government announced the upgrade of 25 rural Primary Health Centres to Community Health Centres at a cost of 350 crore rupees over two years, continuing a similar commitment from the previous year's budget, in which 70 crore rupees had been set aside to upgrade 23 PHCs to CHCs, though only 15 of these were ultimately approved and are being operationalised (Deccan Herald, 2024). The same budget announced state-of-the-art Critical Care Blocks in each district, with construction beginning in seven districts including Udupi, Mysuru, and Dharwad at a cost of 187 crore rupees, alongside 280 crore rupees for new 100-bed taluk hospitals in seven taluks and 221 crore rupees for 46 new Primary Health Centres in the Kalyana Karnataka region, plus 130 crore rupees for 199 additional health and wellness centres (Deccan Herald, 2024).

Karnataka's doctor availability presents a striking divergence depending on whether it is measured in aggregate or specifically within government health facilities, a distinction that goes some way toward explaining why the district-level recruitment activity documented below remains a persistent rather than resolved challenge. On an aggregate basis, drawing on National Medical Commission registration data for allopathic and AYUSH practitioners, Karnataka's overall doctor-to-patient ratio stands at 457 people per doctor as of the most recent state-wise analysis, the second best ratio of any Indian state after Goa's 353, and considerably ahead of Andhra Pradesh at 488, Tamil Nadu at 495, and Kerala at 509, comfortably surpassing both the World Health Organization's commonly cited benchmark of one doctor per 1,000 people and India's projected national ratio of 811 people per doctor (IndiaDataMap, 2026). This aggregate strength, however, is heavily concentrated in a single city and in the private sector rather than distributed across the state's government health network, with independent clinical research finding that 40 percent of Karnataka's registered doctors and 30 percent of its medical colleges are located in Bengaluru alone (APIK Journal of Internal Medicine, 2025).

Within government-run facilities specifically, Karnataka's doctor availability tells an almost opposite story. According to the Union Health Ministry's National Health Profile, one government doctor in Karnataka served 13,556 people, a ratio the same report described as the worst in southern India, and one that had deteriorated from 13,257 people per government doctor just a year earlier, despite Karnataka being one of only three Indian states with more

than one lakh registered doctors, at 1,04,794, behind only Maharashtra's 1,53,513 and Tamil Nadu's 1,26,399 (Deccan Herald, n.d.-s). At the primary health centre level specifically, only 2,136 doctors and, at the community health centre level, just 498 specialists were in position across the state at the time of that reporting, with not a single new specialist having joined any community health centre in Karnataka during the preceding year, a pattern the report attributed to the great majority of registered doctors preferring private clinical practice over government service (Deccan Herald, n.d.-s). Taken together, these two datasets indicate that Karnataka's genuine strength in aggregate physician supply coexists with a rural, public-sector doctor shortage comparable to some of India's most under-resourced states, a divergence that reinforces the case for the ongoing district-by-district Medical Officer recruitment drives discussed below being treated as a standing structural priority rather than a temporary staffing gap.

Workforce supply remains an active recruitment priority across the health system. The Department of Health and Family Welfare continues to run recruitment cycles for Medical Officers, Nursing Officers, Community Health Officers, and Pharmacy Officers, with medical officer vacancies advertised at the Primary Health Centre level in individual districts, such as a direct interview recruitment drive for General Duty Medical Officer posts in Chikkaballapura district's Primary Health Centres in March 2026 (Chikkaballapur District, 2026; MySarkariNaukri, 2026). This local, district-by-district recruitment pattern illustrates that PHC staffing gaps persist at the grassroots level even as state-wide policy announcements emphasise infrastructure upgrades. Nursing recruitment is similarly active, with south Indian states including Karnataka identified as having a continuous requirement for staff nurse and paramedical roles under the National Health Mission and State Health Missions, contributing to a combined national nursing vacancy pool exceeding 30,000 posts across states in the 2025-26 recruitment cycle (PW, 2025). The District Health and Family Welfare Society, which operates under the National Health Mission at the district level in Karnataka, continues to issue notifications for both medical and non-medical posts through district health portals, indicating that recruitment against sanctioned vacancies is an ongoing, rather than one-time, administrative task across the state's PHC and CHC network (Karnatakacareers.org, 2026).

6.2 Epidemiological Profile: Communicable and Non-Communicable Disease Burden

Karnataka's epidemiological transition mirrors the broader Indian pattern in which non-communicable diseases account for a rising share of the disease burden even as the state continues to manage communicable disease control and vector-borne illness surveillance through its public health network. The state's mental health burden, discussed further in section 6.5, is itself indicative of this transition, since the lifetime prevalence of psychiatric disorders in India stands at approximately 14 percent, a burden that primary care systems such as Karnataka's PHC network were not originally designed to manage and that has required dedicated integration programmes to address (Math et al., cited in Indian Journal of Medical Research, 2025).

Karnataka carries a documented and comparatively elevated burden of hypertension among women. National Family Health Survey 5 data place Karnataka fourth among Indian states and union territories for hypertension prevalence among women, at 21.0 percent, behind only Sikkim at 30.3 percent, Kerala at 22.1 percent, and Nagaland at 21.4 percent, and ahead of the Andaman and Nicobar Islands at 20.1 percent (Chand et al., 2023). This ranking places Karnataka's women's hypertension burden among the five highest in the country, a finding that sits in some tension with the state's comparatively strong maternal and child health outcomes documented in section 6.3, and that indicates the state's disease burden is shifting toward chronic, long-duration conditions even as acute maternal risk has been substantially reduced.

A dedicated cross-sectional analysis of Karnataka using National Family Health Survey 2019-20 data, drawing on responses from 26,574 households covering 30,455 women and 4,516 men of reproductive age, investigated the prevalence, risk factors, and healthcare-seeking behaviour associated with hypertension and diabetes in the state and found a high combined prevalence of both conditions, alongside identifiable behavioural and socio-demographic risk factors that shaped who was affected (Joshi, 2024). Significantly, the same study identified a persistent gap in healthcare-seeking behaviour among Karnataka residents already diagnosed with hypertension or diabetes, concluding that public health interventions in the state need to focus as much on encouraging affected individuals to seek and sustain treatment as on primary prevention and screening, since a diagnosis alone does not reliably translate into ongoing clinical management under current conditions (Joshi, 2024).

Karnataka has also been a testing ground for one of India's more thoroughly evaluated primary-care non-communicable disease programmes. A public-private partnership initiative implemented in urban Mysuru between 2017 and 2018, covering a population of approximately 58,000 residents, combined population-based screening to estimate the number of residents with or at risk of hypertension and diabetes, cross-sectional surveys of risk factor distribution, and an integrated model of disease prevention, health promotion, treatment, and continuing care delivered through the existing primary health system rather than through a parallel structure (Jayanna et al., 2019). The programme's design was explicitly intended to address the gap identified nationally, where India accounts for more than two-thirds of non-communicable disease mortality in the South-East Asia region, by testing whether an integrated continuum-of-care model built on existing urban primary health infrastructure could improve both detection and sustained management of hypertension and diabetes at the population level (Jayanna et al., 2019). The Mysuru model offers a directly relevant, state-specific template that Karnataka's broader Ayushman Arogya Mandir network, discussed in section 6.1, could draw upon as it takes on a larger role in non-communicable disease screening at the village and urban-ward level.

This shifting burden needs to be read against the global and national scale of the non-communicable disease challenge. Non-communicable diseases are estimated to cause approximately 41 million deaths worldwide each year, representing 71 percent of all global

deaths, including 14 million premature deaths among people aged between 30 and 70 years, a burden the World Health Organization has long attributed to a combination of genetic, physiological, environmental, and behavioural risk factors (World Health Organization data, cited in Chand et al., 2023). India's national diabetes prevalence has been estimated at 7.8 percent, split closely between men at 7.9 percent and women at 7.5 percent, and national hypertension prevalence among men rose from 11.5 percent to 16 percent, and among women from 7.1 percent to 13.7 percent, between the NFHS-4 and NFHS-5 survey rounds, indicating that the upward trend in blood pressure prevalence documented for Karnataka is consistent with, and in the case of women's hypertension considerably more severe than, the national trajectory over the same period (World Health Organization data, cited in Prevalence of Lifestyle Diseases in Maharashtra, 2022).

Non-communicable disease surveillance and management in Karnataka is delivered through the same PHC and CHC network discussed in section 6.1, with Medical Officers at these facilities responsible for both clinical care and the implementation of broader public health programmes, including immunization and maternal health initiatives that indirectly shape non-communicable disease outcomes across the life course, such as low birth weight and childhood undernutrition, which are established risk factors for adult metabolic disease (MySarkariNaukri, 2026). Karnataka's underlying demographic profile, with roughly 61 percent of its population still resident in rural areas as of the most recent census-based estimates, means that the state's non-communicable disease burden is disproportionately borne by a population with comparatively limited access to specialist diagnostic and treatment services outside its district hospitals (Karnataka.com, n.d.).

6.3 Maternal and Child Health: MMR, IMR, Under-5 Mortality and Nutrition

Karnataka has made substantial and internationally comparable progress on maternal and child mortality, even as some indicators reveal state-specific concerns that require continued attention. As of the Sample Registration System 2018-20 cycle, Karnataka's Maternal Mortality Ratio stood at 69 per 100,000 live births, placing it among only eight Indian states that have already surpassed the Sustainable Development Goal target of reducing maternal mortality below 70 per 100,000 live births by 2030, alongside Kerala, Maharashtra, Telangana, Andhra Pradesh, Tamil Nadu, Jharkhand, and Gujarat (Press Information Bureau, 2025; PMC, 2025). This places Karnataka well ahead of the national Maternal Mortality Ratio of 97 per 100,000 live births recorded in the same period, and considerably below the national historical baseline of 130 per 100,000 live births recorded in 2014-16 (Press Information Bureau, 2025).

On child mortality, Karnataka has similarly met key national targets ahead of schedule. The state's Under-5 Mortality Rate stands at 21 per 1,000 live births, placing it among twelve states and union territories that have already attained the Sustainable Development Goal target of an Under-5 Mortality Rate of 25 or fewer by 2030, a group that includes Kerala, Delhi, Tamil Nadu, Jammu and Kashmir, Maharashtra, West Bengal, Punjab, Telangana, Himachal Pradesh, Andhra Pradesh, and Gujarat (Press Information Bureau, 2025). At the

national level, the Infant Mortality Rate has declined from 39 per 1,000 live births in 2014 to 27 per 1,000 live births in 2021, and the Neonatal Mortality Rate has declined from 26 to 19 per 1,000 live births over the same period, establishing the national trajectory against which Karnataka's own indicators should be read (Press Information Bureau, 2025).

Karnataka's own earlier state-specific data, drawn from the Sample Registration System 2015 cycle referenced by UNICEF, recorded a Neonatal Mortality Rate of 19 per 1,000 live births and a Maternal Mortality Ratio of 133 per 100,000 live births at that time, indicating the scale of improvement the state has achieved over the subsequent decade to reach its current sub-70 Maternal Mortality Ratio (UNICEF India, n.d.). NFHS-5 data for Karnataka additionally recorded an Infant Mortality Rate that varies notably by maternal age, at 34 per 1,000 live births for teenage mothers compared with 27 per 1,000 live births for mothers aged 30 to 39, underscoring the elevated risk associated with adolescent pregnancy in the state (ResearchGate, 2022). The same NFHS-5 data found that 97 percent of births in Karnataka are now attended by skilled health personnel, a marked rise from the NFHS-4 figure, and that 32 percent of births in the state were delivered by caesarean section, with 14 percent of all births involving an emergency caesarean procedure (ResearchGate, 2022). Postnatal care coverage is similarly strong, with 91 percent of mothers in Karnataka receiving a postnatal check after their most recent birth (ResearchGate, 2022).

One indicator that runs counter to this broadly positive trend is the sex ratio at birth, where Karnataka has been specifically flagged in national reporting as among a handful of states recording a worsening trend over a six-year period since 2014, even as the national sex ratio at birth improved from 899 to 913 over the same period (Deccan Herald, cited via Ray, n.d.). This divergence between Karnataka's strong performance on maternal and under-five mortality and its concerning trajectory on sex ratio at birth is a distinct policy problem that mortality-focused interventions alone will not resolve, and it warrants dedicated monitoring under the state's child rights and gender equity framework discussed in Chapter 7.

6.4 Universal Health Coverage: State Health Assurance Schemes

Karnataka operates a layered health insurance architecture built around the merger of several legacy schemes into the Ayushman Bharat Arogya Karnataka programme. When Arogya Karnataka was launched in March 2018, it combined eight individual medical care schemes the state had previously run separately, and later that year it was merged with the central Ayushman Bharat programme, raising the annual health coverage available to a Below Poverty Line family of five members from 1.5 lakh rupees to 5 lakh rupees, with an additional 50,000 rupees available where necessary (Tata AIG, n.d.).

Running alongside this merged scheme is the Yeshasvini Cooperative Farmers Health Care Scheme, a community-based health insurance programme launched in 2003 specifically for members of cooperative societies, predominantly farmers and rural informal workers, which was discontinued in 2018 when it was folded into Arogya Karnataka before being relaunched independently in 2022-23 following demands from stakeholders (GKToday, 2025; HDFC

Ergo, 2026). As of the most recent published figures, the Yeshasvini scheme benefits approximately 30 lakh beneficiaries across 30 districts of Karnataka, covers more than 1,650 medical procedures for a minimum annual premium of just 250 rupees, and provides cashless coverage up to 5 lakh rupees per family per year at network hospitals (PolicyBazaar, 2026; Tata AIA, n.d.). Beneficiaries enrolled under the Ayushman Bharat Arogya Karnataka scheme are additionally eligible to draw on Yeshasvini's benefits, creating a degree of overlap between the two schemes that state health administrators have sought to rationalise (Tata AIG, n.d.).

The scheme's rate structure has itself become a live policy issue in 2025. An expert committee constituted by the state government conducted a six-month market analysis of the 2,128 medical procedures covered under Yeshasvini and recommended rate increases of 15 to 25 percent for standard procedures and up to 50 percent for complex procedures such as paediatric heart surgeries and oncology treatment, alongside the removal of six outdated procedures and the addition of 69 new ones, with the report submitted to Chief Minister Siddaramaiah in April 2025 (GKToday, 2025). This recommended rate revision reflects a broader challenge facing state-level health assurance schemes nationally, namely that package rates set years earlier increasingly fail to reflect the actual cost of care, which can discourage empanelled hospitals from offering the full range of covered procedures to scheme beneficiaries.

6.5 Mental Health Services: Availability, Access and Stigma Reduction

Karnataka operates one of the more institutionally developed state mental health programmes in India, anchored by the District Mental Health Programme and its distinctive Manochaitanya initiative. The District Mental Health Programme, implemented under the National Mental Health Programme, currently operates in all 30 districts of Karnataka and the Bruhat Bengaluru Mahanagara Palike area, with an additional Taluka Mental Health Programme extended to 10 taluks (Mental Health Programme in Karnataka, n.d.-a).

The state's flagship innovation is the Manochaitanya programme, also known as the Super Tuesday clinic, launched by the Government of Karnataka on October 10, 2014, as a public-private partnership with the Karnataka chapter of the Indian Psychiatric Society, under which psychiatrists provide specialist services to the mentally ill at taluk-level hospitals on designated Tuesdays each month (Indian Journal of Medical Research, 2025; Mental Health Programme in Karnataka, n.d.-b). At the time of its launch, the programme addressed a significant coverage gap, since the District Mental Health Programme had at that point covered only eight of Karnataka's districts, leaving the majority of the state without dedicated mental health services integrated into primary care (Indian Journal of Medical Research, 2025). The programme has since scaled substantially, and Manochaitanya clinics are now functional in 146 taluks of the state, extending specialist psychiatric access to a population base exceeding 60 million people across roughly 2,310 Primary Health Centres, 180

Community Health Centres, and 146 taluk hospitals (Indian Journal of Medical Research, 2025; Mental Health Programme in Karnataka, n.d.-b).

A performance audit of the programme's first 30 months at the secondary care level, conducted across all 31 districts of Karnataka using a semi-structured proforma, provides one of the few systematic evaluations of a state mental health integration model of this kind in India, and found the public-private partnership structure functioned as intended in extending outpatient psychiatric care to sub-district hospitals (Indian Journal of Community Medicine, cited in performance audit, n.d.). Independent clinical commentary has nonetheless identified structural weaknesses in the model, including the absence of a dedicated programme budget, no financial or professional incentive for participating doctors beyond intrinsic motivation, limited psychosocial content in the treatment protocol despite a high proportion of patients presenting with psychosocial stressors, and a broader gap in psychiatric training during undergraduate medical education and internship that leads to under-diagnosis and predominantly symptomatic treatment at the primary care level (Indian Journal of Medical Research, 2025).

Institutional oversight of mental health establishments in the state operates through the Karnataka State Mental Health Authority, which has conducted inspections of 34 private mental health establishments in response to complaints and submitted a draft State Mental Healthcare regulation to the state government in August 2023 following a series of committee meetings held in coordination with the National Institute of Mental Health and Neurosciences (Karnataka State Mental Health Authority, n.d.). The state additionally operates e-Manas, an internet-based statewide digital registry covering mental health establishments, mental health professionals, and the treatment records of persons with mental illness, representing one of the more advanced digital mental health governance tools operated by any Indian state (Karnataka State Mental Health Authority, n.d.).

6.6 Nutrition Programmes: ICDS, Mid-Day Meal and Poshan Abhiyan

Child undernutrition remains one of the more persistent public health challenges in Karnataka despite the state's comparatively strong record on maternal and child mortality documented in section 6.3. According to NFHS-5 data, 35.4 percent of children under five years in Karnataka are stunted, 19.5 percent are wasted, and 8.4 percent are severely wasted, indicators that place all 30 districts of the state in the category of public health concern for at least one form of undernutrition, based on World Health Organization thresholds applied in a NITI Aayog state nutrition profile of Karnataka (UNICEF India, n.d.; NITI Aayog, 2021). The same NITI Aayog profile identified Bangalore, Belgaum, Bijapur, and Bagalkot as the districts carrying the highest absolute burden of stunted children in the state, reflecting both population size and prevalence (NITI Aayog, 2021). Anaemia prevalence in Karnataka is similarly high, with the NITI Aayog nutrition profile recording anaemia among a substantial share of both children under five and women aged 15 to 49, a pattern consistent with the broader national anaemia burden documented across successive NFHS rounds (NITI Aayog, 2021).

Nationally, the government's Poshan Tracker platform, which monitors nutritional outcomes at Anganwadi centres in real time, recorded that of 7.54 crore children up to five years of age enrolled in Anganwadis and registered on the tracker, 38.9 percent were found to be stunted, 17 percent underweight, and 5.2 percent wasted, according to the Women and Child Development Ministry's most recent response to the Rajya Sabha (Deccan Herald, n.d.-a). These national Anganwadi-based figures are somewhat higher on stunting than the NFHS-5 household survey figures, a divergence the government's own nutrition monitoring literature attributes in part to differences in measurement methodology and population coverage between facility-based tracking and household survey sampling (Deccan Herald, n.d.-a; PIB, cited in nutrition literature).

Karnataka has piloted more granular, block-level nutrition interventions that go beyond the standard Integrated Child Development Services framework. The Karnataka Multi-sectoral Nutritional Pilot Project, implemented between 2015 and 2018 in Chincholi block of Gulbarga district and Devadurga block of Raichur district, provided a real-time proof-of-concept dataset that researchers have since used to model projected improvements in stunting, wasting, and underweight prevalence among children aged 6 to 35 months when compared against NFHS-5 baseline data for India's aspirational districts (Rao et al., 2024). This pilot's methodology, which combines real-time monitoring with the aspirational districts framework used more broadly across India's more nutritionally vulnerable blocks, offers a template for scaling more intensive nutrition interventions to Karnataka's own highest-burden districts identified in the NITI Aayog profile.

At the national programme level, the government's Mission Poshan 2.0 framework, under which Karnataka's own Anganwadi network operates, focuses on maternal nutrition, infant and young child feeding norms, and treatment of moderate and severe acute malnutrition, alongside wellness interventions delivered through Ayush practices, with supplementary nutrition provided to beneficiaries for 300 days a year through a national network of 13.97 lakh Anganwadi centres reorganised under the 15th Finance Commission's Mission Saksham Anganwadi framework (PIB, n.d.-b). Karnataka's Anganwadi infrastructure operates within this national architecture, meaning the state's own nutrition outcomes are shaped significantly by the pace of national Poshan 2.0 implementation as well as by state-specific interventions such as the Karnataka Multi-sectoral Nutritional Pilot Project model.

6.7 Population Stabilisation and Family Planning

Karnataka's population dynamics reflect the broader demographic transition underway across southern India, where fertility has fallen to or below replacement level in most states well ahead of the national average. India's national Total Fertility Rate declined from 2.2 in the NFHS-4 cycle of 2015-16 to 2.0 in the NFHS-5 cycle of 2019-21, meeting the government's national target of 2.1 by 2025 ahead of schedule (Press Information Bureau, n.d.-c). Karnataka's own state-specific fertility rate was not isolated with a verified, current figure in the sources reviewed for this chapter, and given the sensitivity of citing an unverified specific statistic, this framework recommends that Karnataka's Directorate of Health and Family

Welfare Services' own vital statistics division, or the forthcoming NFHS-6 state factsheet, be consulted directly for the current authoritative figure.

What is clear from the broader south Indian pattern is that Karnataka's population growth is being driven increasingly by longevity and internal migration rather than by fertility, a dynamic that has implications for the state's health system planning discussed throughout this chapter, since an ageing population profile requires a different balance of primary care, chronic disease management, and geriatric services than a younger, high-fertility population would. Karnataka's own population, per the most recent census-based projections, was estimated at approximately 6.87 crore in 2026, with a sex ratio of 973 females per 1,000 males as recorded in the 2011 Census, the last full census conducted before the subsequent census was postponed (Census of India, n.d.; Karnataka.com, n.d.). This postponement itself represents a data gap that constrains the precision with which current state-level fertility and family planning indicators can be verified, since India's most recent full census remains the 2011 count, with subsequent estimates relying on sample surveys such as NFHS and the Sample Registration System rather than a fresh enumeration (Karnataka Population, n.d.).

6.8 Health System Strengthening and Future Preparedness

Karnataka's recent budget commitments, documented throughout this chapter, indicate a health system that is expanding physical infrastructure and insurance coverage in parallel, but the evidence assembled here points to five areas requiring closer attention as the state strengthens its health system going forward.

First, the gap between announced Primary Health Centre to Community Health Centre upgrades and actual operationalisation is a recurring pattern worth addressing directly. As documented in section 6.1, only 15 of 23 planned upgrades from the 2023-24 budget cycle were ultimately approved, and a further 25 upgrades were announced in 2024-25 on essentially the same model, suggesting that budget allocation alone is not translating into infrastructure delivery at the pace intended (Deccan Herald, 2024). Second, the persistent need for district-by-district recruitment drives for Medical Officers and nursing staff, continuing into 2026, indicates that workforce supply remains a binding constraint on the quality of care available at the PHC and CHC level, echoing the broader teacher supply challenge documented in Chapter 5, and the urban-rural and public-private divide in doctor availability documented in section 6.1 indicates that this constraint is structural rather than a simple aggregate numbers problem (MySarkariNaukri, 2026; Chikkaballapur District, 2026; IndiaDataMap, 2026). Third, the Yeshasvini scheme's overdue rate revision, while a positive development, highlights the need for a standing mechanism to periodically update state health insurance package rates in line with actual treatment costs, rather than relying on ad hoc expert committees convened years after rates were last set (GKToday, 2025).

Fourth, the evidence assembled in section 6.2 on hypertension and diabetes prevalence indicates that Karnataka's non-communicable disease burden, and particularly its unusually high hypertension prevalence among women relative to other Indian states, is now a

first-order health system priority in its own right, not a secondary concern trailing behind communicable disease and maternal health programming. The Mysuru urban primary care model documented in section 6.2 demonstrates that an integrated screening and continuum-of-care approach is feasible within Karnataka's existing PHC and CHC infrastructure, and the evident gap in healthcare-seeking behaviour identified among already-diagnosed patients suggests that the state's Ayushman Arogya Mandir network, and the Community Health Officers who staff it, should be positioned as the primary vehicle for closing this behavioural gap, through structured follow-up and adherence support rather than screening alone (Joshi, 2024; Jayanna et al., 2019).

Fifth, and perhaps most significant given the state's stated identity as a hub of medical and technological innovation, the divergence between Karnataka's strong maternal and under-five mortality outcomes and its concerning nutrition and sex ratio at birth trends suggests that mortality reduction alone is an incomplete measure of child wellbeing, and that dedicated nutrition and gender-equity interventions, discussed further in Chapter 7, deserve equal prominence in the state's health strengthening agenda going forward (Press Information Bureau, 2025; UNICEF India, n.d.).

Chapter 7: Social Justice, Inclusion and Community Welfare

7.1 Scheduled Castes: Demographic Profile, Deprivation and Development Programmes

Scheduled Castes constitute the single largest identifiable social bloc in Karnataka's long-delayed caste survey, officially titled the Socio-Economic and Educational Survey. According to the survey findings tabled before the Karnataka Cabinet in April 2025, Scheduled Castes and Scheduled Tribes together form the largest social bloc in the state at 1.52 crore, or 25 percent of the surveyed population, with Scheduled Castes alone identified as the single largest individual social group at 1.09 crore (Deccan Herald, 2025a; IndiaTomorrow, 2025). The survey, originally commissioned in 2015 and conducted by the Karnataka State Commission for Backward Classes under the chairmanship of H. Kantharaj before being finalised by his successor K. Jayaprakash Hegde in February 2024, was placed before the Cabinet in a sealed cover and formally accepted on April 11, 2025, after nearly a decade of delay attributed variously to model code of conduct restrictions during successive elections and administrative delays in compiling district-level returns (Deccan Herald, 2025b; Deccan Herald, n.d.-b).

Financial support for Scheduled Caste welfare in Karnataka flows substantially through the Scheduled Caste Special Plan and Tribal Special Plan corpus, a ring-fenced budgetary mechanism intended to guarantee proportionate development spending for these communities. In the 2025-26 state budget, the government sanctioned 42,018 crore rupees for the combined SCSP/TSP corpus, an increase of 2,897 crore rupees over the previous year's allocation, though this increase was substantially directed toward non-guarantee schemes covering education, farming, and various welfare boards rather than the direct cash guarantee schemes that had previously drawn a larger share of the corpus, with guarantee scheme expenditure from the SCSP/TSP funds falling by 6 percent, from 14,282.38 crore rupees in 2024-25 to 13,433.84 crore rupees in 2025-26 (Deccan Herald, 2025c). This reallocation has drawn criticism from Dalit advocacy groups and opposition politicians, who have characterised the shift away from guarantee schemes as a form of fund diversion from the SCSP/TSP's original constitutional purpose (Deccan Herald, 2025c).

Beyond fiscal allocation, Karnataka's Scheduled Caste population continues to face a distinct and persistent dignity and occupational safety crisis tied directly to manual scavenging, an occupation historically imposed on Dalit communities under India's caste hierarchy and one the Prohibition of Employment as Manual Scavengers and their Rehabilitation Act, 2013, formally banned more than a decade ago. Despite this legal prohibition, the chairperson of the Karnataka State Safai Karmachari Commission reported that 90 scavengers in the state died since 2020 while manually cleaning manholes, septic tanks, and open drainage, and that 7,080 manual scavengers remained identifiable in the state at the time of that reporting, a figure the Commission's own chairperson presented alongside an acknowledgement that officers heading local bodies where such deaths occur should themselves face punishment (Deccan Herald, n.d.-t). A separate review by the same Commission, focused specifically on

the Bengaluru Water Supply and Sewerage Board, found that at least six sanitary workers had died after inhaling poisonous gases in manholes, and that of 462 sanitary workers employed by the Board, nearly 292 worked on a contract basis without Employees' State Insurance or Provident Fund benefits, and were additionally denied minimum wages, uniforms, and identity cards, a set of findings that prompted the Commission to direct the Board not to permit any person to clean soak pits in areas newly brought under municipal limits and to warn that criminal cases and non-bailable warrants would follow further violations (Deccan Herald, n.d.-u).

Karnataka's manual scavenging crisis has also been shown to extend beyond traditional sewer and manhole cleaning into newer sanitation infrastructure built under national cleanliness programmes. A roundtable discussion held at the National Law School of India University's Centre for the Study of Social Exclusion heard testimony that private sewage treatment plants and single-pit toilets constructed under the Swachh Bharat Abhiyan had become what participants described as new killing fields for manual scavengers, since most sewage treatment plants in Bengaluru operated without formal rules governing their cleaning and maintenance, and since at least 25,000 sewage plants existed in Bengaluru alone at the time of the discussion, with at least 78 manual scavengers having died at work in Karnataka since 2008, including six who died specifically while cleaning sewage treatment plants (Deccan Herald, n.d.-v).

This state-level pattern mirrors a far larger national crisis in which official government figures on manual scavenging deaths diverge sharply from those documented by civil society. The Safai Karmachari Andolan, the country's principal movement against manual scavenging, documented 121 sewer and septic tank deaths nationally in 2025 against a government-reported figure of only 46, a similar undercount pattern to 2024, when the movement recorded 116 deaths against a government figure of 55, and 2023, when it recorded 102 deaths against a government figure of 65, with a further 41 deaths already recorded in the first three months of 2026 alone (Counterview.net, 2026). This divergence has occurred even as India's Ministry of Social Justice and Empowerment told Parliament in a written reply on June 29, 2025, that no report of the practice of manual scavenging had been received from any state or union territory, a position Safai Karmachari Andolan's national convenor Bezwada Wilson has directly disputed, arguing that the government has an incentive to underreport or deny the true death toll precisely because acknowledging its scale would make the government answerable for it (Outlook India, 2025). The National Commission for Safai Karmacharis, a statutory body, separately records 1,313 sewer and septic tank deaths nationally between 1993 and June 2025, a figure Safai Karmachari Andolan itself considers a significant undercount, placing its own estimate of deaths since 1993 at more than 1,760 (Outlook India, 2025; Sain Network, 2025).

The legal framework governing this practice has been reinforced by successive Supreme Court interventions, beginning with the Court's 2014 ruling in *Safai Karmachari Andolan v. Union of India*, which ordered compensation of 10 lakh rupees for each sewer or septic tank death and held the state liable, followed by the Court's 2023 ruling in *Dr. Balram Singh v.*

Union of India, which ordered a phased end to manual sewer cleaning, and by an August 2024 hearing in which the Court confronted photographic evidence, submitted by a senior advocate acting as *amicus curiae*, showing men cleaning sewers with bare hands and no protective gear immediately outside the Supreme Court's own gate, an image the same reporting described as laying bare the country's entrenched culture of impunity around this practice (Sain Network, 2025). The central government's National Action Plan for Mechanised Sanitation Ecosystem, known as NAMASTE, represents the principal current policy response intended to end hazardous manual cleaning through mechanisation, though the persistence of Karnataka-specific deaths documented above, continuing well into 2026, indicates that mechanisation has not yet been implemented at the pace or scale needed to eliminate the underlying hazard (NextIAS, 2025).

Legal protection for Scheduled Castes against caste-based violence in Karnataka is enforced through the Scheduled Castes and Scheduled Tribes (Prevention of Atrocities) Act, 1989, and the state's own enforcement record has fluctuated considerably over the past decade. State legislative committee data presented in 2018 showed that Karnataka's conviction rate under the Atrocities Act had fallen to just 5 percent in 2016 and 2017, down from 6 percent in 2015, with only 177 of the cases registered over the preceding three years ending in conviction against 3,283 that ended in acquittal, and with cases pending before the courts rising from 3,948 at the end of 2015 to 5,207 by July 2018, a trend that placed Karnataka alongside Odisha and Andhra Pradesh among the states with the weakest conviction outcomes nationally at that time (Deccan Herald, 2018). Separate district-level analysis of 2016 NCRB data found that no case in Karnataka that year resulted in a conviction at all under the Act, with a pendency rate of 86.8 percent, close to the national average of 87.1 percent (Centre for Law and Policy Research, 2020).

More recent national reporting suggests a meaningful improvement in Karnataka's prosecutorial performance, though the underlying national picture for the Atrocities Act remains one of high acquittal rates and case backlogs. National commentary published in December 2025 characterised Karnataka and Tamil Nadu as states that often report Atrocities Act conviction rates above 40 percent, a improvement attributed to stronger prosecution infrastructure, more robust forensic support, and more functional exclusive special courts, in contrast to a national conviction rate that fell from around 39 to 40 percent in 2020 to 32 to 33 percent by 2022, with more than 60 percent of cases nationally still ending in acquittal or discharge (The Week, 2025). This apparent improvement in Karnataka's own conviction outcomes over the period between 2018 and 2025 should nonetheless be weighed against the substantial caseload the state continues to carry, since Karnataka had 3,342 Scheduled Caste and Scheduled Tribe atrocity cases pending investigation as of NCRB data reviewed in 2019, the third highest pending caseload among south Indian states after Andhra Pradesh and Telangana (The News Minute, 2019). The survey's findings discussed above, which identify Scheduled Castes as the state's single largest social group, therefore carry a direct implication for the scale of investment Karnataka's civil rights enforcement and prosecution infrastructure will need if recent gains in conviction rates are to be sustained rather than reversed, an investment need the manual scavenging data discussed above suggests extends well beyond

prosecution alone into basic occupational safety enforcement for the specific caste-linked labour that continues to place Scheduled Caste sanitation workers at risk of death in the course of ordinary municipal service delivery.

7.2 Scheduled Tribes: Rights, Forest Dwelling Communities and Welfare Measures

Karnataka's Scheduled Tribe population is administered through a combination of central schemes, notably the Forest Rights Act framework and the Eklavya Model Residential School network, and state-specific tribal welfare programmes delivered through district Scheduled Tribe Welfare Departments. At the national level, the Union Budget 2025-26 allocated 7,088.60 crore rupees for the expansion of Eklavya Model Residential Schools, with a target of operationalising 728 schools by March 2026 benefiting 3.5 lakh tribal students nationally, alongside a fourfold increase, from 500 crore to 2,000 crore rupees, in funding for the Dharti Aaba Janjatiya Gram Utkarsh Abhiyan, which supports infrastructure, education, and livelihoods in tribal-majority regions (Drishti IAS, 2025a). The overall national budget allocation for Scheduled Tribe development rose from 10,237.33 crore rupees in 2024-25 to 14,925.81 crore rupees in 2025-26, a 45.79 percent increase, and represents a cumulative rise of 231.83 percent since 2014-15, when the allocation stood at 4,497.96 crore rupees (Tribune, n.d.).

Enforcement of the Atrocities Act specifically in relation to crimes against Scheduled Tribes, or Adivasis, has historically been even weaker in Karnataka than enforcement in relation to Scheduled Caste victims. NCRB data reviewed in 2017 found Karnataka's conviction rate for atrocities against Adivasis stood at just 3 percent, the second lowest among five south Indian states after Andhra Pradesh's 1.4 percent, and well below Tamil Nadu's 33.3 percent, with retired police officials attributing the pattern substantially to a lack of hard evidence, witnesses turning hostile, and closure reports being filed in the absence of sustained prosecutorial follow-through (The News Minute, 2019). This weak historical enforcement record for Scheduled Tribe atrocity cases specifically, set against the more encouraging recent trend documented for Scheduled Caste cases in section 7.1, suggests that any improvement in Karnataka's overall Atrocities Act conviction rate since 2018 may not have been evenly distributed between Scheduled Caste and Scheduled Tribe victims, a distinction the state's own Directorate of Civil Rights Enforcement would need to verify through disaggregated, tribe-specific conviction data going forward.

At the district level in Karnataka, Scheduled Tribe welfare delivery continues through Integrated Tribal Development Projects, which run programmes such as the Valmiki Ashrama Schools providing free residential education and food support to tribal students at a cost of approximately 1,300 rupees per student per month, illustrated by ongoing operations in districts such as Kodagu (Kodagu District, Government of Karnataka, n.d.). Karnataka's own SCSP/TSP corpus, discussed in section 7.1, provides the state-level counterpart to these

central tribal welfare schemes, with the Tribal Special Plan component of the 42,018 crore rupee 2025-26 corpus specifically earmarked for Scheduled Tribe development activities alongside the Scheduled Caste Special Plan (Deccan Herald, 2025c).

Nationally, Scheduled Tribe communities continue to face documented gaps in literacy, land rights, and cultural preservation that are directly relevant to Karnataka's own tribal population. The 2011 Census recorded a Scheduled Tribe literacy rate of 59 percent nationally, significantly below the general population average, and national policy analysis continues to flag exploitation and bonded labour, human trafficking, and child labour as persistent risks in tribal-dominated areas, alongside the ongoing challenge of securing full implementation of the Forest Rights Act of 2006 to provide Scheduled Tribes with legal land titles and protection from displacement due to development projects (PW OnlyIAS, 2025). Karnataka's own forest-dwelling tribal communities, concentrated in districts such as Kodagu, Chikkamagaluru, and parts of the Western Ghats, remain subject to these same national implementation gaps, and the state's own Forest Rights Act claim processing record at the district level would benefit from the kind of granular tracking increasingly available through Right to Information mechanisms designed specifically for Scheduled Tribe citizens (Right to Information Wiki, 2026).

7.3 Other Backward Classes: Identification, Reservation and Social Mobility

The single most consequential social justice development in Karnataka in 2025 was the Cabinet's acceptance of the Socio-Economic and Educational Survey, commonly known as the caste census, which produced findings that have reshaped the state's reservation debate. The survey found that Other Backward Classes constitute 69.6 percent of Karnataka's population, a figure approximately 38 percent higher than earlier estimates that had informed the state's existing reservation framework, under which Other Backward Classes currently receive 32 percent reservation in public jobs and education (Testbook, 2025; Drishti IAS, 2025b).

Based on this finding, the Karnataka State Commission for Backward Classes recommended increasing the Other Backward Class reservation quota from 32 percent to 51 percent, reasoning that half of the 38 percentage point gap between the OBC population share and the existing quota should be added to the reservation quantum, with the other half retained under the general category (Deccan Herald, 2025a). Implementing this recommendation in full would push Karnataka's total combined reservation across Scheduled Castes, Scheduled Tribes, Other Backward Classes, and Economically Weaker Sections to 85 percent, a figure that exceeds the 50 percent ceiling historically upheld by the Supreme Court of India in the Indra Sawhney judgment, and that has consequently ignited a complex debate touching on constitutional limits, social justice, and political calculation (Bangalore Education News, 2025).

The survey's caste-wise breakdown further revealed that Scheduled Castes and Scheduled Tribes combined form 25 percent of the surveyed population, followed by Muslims, who form the sole occupants of OBC Category 2B, at 75.25 lakh people, with Scheduled Castes, Scheduled Tribes, and Other Backward Classes together accounting for 94 percent of Karnataka's surveyed population, leaving the general category at just 29.74 lakh people, or roughly 6 percent (Deccan Herald, 2025a). Political response to the report has divided along expected lines, with the ruling Congress government signalling intent to implement the recommendations while managing opposition from general category voters and anticipated legal challenges, and the opposition Bharatiya Janata Party and Janata Dal (Secular) criticising specific elements of the report, particularly its recommendation of an 8 percent quota for Muslims under Category 2B, discussed further in section 7.8 (IndiaTomorrow, 2025; Bangalore Education News, 2025). Chief Minister Siddaramaiah has indicated that the caste survey findings will be used as a basis for the state's budget preparation going forward, signalling that the report's influence will extend beyond reservation policy into the broader allocation of welfare resources across social groups (Deccan Herald, 2025d).

Proponents of the reservation increase have argued that empirical caste data of this kind is a necessary precondition for evidence-based welfare targeting, since broad SC, ST, and OBC categories can mask significant internal disparities that allow dominant sub-groups within a reserved category to capture a disproportionate share of benefits while more disadvantaged sub-groups remain underserved, an argument made explicitly in national commentary on the Karnataka survey's implications for reservation policy design (Drishti IAS, 2025b). Whether Karnataka's implementation of the survey's recommendations manages to address this intra-category disparity concern, or instead simply raises the overall reservation ceiling without addressing distribution within it, will be a defining test of the state's social justice architecture over the coming budget cycles.

7.4 Gender Equity: Women's Participation in Education, Economy and Governance

Karnataka's approach to gender equity in 2026 is dominated by a rapidly expanding programme of direct cash transfers to women, a model that has drawn both popular support and structural policy criticism. Category A allocations in Karnataka's Gender Budget, defined as schemes where 100 percent of the benefit accrues to women, grew from 55 crore rupees in 2021-22 to 401 crore rupees by 2025-26, driven substantially by the Gruha Lakshmi scheme, a monthly cash transfer of 2,000 rupees to women homemakers, and the Shakti scheme, which provides women free rides on state buses (Centre for Public Policy Research, 2026).

Independent policy analysis has characterised this expansion using the distinction between a citizen and a labharthi, or beneficiary, arguing that these transfers function as compensatory welfarism that eases immediate financial vulnerability without altering what a woman owns, earns, or her bargaining power within the household or labour market, and that a starker story is visible in Category B allocations, where 30 to 99 percent of a scheme's benefit reaches women, since Category B spending peaked at 51.6 percent of total gender-linked allocations

in 2019-20 before collapsing to below 20 percent after 2022 and remaining there through 2025-26 (Centre for Public Policy Research, 2026). This decline in gender-mainstreamed institutional spending, relative to the growth in direct, branded cash transfers, has been attributed in part to the difficulty of collecting sex-disaggregated data for general public services, but the timing of the decline coincides with a broader fiscal shift toward visible, individually attributable transfers rather than less visible investments such as gender-responsive school infrastructure (Centre for Public Policy Research, 2026).

The gap between Karnataka's gender spending and measurable outcomes is illustrated by national labour force data. Women's labour force participation in India stood at 43.6 percent in 2023-24 per the Periodic Labour Force Survey, a figure that masks the prevalence of informal and low-paid work among participating women, and Karnataka's own gender budget documentation does not track whether women's ownership of productive assets such as land, livestock, or business capital has changed over the period of the budget's expansion, nor does it connect its substantial education allocations to outcomes such as girls' secondary completion rates or women's graduate-level employment (Centre for Public Policy Research, 2026). National literacy among those aged five and above stood at 73.7 percent per the same Periodic Labour Force Survey data, with only a modest gap between men and women, indicating that comparatively high literacy in India has not yet translated into strong female labour force participation or secure, well-paid work for women more broadly, a pattern independent researchers have also identified specifically within Karnataka's decade-long gender budgeting exercise as an institutional machinery that is well established but only weakly linked to tracked outcomes (Centre for Public Policy Research, 2026).

7.5 Child Rights, Protection and Development: POCSO, Child Labour and Nutrition

Crimes against children in Karnataka have risen steadily in official crime data even as awareness and reporting mechanisms have expanded. National Crime Records Bureau data for 2023 recorded 8,929 cases of crime against children in Karnataka, a 22 percent increase from the 7,261 cases recorded in 2021, with cases under the Protection of Children from Sexual Offences Act accounting for 43 percent of the total, at 3,878 cases, and kidnapping and abduction accounting for a further 36 percent, at 3,254 cases (Deccan Herald, 2025e). Within this same reporting year, 128 cases of child labour and 143 cases of child marriage were recorded in the state despite existing bans and surveillance mechanisms against both practices (Deccan Herald, 2025e).

More recent data presented in the Karnataka Legislative Council shows Protection of Children from Sexual Offences Act cases continuing to rise sharply, from 3,209 cases in 2022 to 4,064 cases in 2024, a nearly 26 percent increase over two years, with a further 2,544 cases recorded in the partial year data available for 2025 (Deccan Herald, 2025f). Conviction rates in these cases remain low relative to the number filed. Of the 3,209 cases recorded in 2022,

only 186 resulted in conviction while 1,562 ended in acquittal and 1,224 remained under trial at the time of reporting, a pattern child rights advocates attribute substantially to parental reluctance to pursue lengthy legal proceedings involving their children, frequent out-of-court settlements, and in some cases family pressure where the accused is a relative (Deccan Herald, 2025f). The Chairperson of the Karnataka State Commission for Protection of Child Rights has noted that the Commission has formed district-level teams including counsellors to work with victims and their families, providing legal support and counselling to help sustain prosecutions that would otherwise be abandoned (Deccan Herald, 2025f). Broader legal analysis of India's child protection framework has similarly noted that the Protection of Children from Sexual Offences Act mandates trial completion within one year, a timeline that is rarely met in practice, contributing to the case backlog evident in Karnataka's own court disposal data, which showed 18,100 cases pending trial from previous years alongside 5,581 new cases sent for trial in 2023 (Deccan Herald, 2025e; Legal Service India, 2025).

Karnataka's child protection framework also intersects with national legal reforms extending support services to child victims. The National Legal Services Authority's Child-Friendly Legal Services for Children Scheme, updated in 2025, establishes that District Legal Services Authorities must provide legal advice, representation, and assistance in filing compensation applications under the Victims' Compensation Scheme for child victims under Section 40 of the Protection of Children from Sexual Offences Act, alongside remote-point coordination for recording child testimony through video conferencing where a Vulnerable Witness Deposition Centre is available (NALSA, 2025). The same national framework recognises that children with disabilities require distinct and specialised education, skill training, and healthcare, including sexual and reproductive health services, and rehabilitation support delivered through community-based integration, a recognition directly relevant to the inclusive education gaps documented for Karnataka's schools in Chapter 5 (NALSA, 2025).

7.6 Welfare of Elderly Persons: Pension, Care Infrastructure and Policy

Old age income security in Karnataka operates substantially through national social assistance schemes administered at the state level, with the Indira Gandhi National Old Age Pension Scheme and the broader Atal Vayo Abhyuday Yojana framework for senior citizens providing the principal mechanisms for elderly welfare delivery, alongside the National Pension System for those in formal employment (Indiastat, n.d.-a; Indiastat, n.d.-b). Karnataka's implementation of these central schemes is tracked through the National Social Assistance Programme's physical progress reports, which record fund allocation, fund release, and beneficiary numbers on a year-by-year basis, providing a mechanism for monitoring whether sanctioned pension amounts are reaching intended beneficiaries in a timely manner across the state's 30 districts (Indiastat, n.d.-a).

The elderly welfare architecture in Karnataka sits alongside the disability pension framework discussed in section 7.7, and both operate under the same broader National Social Assistance Programme umbrella, meaning that administrative capacity constraints affecting one scheme's disbursement timeliness, such as delays in fund release from the central government to the

state, or from the state to district-level disbursing authorities, tend to affect both elderly and disability pension beneficiaries similarly. Given the pace of population ageing implied by Karnataka's declining fertility trajectory discussed in Chapter 6, the state's elderly care infrastructure, including old age homes, day care centres, and home-based care services, will require proportionately greater investment over the coming decade than the current scale of central scheme-linked pension disbursement alone can provide.

7.7 Persons with Disabilities: Rights, Accessibility and Empowerment

Disability welfare in Karnataka is administered principally through the Indira Gandhi National Disability Pension Scheme, a component of the National Social Assistance Programme that provides income support to persons with disabilities across the state's districts, with fund allocation, fund release, and beneficiary count tracked annually from 2009-10 through the 2024-25 cycle (Indiastat, n.d.-a). This pension scheme operates as the primary social security instrument for persons with disabilities in Karnataka who are not otherwise covered through formal employment-linked disability benefits, and its year-on-year beneficiary and disbursement data provide one of the few consistently tracked indicators of the state's disability welfare reach.

Beyond income support, Karnataka's approach to disability inclusion increasingly runs through its education and skilling architecture rather than through disability-specific welfare schemes in isolation. As documented in Chapter 5, the state's CWSN-friendly school infrastructure remains critically underdeveloped, with only 19.7 percent of schools reporting disability-accessible toilets against a national average of 35.6 percent, and the state's new Skill Development Policy 2025-32 explicitly names persons with disabilities among its target groups for special skilling interventions, a policy commitment that will require follow-through in the form of accessible training infrastructure at Industrial Training Institutes and German Technical Training Centres if it is to translate into improved employment outcomes (Education for All in India, 2026; The South First, 2025). The broader national employment gap facing persons with disabilities, where only 34 lakh of an estimated 3 crore persons with disabilities in India have secured employment across all sectors, provides the backdrop against which Karnataka's own disability employment interventions should be measured, since even a successful skilling programme addresses only the supply side of this gap unless matched by dedicated employer engagement and reasonable accommodation requirements in both public and private sector hiring (IDR, 2023).

7.8 Minority Communities: Development, Representation and Welfare

Karnataka's minority welfare policy is currently shaped substantially by the same 2025 caste survey discussed in sections 7.1 and 7.3, which placed specific focus on the state's Muslim population as the sole occupant of OBC Category 2B. The survey recorded Muslims under Category 2B at 75.25 lakh people, identifying this group as the second-largest social bloc in the state after the combined Scheduled Caste and Scheduled Tribe population, and the Backward Classes Commission's report recommended an 8 percent quota specifically for

Muslims under this category, a recommendation that has become one of the most politically contested elements of the entire caste survey process (IndiaTomorrow, 2025; Deccan Herald, 2025a).

The proposed Muslim quota recommendation has drawn sharp criticism from the opposition Bharatiya Janata Party and its ally the Janata Dal (Secular), who have characterised it as a departure from constitutional principles governing religion-based reservation, while the ruling Congress government has thus far signalled intent to weigh the recommendation as part of its broader implementation of the caste survey's findings (IndiaTomorrow, 2025). This debate over the 2B category quota sits within a longer national pattern in which minority welfare policy in India has increasingly been contested through the lens of caste-based sub-categorisation rather than religion-based welfare targeting alone, and Karnataka's own resolution of this specific recommendation, expected as the state finalises its response to the caste survey, will likely set a precedent that other states with pending or prospective caste surveys will watch closely.

7.9 Social Security and Beneficiary-Linked Welfare Architecture

Karnataka's social security system in 2026 is characterised by a proliferation of beneficiary-linked, direct transfer schemes that span the constituencies discussed throughout this chapter, from the Gruha Lakshmi and Shakti schemes for women discussed in section 7.4, to the SCSP/TSP-funded guarantee schemes for Scheduled Castes and Scheduled Tribes discussed in sections 7.1 and 7.2, to the Indira Gandhi National Old Age and Disability Pension Schemes discussed in sections 7.6 and 7.7. Independent policy analysis of this architecture has characterised the overall pattern as a shift toward what has been termed a *labharthi*, or beneficiary, model of welfare delivery, in which the state increasingly relies on direct, visible, and individually attributable transfers rather than harder-to-brand investments in gender-responsive or disability-responsive general services, a critique that applies with particular force to Karnataka's gender budget but that extends, on the evidence reviewed in this chapter, to the broader pattern of SCSP/TSP fund reallocation away from guarantee schemes and toward other welfare board spending (Centre for Public Policy Research, 2026; Deccan Herald, 2025c).

A social security architecture built primarily around cash transfers and pensions, however, has an inherent limitation that the evidence in this chapter makes especially visible: it does little to strengthen the legal and institutional protections that determine whether a beneficiary's underlying rights are actually secure. The persistently low, if recently improving, conviction rates under the Prevention of Atrocities Act documented in sections 7.1 and 7.2, and the low conviction rates under the Protection of Children from Sexual Offences Act documented in section 7.5, both point to the same underlying gap, namely that Karnataka's welfare architecture has expanded its financial reach to beneficiaries faster than it has strengthened the prosecutorial and judicial capacity needed to make the underlying legal protections those beneficiaries are entitled to meaningful in practice. A Scheduled Caste household receiving benefits under the SCSP/TSP corpus, or a child receiving compensation under the National

Legal Services Authority's victim compensation scheme, is still exposed to the same weak conviction environment documented throughout this chapter if the underlying case against their perpetrator is unlikely to result in conviction.

The caste survey's anticipated influence on the state's 2026-27 budget preparation, as signalled directly by Chief Minister Siddaramaiah, means that Karnataka's social security architecture is likely to be substantially reshaped over the coming budget cycles, with reservation policy, welfare board funding, and beneficiary eligibility criteria across Scheduled Caste, Scheduled Tribe, Other Backward Class, and minority welfare programmes all potentially recalibrated based on the survey's population and deprivation findings (Deccan Herald, 2025d). Taken together with the child protection gaps documented in section 7.5, where conviction rates for crimes against children remain persistently low despite rising case numbers, the accessibility gaps documented in section 7.7 for persons with disabilities, and the uneven Atrocities Act enforcement record documented in sections 7.1 and 7.2, the evidence in this chapter suggests that Karnataka's social justice framework would benefit from an integrated outcome-tracking mechanism that links its various beneficiary-linked schemes to measurable indicators of social mobility, safety, prosecutorial performance, and inclusion, rather than tracking fund disbursement and beneficiary counts as ends in themselves.

Chapter 8: Transport and Connectivity Infrastructure

8.1 Road Network: National Highways, State Highways and Rural Roads

Karnataka's road network forms the backbone of the state's internal connectivity, particularly for the agricultural economy documented in Chapter 3, where over 45 percent of the workforce depends on rural market access. As per the most recent nationally comparable government data available for this chapter, drawn from the National Highways Authority of India's roadways assessment as of March 31, 2017, Karnataka's state highway network extended to 19,556 kilometers, the second-longest state highway system in India after Maharashtra's 39,000 kilometers, ahead of Gujarat at 17,201 kilometers, Rajasthan at 15,019 kilometers, and Tamil Nadu at 12,095 kilometers (National Atlas and Thematic Mapping Organisation, cited in this chapter's research). Karnataka's district road network, the secondary tier connecting taluk and district headquarters to the state and national highway system, extended to 49,923 kilometers as of the same reference date, again the third-longest such network nationally after Maharashtra's 109,530 kilometers and Uttar Pradesh's 55,061 kilometers, and ahead of Tamil Nadu's 45,379 kilometers (National Atlas and Thematic Mapping Organisation, cited in this chapter's research). This 2017 reference year is dated, and current figures should be obtained directly from the Karnataka Public Works Department or the NHAI's more recent state-wise statistical returns before use in a ministerial briefing, but the relative ranking, Karnataka consistently placing second or third nationally in state highway and district road length, is unlikely to have shifted dramatically given the scale of infrastructure required to overtake or fall behind by a full rank in either direction.

At the individual project level, Karnataka's state highway network includes routes of highly variable length and function, from shorter district-specific corridors such as State Highway 89 connecting Madikeri to Kutta across roughly 87 kilometers entirely within Kodagu district, to longer multi-district corridors such as State Highway 85, running approximately 346 kilometers from Bengaluru through Ramanagara, Tumakuru, Mandya, Mysuru, Hassan, Kodagu, and terminating at Jalsoor in Dakshina Kannada district, effectively linking the state capital to the coastal region through the Western Ghats (Wikipedia, 2026). Notably, State Highway 10, connecting Sarasamba to Ribbonpalli across the Kalaburagi district discussed in Chapter 1 as part of the constitutionally recognized Hyderabad-Karnataka backward region, was the first state highway in Karnataka to be tolled (Wikipedia, 2026), an early example of the user-fee financing model the state has since extended more broadly across its highway network.

On new construction, in July 2025, the Union Minister of Road Transport and Highways inaugurated nine national highway projects spanning 88 kilometers with investment exceeding Rs 2,000 crore in Sagara, Shivamogga district, including the Sharavathi Bridge intended to improve connectivity between the Malnad and coastal regions introduced in Chapter 1 (Press Information Bureau, 2025). Karnataka's most significant emerging inter-state highway project is the Bengaluru-Vijayawada Expressway, a 518-kilometer greenfield corridor under the Bharatmala Pariyojana programme, connecting Bengaluru's

National Highway 44 through Chikkaballapura district in Karnataka and onward through Sri Sathya Sai, Kadapa, Nellore, Prakasam, Guntur, and NTR districts in Andhra Pradesh before terminating at National Highway 16 in Vijayawada, with construction reported to have commenced in the 2026-27 period (Wikipedia, 2026). This expressway is expected to substantially reduce Karnataka's overland travel time to Andhra Pradesh, a corridor with direct relevance to the inter-state regional cooperation themes discussed in Chapter 4 and Chapter 21.

8.2 Railways: Existing Network, Pending Projects and Expansion Proposals

The 2025-26 Union Budget allocated Rs 7,564 crore to Karnataka's railway infrastructure, funding 25 projects covering 3,264 kilometers, of which 10 focus specifically on line doubling to increase capacity, including the Yeshwanthpur-Channasandra and Baiyappanahalli-Hosur doubling projects (Grokikipedia, 2026). Indian Railways achieved over 99 percent electrification of its broad gauge network nationally as of August 2025, with the South Western Railway zone covering Karnataka contributing substantially to this progress, including the completed electrification of the Bengaluru-Hubballi line in June 2023, though delays in transmission line construction have slowed full electric operation on the Bengaluru-Mysuru-Mangaluru corridor (Grokikipedia, 2026). This delay is directly relevant to the New Mangalore Port connectivity concerns documented in section 8.4 below, since unreliable monsoon-season railway operation along this exact corridor was specifically cited by port stakeholders as compounding, rather than relieving, the region's road connectivity bottleneck.

The Bengaluru Suburban Rail Project, a significant addition to the city's commuter rail capacity intended to relieve pressure on Namma Metro and the city's road network alike, is estimated at Rs 15,767 crore (Basic Home Loan, 2025). This project's completion timeline and current construction progress were not confirmed with sufficient specificity in the sources reviewed for this chapter and should be verified directly against the Karnataka Rail Infrastructure Development Enterprise's own project dashboards before inclusion in any ministerial timeline commitment, given the sector's documented history of multi-year delays illustrated by the Bengaluru-Mysuru-Mangaluru electrification example above, and consistent with the broader pattern of announced-versus-delivered infrastructure timelines this Framework has documented across water, sanitation, and administrative sectors in earlier chapters.

8.3 Aviation: Airport Infrastructure and Air Connectivity

Karnataka's aviation sector is overwhelmingly anchored by Kempegowda International Airport in Bengaluru, operated by Bangalore International Airport Limited, a consortium in which Fairfax India Holdings holds 54 percent, Siemens Project Ventures GmbH holds 20 percent, and the Airports Authority of India and the Karnataka State Industrial and Infrastructure Development Corporation each hold 13 percent (Wikipedia, 2026). The airport recorded 43.82 million passengers across calendar year 2025, an 8 percent increase over the

40.73 million recorded in 2024, alongside a record single-day footfall and rising international flight volumes (Deccan Herald, 2026). On a financial-year basis, the airport handled 44.47 million passengers in 2025-26, a 6.2 percent year-on-year increase, with international passenger traffic the primary growth driver, rising 23.9 percent to 7.23 million against a more moderate 3.3 percent domestic growth rate to 37.24 million passengers (NewsKarnataka, 2026; Wikipedia, 2026). Aircraft movements reached approximately 279,971 for the financial year, a 4.5 percent increase, averaging around 769 aircraft movements daily with a peak single-day figure of 837, while cargo tonnage rose 5.9 percent to 532,012 tonnes (Wikipedia, 2026; NewsKarnataka, 2026). The airport now provides direct connectivity to more than 78 domestic and 34 international destinations, having added new international routes to Hanoi and Riyadh during 2025-26 and increased frequencies on major routes including London Heathrow, Bangkok, Bahrain, Jeddah, Kuwait, Munich, and Mauritius, with Dubai, Abu Dhabi, Singapore, London Heathrow, and Kuala Lumpur remaining its busiest international sectors (NewsKarnataka, 2026).

This sustained traffic growth is placing capacity strain on existing infrastructure. Bangalore International Airport Limited issued a tender in mid-2026 for a new air traffic control tower, to be completed by 2027, since the airport's original tower, operational since the facility opened in 2008, requires extended maintenance downtime that its current traffic volume as India's busiest South Indian airport can no longer readily accommodate, with the new structure explicitly designed to support the airport's planned second phase of Terminal 2 and a future third terminal (Deccan Herald, cited in this chapter's research, 2026).

Beyond Bengaluru, Karnataka opened Kuvempu Airport in Shivamogga, named after the Kannada poet, at a cost of approximately Rs 4.5 billion, intended to improve air connectivity for the Malnad region introduced in Chapter 1 (Basic Home Loan, 2025). For FY25, the state allocated Rs 150 crore for minor airport development, including Rs 20 crore for land acquisition at Raichur Airport and Rs 75.75 crore for ongoing works at Shivamogga Airport, with Rs 100 crore released by December 2024 (India Brand Equity Foundation, 2026). Mangaluru International Airport continues to serve as the state's principal secondary gateway, maintaining regular domestic connectivity to Bengaluru with flight times of just over an hour operated by IndiGo and Air India Express, though a precise, current annual passenger figure for Mangaluru specifically was not confirmed in the sources reviewed for this chapter and should be obtained directly from the Airports Authority of India's traffic statistics for accuracy.

8.4 Ports, Inland Waterways and Logistics Hubs

Karnataka's coastline, measured precisely at 343.3 kilometers by the state's own Maritime Board, hosts one major port, the New Mangalore Port, and thirteen non-major ports spread across the three coastal districts of Uttara Kannada, Udupi, and Dakshina Kannada: Karwar, Honnavar, Malpe, Belekeri, Manki, Padubidri, Keni, Bhatkal, Old Mangalore, Tadadi,

Kundapura, Pavinakurve, and Hangarkatta (Karnataka Maritime Board, 2025; Deccan Herald, cited in this chapter's research, 2026). Of these thirteen non-major ports, only Karwar and Old Mangalore currently function as all-weather greenfield ports, while the remainder operate only as anchorage and lighterage facilities, and several, including Tadadi, Honnavar, Manki, Pavinakurve, Bhatkal, and Padubidri, show no recorded history of commercial cargo handling at all, while Belekeri, Kundapura, and Hangarkatta show no cargo handling data since 2018, and Malpe and Old Mangalore have seen declining business over the preceding five years (International Collective in Support of Fishworkers, cited in this chapter's research).

New Mangalore Port itself, situated at the confluence of the Netravati and Gurupura rivers, was established as India's ninth major port on May 4, 1974, and formally inaugurated by Prime Minister Indira Gandhi on January 11, 1975, now operating under the New Mangalore Port Authority following its notification under the Major Port Authorities Act, 2021 (Grokikipedia, 2026). The port spans approximately 822 hectares of land and 120 hectares of water area across 16 berths, serving major industrial anchors including Mangalore Refinery and Petrochemicals Limited, the Oil and Natural Gas Corporation, and Kudremukh Iron Ore Company (Grokikipedia, 2026). In FY2024-25, the port achieved a record throughput of 46.01 million metric tonnes, a 0.7 percent increase over the previous year's 45.7 million metric tonnes, with an average pre-berthing detention time of just 0.81 days, an average vessel turnaround time of 40.37 hours, and an output per berth day of 20,117 tonnes (Grokikipedia, 2026). This strong operational momentum has continued into the current fiscal year: the port recorded an all-time high monthly cargo throughput of 5.44 million metric tonnes in December 2025, surpassing its previous best of 4.7 million metric tonnes set in March 2025, and giving port authorities confidence in pursuing an ambitious 50 million metric tonnes annual traffic target (The Week, 2026).

On containerized cargo specifically, New Mangalore Port handled an estimated 170,000 to 180,000 TEUs, or twenty-foot equivalent units, in 2024-25, recording a monthly record of 21,425 TEUs in July 2025, served by major global carriers including Maersk, MSC, and CMA CGM across its 17 berths spanning 282 hectares (UNISCO, cited in this chapter's research, 2026), though this container volume, while significant regionally, does not place the port among the world's top 100 container ports by throughput. In March 2026, the Union Ministry of Ports, Shipping and Waterways approved a major redevelopment of Berth No. 9 specifically to boost liquid bulk handling capacity, deepening the berth draft from its existing 10.5 metres to 14 metres, with a future-ready design provision extending to 19.8 metres, enabling the port to accommodate vessels of up to two lakh deadweight tonnage, including Very Large Gas Carriers, and raising the berth's cargo handling capacity to 10.90 million tonnes per annum (News on Air, 2026). Union Minister Sarbananda Sonowal specifically framed this redevelopment as reinforcing New Mangalore's position as a key maritime gateway not only for Karnataka but for the Kerala hinterland as well (News on Air, 2026), an inter-state logistics dimension worth noting alongside the regional cooperation themes discussed in Chapter 21.

Separately, in 2025 the state cabinet approved the Karnataka Non-Major Ports Iron Ore Handling Policy, covering the export, import, and trade of iron ore specifically at the thirteen non-major ports, aimed at restarting iron ore trade that had been effectively blocked at ten of these ports since a 2010 government order, until a 2022 Supreme Court judgment permitted the export of Karnataka-mined iron ore to other countries (Deccan Herald, cited in this chapter's research, 2026), a policy shift directly connected to the illegal mining history and Central Empowered Committee reclamation framework documented extensively in Chapter 13. This policy, prepared by the Karnataka Maritime Board, is structured to generate direct state revenue through registration fees, licence fees for land allotment, wharfage charges, minimum guarantee throughput deposits, security deposits, non-compliance penalties, and a recurring pollution mitigation, safety, and supervision fee of Rs 13 per tonne of cargo handled (Deccan Herald, cited in this chapter's research, 2026).

Despite these positive developments at the major port and the new non-major ports policy, industry stakeholders have consistently flagged inland connectivity as the sector's most binding constraint, a finding directly relevant to the road network discussion in section 8.1 above. At a Karnataka Ports, Shipping and Logistics Summit hosted by the New Mangalore Port Trust, the president of the Mangaluru Stevedores' Association identified poor road conditions as the principal obstacle to cargo movement, specifically citing the closure of the Shiradi Ghat road connecting Bengaluru to Mangaluru following landslides, and noting that even railway connectivity along this corridor can be unreliable during the monsoon season, directly echoing the ecological vulnerability of the Western Ghats corridor documented in Chapter 1 (Deccan Herald, cited in this chapter's research). Industry representatives at the same summit specifically called for the widening of National Highway 275 to enable movement of larger containers from Chikkamagaluru and surrounding areas to Mangaluru, and the Plastics Export Promotion Council's chairman noted that New Mangalore Port exports only about 1,000 containers of value-added plastic products annually, a volume he attributed directly to the port's weaker connectivity relative to competing gateways, with transportation costs to Mangaluru running 15 to 20 percent higher than to Chennai port, a shortfall he linked to a perennial shortage of containers and limited shipping line availability (Deccan Herald, cited in this chapter's research). This is a concrete, quantified finding for ministerial attention: New Mangalore Port's throughput growth and impending capacity expansion at Berth No. 9 will likely deliver diminished returns unless paired with the specific road connectivity improvements, particularly the Shiradi Ghat corridor and National Highway 275 widening, that industry itself has already identified as the binding constraint.

8.5 Urban Mass Transit: Metro, Bus Rapid Transit and Integrated Mobility

Beyond Namma Metro, Karnataka's most significant current road-based response to Bengaluru's congestion problem, documented earlier in this chapter through the airport traffic and metro capacity findings, centres on two large ring-road projects whose contrasting implementation timelines offer another useful data point for this Framework's recurring finding on the gap between announced infrastructure ambition and delivered reality.

The Satellite Town Ring Road, a 280.8 to 288-kilometre access-controlled expressway costing Rs 15,676 crore and executed by the National Highways Authority of India, is designed to link twelve satellite towns around Bengaluru, including Devanahalli, Hoskote, Doddaballapura, Sarjapur, Ramanagara, Anekal, and Magadi, diverting long-haul and freight traffic away from the city's core roads entirely rather than routing it through them (Lodha Group, cited in this chapter's research, 2025; TalkingLands, cited in this chapter's research, 2026). The project's first 80-kilometre phase, covering the Dobbaspete to Doddaballapura and Doddaballapura to Hoskote sections, was inaugurated by the Prime Minister on March 11, 2024 (Lodha Group, cited in this chapter's research, 2025). A further 21-kilometre stretch connecting Hoskote to the Tamil Nadu border, which will integrate directly with the Bangalore-Chennai Expressway, brought the total operational STRR length to 102.6 kilometres upon its opening, with the National Highways Authority of India's Bengaluru project director confirming in late 2024 that the stretch was on track for its February-to-March 2025 completion target, roughly fifty percent complete at the time of that statement (Deccan Herald, cited in this chapter's research, 2024). Of the full 288-kilometre alignment, 45 kilometres fall within Tamil Nadu, underscoring the project's genuinely inter-state character, directly relevant to the regional cooperation themes discussed in Chapter 4 and Chapter 21 (TalkingLands, cited in this chapter's research, 2026). The STRR's full completion, spanning its remaining approximately 142.8 to 186 kilometres, is targeted for 2027, with the completed corridor ultimately connecting eight state highways and six national highways, a scale of connectivity its planners expect to meaningfully boost inter-regional trade, freight movement, and the development of new economic hubs outside Bengaluru's urban core (TalkingLands, cited in this chapter's research, 2026; Lodha Group, cited in this chapter's research, 2025). The project's toll structure has been designed with a degree of demand-sensitivity: fresh greenfield stretches such as the Hoskote-Tamil Nadu border section carry deliberately lower toll rates than the already-operational Dobbaspete-Hoskote stretch, which charges Rs 185 for a single car journey and Rs 275 for a same-day return across its 81.6 kilometres, working out to roughly Rs 2.2 per kilometre one-way (Deccan Herald, cited in this chapter's research, 2024).

The STRR's implementation pace, while not without incremental delay, compares favourably against Karnataka's second major ring-road initiative, the Peripheral Ring Road, more recently rebranded the Bengaluru Business Corridor, whose history illustrates the announced-versus-delivered infrastructure gap this Framework has documented repeatedly across other sectors in unusually stark terms. The Peripheral Ring Road concept, an 8-lane, access-controlled expressway spanning roughly 73 to 74 kilometres and designed to connect Tumakuru Road to Hosur Road via Ballari, Hennur, and Old Madras Roads while completing a full 116-kilometre outer bypass ring in conjunction with the existing NICE Road corridor, was originally notified by the Bangalore Development Authority all the way back in 2007 (TalkingLands, cited in this chapter's research, 2026). The project's rationale traces directly to the same congestion pressure documented throughout this chapter: Bengaluru's existing Outer Ring Road, originally built as the city's own bypass corridor, now itself handles over 10,000 trucks daily functioning as a de facto inter-city bypass, a volume the road was never designed

to carry and which the Peripheral Ring Road is intended to divert away from entirely (TalkingLands, cited in this chapter's research, 2026). Despite this 2007 origin, the project remained substantially dormant for roughly a decade and a half before being formally revived in 2022 and rebranded as the Bengaluru Business Corridor during 2024 and 2025 (TalkingLands, cited in this chapter's research, 2026). This means the Peripheral Ring Road took approximately eighteen years from initial notification to reach even the land acquisition stage documented below, a delay of a scale that exceeds even the multi-year implementation gaps this Framework has documented in Chapter 1's taluk administrative buildings, Chapter 2's ESCOM reform, and Chapter 10's sewage treatment timelines, and stands as perhaps the single most extreme example of this recurring pattern identified anywhere in this Framework.

Land acquisition for the revived project remains the primary bottleneck as of the most recent reporting reviewed for this chapter. In 2025, the Karnataka government empowered the Bangalore Development Authority to offer revised, more generous compensation terms for the 948 acres still required for the project, representing only about half of the total land the project needs, amid stalled negotiations with landowners (TalkingLands, cited in this chapter's research, 2026). By early 2026, over 600 landowners had consented to these terms, which include a choice between cash compensation at two to three times the government guidance value, Transferable Development Rights valued at twice the land's value, or other enhanced compensation options (TalkingLands, cited in this chapter's research, 2026). Construction is expected to accelerate through 2026 following fresh tenders issued in October 2025, with the project's first phase targeted for completion by late 2027 under a Public-Private Partnership Design-Build-Finance-Operate-Transfer model (Newsfirst Prime, cited in this chapter's research, 2025; TalkingLands, cited in this chapter's research, 2026).

Beyond these two ring-road projects, Bengaluru's decongestion strategy also extends to a planned 170 kilometres of road tunnels and double-decker flyovers, targeted for completion between 2026 and 2027, including a Hebbal-to-Silk Board tunnel corridor and JP Nagar-to-Hebbal flyover works, which planners project could halve peak-hour travel delays along some of the city's most congested arterial corridors (Newsfirst Prime, cited in this chapter's research, 2025). Collectively, this wave of Bengaluru infrastructure investment, spanning the STRR, the Peripheral Ring Road, and the tunnel and flyover programme, represents a combined outlay in the range of Rs 12,000 to 15,000 crore, with backers reportedly expecting the associated real estate and economic activity along these corridors to reach financial break-even by late 2025 (Newsfirst Prime, cited in this chapter's research, 2025).

Read together with this chapter's earlier finding on the scale gap between Bengaluru's 96-kilometre operational metro network and its economic weight, the Peripheral Ring Road's eighteen-year gestation period offers a second, independently sourced illustration of the same underlying point: Bengaluru's transport infrastructure investment need has been correctly identified by planners for a very long time, in the Peripheral Ring Road's case, nearly two decades before meaningful construction, but the gap between correct diagnosis and delivered

infrastructure remains the binding constraint on the city's mobility, not a lack of awareness of what needs to be built.

8.6 Multimodal Logistics: Last-Mile Connectivity and Freight Corridors

Karnataka's multimodal logistics ambitions extend well beyond the state-level Logistics Policy and Karikad multimodal park discussed earlier in this section, into a genuinely major national infrastructure initiative: the Chennai-Bengaluru Industrial Corridor, one of five industrial corridors being developed nationally under the National Industrial Corridor Development and Implementation Trust, and explicitly modelled on the roughly \$100 billion Delhi-Mumbai Industrial Corridor (Wikipedia, cited in this chapter's research; NICDC, cited in this chapter's research, 2026). The corridor is designed to achieve accelerated industrial development and regional agglomeration across three states, Tamil Nadu, Karnataka, and Andhra Pradesh, through high-impact, market-driven industrial nodes built with world-class road and rail freight connectivity to ports and logistics hubs, reliable power supply, and quality social infrastructure intended to create a globally competitive investment environment (NICDC, cited in this chapter's research, 2026).

Karnataka's designated node within this corridor is the Tumakuru Industrial Area, spanning a substantial 8,484 acres, developed in phases, and located in the same Tumakuru district already identified elsewhere in this Framework as hosting the Pavagada Solar Park discussed in Chapter 9 and as recording the highest addition of new forest cover of any Karnataka district in the 2021 assessment cycle discussed in Chapter 13 (Geotix, cited in this chapter's research, 2025). The Government of India formally approved development of the Tumakuru node, alongside the Krishnapatnam node in Andhra Pradesh, on December 30, 2020, and Prime Minister Modi laid the foundation stone specifically for the Tumakuru Industrial Node on February 6, 2023, a genuinely significant milestone that predates the corresponding Krishnapatnam foundation stone by roughly two years, since that Andhra Pradesh node's foundation stone was not laid until early January 2025 (Blackridge Research, cited in this chapter's research, 2026). As of early 2026, both the Tumakuru and Krishnapatnam nodes are under active construction and are expected to deliver plug-and-play industrial infrastructure by late 2026, while the third planned node at Ponneri in Tamil Nadu remains comparatively stalled at the planning and master-plan consultancy stage, with limited visible construction progress by comparison (Blackridge Research, cited in this chapter's research, 2026). This uneven progress across the corridor's three nodes, Tumakuru moving fastest, Krishnapatnam roughly two years behind, and Ponneri lagging furthest, is itself a useful comparative data point: it suggests Karnataka's own execution of its portion of this multi-state initiative has, at least to date, outpaced its Tamil Nadu and kept pace with or exceeded its Andhra Pradesh counterparts, a genuinely creditable finding worth noting given this Framework's frequent identification of implementation delay as a recurring Karnataka-specific weakness elsewhere.

The corridor's backbone infrastructure rests on two complementary transport investments: the Bangalore-Chennai Expressway, already referenced in this chapter's earlier discussion of the Satellite Town Ring Road's Hoskote-to-Tamil Nadu border connection, and a dedicated

Bangalore-Chennai freight rail corridor still in planning (Wikipedia, cited in this chapter's research). Once complete, this combined road and rail backbone is projected to cut travel time between Chennai and Bengaluru from the current roughly five hours to somewhere between two and three hours (India Seatrade News, cited in this chapter's research, 2024; Geotic, cited in this chapter's research, 2025), a reduction with direct relevance to the inter-state labour mobility and Tamil community migration patterns into Bengaluru discussed in Chapter 1 and Chapter 20, since a sub-three-hour intercity commute would meaningfully change the calculus for workers and businesses operating across the Karnataka-Tamil Nadu border. The corridor's Comprehensive Integrated Regional Master Plan was itself prepared with technical assistance from the Japan International Cooperation Agency, the same bilateral development partner that supported the original Delhi-Mumbai Industrial Corridor this Chennai-Bengaluru initiative is modelled on, reflecting a degree of international institutional continuity in India's industrial corridor development approach (Wikipedia, cited in this chapter's research).

This is not, in fact, Karnataka's first attempt at securing a dedicated freight rail corridor running through the state, and the earlier attempt's fate is instructive. As far back as a Union Budget speech announcing a proposed Chennai-Goa freight corridor, the railway ministry outlined a corridor explicitly designed to cover major industrial hubs including Sriperumbudur, Ranipet, Hosur, Bengaluru, Davangere, Hubli-Dharwad, and Belgaum, envisioning a dedicated railway line paired with six-lane highways and anticipating an investment exceeding Rs 35,000 crore under a Public-Private Partnership model, with the Karnataka government itself a formal project partner committed to undertaking land acquisition (Deccan Herald, cited in this chapter's research). Notably, this earlier corridor proposal explicitly named Hubli-Dharwad and Belgaum, both in north Karnataka, as beneficiary industrial hubs, meaning it would have extended dedicated freight rail infrastructure directly into the same Hyderabad-Karnataka-adjacent northern districts this Framework has repeatedly identified as the state's most structurally underdeveloped region, a genuinely more geographically balanced freight infrastructure proposal than the Chennai-Bengaluru Industrial Corridor's current Tumakuru-centred alignment, which remains concentrated in the state's already more prosperous southern districts. Reporting at the time also noted an interesting point of state-versus-central negotiation: Karnataka's own government had specifically pushed for the corridor to extend toward Mumbai rather than terminate at Goa, reflecting the state's own preference for maximizing its connectivity to India's largest financial and commercial hub, though the railways ministry was instead conducting a feasibility study to route the corridor through the Goa port specifically (Deccan Herald, cited in this chapter's research). This earlier Chennai-Goa corridor proposal does not appear, based on the sources reviewed for this chapter, to have progressed to the same construction stage as the currently active Chennai-Bengaluru Industrial Corridor's Tumakuru node, suggesting it was either superseded by the newer, more narrowly Chennai-Bengaluru-focused initiative or has itself stalled, a further, if less certain, illustration of the broader pattern of announced freight corridor ambition outpacing delivered

infrastructure that this chapter has now documented across its road, port, and freight corridor sections alike.

Karnataka's own Industrial Policy 2020-2025, and its logistics-specific implementation guidance prepared for the Department for Promotion of Industry and Internal Trade, explicitly frames the pursuit of dedicated rail-based freight corridors, alongside improved capacity and connectivity for the state's coastal and inland water-based routes under the national Sagarmala and Bharatmala programmes and integration with PM Gati Shakti's national logistics platform, as a core strategic action for improving the state's logistics performance, alongside adoption of digital trade facilitation systems including PCS 1x and the Unified Logistics Interface Platform (Government of Karnataka, cited in this chapter's research). This confirms that Karnataka's pursuit of dedicated freight rail capacity is a deliberate, sustained state policy priority rather than an incidental beneficiary of nationally driven corridor planning, even though, as the Chennai-Goa corridor's apparent stall illustrates, the state's own preferred routing and destination choices for such corridors have not always prevailed against the Union Railway Ministry's competing feasibility considerations.

Chapter 9: Energy, Power and Renewable Transition

9.1 Power Generation: Installed Capacity, Mix and Dependence Profile

This chapter's earlier treatment of Karnataka's power generation mix focused heavily on the state's renewable energy achievements, but a complete accounting of the 36,271.36 MW installed capacity figure established at the start of this chapter requires equal attention to the conventional thermal and nuclear generation fleet that continues to provide Karnataka's baseload power, particularly given the direct relevance of this fleet's fuel dependency and inter-state power allocation arrangements to themes already developed in Chapters 2 and 13.

Karnataka's thermal generation backbone rests on a cluster of coal-fired power stations concentrated specifically in the state's north-eastern districts, the same Raichur and Ballari districts already identified throughout this Framework as part of the constitutionally recognized Hyderabad-Karnataka backward region and, in Ballari's case, as the epicentre of the illegal iron ore mining scandal documented extensively in Chapter 13. The Raichur Thermal Power Station, Karnataka's first thermal power plant and the state's oldest, is a coal-fired facility with a nameplate capacity of 1,720 megawatts across eight units commissioned progressively between 1985 and 2010, operated entirely by the state-owned Karnataka Power Corporation Limited (Wikipedia, cited in this chapter's research; Power Technology, cited in this chapter's research, 2024). The plant's daily coal requirement reaches approximately 20,000 metric tonnes at full capacity, sourced from Western Coalfields Limited and Mahanadi Coalfields Limited, with the plant also capable of running on Light Diesel Oil during coal shortages and having adopted washed coal with lower ash content to improve combustion efficiency (Wikipedia, cited in this chapter's research). This roughly 20,000-tonne daily coal dependency for a single power station is a directly relevant data point when read alongside Chapter 13's documentation of Karnataka's air pollution challenges, since coal-fired thermal generation of this scale represents a substantial, geographically concentrated source of the particulate matter emissions that the National Green Tribunal specifically flagged as exceeding national air quality standards in five Karnataka cities, including nearby Kalaburagi.

Immediately adjacent to Raichur Thermal Power Station, the Yermarus Thermal Power Station, also owned by the Karnataka Power Corporation Limited and operated through RPCL, adds a further 1,600 MW of coal-fired capacity, and holds the distinction of being India's first 800 MW super-critical thermal power plant, with its first unit commissioned in May 2015 and second in March 2017 (Wikipedia, cited in this chapter's research). Further south in Ballari district, the Bellary Thermal Power Station, also wholly owned and operated by the Karnataka Power Corporation Limited with turbines supplied by Bharat Heavy Electricals Limited, contributes an additional 1,700 MW across three units commissioned between 2007 and 2016, comprising two 500 MW units and one 700 MW super-critical unit, and reportedly operates at 95 to 105 percent of capacity across its operational units according to an assessment by an IAS official cited in reporting on the plant (Unacademy, cited in this chapter's research, 2022; Wikipedia, cited in this chapter's research). A fourth, privately

owned facility, the JSW Vijayanagar Power Station in Toranagallu, Bellary district, operated by JSW Energy Limited and running on imported coal rather than domestic supply, adds a further 1,460 MW to the district's thermal generation cluster (Wikipedia, cited in this chapter's research). Taken together, these four thermal stations, three state-owned and one private, concentrate roughly 6,480 MW of coal-fired capacity within a remarkably tight geographic radius spanning Raichur and Ballari districts, meaning a substantial share of Karnataka's conventional baseload generation, and its associated coal logistics, ash disposal, and air quality burden, falls specifically on two of the same north Karnataka districts this Framework has repeatedly identified as facing the state's most acute poverty, health, and environmental governance challenges.

Karnataka's third major conventional generation asset takes an entirely different form and carries genuinely distinctive national significance. The Kaiga Generating Station, known interchangeably as the Kaiga Atomic Power Station, is located near the Kali River in Uttara Kannada district, the same Western Ghats coastal district already identified in Chapter 13 as home to some of the state's most ecologically sensitive forest cover, and operates under the Nuclear Power Corporation of India Limited (Wikipedia, cited in this chapter's research). Construction began in 1989, and the plant's first two units began commercial operation in 2000, with a third and fourth unit following in 2007 and 2011 respectively, bringing the station's total nameplate capacity to 880 megawatts across four indigenously developed Pressurised Heavy Water Reactors, each rated at 220 MW, making Kaiga India's third-largest nuclear power station after Tarapur's 1,400 MW and Rawatbhata's 1,180 MW (Wikipedia, cited in this chapter's research; Testbook, cited in this chapter's research). The plant's most recent published capacity factor, for 2020-21, stood at a notably high 92.02 percent, with an annual net output of 7,094 gigawatt-hours that year (Wikipedia, cited in this chapter's research).

Kaiga's most globally significant achievement came in December 2018, when the station's Unit 1 surpassed the world record for continuous operation among all nuclear power reactor types of any technology, reaching 941 days of uninterrupted operation on December 10, 2018, and ultimately extending to 962 days by December 31 that year, surpassing the previous global record of 940 days held by the Heysham-2 Unit-8 reactor in the United Kingdom (Deccan Herald, cited in this chapter's research, 2018; BusinessToday, cited in this chapter's research, 2018). During this record-setting run, which began on May 13, 2016, the unit operated at a capacity factor of 99.4 percent and generated approximately 500 crore units of electricity, a scale of continuous, near-perfect operational reliability the Department of Atomic Energy characterized as demonstrating the full technological maturity of India's indigenously developed Pressurised Heavy Water Reactor design (Deccan Chronicle, cited in this chapter's research, 2019; Deccan Herald, cited in this chapter's research, 2018). Prime Minister Modi personally applauded the achievement as a "major feat" (Testbook, cited in this chapter's research), and it stands as a genuinely rare instance in this Framework of an unambiguous, internationally verified, world-record-setting Karnataka infrastructure achievement, free of the implementation-delay pattern this Framework has documented so consistently elsewhere.

Kaiga's power allocation arrangement, however, surfaces a finding directly analogous to the Centre-state fiscal asymmetry documented extensively in Chapter 2. Despite being physically located entirely within Karnataka and requiring the state to bear whatever local environmental, land-use, and safety-related burden hosting a nuclear facility entails, only 33 percent of Kaiga's generated power is actually allocated to Karnataka itself, with the remaining 67 percent distributed to Telangana, Andhra Pradesh, Tamil Nadu, Kerala, and Puducherry under the Southern Regional Grid's power allocation framework (Testbook, cited in this chapter's research; Byju's, cited in this chapter's research, 2022). This is a striking parallel to the GST and Finance Commission devolution grievance documented in Chapter 2, where Karnataka's leadership has repeatedly argued that the state generates far more value, in tax revenue there, in installed generation capacity here, than it receives back in return; in Kaiga's specific case, however, this asymmetry results not from a contested formula like the Finance Commission's income distance criterion, but from a deliberate, longstanding Southern Regional Grid power-sharing arrangement that predates the plant's very construction, since Kaiga was conceived from the outset as a facility serving the wider southern grid rather than Karnataka alone. This distinction matters for how state leadership should think about the two grievances differently: the Finance Commission devolution issue is a live, renegotiable policy question currently before the Sixteenth Finance Commission, as documented in Chapter 2, while Kaiga's power-sharing arrangement is a structural feature of the plant's original design and the Southern Regional Grid's broader integration logic, considerably less amenable to unilateral renegotiation by Karnataka alone.

Kaiga's expansion has also encountered the kind of community and environmental opposition this Framework has documented in other large infrastructure contexts, though with a distinctive nuclear-specific character. Two additional reactors, Kaiga Units 5 and 6, each rated at 700 MW, received administrative approval and financial sanction from the central government as of the 2018 reporting reviewed for this chapter (Deccan Herald, cited in this chapter's research, 2018), but this proposed expansion, then attributed in some reporting to the National Thermal Power Corporation's involvement, has faced sustained opposition from local residents and environmentalists. In November 2011, residents of several villages near the plant staged formal protests alleging a threat to their lives from the facility's operation, and scientists and environmentalists based in Karwar have separately urged authorities to halt the expansion specifically citing potential harm to the surrounding Western Ghats ecology (Testbook, cited in this chapter's research). This opposition connects directly to the broader Western Ghats ecological sensitivity theme documented extensively in Chapter 13, where this Framework noted that the region's status as a UNESCO-recognized biodiversity hotspot has not prevented significant encroachment and forest cover loss driven by other forms of development pressure; a further doubling of Kaiga's nuclear generation footprint through Units 5 and 6 would represent precisely the kind of large-scale infrastructure development within this ecologically sensitive corridor that Chapter 13's own findings suggest deserves particularly careful environmental scrutiny, given the cumulative development burden that corridor is already documented to be carrying.

Reading this expanded conventional generation picture alongside the renewable energy achievements documented earlier in this chapter yields an important overall clarification for the ministerial reader: Karnataka's genuinely impressive renewable energy leadership, its solar capacity approaching 10 GW, its record-setting wind capacity additions, and its 44,096 million units of renewable generation in 2024-25, does not yet mean the state has substantially transitioned away from coal-fired baseload power. With roughly 6,480 MW of coal capacity concentrated in Raichur and Ballari districts alone, plus whatever additional thermal capacity exists elsewhere in the state's generation portfolio, Karnataka's conventional fossil generation base remains substantial, geographically concentrated in precisely the districts this Framework has repeatedly identified as the state's most structurally disadvantaged, and directly implicated in the air quality concerns documented in Chapter 13. Any full accounting of Karnataka's energy transition trajectory, and any credible Vision 2047 energy roadmap of the kind discussed in Chapter 21, should therefore track not only continued renewable capacity addition but also a clear-eyed plan, or absence of one, for the eventual retirement, repowering, or emissions mitigation of this coal fleet, since renewable capacity addition and coal fleet retirement are two distinct policy tracks that do not automatically move in tandem, and Karnataka's own data, an expanding renewable portfolio operating alongside an apparently undiminished thermal fleet still running at 95 to 105 percent of capacity as of the most recent assessment reviewed for this chapter, suggests the state is currently pursuing renewable addition considerably more aggressively than thermal retirement.

9.2 Transmission and Distribution: Infrastructure, Losses and Reliability

Karnataka's transmission backbone is managed by the Karnataka Power Transmission Corporation Limited, which has previously outlined plans to install a total of 451 new substations, comprising 208 at the 66 kV level, 172 at 110 kV, 58 at 220 kV, and 13 at the 400 kV level, alongside 15,152 circuit kilometers of new transmission lines split across 4,346 circuit km at 66 kV, 3,496 circuit km at 110 kV, 4,470 circuit km at 220 kV, and 2,840 circuit km at 400 kV, with an original outlay of Rs 3,000 crore identified for the initial tranche of this expansion (Electrical India Magazine, cited in this chapter's research). This transmission buildout is directly relevant to unlocking the state's renewable potential, since inadequate grid capacity is one of the most commonly cited bottlenecks constraining further solar and wind capacity addition nationally, and industry analysis specifically frames grid integration, alongside land availability and bankable power offtake agreements, as one of the three central bottlenecks now shaping the next phase of Karnataka's renewable energy development, precisely because the state's earlier "prove the technology is feasible" phase has already been won (REConnect Energy, cited in this chapter's research, 2026).

On distribution, the financial and operational condition of the state's five ESCOMs, BESCOM, CESC, GESCOM, HESCOM, and MESCOM, was documented in considerable detail in Chapter 2, where their collective debt was shown to have risen from Rs 29,764 crore in March 2022 to between Rs 42,750 crore and Rs 49,500 crore by early 2026. That chapter's finding that BESCOM's aggregate technical and commercial losses remain below the national

FY2023-24 average of 16.3 percent, indicating comparatively efficient network operation even amid financial strain (Grokikipedia, cited in Chapter 2's research, 2026), is directly relevant here: Karnataka's distribution network is not failing on a technical loss basis, its problems are financial and procurement-related, driven by power purchase costs exceeding regulator-approved benchmarks and tariff collection shortfalls, rather than by physical transmission and distribution inefficiency. This distinction matters for policy design, since it means the state's most urgent distribution-sector reform need is financial restructuring and power procurement discipline, not primarily network infrastructure investment, which is a materially different, and in some ways more tractable, policy problem. It also means that any future capital allocated to the transmission expansion described above should be sequenced separately from, and should not be used to paper over, the distinct financial restructuring need at the ESCOM level, since conflating the two risks under-capitalizing the genuinely productive transmission investment while failing to resolve the ESCOM debt trajectory on its own terms.

9.3 Rural and Household Electrification: Coverage and Quality

Beyond the general household electrification picture described earlier in this chapter, Karnataka's rural electrification story carries a specific and highly significant dimension centred on Irrigation Pump Set, or IP set, connections, which reveals both the fiscal scale of the state's agricultural power subsidy commitment and a genuinely serious, recently quantified governance failure in how that subsidy is being administered.

Karnataka currently provides free electricity to agricultural pump sets up to 10 horsepower capacity, a policy that has expanded dramatically in both connection count and fiscal cost over the past decade. The number of IP set electricity connections statewide rose from roughly 20 lakh in 2012 to 34.17 lakh by 2023, with approximately 1.2 lakh new IP set connections added annually (Deccan Herald, cited in this chapter's research, 2024). The associated subsidy cost has risen even more steeply in percentage terms: the state's IP set subsidy bill grew 121 percent, from Rs 10,118 crore in 2016 to Rs 22,387 crore in 2023 (Deccan Herald, cited in this chapter's research, 2024), a figure that, notably, the state's own Energy Minister separately cited at Rs 15,000 crore in an earlier public statement discussing the department's overall subsidy burden, illustrating some variation in how this figure is reported depending on the specific year and scope referenced, but confirming in either case that this subsidy now represents one of the largest single line items in Karnataka's power sector finances, a scale directly relevant to the ESCOM debt trajectory documented extensively in Chapter 2, where BESCOM alone was found to be running a revenue gap in the thousands of crores annually.

The scale of Karnataka's dependence on IP set power consumption specifically, relative to other major agricultural states, is itself a striking and underappreciated data point. According to a statement by then Chief Minister Siddaramaiah at the launch of the Energy Department's "Protect Farmers, Save Energy" initiative, Karnataka's roughly 22 lakh IP sets at the time consumed 37 percent of the state's total power output, whereas Maharashtra, with 40 lakh IP

sets, nearly double Karnataka's count, and Andhra Pradesh, with 32 lakh IP sets, both consumed only 27 percent of their respective states' total power (Deccan Herald, cited in this chapter's research). This means Karnataka's agricultural sector draws a disproportionately larger share of the state's total electricity output relative to its actual IP set count compared to these two major peer agricultural states, a finding the Chief Minister himself specifically flagged as evidence the government was struggling to accurately account for actual energy consumption and transmission and distribution losses among its farming population (Deccan Herald, cited in this chapter's research). At that same event, farmer representatives, through the Rajya Raitha Sangha, pushed back directly against government efforts to install meters on IP sets, with the organization's president arguing the government was not doing farmers any favour through the subsidy and instead demanding guaranteed support prices for crops as a precondition for accepting metering, a direct illustration of the political economy constraints that have historically limited the state's ability to improve IP set consumption data quality (Deccan Herald, cited in this chapter's research).

This historical resistance to metering makes the eventual outcome of a subsequent state government audit particularly significant, and it stands as one of the most concrete, quantified, and directly actionable governance findings encountered anywhere in this Framework. Following a Karnataka Electricity Regulatory Commission directive requiring the state's Finance Department and Energy Department to link all IP sets receiving free power to Aadhaar records, the resulting data-matching exercise uncovered what state authorities themselves characterized as widespread subsidy misuse totalling approximately Rs 5,000 crore (Deccan Herald, cited in this chapter's research, 2025). The audit found that of the state's IP set connections, 23.35 lakh belonged to small and marginal farmers owning less than five acres, the intended beneficiary group for the subsidy, but the analysis explicitly concluded that data indicates wealthier farmers with larger landholdings and multiple pump sets receive disproportionate benefits from a subsidy structure ostensibly designed for smallholders (Deccan Herald, cited in this chapter's research, 2025). More alarmingly, authorities found that 5.68 lakh beneficiaries linked to 9 lakh IP sets did not appear at all in the state's own Farmer Registration and Unified Beneficiary Information System, the FRUITS database intended to be the authoritative registry of the state's actual farming population, with the government's own analysis concluding this absence suggests affluent farmers or entirely non-agricultural users may be misusing the subsidy (Deccan Herald, cited in this chapter's research, 2025). A parallel cross-check found that 6.55 lakh Aadhaar numbers linked to 10.97 lakh IP sets were similarly missing from KUTUMBA, the state's comprehensive citizen registry, again suggesting potential misuse by affluent families or non-agricultural entities (Deccan Herald, cited in this chapter's research, 2025). The audit further identified 6.9 lakh farmers holding multiple IP sets, ranging from two to five or more connections per farmer, and 2.7 lakh Above Poverty Line families collectively holding 4.32 lakh IP sets still receiving the ostensibly poverty-targeted subsidy (Deccan Herald, cited in this chapter's research, 2025).

This Rs 5,000 crore misuse finding is directly comparable in character, though considerably larger in confirmed quantified scale, to several other subsidy and welfare targeting concerns

already documented throughout this Framework, including the PMAY-Gramin beneficiary targeting concerns discussed in Chapter 12 and the broader welfare architecture themes touched on in Chapter 7. It is also directly relevant to the Gruha Jyothi and rooftop solar tension already identified earlier in this chapter, since both cases involve a Karnataka energy subsidy scheme whose beneficiary targeting has not kept pace with the scale and popularity the scheme itself has achieved, and both point toward the same broader recommendation: any further expansion or renewal of Karnataka's major power subsidy programmes should be preceded by, rather than followed by, the kind of Aadhaar and citizen-registry cross-verification that this IP set audit only conducted after KERC's regulatory intervention forced the issue, and after farmer representative bodies had for years successfully resisted metering on political grounds.

In direct response to these findings, the state's Energy Minister announced in mid-2024 a plan to link farmers' Aadhaar numbers specifically to IP set registration, or RR, numbers to establish accurate power allocation, explicitly citing the difficulty of determining the exact power needs of pump sets given the prevalence of illegal, unregistered pump sets that exacerbate power shortages for properly registered farmers (Deccan Chronicle, cited in this chapter's research, 2024). Under this initiative, illegal IP sets exceeding 10 horsepower capacity were slated for disconnection, while power supply would continue for smaller illegal pump sets up to 10 horsepower until alternative arrangements could be made, and illegal IP sets located within 500 metres of an existing power transformer were to be formally regularized, while those beyond that distance would instead be directed toward solar pump sets under the central PM-KUSUM Component B scheme, which combines a 30 percent central government subsidy with a 50 percent state subsidy, leaving farmers to cover the remaining 20 percent themselves (Deccan Chronicle, cited in this chapter's research, 2024). The same announcement included plans for a statewide recruitment drive for 2,000 linemen, intended to address the on-ground staffing capacity needed to actually implement and enforce this regularization exercise (Deccan Chronicle, cited in this chapter's research, 2024), a specific, welcome acknowledgment that resolving this subsidy targeting problem requires additional human capital investment rather than data and policy reform alone, directly consistent with the personnel-and-follow-through pattern this Framework has identified as a recurring constraint across the judiciary, Lokayukta, and police department in Chapter 15.

Karnataka's stated longer-term strategy for addressing the fiscal burden of this subsidy, articulated by a previous Energy Minister, centres on shifting agricultural power consumption toward solar generation specifically to reduce the department's overall subsidy outgo, with an explicit acknowledgment at the time that the scheme's beneficiary base had grown from just 10,000 farmers at its original introduction to 30 lakh farmers by the time of that statement, alongside a stated ambition to raise the state's total installed power generation capacity from 30,000 MW to 40,000 MW by 2030 (Deccan Herald, cited in this chapter's research). This solar-for-agriculture strategy directly complements the PM-KUSUM solarization approach described above and connects meaningfully to this chapter's earlier discussion of Karnataka's broader solar capacity expansion in section 9.4, suggesting that agricultural feeder

solarization represents a genuinely coherent, multiply-reinforced state policy priority rather than an isolated response to the subsidy misuse finding alone.

On power supply reliability specifically, BESCOM's own published operating standards for agricultural feeders in its jurisdiction commit to providing six to seven hours of three-phase power daily to irrigation pump sets in rural areas, split across four daytime hours and two to three night-time hours under a 2014 state government order, with single-phase supply extended for six to eight hours where feeders serve more than nine non-agricultural installations, and continuous seven-hour daytime three-phase supply provided only where technically feasible, with batch-based rotation used elsewhere (BESCOM, cited in this chapter's research). This relatively modest, rationed daily supply window for farmers, six to seven hours rather than continuous supply, stands in direct contrast to the near-continuous free electricity access that the Gruha Jyothi scheme's 200-unit monthly allowance effectively provides to ordinary household consumers, documented earlier in this chapter, illustrating that Karnataka's two major electricity welfare schemes, one targeting general households and one targeting farmers, differ meaningfully not only in their beneficiary population but in the basic reliability and continuity of the power supply each actually delivers, a distinction worth flagging directly for any state review of overall power subsidy equity across rural and urban, and agricultural and residential, consumer categories.

9.4 Renewable Energy Potential: Solar, Wind, Hydro and Biomass

Karnataka's renewable energy strength rests on two roughly comparable pillars: solar and wind, both underpinned by favourable geography (Sonam Raina, cited in this chapter's research, 2025). Solar capacity reached approximately 9 to 10 GW by 2025, described as the fastest five-year rise in the state's solar sector since 2020, with solar power now constituting the single largest component of Karnataka's overall energy mix (Sonam Raina, cited in this chapter's research, 2025; Ornate Solar, cited in this chapter's research, 2026). The centrepiece of this solar buildout is the Pavagada Solar Park in Tumakuru district, the same district identified in Chapter 8 as hosting Karnataka's node under the Chennai-Bengaluru Industrial Corridor, a 2,000 MW facility developed jointly by the Karnataka Renewable Energy Development Limited and the Solar Energy Corporation of India, which achieved commissioning at a notably low tariff (Electrical India Magazine, cited in this chapter's research), and which remains one of the largest solar parks in the world by installed capacity.

Wind capacity has kept close pace with solar, reaching 7,351 MW as of mid-2025 (Deccan Herald, cited in this chapter's research, 2025). Karnataka's wind sector achieved a particularly notable milestone in FY2024-25, adding 1,331.48 MW of new wind capacity, the highest addition of any Indian state that year, ahead of Tamil Nadu's 1,136.37 MW and Gujarat's 954.76 MW, an achievement formally recognized at the Global Wind Day 2025 celebrations held in Bengaluru, where Karnataka's Energy Minister K.J. George received the award from the Union Minister of New and Renewable Energy (Deccan Herald, cited in this chapter's research, 2025). This wind capacity growth had, in fact, plateaued between 2020 and 2023 before this record-setting rebound, driven by strong competitive bidding (Sonam Raina, cited

in this chapter's research, 2025). Looking forward, Karnataka has committed to supporting India's national target of 500 GW of total renewable energy capacity by 2030, of which 100 GW is targeted specifically from wind nationally, and the state is set to implement 17 GW of new wind power projects of its own, with over 5 GW of this pipeline falling under a dedicated Renewable Energy Cluster Programme (Deccan Herald, cited in this chapter's research, 2025). Karnataka's projects commissioned before June 30, 2025 additionally benefit from a central government waiver on interstate transmission system charges, a policy design that materially boosts the commercial viability of Karnataka-generated renewable power sold across state lines, and one that developers active in the state's pipeline should be encouraged to utilize before any similar waiver window closes (Sonam Raina, cited in this chapter's research, 2025).

The state's overarching policy framework for this buildout is the Karnataka Renewable Energy Policy 2022-2027, which industry analysis characterizes as a deliberately "second generation" framework, one less focused on proving the basic feasibility of solar and wind deployment, which Karnataka has already demonstrated at scale, and more focused on shaping the quality of continued capacity addition through administrative clarity on approvals, an expanded regulatory role for KREDL, and a broadened technology scope extending beyond solar and wind into storage and hybrid configurations (REConnect Energy, cited in this chapter's research, 2026). That same analysis identifies energy storage policy, specifically whether Karnataka treats storage as core grid infrastructure rather than an optional add-on, as one of the three central strategic choices that will determine whether the state can sustain its renewable leadership position as competing states increasingly emulate its solar park and single-window facilitation model (REConnect Energy, cited in this chapter's research, 2026). This is a genuinely important, specific, and time-sensitive strategic recommendation available to state leadership directly from independent energy sector analysis: Karnataka's renewable advantage is not permanent or uncontested, and its durability depends specifically on how the state now treats storage infrastructure, a policy question that remains open as of this Framework's preparation.

Beyond utility-scale solar and wind, Karnataka's largest single hydroelectric storage initiative remains the Sharavathi Pumped Storage Power Project, projected to cost over Rs 8,000 crore, leveraging the state's Western Ghats hydro potential documented in Chapter 1 for grid-scale energy storage rather than only generation (Basic Home Loan, 2025), directly complementary to the storage-as-infrastructure strategic priority identified above.

However, Karnataka's renewable energy story shows a genuinely sharp divide between its utility-scale success and its decentralized, rooftop-level performance. Under the national PM Surya Ghar Muft Bijli Yojana rooftop solar scheme, only 7,429 rooftop systems had actually been installed in Karnataka by early 2025, against 1.9 lakh applications received, a conversion rate of under 4 percent (Sonam Raina, cited in this chapter's research, 2025). A KREDL official quoted in this reporting attributed the shortfall to a combination of factors: domestic solar panels, mandated under the scheme, remain either too expensive or difficult to source; net-metering meters remain in short supply; and public awareness of the scheme

remains low (Sonam Raina, cited in this chapter's research, 2025). Compounding this structural supply-chain problem is a specific and somewhat paradoxical policy interaction: the state's own Gruha Jyothi scheme, by offering free electricity for consumption under 200 units, unintentionally removes much of the financial incentive for eligible households to install rooftop solar panels at all, since a household whose bill is already zero has little reason to invest in generation capacity of its own (Sonam Raina, cited in this chapter's research, 2025). This is a clear, quantified, and directly actionable policy tension for ministerial attention: two of the state's own flagship energy policies, one a popular welfare guarantee and the other a national decentralized renewable programme, are working against each other in a measurable and specific way, and resolving this tension will require either redesigning Gruha Jyothi's eligibility structure, for instance by tapering the free-unit threshold for households that install rooftop solar, or accepting that rooftop solar uptake will remain structurally suppressed among the very households the scheme was designed to help.

9.5 Energy Efficiency, Conservation and Demand-Side Management

Karnataka's Clean Mobility Policy 2025-30, targeting Rs 500 billion in related investment, alongside a dedicated Electric Vehicle Policy for 2025 offering incentives for EV adoption (Grokikipedia, 2026), positions transport electrification as a significant component of the state's broader energy transition strategy. Karnataka has also been identified as the leading state nationally for electric vehicle charging infrastructure deployment, forming part of a national network of 29,277 EV charging stations as of the most recent nationwide assessment reviewed for this chapter (IndiaDataMap, cited in this chapter's research, 2026), a position consistent with the state's broader technology-sector leadership documented in Chapter 3 and its stated Clean Mobility Policy ambitions.

On the demand side more broadly, the same structural tension identified in section 9.4 between Gruha Jyothi's free-electricity design and rooftop solar uptake has a direct bearing on demand-side management strategy: a scheme that removes the price signal for the roughly 1.6 crore households consuming under 200 units monthly also removes any behavioural incentive for those households to conserve electricity or shift consumption to off-peak hours, which is worth flagging as a second-order consequence of the scheme beyond the renewable adoption question already discussed. Granular, current data on industrial demand-side management programmes, time-of-day tariff structures for large consumers, and specific energy efficiency scheme uptake were not confirmed with sufficient specificity in the sources reviewed for this chapter and should be obtained directly from the Karnataka Renewable Energy Development Limited and the Bureau of Energy Efficiency's state-level programme reports for a fully rigorous treatment.

9.6 State Electricity Regulatory Framework and Tariff Policy

The Karnataka Electricity Regulatory Commission governs the state's power tariff structure across both conventional and renewable generation. For the period from July 1, 2025 to June 30, 2026, KERC's generic tariff order for solar power set the approved rate for MW-scale

ground-mounted solar projects at Rs 3.07 per kWh, with non-domestic distributed solar photovoltaic consumers paying a marginally higher Rs 3.08 per kWh (Mercom India, cited in this chapter's research, 2025). For domestic rooftop consumers installing systems between 1 kW and 10 kW capacity, the applicable tariff is Rs 3.86 per kWh before subsidy, though consumers eligible under the PM Surya Ghar scheme receive substantially subsidized rates of Rs 2.30 per kWh for 1 to 2 kW systems, Rs 2.48 per kWh for 2 to 3 kW systems, and Rs 2.93 per kWh for systems above 3 kW (Mercom India, cited in this chapter's research, 2025). This tariff order also permits either static or digital meters with communication modules, or smart meters, for solar generation metering effective from July 1, 2025, does not mandate battery energy storage systems given their high capital cost and current low rooftop adoption rates, and allows grid connectivity at the low-tension level for capacities up to 150 kW and at the 11 kV high-tension level for projects between 150 kW and 2 MW (Mercom India, cited in this chapter's research, 2025).

Separately, in early 2025, KERC issued a discussion paper proposing tariff norms for a newer technology category, rooftop aero turbines with or without accompanying solar installation, aligned with the Karnataka Renewable Energy Policy 2022-27's stated goal of promoting innovative renewable technologies suited to urban and suburban settings where standalone wind farms are not feasible (SolarQuarter, cited in this chapter's research, 2025). Under this proposed framework, a standalone rooftop aero turbine system would require a minimum capacity of 1 kW, and combined turbine-and-solar installations would be capped at 1.25 times the consumer's sanctioned electrical load, with plant life assumed at 25 years for tariff calculation purposes (SolarQuarter, cited in this chapter's research, 2025). This proposal, still at the discussion-paper stage as of the sources reviewed for this chapter, illustrates that Karnataka's regulatory apparatus is actively working to extend renewable tariff frameworks into genuinely novel technology categories ahead of significant market deployment, a proactive regulatory posture worth noting favourably alongside the more reactive tariff-adjustment pattern documented for the ESCOM sector in Chapter 2.

Taken together, sections 9.1 through 9.6 of this chapter point to a consistent overall picture: Karnataka's energy sector combines genuine, internationally competitive success in utility-scale renewable generation with two specific, well-documented, and directly addressable weaknesses, the ESCOM financial position inherited from Chapter 2's analysis, and the rooftop solar and demand-side management gap created by the interaction between Gruha Jyothi and national decentralized renewable schemes, both of which are far more tractable policy problems than the underlying generation and grid infrastructure challenge that the state has already largely solved.

Chapter 10: Water, Sanitation and Solid Waste Management

10.1 Drinking Water Supply: Coverage, Quality and Infrastructure

Karnataka's household access to drinking water is roughly at par with the national average as of 2019-21 (NITI Aayog, 2025), a state-level average that this chapter's fuller research now shows conceals a considerably more concerning picture specifically with respect to piped, in-home tap water connectivity under the national Jal Jeevan Mission. Nationally, the Jal Jeevan Mission has transformed rural drinking water access since its August 2019 launch, raising Functional Household Tap Connection coverage from just 3.23 crore households, or 17 percent of rural India, to over 15.44 crore households, or 79.74 percent, by February 2025 (Press Information Bureau, cited in this chapter's research, 2025; Yes Punjab, cited in this chapter's research, 2025), with coverage climbing further to over 81 percent by late 2025 and a projected roughly 83 percent by early 2026 (IndiaDataMap, cited in this chapter's research, 2026). Eleven states and Union Territories, including Gujarat, Punjab, Haryana, Telangana, Himachal Pradesh, Mizoram, Arunachal Pradesh, and Goa, had achieved 100 percent rural tap water connection coverage as of March 2025 (Yes Punjab, cited in this chapter's research, 2025).

Karnataka's own performance against this national benchmark is, in stark contrast to several of the state's other infrastructure indicators documented throughout this Framework, genuinely and specifically poor. Karnataka's Functional Household Tap Connection coverage stood at just 38.3 percent as of the most recent assessment reviewed for this chapter, a figure explicitly cited alongside Maharashtra's comparably lagging 46.6 percent as an illustration of states showing what one assessment characterized, with some generosity, as "impressive progress" relative to their own earlier starting points, but which nonetheless places Karnataka roughly 41 percentage points below the 79.74 percent national average and dramatically behind the eleven states that have already reached full coverage (TarunIAS, cited in this chapter's research, 2025). This is one of the most significant, and previously undocumented in earlier drafts of this Framework, specific infrastructure underperformance findings identified in this entire document: a state that ranks among India's leading performers on GSDP growth, per capita income, innovation indices, and renewable energy capacity, as established throughout Chapters 3, 4, and 9, ranks among the weaker performers nationally on the specific, basic measure of whether rural households have a functioning water tap inside their home.

This underperformance is not attributable to insufficient central funding attention or an absence of prior warning. As far back as June 2020, the Union Minister for Jal Shakti wrote directly to then Chief Minister B.S. Yediyurappa specifically urging Karnataka to expedite the scheme, noting that the state had itself set a target of 100 percent household coverage by 2022-23 and needed to take immediate steps to meet it (Deccan Herald, cited in this chapter's research, 2020). At that time, of Karnataka's 89.61 lakh rural households, tap connections had been provided to just 24.41 lakh, with only 22,133 connections completed in the scheme's first year, 2019-20, before the state government's own budget commitment rose from Rs

546.06 crore that year to Rs 1,189.40 crore for 2020-21 (Deccan Herald, cited in this chapter's research, 2020). The Union Minister's letter specifically noted that Karnataka could access additional performance-linked central funding if it accelerated its physical and financial progress (Deccan Herald, cited in this chapter's research, 2020). Given that the state's own stated target was 100 percent coverage by 2022-23, and its actual performance nearly three years past that self-set deadline stands at only 38.3 percent, this represents one of the clearest, most precisely dated examples in this entire Framework of a state government's own announced infrastructure target being missed by a very wide margin, directly comparable in character, though considerably larger in scale, to the taluk administrative building delays documented in Chapter 1, the ESCOM reform blueprint left substantially unimplemented in Chapter 2, and the Peripheral Ring Road's eighteen-year gestation documented in Chapter 8. This finding should be treated as a genuine priority for ministerial attention precisely because it involves the most basic tier of infrastructure covered anywhere in this Framework, a functioning water tap inside a rural home, rather than a more complex, higher-order capability, and because the gap between the state's own 2022-23 target and its actual current performance is unusually large and unusually well documented.

What is verifiable and directly relevant to Karnataka's planning is the broader national finding on the gap between infrastructure coverage and actual service functionality, which compounds this chapter's coverage concern with a further quality concern. A 2024 government-commissioned Functionality Assessment Survey found that although nearly 98 percent of rural households nationally had received tap connections under the mission, only about three-quarters actually received a regular, safe, and adequate water supply, with just 83 percent of households reporting they had received water through their taps at least once in the preceding seven days (Sanskriti IAS, cited in this chapter's research, 2026). This functionality gap is a critical distinction for any Karnataka-specific assessment, since the state's own certification of villages as "Har Ghar Jal," meaning all households and public institutions have tap connections, is explicitly based on infrastructure availability rather than actual service delivery, water quality, or reliability (Sanskriti IAS, cited in this chapter's research, 2026). Given that Karnataka's own baseline coverage rate of 38.3 percent already lags so substantially behind the near-98-percent national coverage figure against which this functionality gap was measured, it is reasonable to expect that whatever share of Karnataka's already-limited tap connections are further undermined by unreliable or infrequent actual water delivery would leave the state's genuinely functional water access rate meaningfully below even the low 38.3 percent headline figure, though a Karnataka-specific functionality assessment applying this same survey methodology was not identified in the sources reviewed for this chapter. Karnataka's own district-level disparity in water infrastructure, illustrated in Chapter 11 by the 2016-17 AMRUT-era finding that household water tap coverage ranged from just 18 percent in Chikkamagaluru to 87 percent in Mandya, and that none of the state's 27 original AMRUT mission cities met the national urban supply norm of 135 litres per capita per day, is entirely consistent with, and helps explain the persistence of, this state-level rural coverage shortfall.

Nationally, quality assurance infrastructure for the mission has expanded substantially, with 2,843 water testing laboratories, comprising 2,184 institutional and 659 treatment-plant-based facilities, testing 38.78 lakh water samples across 4,49,961 villages during 2025-26, alongside 24.80 lakh rural women trained to conduct water quality testing using Field Testing Kits across more than 5 lakh villages nationally (Press Information Bureau, cited in this chapter's research, 2025). This community-based monitoring model, training rural women as frontline water quality monitors rather than relying solely on centralized laboratory testing, is a genuinely promising decentralized governance innovation that Karnataka's own gram panchayat climate action planning initiative, documented in Chapter 14, could plausibly draw on as a template for community-level environmental monitoring more broadly, and Karnataka's own comparatively poor tap connection coverage arguably makes this kind of community-level monitoring and accountability mechanism even more important for the state specifically, since a lower baseline of infrastructure typically correlates with weaker existing institutional oversight of whatever water infrastructure does exist. In December 2025, the national programme also launched Jal Seva Aankalan, under which Village Water and Sanitation Committees conduct structured village-level water service assessments (Organiser, cited in this chapter's research, 2026), a mechanism that, if actively and specifically implemented by Karnataka's own gram panchayats, could help close the coverage and functionality gaps documented above, and represents a concrete, low-cost near-term step the state's Rural Development and Panchayati Raj Department could prioritize given how far behind national benchmarks the state currently sits on this specific indicator.

On the fiscal side, national Jal Jeevan Mission expenditure has shown a notably uneven implementation pace: the 2025-26 budget estimate for the mission nationally was Rs 67,000 crore, but revised spending came in at only Rs 17,000 crore, while expenditure in 2024-25 stood at approximately Rs 22,615 crore against a similarly ambitious original allocation (Business Standard, cited in this chapter's research, 2026). Cumulative national expenditure since the mission's 2019 launch has crossed Rs 3.6 lakh crore, and the Union Budget 2023-24 extended the mission's overall completion timeline to 2028 specifically in recognition that the original 2024 target would not be met nationally (TarunIAS, cited in this chapter's research, 2025). This pattern, of budgeted allocations substantially exceeding actual utilization at the national level, suggests implementation bottlenecks, procurement delays, or capacity constraints at the state and local level are slowing the pace at which centrally allocated water infrastructure funds can actually be spent, a national finding Karnataka's own Rural Development and Panchayati Raj Department should specifically audit its own utilization rate against, given both the direct relevance to the state's own rural water infrastructure ambitions and the state's own specifically poor coverage performance documented above.

10.2 Irrigation Infrastructure: Command Area, Efficiency and Water-Use Productivity

As established in Chapter 3, only about 26.5 percent of Karnataka's sown area benefits from irrigation, leaving the substantial majority of the state's roughly 123,100 square kilometers of cultivated land dependent on monsoon rainfall (Wikipedia, 2026), a constraint with direct

bearing on the agricultural volatility documented in that chapter and the drought risk profile documented in Chapter 14, and a clear priority area for future capital investment given the fiscal space discussed in Chapter 2.

The single most significant irrigation project intended to address this gap for Karnataka's most drought-prone districts is the Upper Krishna Project, and its multi-decade history offers one of this Framework's most extreme and most consequential illustrations of the diagnosis-versus-delivery gap this document has now documented across nearly every sector. The Upper Krishna Project is designed to bring irrigation to the drought-prone districts of Vijayapura, Bagalkot, Kalaburagi, Yadgir, and Raichur, precisely the same north Karnataka districts identified throughout Chapters 1, 6, and 12 as facing the state's most acute poverty, malnutrition, and health deprivation, through construction of the Almatti and Narayanpur dams and an extensive irrigation canal network across the Krishna River (Wikipedia, cited in this chapter's research; Deccan Chronicle, cited in this chapter's research, 2025). The project was originally designed to irrigate 1,536,000 acres, or roughly 6,220 square kilometres, of land, with its Stage II component alone using 54 thousand million cubic feet of water to irrigate 1,971.20 square kilometres through a combination of gravity-flow canals and lift irrigation schemes at Rampur, Indi, and Mulwad (Wikipedia, cited in this chapter's research).

The project's central, currently unresolved bottleneck concerns the height of the Almatti Dam, formally known as the Lal Bahadur Shastri Dam, located in Vijayapura district. Karnataka has proposed raising the dam's height from its current 519.6 metres to 524.256 metres, which would expand its storage capacity from 173 to 300 thousand million cubic feet and allow the state to fully utilise its entitlement of 911 thousand million cubic feet awarded under the Krishna Water Disputes Tribunal, bringing irrigation to nearly 14.7 lakh acres of drought-prone farmland across the five districts named above (Insights on India, cited in this chapter's research, 2025; Deccan Herald, cited in this chapter's research, 2025). This is not a recently conceived proposal; Karnataka first sought Supreme Court approval to raise the Almatti Dam's height as far back as 2000, a petition the court rejected at the time, and disputes over the dam's height and storage capacity, principally between Karnataka as the upstream riparian state and Andhra Pradesh and Maharashtra as downstream and co-basin states concerned about reduced water flow to their own territories, trace back through multiple Krishna Water Disputes Tribunals dating to the tribunal's original 1969 constitution under the Inter-State Water Disputes Act, 1956 (The South First, cited in this chapter's research, 2023; Prepp, cited in this chapter's research, 2023). A second tribunal, chaired by former Supreme Court Justice Brijesh Kumar, was constituted in 2004 specifically to resolve the allocation of Krishna River's surplus water among Karnataka, Maharashtra, and the then-united Andhra Pradesh (The South First, cited in this chapter's research, 2023).

Despite the Krishna Water Disputes Tribunal-II having, according to Chief Minister Siddaramaiah's own public statements, already formally allowed Karnataka to raise the Almatti Dam's height, the project remains stalled specifically because the Union government has not yet issued the final Gazette notification of the tribunal's award, a purely administrative step without which the state cannot legally proceed with construction (Deccan

Chronicle, cited in this chapter's research, 2025). Siddaramaiah has repeatedly and publicly pressed this specific demand with the Union government, including during a visit to Almatti to perform Gangapooja, and has recounted direct meetings with the Prime Minister and Union Ministers, alongside Chief Minister D.K. Shivakumar, specifically to press for this notification's release (Deccan Chronicle, cited in this chapter's research, 2025). This is directly analogous in structure, though it concerns a different Union ministry and legal mechanism, to the Karnataka State Action Plan on Climate Change's own three-year approval delay documented in Chapter 14, and to the Sixteenth Finance Commission devolution negotiations documented in Chapter 2: in all three cases, Karnataka has a policy or infrastructure priority that has already cleared its substantive legal or technical hurdle, tribunal approval, plan drafting, devolution formula submission, and remains stuck specifically at the level of a discrete administrative or political step the Union government controls, a pattern that suggests Karnataka's Centre-state coordination on major infrastructure and policy approvals is a genuinely recurring structural friction point across multiple, otherwise unrelated, sectors.

Even where central approval has advanced, however, the Upper Krishna Project's implementation has separately stalled on a wholly state-level, domestic obstacle: land acquisition and compensation. Of the 1.33 lakh acres of land required for the project's continued construction, Chief Minister D.K. Shivakumar has acknowledged that compensation has been finalised in only a fraction of cases, with nearly 45,000 landowners having turned to the courts seeking higher payouts, and the project's Almatti Dam expansion specifically would require submerging 20 villages and 10 wards of Bagalkot situated in the dam's backwaters, a resettlement and rehabilitation challenge of considerable human and administrative scale (Deccan Herald, cited in this chapter's research, editorial). As far back as January 2020, then Chief Minister Govind Karjol sought a Rs 20,000 crore budget allocation specifically for the project's Stage III, and separately requested the state depute a dedicated team of 100 personnel, including rehabilitation officers and special land acquisition officers, to accelerate exactly this resettlement and land acquisition process (Deccan Herald, cited in this chapter's research, 2020). A Deccan Herald editorial published in 2025, more than five years after that staffing request, described the project as one that has remained "entangled in disputes over land acquisition and compensation" for "decades" despite being conceived as a lifeline for North Karnataka's parched districts, and characterized allowing the project to "drown in a sea of litigation" as an "unforgivable failure" (Deccan Herald, cited in this chapter's research, editorial). This closely mirrors the pattern this Framework has already documented for the Peripheral Ring Road in Chapter 8, where land acquisition, rather than the underlying engineering or funding, has proven the binding constraint on project delivery, and it reinforces this Framework's broader, cross-sectoral finding that Karnataka's institutional capacity for large-scale, contested land acquisition specifically, whether for roads, irrigation, or industrial corridors, represents a distinct and recurring state-level execution bottleneck deserving dedicated attention in its own right, separate from whichever specific sector's infrastructure happens to be affected in any given case.

Karnataka's second major stalled irrigation and drinking water initiative for its northern districts is the Kalasa-Banduri Nala project in the Mahadayi river basin, intended to divert water for drinking water supply to the Malaprabha basin districts, though this project has generated its own separate, long-running inter-state dispute with Goa, whose representatives have publicly and pointedly criticized Karnataka's dam-building plans on the river (The South First, cited in this chapter's research, 2023). Then Chief Minister Basavaraj Bommai secured Central Water Commission approval for the Kalasa-Banduri Nala project's Detailed Project Report, a step reported at the time as carrying direct electoral significance for the ruling party's prospects in North Karnataka specifically, given that both the Kalasa-Banduri Nala and Upper Krishna projects have been promised by successive governments of multiple political parties in their election manifestos for over two decades without full delivery (The South First, cited in this chapter's research, 2023). This is a further, independently sourced confirmation of the pattern already established through the Upper Krishna Project's history: North Karnataka's two flagship irrigation initiatives have both been political promises across successive election cycles and successive governing parties for more than twenty years, yet both remain incomplete, entangled respectively in Centre-state notification delays and land acquisition litigation on one hand, and inter-state river dispute litigation with Goa on the other.

Karnataka's state government itself has now formally acknowledged the scale of this problem in aggregate terms: the state currently has 17 separate inter-state river water disputes pending before courts and tribunals, spanning the Krishna, Mahadayi, and other river systems, with delays in issuing final tribunal notifications and granting environmental clearances from the Centre identified as the major roadblocks preventing on-ground construction work across multiple of these disputed projects simultaneously (The Federal, cited in this chapter's research, 2026). This figure, 17 concurrent inter-state water disputes, is a striking, precisely quantified illustration of the scale of Karnataka's irrigation infrastructure logjam, and it directly explains why the state's own irrigation coverage has remained stuck at roughly 26.5 percent of sown area despite decades of stated political commitment to expanding it, since a meaningful share of the state's planned additional irrigation capacity is legally tied up in exactly these kinds of multi-state or Centre-state disputes rather than awaiting only construction funding or engineering work. This is arguably the single most consequential, if least visible, finding in this entire Framework's water and agriculture chapters: Karnataka's irrigation gap, and by extension its documented agricultural volatility in Chapter 3 and its drought exposure in Chapter 14, is not primarily a funding or engineering problem but a legal and inter-governmental coordination problem operating across 17 separate disputes, meaning the single highest-leverage action available to state leadership on irrigation may well be a dedicated, senior-level, sustained diplomatic and legal effort to resolve or accelerate these specific disputes, rather than further budget allocation to projects that cannot legally proceed regardless of available funding.

Nationally, domestic water consumption accounts for a relatively modest 5 to 7 percent of annual freshwater withdrawals, while agriculture dominates total water use at approximately 85 percent (India Water Portal, cited in this chapter's research, 2025), meaning that even

substantial gains in rural drinking water supply coverage of the kind documented in section 10.1 above would have only a marginal effect on the state's overall water balance compared to improvements in agricultural irrigation efficiency specifically. This underscores why the irrigation investment priority identified in Chapter 3, Chapter 18, and Chapter 21 of this Framework should be treated as the single highest-leverage water sector intervention available to Karnataka, ahead of further urban or rural drinking water supply investment, purely on the basis of the scale of water consumption each sector represents, even though, as this section has now shown, the primary obstacle to realizing that intervention is legal and diplomatic rather than financial.

10.3 Sanitation and Open Defecation Free Status: Post-ODF Sustainability

Karnataka's public toilet infrastructure, while extensive on paper, shows a genuinely alarming quality collapse in its most recent independent national assessment. Under the Swachh Survekshan 2025 survey, Bengaluru's public toilets rated as clean fell from 87 percent in the previous year's assessment to just 27 percent, one of the sharpest single-year deteriorations recorded in any indicator across this entire Framework (NewsBytesApp, cited in this chapter's research, 2025). This collapse occurred even as the city maintained strong performance on two other sanitation-adjacent indicators, solid waste collection at 99 percent and waste processing at 81 percent, and even as source segregation, the practice of separating wet and dry waste at the household level before collection, fell from 99 percent to 82 percent over the same period (NewsBytesApp, cited in this chapter's research, 2025). This combination, a near-collapse in public toilet cleanliness alongside a comparatively modest decline in source segregation and continued strength in raw collection rates, indicates the failure is specifically one of facility maintenance and post-construction upkeep, not of the underlying sanitation infrastructure build-out itself, a distinction with direct relevance for where corrective state investment should be targeted. This finding should also be read against the earlier, more favourable NITI Aayog assessment that Karnataka's household access to sanitation exceeds the national average as of 2019-21; that figure captures household toilet access, a fundamentally different metric from public toilet facility maintenance in the state's largest city, and the two should not be conflated when briefing ministers on the state's overall sanitation performance.

10.4 Solid Waste Management: Municipal, Biomedical and Hazardous Waste

Karnataka's solid waste management performance can now be assessed with considerable precision and currency, and the picture that emerges is markedly more concerning than earlier drafts of this Framework indicated. Under the Swachh Survekshan 2025 cleanliness survey, conducted by the Quality Council of India and covering over 4,000 cities nationally, Bengaluru was ranked as the fifth dirtiest city in India among cities with populations exceeding one million, falling to 36th position out of 40 cities in that population category, and dropping to 15th place even within Karnataka's own state rankings (NewsBytesApp, cited in this chapter's research, 2025; Deccan Herald, cited in this chapter's research, 2025). Bengaluru shared this bottom tier with Madurai, Ludhiana, Chennai, and Ranchi, while

smaller Indian towns, which frequently lack Bengaluru's fiscal resources, outperformed the city substantially, a pattern independent commentary specifically noted as proof that resource availability alone does not guarantee municipal cleanliness outcomes (Aç South Asia, cited in this chapter's research, 2025; Entertaes, cited in this chapter's research, 2025). This is a historically consistent pattern rather than a one-off result: Bengaluru ranked a lowly 43rd out of 45 cities in the 2022 Swachh Survekshan garbage-free city category despite the Bruhat Bengaluru Mahanagara Palike spending nearly Rs 1,500 crore annually on solid waste management, with ministry assessors at the time specifically citing a poor citizen grievance redress system and inadequate public toilet cleanliness as key weaknesses (Deccan Herald, cited in this chapter's research, 2022), and the city ranked 194th nationally and 14th within Karnataka in the 2019 survey, behind Andhra Pradesh, Telangana, and Tamil Nadu at the state level, with officials at the time attributing the poor showing specifically to inadequate garbage segregation enforcement and delayed Open Defecation Free certification (Deccan Herald, cited in this chapter's research, 2019).

This is not a story of uniform state-level failure, however, and the contrast within Karnataka's own municipal cohort is instructive for policy design. Mysuru City Corporation was rated the third cleanest city nationally among cities with over ten lakh population in the 2019 survey (Deccan Herald, cited in this chapter's research, 2019), and went on to win a five-star rating in the Garbage Free City category during the 2021 survey cycle, when Karnataka as a whole climbed 12 positions to 9th place nationally and was awarded the "Fastest Mover State" recognition, with Tumakuru and Hubballi-Dharwad separately earning three-star Garbage Free City ratings and Hubballi-Dharwad additionally winning a Fastest Mover award in the medium-city category (Deccan Herald, cited in this chapter's research, 2021). This means the same state government administrative and regulatory framework has produced both a nationally recognized cleanliness leader in Mysuru and one of India's most persistently poorly performing large cities in Bengaluru, a divergence that cannot be explained by state-level policy alone and points instead to a specific institutional and municipal governance failure concentrated in Bengaluru's own civic administration.

The state government's own response to the 2025 result confirms this diagnosis. Following Bengaluru's poor Swachh Survekshan 2025 showing, the state government moved to strip Bengaluru Solid Waste Management Limited, a company formed only three years earlier specifically to professionally manage the city's solid waste system after it had previously been controlled by what state officials themselves described as a "garbage mafia," of its household and commercial waste collection responsibilities (Deccan Herald, cited in this chapter's research, 2025). Collection responsibility was transferred directly to the Bruhat Bengaluru Mahanagara Palike's zonal commissioners, with an eventual shift planned to the five new city corporations set to be carved out of Bengaluru's civic administration as documented in Chapter 11, while Bengaluru Solid Waste Management Limited was directed to refocus solely on waste processing and landfill management (Deccan Herald, cited in this chapter's research, 2025). This decision, taken at a review meeting chaired directly by Chief Minister D.K. Shivakumar and attended by the state's Chief Secretary, represents a significant, high-level admission that the institutional model adopted just three years prior

had failed to deliver the professionalization it was created for, and is a directly relevant case study for any minister considering similar public-private or specialized-agency restructuring in other service delivery domains covered elsewhere in this Framework, including the ESCOM sector discussed in Chapter 2. Separately, and in what reads as a related but more incremental civic response, the Bruhat Bengaluru Mahanagara Palike has also been deliberately reducing the number of public wayside waste bins across the city, including on high-footfall commercial streets such as MG Road, on the stated rationale of encouraging citizens to dispose of household waste at home rather than allow public bins to become uncollected "black spots," a policy that has drawn criticism from business owners and civic activists in areas experiencing heavy pedestrian traffic (Deccan Herald, cited in this chapter's research, 2025).

Taken together, these findings support a specific, actionable conclusion for ministerial attention: Karnataka's solid waste management challenge is not primarily a resource or policy design problem at the state level, since the state's own Mysuru and Hubballi-Dharwad municipal corporations have demonstrated that strong, nationally recognized outcomes are achievable within the existing regulatory framework. The challenge is specifically one of Bengaluru's own civic execution capacity, now compounded by an admitted institutional design failure in the Bengaluru Solid Waste Management Limited model, and the state's ongoing plan to split Bengaluru into five separate city corporations, documented in Chapter 11, should be evaluated explicitly against whether it is likely to replicate the smaller-scale civic accountability that appears to have driven Mysuru's and Hubballi-Dharwad's success, rather than treated as a purely administrative reorganization exercise.

10.5 Liquid Waste and Sewerage: Urban and Peri-Urban Treatment Infrastructure

Bengaluru's sewage treatment infrastructure, managed by the Bangalore Water Supply and Sewerage Board, illustrates a persistent and well-documented pattern of capacity expansion consistently running behind the city's growing wastewater generation. As of mid-2025, BWSSB operated 34 sewage treatment plants with a combined capacity of 1,348.5 million litres per day, and was working to add a further 470 million litres per day of capacity across 26 new plants by the end of 2025, a planned 35 percent capacity increase that would bring total treatment capacity to 1,818.5 million litres per day (Water Digest, cited in this chapter's research, 2025). The single largest of these planned new facilities is a 150 million litre per day plant at Vrishabhavathi Valley on Mysuru Road, followed by two 60 million litre per day plants at Hebbal and Horamavu (Water Digest, cited in this chapter's research, 2025). Notably, 14 of these 26 new plants, with a combined capacity of 124 million litres per day, are specifically intended to serve 110 villages that were formally added to the Bruhat Bengaluru Mahanagara Palike's jurisdiction in 2008 but had, as of 2025, still not received underground drainage connections nearly two decades later, despite having received Cauvery water supply connections only in October 2024 (Deccan Herald, cited in this chapter's research, 2025; Water Digest, cited in this chapter's research, 2025).

This 110-village case is a genuinely striking illustration of infrastructure sequencing failure worth flagging explicitly for ministerial attention: residents in these areas were incorporated into Bengaluru's formal municipal boundary in 2008, some had reportedly paid for sewage connections as early as 2019, yet as of the most recent reporting reviewed for this chapter, sewage lines remained non-operational pending completion of the associated treatment plants, with BWSSB's own chairman confirming that pipelines had been laid and connections awaited only the plants' completion, expected by December 2025 (Deccan Herald, cited in this chapter's research, 2025). Lake conservation volunteers in these areas have specifically raised concerns that, absent these treatment plants, sewage continues to pollute local waterbodies (Deccan Herald, cited in this chapter's research, 2025), a direct and quantifiable link to the water body and wetland health concerns discussed in Chapter 13.

This capacity-versus-demand gap is not a new phenomenon but a multi-year pattern documented across successive reporting cycles. As of 2022, Bengaluru was estimated to generate approximately 1,440 million litres of sewage daily, of which only about 1,000 million litres, or roughly 69 percent, was actually being treated, with the National Green Tribunal having already directed BWSSB to eliminate all untreated sewage discharge into lakes and river valleys by September 2020, a deadline the board acknowledged it would miss, subsequently revising its own target to 2024 (Deccan Herald, cited in this chapter's research, 2022). That same 2022 reporting revealed that even where treatment plants existed, several were operating substantially below their rated capacity: the Hebbal plant, rated to treat 100 million litres per day, was processing only 49.01 million litres, the two K.R. Puram plants combined were processing just 16.6 million litres against a combined capacity of 40 million litres, and the Kengeri plant, with a 180 million litre per day capacity, was processing only 10 million litres (Deccan Herald, cited in this chapter's research, 2022). This underutilization pattern, treatment plants standing built but substantially idle, is arguably a more concerning finding than the raw capacity shortfall itself, since it indicates the constraint is not solely one of insufficient built infrastructure but also of incomplete sewer network connections feeding into that infrastructure, inadequate plant commissioning, or operational and maintenance capacity gaps within BWSSB itself.

Set against this backdrop, official statements about the pace of progress toward full treatment coverage have shown a consistent pattern of slipping timelines. In a 2018 statement, the state's Bengaluru Development and Town Planning Minister projected the city would treat 80 percent of its wastewater by March 2018 and reach 100 percent treatment capacity by 2020 (Deccan Herald, cited in this chapter's research, 2018); by 2022, actual treatment stood at roughly 69 percent of generated sewage, and by 2025, full underground drainage coverage for even the 110 villages added to the city's boundary in 2008 remained incomplete. This repeated pattern of missed deadlines, from 2018's projected 2020 completion, to the National Green Tribunal's own September 2020 deadline, to BWSSB's subsequently revised 2024 target, to the still-pending December 2025 completion of the 110-village drainage connections, is directly comparable to the Upper Krishna Project's decades-long delay documented in section 10.2 above, the taluk administrative building implementation gap documented in Chapter 1, and the state-commissioned ESCOM reform blueprint documented

in Chapter 2 as having gone substantially unimplemented: across multiple, unrelated sectors covered in this Framework, Karnataka's state and municipal bodies show a consistent institutional pattern of announcing ambitious completion timelines that are then revised downward and missed repeatedly, rather than a sector-specific water and sanitation problem alone. This cross-sectoral pattern, appearing independently in administrative infrastructure, power sector reform, irrigation, and wastewater treatment alike, is one of the single most important governance findings in this entire Framework, and warrants a dedicated, government-wide project delivery audit rather than being addressed piecemeal within each sector's own chapter.

A partial, more encouraging counterpoint exists in the state's efforts at water reuse: as of 2022, BWSSB reported that of the roughly 1,443 million litres of wastewater generated daily against 1,800 million litres of water supplied, approximately 721 million litres of treated wastewater was already being reused, funded partly through the central government's Mega City Revolving Fund alongside state and BWSSB contributions, at a cost of Rs 1,202 crore for four specific treatment plants at Koramangala, Challaghatta valley, Vrishabhavathi valley, and Doddabala (Deccan Herald, cited in this chapter's research, 2022). This demonstrates that where treatment capacity is actually built and operational, Bengaluru has shown a genuine capacity for productive wastewater reuse, reinforcing that the core policy challenge here is one of completing and properly operating planned infrastructure, rather than a fundamental absence of technical capability or institutional intent.

Reading all five sections of this chapter together, water and sanitation emerges as the sector where this Framework's recurring diagnosis-versus-delivery finding is most starkly and most consequentially illustrated. Karnataka's rural tap water coverage, at 38.3 percent against a 79.74 percent national average, is a specific, quantified underperformance against the state's own 2022-23 target. Its flagship North Karnataka irrigation project has been a cross-party election promise for over two decades while remaining entangled in Centre-state notification delays and land acquisition litigation. Its capital city's sewage treatment capacity has missed every publicly announced completion deadline since at least 2018. And its solid waste management performance in Bengaluru specifically has deteriorated sharply even as two of its other major cities have won national recognition for cleanliness using the same underlying state framework. Given the direct linkage between each of these findings and the human development, agricultural, and public health outcomes documented throughout the rest of this Framework, particularly in Chapters 1, 3, 6, 13, and 14, this chapter's overall conclusion is that water and sanitation infrastructure delivery, more than any other single sector covered in this document, deserves to be treated as a distinct, dedicated, closely monitored priority in its own right for the remainder of this decade, rather than as one line item among many in the state's broader infrastructure agenda.

Chapter 11: Urban Development, Housing and Smart Cities

11.1 Urbanisation Trends and Urban Governance Architecture

As of the 2011 Census, 38.67 percent of Karnataka's population lived in urban areas, with an urban sex ratio of 963 females per 1,000 males, slightly below the state's overall rural-inclusive figure of 973 (Census of India, 2011, as cited in CensusOfIndia.net, 2026). Karnataka's urban governance rests on 314 urban local bodies statewide (The Better India, 2026), ranging from the state's newly restructured capital city governance framework, discussed in detail below, down to small town municipalities in the state's less urbanized northern districts. This two-decade-old count of urban local bodies, largely unchanged in headline number even as Bengaluru's own internal structure has been fundamentally redrawn, is itself a useful reminder that the scale of institutional churn described in this chapter has, so far, been concentrated almost entirely in the capital rather than distributed evenly across the state's urban hierarchy; Mysuru, Hubballi-Dharwad, Mangaluru, and Belagavi continue to operate as single municipal corporations under the pre-existing Karnataka Municipal Corporations Act framework, a point worth holding in mind throughout this chapter, since much of what follows concerns Bengaluru specifically rather than Karnataka's urban system as a whole.

Karnataka's urban governance architecture underwent its single most significant transformation in decades during 2025, with the dissolution of the Bruhat Bengaluru Mahanagara Palike, the body that had governed the capital since 2007. The Greater Bengaluru Governance Bill was introduced in the Karnataka Legislative Assembly on July 23, 2024, following recommendations from a Brand Bengaluru Committee constituted in 2023, itself a reconstitution of an earlier three-member expert committee the state government had set up in 2014 to examine Bengaluru's governance structure (PRS Legislative Research, cited in this chapter's research, 2026; Observer Research Foundation, cited in this chapter's research, 2025). The bill passed both houses of the state legislature on March 10, 2025, received the Governor's assent on April 23, 2025, and was formally published as the Greater Bengaluru Governance Act, 2024, Karnataka Act No. 36 of 2025 (Wikipedia, 2026; PRS Legislative Research, cited in this chapter's research, 2026).

The reform's stated rationale, as captured in the Act itself, was that Bengaluru's civic agencies, including the Bangalore Development Authority and Bangalore Metropolitan Development Authority for land-use planning, the Bangalore Water Supply and Sewerage Board for water and wastewater, the Bengaluru Metropolitan Transport Corporation for city transport, and the Lake Development Authority for lake upkeep, had been operating in silos, sharing neither information, nor manpower, nor money, producing inefficiencies, disinterest in other agencies' problems, duplication of effort, and overall poor service delivery (Observer Research Foundation, cited in this chapter's research, 2025). A single municipal body covering more than 12 million people across the BBMP's original 243 wards had, by the state government's own assessment, become too unwieldy to deliver consistent services, particularly since planning, transport, and waste management decisions routinely cut across

ward boundaries and required a coordinating body with authority spanning the whole metropolitan area (PropNewz, cited in this chapter's research, 2026). This governance failure diagnosis connects directly to the solid waste management findings of Chapter 10, where Bengaluru's poor Swachh Survekshan 2025 performance was traced specifically to civic execution and institutional design failures rather than resource constraints. As section 11.7 below documents, the same silo diagnosis applies to stormwater governance, where at least five separate agencies hold overlapping responsibility for a single drainage network.

The new structure establishes a three-tier system: the Greater Bengaluru Authority as an apex coordinating body chaired by the Chief Minister, with a Chief Commissioner serving as member secretary and an Executive Committee assisting with daily functions; five newly constituted City Corporations governing distinct geographic zones; and ward committees at the grassroots level (ClearTax, cited in this chapter's research, 2025; Wikipedia, 2026). The Greater Bengaluru Authority was formally established on May 15, 2025, and the actual handover from BBMP took place on September 2, 2025, when the 75-member GBA was notified with M. Maheshwar Rao appointed as Chief Commissioner (PropNewz, cited in this chapter's research, 2026; BookNewProperty, cited in this chapter's research, 2025). The GBA is chaired ex officio by the Chief Minister, currently Siddaramaiah, with the Deputy Chief Minister serving as Vice-Chair, and its membership of 75 draws together state ministers, Members of Parliament, Members of the Legislative Assembly, the mayors of the five corporations, and the heads of key civic infrastructure agencies, while a separate Executive Committee headed by the Bengaluru Development Minister manages day-to-day coordination between meetings of the full Authority (BookNewProperty, cited in this chapter's research, 2025; Vault PropTech, cited in this chapter's research, 2026). Unlike the BBMP's earlier four-tier model, the new law abolishes the intermediate zonal committee and area sabha layers, streamlining the structure to the three tiers of GBA, city corporation, and ward committee described above (BookNewProperty, cited in this chapter's research, 2025). The Authority is headquartered at the historic Kempegowda Civic Centre on Hudson Circle, previously the BBMP's own head office, and its coordinating mandate explicitly spans the Bangalore Development Authority for land development, BWSSB for water and sewerage, BESCOM for electricity distribution, BMRL for Metro expansion, and BMTC for bus transport, with any project that crosses corporation boundaries, including Metro expansion, the Peripheral Ring Road, and major flood-management works, required to be reviewed and approved at the GBA level rather than by any single corporation acting alone (Vault PropTech, cited in this chapter's research, 2026).

The five resulting City Corporations, Bengaluru North, South, East, West, and Central, were established following a formal delimitation exercise that expanded and reorganized the BBMP's original 198 wards into 369 wards distributed across the five bodies (Wikipedia, 2026). The distribution of these 369 wards across the five corporations is markedly uneven, reflecting the underlying population and geographic differences between zones: Bengaluru West carries the largest council with 112 seats, Bengaluru South and Bengaluru East each hold 72 seats, Bengaluru Central holds 63 seats, and Bengaluru East, covering the Mahadevapura, Whitefield, and KR Puram belt, holds 50 seats (Wikipedia, 2026). Each

corporation is designed to be headed by its own elected Mayor and IAS Commissioner, a structural departure from the BBMP's single-Mayor model (BookNewProperty, cited in this chapter's research, 2025), and the Act specifies that any future corporation must meet a minimum population of 10 lakh, a minimum density of 5,000 persons per square kilometre, a minimum revenue generation capacity of Rs 300 crore, and at least 50 percent employment in non-agricultural activities, though the state government retains authority to alter corporation boundaries at its own discretion at any time (Observer Research Foundation, cited in this chapter's research, 2025).

This reform has drawn substantive political and civic opposition worth noting for a balanced ministerial assessment. Opposition BJP leaders have characterized the restructuring as "unconstitutional," alleging the fragmentation primarily serves political rather than administrative objectives, and civic campaigner Prakash Belawadi has publicly announced intent to legally challenge the Act on constitutional grounds relating to municipal self-governance provisions (BookNewProperty, cited in this chapter's research, 2025; PropNewz, cited in this chapter's research, 2026). Independent legal analysis of the bill as originally introduced identified a specific structural risk: an overlap between the powers of the new city corporations and Bengaluru's existing statutory authorities, precisely the coordination problem the reform was meant to solve, suggesting the overlap issue may not have been fully resolved even in the version ultimately passed (PRS Legislative Research, cited in this chapter's research, 2026). On the other side of this debate, some citizen groups have responded more favourably; Whitefield Rising, a prominent Bengaluru resident welfare and civic advocacy group, welcomed the creation of smaller, more geographically focused corporations as likely to respond better to hyperlocal needs in areas such as Whitefield, Jayanagar, and Yelahanka (BookNewProperty, cited in this chapter's research, 2025). It is also worth noting, as a matter of democratic accountability, that Bengaluru had been operating without an elected local government at all for over four years prior to this reform, governed instead by a state-appointed administrator, since the BBMP's own elected council term had expired without the constitutionally mandated election being held within the required six-month window (Mongabay India, cited in this chapter's research, 2024). For state leadership, the central question this reform now poses is empirical rather than political: whether five smaller, independently elected corporations can replicate the kind of civic accountability and cleanliness outcomes that Mysuru and Hubballi-Dharwad, Karnataka's own better-performing municipal corporations documented in Chapter 10, have already demonstrated at a comparable population scale, an outcome this Framework recommends the state track explicitly against Bengaluru's Swachh Survekshan and citizen grievance redressal performance over the next several assessment cycles, given that four-year democratic deficit as important context for why this reform was considered necessary in the first place.

The governance transition described above has now moved into its most consequential phase for democratic accountability: the actual election of mayors and councillors to the five new corporations. As of this update, no elected representative has taken office in any of the five bodies since their formal notification on September 2, 2025; each corporation continues to be run by its IAS Municipal Commissioner under the overall administrative authority of Chief

Commissioner M. Maheshwar Rao, with the Mayor, Deputy Mayor, and Leader of the Opposition posts vacant across all five corporations (Wikipedia, 2026). This extends Bengaluru's period without elected municipal government, which began when the BBMP council's term lapsed without the constitutionally mandated election being held, and which by the time any new corporation actually seats an elected Mayor will likely have stretched past eleven years since the last full civic poll, held in 2015 (Wikipedia, 2026).

The state government has notified the Greater Bengaluru Governance (Elections) Rules, 2025, and the Voters Registration Rules, 2025, and the State Election Commission has begun preparing ward-wise electoral rolls, with the government publicly targeting elections by August 2026 (Wikipedia, 2026; Deccan Herald, cited in this chapter's research, 2026). This election timeline has itself become a point of political contention. In mid-2026 the state's Urban Development Department was compelled to publicly deny opposition allegations that a proposed Greater Bengaluru Governance (Second Amendment) Bill, 2025, which would allow nomination of at least one resident representative for every 20,000 population in newly added local areas not yet covered by ward delimitation, was a device to indefinitely delay elections or dilute elected representation (Deccan Herald, cited in this chapter's research, 2026). The department clarified that this nomination provision applies only to areas subsequently annexed into the GBA's boundary after the original 369-ward delimitation was notified, and that the amendment separately imposes a mandatory timeline requiring any newly included area to be re-delimited within three months and go to election within six months of inclusion (Deccan Herald, cited in this chapter's research, 2026). For state leadership, this episode is a useful early signal of how contested the transition will remain even after the administrative handover is complete: procedural questions about representation in boundary areas are likely to recur each time the state exercises its retained discretion, noted above, to alter corporation boundaries.

Beyond the electoral question, the transition carries substantial administrative friction that ministers should track as a distinct risk from the governance-design questions already discussed. The former BBMP's employee base, physical assets, and outstanding liabilities must now be apportioned across five newly constituted corporations, a redistribution exercise that industry analysts have flagged as a significant near-term operational hurdle, alongside the parallel challenge of maintaining continuity in day-to-day services such as garbage collection and road maintenance throughout the transition (BookNewProperty, cited in this chapter's research, 2025). This coordinating role is, in effect, the institutional answer the Act proposes to the original silo problem documented above; whether it functions as intended will only become clear once elected mayors, rather than administrators, are actually making decisions within each corporation.

11.2 Urban Local Bodies: Financial Health, Capacity and Service Delivery

Property tax administration in the new Greater Bengaluru structure continues, at least during the ongoing transition phase, to use the existing Unit Area Value system previously employed by BBMP, with tax rates determined by the state government in consultation with the GBA

and local collection handled by the ward committees; the bbmptax.karnataka.gov.in portal remains the active payment channel even though the underlying governing authority has changed (PropNewz, cited in this chapter's research, 2026). This continuity in revenue administration during a period of significant institutional upheaval is a sensible transitional design choice, though it also means the new corporations inherit the BBMP's existing revenue base and collection challenges rather than starting with a clean fiscal slate, a point worth flagging given the AMRUT-era finding documented earlier in this Framework that Karnataka's 27 original mission cities were required to contribute 30 to 47 percent of project costs themselves, placing real strain on municipal finances even before this latest restructuring.

Karnataka's own experience under the AMRUT mission illustrates the capacity constraints facing its ULBs more broadly. Twenty-seven Karnataka cities included in the original Atal Mission were required to contribute between 30 and 47 percent of project costs, with an approved project expenditure of Rs 1,258 crore, split across water supply augmentation, Rs 552 crore, sewerage projects, Rs 613 crore, storm water drains, Rs 49 crore, green spaces and parks, Rs 28 crore, and urban transport, Rs 18 crore (Government of Karnataka AMRUT data, as cited in an academic case study, reference year 2016-17). Within this same cohort, household water tap coverage varied enormously, from 18 percent in Chikkamagaluru to 87 percent in Mandya, and none of the 27 mission cities met the national norm of 135 litres per capita per day for water supply, with actual supply ranging from 35 lpcd in Robertsonpet to 106 lpcd in Ranebennur (OIDA International Journal of Sustainable Development, cited study). These figures are dated to the mission's original implementation period and should be updated against current AMRUT 2.0 progress data for Karnataka before use in a current briefing, but they usefully illustrate the scale of intra-state service delivery disparity that likely persists, and they are directly relevant background for the urban water security discussion in section 11.7 below.

At the national level, the fiscal environment for urban local bodies has tightened. The Ministry of Housing and Urban Affairs' overall allocation fell from Rs 96,777 crore to Rs 85,522 crore between the 2025-26 and 2026-27 Union Budgets, with AMRUT funding falling from Rs 10,000 crore to Rs 8,000 crore and metro and mass rapid transit allocation falling from Rs 31,239 crore to Rs 28,740 crore over the same period (The Statesman, 2026). This national fiscal contraction has direct implications for Karnataka's own urban infrastructure financing plans, particularly for AMRUT-linked water and sewerage projects and for continued Namma Metro expansion discussed in Chapter 8, and arrives at precisely the moment the state's largest city is absorbing the administrative cost of the five-way governance split described above.

11.3 Housing: Demand Assessment, Affordability and Flagship Schemes

Nationally, Pradhan Mantri Awas Yojana-Urban 2.0 was launched in September 2024 specifically to accelerate delivery, deepen inclusion, and address the gaps that had emerged under the original scheme, including application backlogs, slow verification, construction

delays, and limited beneficiary awareness (DD News, cited in this chapter's research, 2025). Under this revamped 2.0 phase, an additional one crore urban families nationally are targeted to receive financial support of up to Rs 2.50 lakh each to build or purchase a permanent house, with explicit priority given to vulnerable groups including slum dwellers, street vendors, and artisans (DD News, cited in this chapter's research, 2025). To accelerate implementation, the Ministry of Housing and Urban Affairs ran the Angikaar 2025 last-mile outreach campaign from September 4 to October 31, 2025, including a "PM Awas Mela – Shehri" event series offering help desks, on-the-spot verification, and loan melas, with 2026 guidelines already published for a follow-on Angikaar 2026 campaign (DD News, cited in this chapter's research, 2025; PMAY-Urban, cited in this chapter's research, 2026). Karnataka-specific PMAY-Urban 2.0 completion figures, and the state's specific allocation and utilization under this revamped scheme, were not confirmed with sufficient precision in this chapter's sources and should be drawn from the PMAY-U dashboard's state-wise data directly, though the scheme's explicit targeting of slum dwellers is directly relevant to the 32.91 lakh slum population documented in section 11.6 below.

One structural component of PMAY-Urban 2.0 that deserves particular attention for Karnataka's own planning is the In-Situ Slum Redevelopment component, which uses land itself as the primary redevelopment resource. It applies to slums located on central government, state government, or urban local body land, and pairs a central slum-rehabilitation grant of approximately Rs 1 lakh per house with additional Floor Space Index, Floor Area Ratio, or Transferable Development Rights incentives that states and cities can extend to private developers to make redevelopment financially viable, with land cost explicitly excluded from the central government's own charges under the scheme (PMAY-Urban ISSR, cited in this chapter's research, 2025). For slums situated on privately owned land, the same additional-FSI or TDR incentive structure is available to the landowner directly rather than to a third-party developer (PMAY-Urban ISSR, cited in this chapter's research, 2025). This framework is discussed further, with reference to Bengaluru's own implementation history, in section 11.6 below.

Separately, Karnataka has moved to modernize its apartment ownership legal framework through the Karnataka Apartment (Ownership and Management) Bill, 2025, intended to replace the outdated Karnataka Apartment Ownership Act, 1972, which Deputy Chief Minister and Bengaluru Development Minister D.K. Shivakumar noted had not been substantively revisited by any government since its original enactment despite apartments now constituting 19 percent of Bengaluru's total resident population (Nemmadi, cited in this chapter's research, 2025; ipandlegalfilings.com, cited in this chapter's research, 2026). The bill addresses recurring disputes over common area management, association governance powers, redevelopment rights, and developer obligations that had persisted under the fragmented mix of outdated legislation, informal society registrations, and developer-drafted agreements previously governing the sector (ipandlegalfilings.com, cited in this chapter's research, 2026). At a December 13, 2025 consultation with the Bangalore Apartments' Federation, Shivakumar gave residents ten days to submit suggestions before the bill's finalization ahead of the winter assembly session, though independent analysis of the draft

has flagged significant remaining gaps affecting villa communities, plotted developments, and the conversion framework for existing resident associations (Nemmadi, cited in this chapter's research, 2025). This bill is a genuinely significant piece of housing-sector modernization given how large a share of Bengaluru's population now lives in apartment housing, and its progress toward final passage is worth tracking alongside the broader Greater Bengaluru governance transition, since apartment associations will need to interface with whichever of the five new city corporations governs their specific location.

11.4 Smart Cities Mission and AMRUT: State-Level Implementation Review

The national Smart Cities Mission has, per recent budget analysis, effectively concluded, with no further central provision to sustain the Integrated Command and Control Centres established across 100 mission cities nationally (The Statesman, 2026). This has direct implications for Karnataka's own Smart City cohort, since ongoing operational and maintenance costs for these command centres will now need to be absorbed by the relevant Karnataka ULBs without continued central mission funding, a burden that, for Bengaluru specifically, now falls to whichever of the five new city corporations inherits the relevant command centre infrastructure, adding another concrete transitional cost item to the governance restructuring described in section 11.1. Given the coordination model the GBA is designed to provide across infrastructure agencies more broadly, discussed above, the Integrated Command and Control Centre would appear a natural candidate for GBA-level, rather than single-corporation, ownership, though no public confirmation of this arrangement was available in sources reviewed for this chapter.

11.5 Heritage Cities, Cultural Landscapes and Urban Tourism

Karnataka's heritage-city portfolio centres on three UNESCO World Heritage Sites: the Hampi monument group in Vijayanagara district, the temple complex at Pattadakal, and the Chalukya-era temple towns of Badami, Aihole, and Halebeedu, together representing the architectural legacy of the Vijayanagara and Chalukya-Hoysala periods (Karnataka Tourism, cited in this chapter's research, 2026; UNESCO World Heritage Centre, cited in this chapter's research, 2025). Hampi, the last capital of the Vijayanagara empire, remains the centrepiece of the state's heritage-tourism strategy: it is built around a landscape of temple architecture and granite ruins along the Tungabhadra River, and the state tourism department has continued to feature it prominently in national and international tourism promotion, including a dedicated showcase at the SATTE 2026 travel trade fair alongside the state's other UNESCO properties (Travel And Tour World, cited in this chapter's research, 2026).

The most significant current policy development in this space is the Karnataka Global Tourism Plan, under which the state government has recommended Hampi, Mysuru, and the lesser-known Chalukya-era temple town of Lakkundi for large-scale, world-class tourism development combining public investment with private-sector participation (Kihikila, cited in this chapter's research, 2026). For Hampi specifically, the plan envisions digital preservation and scientific documentation of monuments, alongside improvements to nearby railway

connectivity and visitor facilities, framed explicitly as upgrades that do not compromise the site's underlying heritage value (Kihikila, cited in this chapter's research, 2026). Academic analysis of Vijayanagara-era heritage management has separately argued that Karnataka's existing digital heritage pilots at Hampi and Badami, including augmented-reality mobile applications and route planners, could be scaled up through technology partnerships and integrated with the Union government's Swadesh Darshan Phase 2 and HRIDAY schemes to build in ecological and conservation indicators alongside conventional visitor-experience metrics (IJCRT, cited in this chapter's research, 2025).

That HRIDAY reference is itself worth situating for ministerial purposes: the National Heritage City Development and Augmentation Yojana was launched by the Ministry of Housing and Urban Affairs in January 2015 with the explicit aim of holistic heritage-city development, preserving and revitalising each city's distinct character through aesthetically appropriate, accessible, and secure urban environments (One India One People Foundation, cited in this chapter's research, 2025). Complementing HRIDAY at the national level is the PRASHAD scheme, which focuses specifically on pilgrimage-site rejuvenation, and the Dekho Apna Desh initiative promoting domestic cultural tourism more broadly (Cultural Tourism overview, cited in this chapter's research, 2025). Karnataka-specific HRIDAY project completion status and fund utilisation figures were not confirmed with sufficient precision in this chapter's sources and should be drawn directly from the Ministry of Housing and Urban Affairs' HRIDAY project dashboard before inclusion in a current briefing.

Beyond monument conservation, cultural festivals remain a central pillar of the state's heritage-tourism economy. Mysuru Dasara, one of India's most widely recognised cultural celebrations, draws large annual visitor numbers through its royal processions and folk performances, while Hampi Utsav celebrates Vijayanagara-era history through cultural exhibitions and performances staged amid the ruins themselves (Travel And Tour World, cited in this chapter's research, 2026). These festivals function as the state's most visible heritage-tourism marketing assets and, taken together with the Global Tourism Plan's Hampi-Mysuru-Lakkundi development corridor, suggest the state is moving toward treating heritage tourism as an integrated economic-development portfolio rather than a series of standalone conservation projects. For a ministerial audience, the open question this raises is one of institutional ownership: whether the infrastructure and connectivity commitments implied by the Global Tourism Plan, particularly around Hampi's rail access, will be coordinated through the state tourism department, the relevant urban local bodies, or a dedicated project vehicle, is not yet clear from public sourcing and would benefit from direct confirmation with the Department of Tourism. See Chapter 19 for the state's broader tourism and cultural heritage profile beyond the urban-governance dimension addressed here.

11.6 Urban Poverty, Slum Rehabilitation and In-Situ Upgradation

Karnataka's slum population was recorded at 32.91 lakh persons as of the 2011 Census, 5.39 percent of the state's total population, spread across 7.08 lakh slum households, with a sex ratio of 994 females per 1,000 males among this population, notably higher than the state

average (Census of India, 2011, as cited in CensusOfIndia.net, 2026). PMAY-Urban 2.0's explicit prioritization of slum dwellers, described in section 11.3, is directly relevant to this population, though current, Karnataka-specific slum rehabilitation progress figures, and any interaction between slum redevelopment planning and the new five-corporation governance structure in Bengaluru specifically, were not confirmed in this chapter's sources and represent an important open question for the Greater Bengaluru Authority to address explicitly as it establishes its own planning priorities distinct from the dissolved BBMP's.

Institutional responsibility for slum rehabilitation in Karnataka rests principally with the Karnataka Slum Development Board, originally constituted as the Karnataka Slum Clearance Board in July 1975 under the Karnataka Slum Areas (Improvement and Clearance) Act, 1973, and renamed in 2010 to reflect an expanded developmental mandate extending beyond basic amenities provision into housing delivery and income-generation support for slum residents (Geospatial Resource Platform, cited in this chapter's research, 2025). The Board undertakes slum surveys and formal slum declarations and implements a mix of in-situ upgradation and beneficiary-led construction models, operating within the national ISSR policy framework described in section 11.3 above (Geospatial Resource Platform, cited in this chapter's research, 2025). Karnataka's specific state-level FSI or TDR incentive schedule for slum redevelopment projects under this framework was not confirmed in sources available to this chapter and would need direct verification against KSDB's current project guidelines.

Bengaluru's own experience illustrates both the promise and the limits of the in-situ model. Academic case-study analysis of Bengaluru's slum-rehabilitation programme has documented three sequential phases of in-situ and relocation projects: an initial phase combining 23 in-situ rehabilitation projects with 22 relocation projects at an average density of 322 dwelling units per hectare, followed by a second phase covering roughly 14,000 slum dwellers across 12 slums, of which five were designated for in-situ rehabilitation and seven for relocation, with a third phase subsequently planned to cover an additional 15 slums (case study cited in this chapter's research, drawing on Institute of Development Studies, University of Mysore, research). This roughly even split between in-situ and relocation approaches within Bengaluru's own programme history is a useful empirical data point given the broader policy debate over which approach better protects slum-dweller welfare: empirical research surveyed in recent regional commentary has found that off-site relocation in particular tends to compound impoverishment through loss of livelihood, loss of proximity to job markets, and loss of existing community and social-support networks, whereas in-situ redevelopment that keeps residents embedded in their existing neighbourhood, paired with secure tenure and participatory planning, is increasingly regarded as the more welfare-protective model across Indian cities generally (Kathmandu Post opinion piece, cited in this chapter's research, 2026). This is directly relevant to how the new Greater Bengaluru Authority and its five city corporations should weigh in-situ versus relocation options as they inherit BBMP's unfinished slum-redevelopment portfolio.

Legal friction around slum tenure and rehabilitation obligations also continues to surface outside Bengaluru itself. In September 2025, the Karnataka High Court directed the rehabilitation of slum dwellers displaced from land near the Sri Kalikamba Temple in Mandya, an area originally notified for slum-dweller rehabilitation as far back as May 1979, indicating that some of the state's oldest slum-declaration commitments remain only partially fulfilled more than four decades later (Deccan Herald, cited in this chapter's research, 2025). This kind of long-deferred rehabilitation obligation is a useful reminder, for a state-level assessment, that the 32.91 lakh-person slum population recorded in the 2011 Census is not merely a historical baseline but reflects communities whose formal entitlement to rehabilitation in some cases substantially predates that census count itself, reinforcing the case for the new Greater Bengaluru Authority, and Karnataka's other city corporations more broadly, to treat slum-redevelopment planning as an explicit and time-bound institutional priority rather than a residual item carried forward indefinitely from one governing body to the next.

11.7 Urban Water Security, Stormwater Management and Flood Resilience

No treatment of Karnataka's urban governance is complete without addressing the stormwater and flooding crisis that has become one of Bengaluru's most visible and politically consequential civic failures, and one that offers a particularly sharp test case for whether the new Greater Bengaluru Authority's coordination mandate, discussed in section 11.1, can actually resolve the institutional fragmentation problem the reform was designed to fix.

Bengaluru's stormwater drainage system, known locally as *rajakaluves*, traces its origin to a centuries-old interlinked network of irrigation tanks and channels built to conform to the city's natural drainage valleys, principally the Hebbal, Koramangala-Challaghatta, Vrishabhavathi, and Arkavathi valleys, historically maintained by local communities responsible for canal upkeep, desilting, and fishing (Mongabay India, cited in this chapter's research, 2025). Decades of rapid urban development have severely degraded this system: a widely cited 2016 assessment found that roughly 80 percent of Bengaluru's lakes had been lost or degraded, and by the 2020s only 183 of the city's original tank network remained functional to any degree, with encroachment of lake beds and interconnecting valley zones, at times with tacit official approval, disrupting the natural flow the system was originally engineered to support (Mongabay India, cited in this chapter's research, 2025; Lukmaan IAS, cited in this chapter's research, 2025).

The consequences of this degradation have become annual and increasingly severe. On May 18, 2025, a pre-monsoon cloudburst delivered 130 millimetres of rain in twelve hours, pushing Bengaluru Urban district's cumulative May rainfall to 278 millimetres, 157 percent above normal and nearly one-fifth of the district's typical annual total; more than twenty lakes overtopped, three lives were lost, and over 500 dwellings were inundated, with the city's existing stormwater drains, designed for rainfall intensities of 40 to 70 millimetres, overwhelmed by intensities exceeding 100 millimetres (Lukmaan IAS, cited in this chapter's research, 2025; Insights on India, cited in this chapter's research, 2025). Flooding during the

2025 monsoon similarly submerged parts of Koramangala, Bellandur, and the Outer Ring Road IT corridor, disrupting operations across a technology sector integral to the state's economy and reported in national coverage as a direct economic cost alongside the immediate public-health risks of waterlogging, including the spread of vector-borne and contamination-related illness (Insights on India, cited in this chapter's research, 2025).

The institutional diagnosis for this recurring crisis mirrors, almost exactly, the silo problem documented in section 11.1 for Bengaluru's governance more broadly. Current mapping of stormwater-relevant responsibility identifies at least five separate agencies with overlapping or adjacent jurisdiction: the GBA's Public Health Department, which handles rajakaluve encroachment notices and holds the property tax data needed to enforce rainwater harvesting requirements but lacks system-level integration with BWSSB; BWSSB itself, responsible for water supply and sewerage but operating without full coordination on drainage; the Karnataka State Natural Disaster Monitoring Centre, responsible for flood forecasting and emergency response; and the Karnataka State Pollution Control Board, responsible for water quality monitoring and regulation (Citizen Matters, cited in this chapter's research, 2026). Because Bengaluru's natural drainage valleys cut across ward and constituency boundaries by definition, this jurisdictional mismatch compounds rather than merely coexists with the underlying data-silo problem: incompatible property records across agencies stall rainwater harvesting enforcement, and despite a 2011 High Court ruling that formally recognised rajakaluves as critical civic lifelines, they continue in practice to be treated by many actors as ordinary open drains or sewers, with roughly Rs 1,000 crore spent annually on drain maintenance and comparatively little public disclosure of how that spending translates into flood-risk reduction (Citizen Matters, cited in this chapter's research, 2026).

Enforcement against encroachment has produced its own difficult trade-offs. In June 2025, the GBA demolished ten houses in the Laggere area for encroaching on a rajakaluve that residents themselves acknowledged had become dangerously narrow, with even thirty minutes of rainfall sufficient to cause overflow into homes; affected residents in that case held formal property documentation (khata) despite the underlying land falling within the drain's surveyed alignment (Citizen Matters, cited in this chapter's research, 2025). Commentary on the enforcement challenge has also noted that the corridors where stormwater encroachment is densest, including Bellandur, Sarjapur, Whitefield, and the Hebbal and Outer Ring Road IT belt, also carry the highest commercial real-estate values in southern India, and that much of the development inside the National Green Tribunal's 2015 buffer-zone specifications predates that ruling and therefore does not technically qualify as illegal encroachment even where it functionally obstructs drainage (Swarajya, cited in this chapter's research, 2026).

Against this backdrop, a live and contested regulatory proposal deserves direct ministerial attention. The Karnataka Urban Development Department has floated Draft Regulation No. UDD 468 MNJ 2025 (E), which would substantially reduce rajakaluve buffer zones across the Bengaluru Metropolitan Region, cutting the current buffers of 50 metres for primary drains, 35 metres for secondary drains, and 25 metres for tertiary drains down to 15 metres,

10 metres, and 5 metres respectively, with drains feeding into tertiary channels maintained only according to revenue records and no buffer requirement at all (The South First, cited in this chapter's research, 2025; TalkingLands, cited in this chapter's research, 2026). Environmental experts and citizen groups have strongly opposed the draft regulation, arguing that buffer zones are not empty developable land but functioning ecological systems performing flood moderation, groundwater recharge, and sediment control, and that the proposal, arriving alongside a separate and similarly contested Karnataka Tank Conservation and Development Authority Amendment Bill 2025 that weakened buffer protections for smaller lakes, risks compounding rather than resolving the city's flood and water-scarcity pressures (The South First, cited in this chapter's research, 2025). This is a genuinely live policy choice with direct fiscal and public-safety implications, and its outcome should be tracked closely alongside the GBA's broader institutional consolidation, since a reduction in legally protected drainage buffer land would, on the balance of expert commentary reviewed for this chapter, work directly against the flood-resilience objectives the new governance structure is nominally intended to advance.

Some state-level and city-level responses are already underway and merit acknowledgment alongside this criticism. Chief Minister Siddaramaiah has publicly attributed the scale of the 2025 flooding to a multi-decade backlog of neglected rajakaluve maintenance and repair under successive previous governments, and stated that the current government has earmarked Rs 800 crore and completed development work on 350 of Bengaluru's roughly 850 kilometres of rajakaluves as of that statement, with a commitment to complete the remaining works the following year (Deccan Herald, cited in this chapter's research). At the state programme level, Bengaluru's stormwater governance now sits formally within the Karnataka Water Resilience Program, and the city's own Climate Action and Resilience Plan, adopted in 2023, commits to eliminating the drainage maintenance backlog entirely by 2035 and achieving 30 percent blue-green infrastructure coverage, while at the state level the Karnataka Water Security and Disaster Resilience Programme, running 2025 to 2031 with a Rs 5,000 crore outlay including a Rs 3,500 crore World Bank loan structured as an outcome-linked Programme-for-Results instrument, earmarks 40 percent of its funding specifically for stormwater drain fortification and lake reconnection (Lukmaan IAS, cited in this chapter's research, 2025; Citizen Matters, cited in this chapter's research, 2026). Whether these funding commitments and planning targets can be delivered through a governance structure still in the middle of its own foundational transition, and still operating without a single elected Mayor in any of the five new corporations, is precisely the kind of cross-cutting implementation test this Framework recommends the state track explicitly, alongside the solid-waste and slum-rehabilitation benchmarks already discussed in this chapter, as concrete, measurable indicators of whether the Greater Bengaluru reform is delivering the coordination benefits its designers intended.

Chapter 12: Rural Development and Decentralised Governance

12.1 Panchayati Raj Institutions: Structure, Devolution and Capacity

Karnataka operates 5,994 gram panchayats alongside its 314 urban local bodies (The Better India, 2026), organized under the standard three-tier Panchayati Raj structure of gram panchayat, taluk panchayat, and zilla panchayat discussed in Chapter 1. Karnataka has been recognized as one of the few Indian states actively implementing the decentralization processes envisioned under the 73rd and 74th Constitutional Amendments, empowering local institutions to participate directly in development planning (UNICEF India). The Gram Panchayat Development Plan, institutionalised under the Fourteenth and Fifteenth Finance Commissions, provides the existing planning architecture into which the state is now attempting to integrate climate priorities, discussed further in Chapter 14 (The Better India, 2026).

This planning architecture deserves somewhat fuller treatment for a ministerial audience than a bare reference to the two Finance Commissions allows. Under the devolution framework established by the Fourteenth and Fifteenth Finance Commissions, gram panchayats receive untied basic grants and tied performance-linked grants directly from the Union government, bypassing state-level intermediation for a defined share of rural development funding, with each panchayat required to prepare its own Gram Panchayat Development Plan through a participatory process that formally begins with Gram Sabha, or village assembly, consultations before consolidation into taluk- and district-level plans. The stated purpose of this architecture is to ensure that centrally devolved funds are allocated according to locally identified priorities rather than uniform top-down formulae, and Karnataka's comparatively long institutional experience with decentralised planning, dating back to some of the earliest post-73rd Amendment panchayat reforms among Indian states, is frequently cited as a reason the state has been able to layer newer priorities, such as the climate action planning initiative discussed in section 12.6 below, onto existing GPDP machinery rather than needing to build parallel planning structures from scratch.

It is worth noting for a ministerial audience that the effectiveness of this planning architecture rests, at bottom, on the quality of the Gram Sabha consultations that formally initiate each panchayat's development plan. A Gram Sabha with genuinely broad-based participation, including women, Scheduled Caste and Scheduled Tribe residents, and landless households, is likely to produce a development plan that more accurately reflects local priorities than one dominated by a narrower set of locally influential voices; conversely, a Gram Sabha convened primarily to satisfy a procedural requirement, with attendance and genuine deliberation both thin, risks producing a development plan that is technically compliant with the Finance Commission's devolution conditions without actually being locally representative in substance. This chapter did not locate current, Karnataka-specific quantitative data on Gram Sabha attendance, quorum compliance, or the demographic composition of participation across the state's 5,994 gram panchayats, and this represents a genuine gap in the evidence base available for assessing how deep Karnataka's structural decentralization

actually runs at the point of first contact with citizens, as distinct from how well-designed the state's decentralization architecture appears on paper. Given how heavily both the climate action planning initiative discussed in section 12.6 and the broader Gram Panchayat Development Plan process depend on this same first-contact consultation step functioning well, closing this specific data gap, potentially through a targeted Gram Sabha functionality audit conducted by the state's Rural Development and Panchayat Raj Department, would materially strengthen the evidence base for every other rural governance initiative discussed in this chapter.

This rural decentralization framework should be read directly alongside the urban governance restructuring documented in Chapter 11. Where Bengaluru's urban governance has just undergone its most significant institutional reorganization in nearly two decades, splitting a single unwieldy corporation into five more locally accountable bodies specifically to address coordination and service delivery failures, Karnataka's rural governance structure has, by contrast, already operated on a genuinely decentralized, multi-tier model for decades. The state's own attempt to extend climate action planning down to the level of all 5,994 gram panchayats individually, discussed in full in Chapter 14, suggests the state's rural governance apparatus, despite its long-standing decentralized structure, still requires a deliberate, centrally coordinated push to translate that structural decentralization into functional policy delivery on any single cross-cutting issue, a lesson the new Greater Bengaluru Authority's own coordination mandate should take seriously as it begins operating.

12.2 MGNREGA: Coverage, Wage Trends and Livelihood Outcomes

Under national MGNREGA guidelines, a minimum of 60 percent of scheme expenditure must be directed to agriculture and allied activities, with roughly 75 percent of permissible works oriented toward water security and conservation nationally (Ministry of Rural Development data, as cited in an SPRF research review, 2025). MGNREGA's role extends well beyond employment guarantee alone; it functions as a direct convergence mechanism for rural housing delivery nationally, since Pradhan Mantri Awas Yojana-Gramin beneficiaries are entitled to 90 to 95 days of unskilled wage employment under MGNREGA specifically for the construction of their own homes, paid at prevailing MGNREGA wage rates, alongside a separate Rs 12,000 payment for toilet construction available through convergence with either the Swachh Bharat Mission-Gramin or MGNREGA itself (pmfias.com, cited in this chapter's research, 2025; Grokipedia, cited in this chapter's research, 2026). This convergence design means MGNREGA's rural employment function and PMAY-Gramin's rural housing function are not, in practice, separable programmes for planning purposes, and any assessment of one scheme's performance in Karnataka should account for its direct dependency on the other.

Karnataka's MGNREGA wage trajectory has been comparatively unfavourable relative to most other states over the past several revision cycles. For 2023-24, Karnataka received one

of the smallest percentage wage increases in the country, a rise of just 2.27 percent, from Rs 309 to Rs 316 per day, placing it second-lowest nationally after Goa's 2.22 percent increase, at a time when states such as Rajasthan received increases exceeding 10 percent (Deccan Herald, cited in this chapter's research, 2023). For the 2025-26 revision, the Ministry of Rural Development's national notification set wage increases ranging from 2.33 to 7.48 percent across states, with southern states including Karnataka, Kerala, and Tamil Nadu receiving increases in the 5 to 6.65 percent range, though separate reporting on Karnataka-specific job-card documentation for 2025-26 continues to reference a daily wage rate of Rs 349, underscoring that authoritative, currently reconciled Karnataka-specific wage figures should be confirmed directly against the state's NREGA portal rather than relied upon from secondary aggregation (onmanorama.com, cited in this chapter's research, 2025; NregaGuide, cited in this chapter's research, 2026).

Beyond the headline wage rate, two implementation trends deserve direct ministerial attention. First, actual employment delivery under the scheme in Karnataka appears to have declined recently in terms of days worked per household: data compiled by the NREGA Sangharsh Morcha shows average workdays per household in the state falling to 44.62 days in 2024-25, down from 52.08 days in 2023-24, both figures well short of the scheme's statutory 100-day annual employment guarantee (Deccan Herald, cited in this chapter's research, 2026). Farmers in labour-scarce districts such as Raichur have reported receiving less than half of the guaranteed 100 days of work in a given financial year, attributing part of the shortfall to seasonal availability of work concentrated around the kharif and rabi cropping cycles (Deccan Herald, cited in this chapter's research, 2026). Second, payment delays have become a persistent administrative friction point: workers are legally entitled to wage payment within 15 days of a muster roll closing, with a mandated compensation of 0.05 percent of unpaid wages per day of delay beyond that window, yet MGNREGS dashboard data reviewed by Deccan Herald indicates that the central government owed payment for roughly 10 lakh delayed workdays to Karnataka's MGNREGA workers as of the time of that reporting (Deccan Herald, cited in this chapter's research, 2026). Taken together, these two trends, declining days-worked-per-household and a substantial backlog of delayed wage payments, point toward a demand-side and administrative implementation gap that is distinct from, but potentially compounds, the wage-rate competitiveness issue discussed above; both are directly relevant to the migration pressure on rural Karnataka households that the scheme was originally designed to relieve.

This pattern also has a historical precedent worth noting for context: as far back as 2019-20, Karnataka publicly flagged a comparable slowdown, when the state's rate of person-day generation collapsed from roughly five lakh person-days a day to about 1.60 lakh person-days a day mid-year, prompting the state government to press the Centre for release of pending funds and to advance roughly Rs 803 crore from its own resources to maintain timely wage payments pending central reimbursement (Deccan Herald, cited in this chapter's research, 2019-20 reporting). That episode, together with the more recent 2024-25 workday decline and payment-delay backlog, suggests that funding and cash-flow friction between the Centre and the state has been a recurring rather than one-off constraint on MGNREGA delivery in

Karnataka, and is a theme the state's Rural Development Department should track systematically rather than treat each occurrence as an isolated administrative lapse.

12.3 Rural Housing: PMAY-Gramin and State Schemes

Nationally, PMAY-Gramin had completed 2.82 crore houses as of August 2025, benefiting 2,68,480 landless families specifically and generating 568 crore person-days of employment since the scheme's 2016 launch (pmfias.com, cited in this chapter's research, 2025). The scheme's central financial assistance stands at up to Rs 1.20 lakh per unit in plain areas and Rs 1.30 lakh in hilly, difficult, or Integrated Action Plan districts, a distinction directly relevant to Karnataka's own Western Ghats and Malnad taluks, which would likely qualify for the higher difficult-terrain assistance tier given the ecological and topographic profile documented in Chapter 1 (Grokopedia, cited in this chapter's research, 2026). Following an 8th anniversary review in November 2024, the Ministry of Rural Development confirmed the scheme had been extended to construct an additional 2 crore houses nationally through March 2029, with a total outlay exceeding Rs 3 lakh crore for this extended phase and over Rs 54,000 crore allocated for the 2024-25 financial year alone (News on Air, cited in this chapter's research, 2024). Beneficiary identification continues to rely on the Socio-Economic and Caste Census 2011 database, supplemented by the more recent Awaas+ survey capturing eligible households excluded from the original 2011 count, with final selection ranked by socio-economic deprivation and verified through local Gram Sabhas (bankbazaar.com, cited in this chapter's research, 2025). Notably, the continued reliance on 2011-vintage socio-economic data for a scheme now extending to 2029 means Karnataka's own beneficiary targeting under this programme is working from demographic and poverty data that is, by the scheme's own extended timeline, potentially up to 18 years out of date by its conclusion, an issue equally relevant to the Awaas+ supplementary survey's own currency and worth flagging for the state's Rural Development Department to actively monitor. Karnataka-specific completion figures, landless-family beneficiary counts, and difficult-terrain unit allocations were not confirmed with sufficient precision in this chapter's sources and should be drawn directly from the state's own PMAY-Gramin dashboard. The direct programmatic linkage between PMAY-Gramin and MGNREGA convergence financing, discussed in section 12.2 above, means that any slowdown in MGNREGA delivery in Karnataka carries a secondary, less visible risk of also slowing the pace at which PMAY-Gramin beneficiaries can complete their own home construction within the scheme's stipulated timelines.

12.4 Livelihood Promotion: SHGs, Cooperatives and Rural Enterprise

Karnataka's rural livelihood promotion architecture operates through a layered set of programmes: the long-standing Stree Shakti scheme, launched in 2000-01 to organise women, particularly those from below-poverty-line, landless-labourer, and Scheduled Caste or Scheduled Tribe backgrounds, into village-level savings groups of 15 to 20 members each through anganawadi workers and taluk-level federations; and the more recent Sanjeevini Self-Help Group federation structure operating under the national DAY-NRLM umbrella and

supported administratively by the Karnataka State Rural Livelihood Mission (Karnataka PCS Notes, cited in this chapter's research; theacademic.in, cited in this chapter's research, 2025). Historical figures place Stree Shakti's scale at approximately 1.40 lakh groups statewide, organising around 20 lakh women members, though this figure dates to older programme documentation and should be treated as a floor rather than a current count given the scheme's subsequent integration into the broader Sanjeevini and KSRLM architecture (Karnataka PCS Notes, cited in this chapter's research). Academic assessment of Karnataka's SHG ecosystem has characterised the state's approach as comparatively progressive relative to other states specifically because of its cross-departmental convergence model, coordinating Women and Child Development, Panchayat Raj, and Rural Development departments around a shared SHG-support infrastructure of revolving funds, capacity-building modules, and technical training, often supplemented by grassroots NGOs providing financial literacy and gender-sensitisation programming (theacademic.in, cited in this chapter's research, 2025).

Two current, concrete state-level initiatives illustrate how this convergence architecture is being operationalised in 2025-26. First, the state government's Matsya Sanjeevini programme extends SHG livelihood support into community aquaculture: the Fisheries Department has identified 1,229 minor irrigation tanks of under 10 hectares each for lease to gram-panchayat-affiliated women's SHG federations under three- to five-year agreements, with participating groups able to earn an additional Rs 50,000 in annual income; early uptake includes 49 women's SHGs in Mandya receiving nearly 9 lakh fish fingerlings and creating self-employment for roughly 245 rural women, 38 SHGs taking up fish farming in Kolar, and 226 SHG federations in Chikmagalur undergoing specialised residential aquaculture training (Deccan Herald, cited in this chapter's research, 2026). Second, the state has committed to constructing 750 common work sheds for Sanjeevini SHG federations at the gram panchayat level, intended to provide shared production infrastructure for group-based micro-enterprise activity (Deccan Herald, cited in this chapter's research). Separately, the state's Namma Saras Mela 2026 marketing platform for SHG-produced goods has been paired with a Rs 70 crore Community Investment Fund specifically for SHG federations in Dakshina Kannada district, indicating the state is beginning to combine market-access events with dedicated federation-level capital rather than relying solely on revolving-fund and bank-linkage credit models (Deccan Herald, cited in this chapter's research, 2026).

These initiatives should be read against the national policy backdrop of the "Lakshpati Didi" target, under which the Union government has progressively raised its national goal for the number of SHG-linked women earning over Rs 1 lakh annually, with the Union Minister for Agriculture and Rural Development specifically commending such women's achievements through DAY-NRLM interventions in remarks that also referenced the January 2025 review meeting held directly with Karnataka's Agriculture, Rural Development, and Revenue Minister discussed earlier in this chapter (rural.gov.in, cited in this chapter's research, 2025). A cautionary data point from the state's own evaluation apparatus is worth flagging directly for ministers: the latest Karnataka Evaluation Authority assessment of the state's SHGs found that a substantial 60 to 70 percent of money borrowed by SHG members was ultimately spent on personal or family consumption needs rather than on income-generating micro-enterprise

activity, a finding that complicates any simple narrative of SHG credit translating directly into livelihood diversification and should temper expectations about how quickly newer initiatives like Matsya Sanjeevini will scale into durable income streams for participating households (ilearncana.com, citing Karnataka Evaluation Authority findings).

12.5 Rural Infrastructure: PMGSY, Connectivity and Market Linkages

At the national level, the Pradhan Mantri Gram Sadak Yojana marked its 25th anniversary in December 2025, having sanctioned a cumulative 8,25,114 kilometres of rural roads since its December 2000 launch, of which 7,87,520 kilometres, or roughly 95 percent, had been physically completed as of that anniversary date, at a cumulative expenditure of roughly Rs 3.46 lakh crore (PIB, cited in this chapter's research, 2025; News on Air, cited in this chapter's research, 2025). The scheme has evolved through four distinct phases relevant to understanding Karnataka's own rural connectivity baseline: PMGSY-I, targeting habitations with population thresholds of 500 in plain areas, had sanctioned roughly 6,44,867 kilometres nationally with about 6,24,699 kilometres constructed as of February 2025; PMGSY-II, focused on upgrading and consolidating the existing network, had sanctioned nearly all of its 50,000-kilometre target; and PMGSY-III, covering routes linking habitations to Gramin Agricultural Markets, higher secondary schools, and healthcare facilities, had sanctioned 1,22,393 kilometres against a 1,25,000-kilometre target, with 1,01,623 kilometres, or 83 percent, constructed by December 2025 (Indian Infrastructure, cited in this chapter's research, 2025; Organiser, cited in this chapter's research, 2026). The current PMGSY-IV phase, launched under the Union Budget 2024-25 and running through 2029, targets connecting 25,000 additional habitations through 62,500 kilometres of new road construction at an outlay of Rs 70,125 crore, with a national allocation of Rs 19,000 crore for FY2025-26 and Rs 18,907 crore earmarked for FY2026-27 to construct a further 26,474 kilometres, alongside continued rollout of the e-MARG digital maintenance-monitoring platform and a directive from the Ministry of Rural Development for states to prioritise remaining unconnected habitations under PMGSY-I and the PM-JANMAN tribal-connectivity initiative (PIB, cited in this chapter's research, 2025; Business Standard, cited in this chapter's research, 2026).

Karnataka-specific PMGSY sanctioned length, completion percentage, expenditure, and district-wise habitation-connectivity gaps were not confirmed with sufficient precision in sources available to this chapter, a gap consistent with the pattern noted elsewhere in this Framework where national-level scheme reporting substantially outpaces state-specific public data availability for a mid-performing, non-controversial implementing state. This is a genuine research gap that should be closed directly against the Ministry of Rural Development's OMMAS portal and the state's own Rural Development and Panchayat Raj Department dashboards before this section can support specific district-level or budget-allocation recommendations; what can be said with confidence from the national data is that Karnataka's own rural road connectivity, like that of most states, now sits within a program that is approaching physical saturation on its original PMGSY-I and PMGSY-II mandates while entering an active, well-funded fourth phase specifically targeted at previously unconnected habitations, meaning any remaining gaps in Karnataka's rural road

network are increasingly likely to be concentrated among genuinely hard-to-reach habitations, including the Western Ghats and Malnad taluks referenced elsewhere in this chapter in the context of PMAY-Gramin's difficult-terrain assistance tier, rather than distributed evenly across the state.

12.6 Community-Based Development Institutions and Participatory Planning

Karnataka's most notable current initiative in this area remains its effort to formulate individual climate action plans for all 5,994 gram panchayats, which, if completed, would represent the first institutionalized model of village-level climate governance in India, using the existing Gram Panchayat Development Plan framework as its foundation, and is discussed in full analytical detail in Chapter 14 (The Better India, 2026). This initiative should be understood as building directly on, rather than replacing, the state's existing Gram Panchayat Development Plan architecture described in section 12.1, meaning its success or failure will be a genuine test of whether Karnataka's decades-old decentralized Panchayati Raj structure can actually be mobilized for a specific, time-bound, cross-cutting policy priority, a test with direct relevance to how effectively the state's rural governance apparatus could similarly be mobilized for other cross-cutting priorities identified throughout this Framework, including the irrigation investment priority discussed in Chapter 10 and Chapter 18, the malnutrition-focused convergence programme for the ten flagged districts discussed in Chapter 1, and, as sections 12.7 and 12.8 below make clear, the rural drinking-water and dairy-cooperative sectors as well.

12.7 Rural Drinking Water Security: Jal Jeevan Mission Implementation in Karnataka

Karnataka's rural drinking water programme operates within the national Jal Jeevan Mission framework, launched by the Prime Minister on August 15, 2019, with the original objective of providing safe and adequate drinking water through individual household tap connections to every rural household by 2024, alongside mandatory source-sustainability measures such as groundwater recharge, greywater reuse, and rainwater harvesting (Jal Jeevan Mission, cited in this chapter's research). Nationally, the mission has expanded rural tap water coverage from just 3.23 crore households, or roughly 17 percent of rural households, at its August 2019 launch to more than 15.89 crore households, or 82.09 percent of India's 19.36 crore rural households, as reported to the Lok Sabha in July 2026, with the Union Jal Shakti Minister confirming the Centre has enhanced the mission's total financial outlay from Rs 3.60 lakh crore to Rs 8.69 lakh crore and extended the programme's completion horizon to December 2028 under a revamped Jal Jeevan Mission 2.0 (newkerala.com, cited in this chapter's research, 2026).

Karnataka's own performance under the mission has been notably strong relative to the national average, though it started from a position the mission's own documentation explicitly frames as more difficult given the state's water-stressed hydrogeology. Reporting on Jal Jeevan Mission progress following recent Memoranda of Understanding between Karnataka

and the Ministry of Jal Shakti places the state, alongside Uttarakhand and Tripura, among the mission's leading performers, with Karnataka having reached approximately 87 percent rural household tap water coverage despite its classification as a water-stressed region, a notably higher achievement than several better-watered states given the underlying resource constraint (Law-Order/Devdiscourse, cited in this chapter's research, 2026). This 87 percent figure should be read as a specific, dated data point rather than a fixed current status, since national coverage has continued to climb steadily through 2025 and into 2026 and Karnataka's own figure would be expected to have moved in step; the state's precise current household coverage percentage, and its district-wise distribution, were not independently confirmed with a more recent date in sources available to this chapter and should be verified directly against the Jal Jeevan Mission public dashboard before use in a current ministerial briefing.

Two dimensions of the mission's implementation architecture are directly relevant to how Karnataka's own rural water security should be assessed going forward, beyond the headline household-connection percentage. First, the mission has increasingly emphasised water quality assurance and monitoring alongside raw connectivity: nationally, a network of 2,843 water-testing laboratories, comprising 2,184 institutional and 659 treatment-plant-based facilities, tested 38.78 lakh water samples across 4,49,961 villages during 2025-26, while 24.80 lakh rural women nationally have been trained to conduct water quality testing using Field Testing Kits across more than 5 lakh villages, a deliberate design choice intended to build local, community-level ownership of water quality monitoring rather than relying solely on centralised laboratory testing (PIB, cited in this chapter's research, 2025; DD News, cited in this chapter's research, 2026). Karnataka-specific counts of certified laboratories, women trained as Field Testing Kit operators, and villages achieving full "Har Ghar Jal" certification, meaning all households and public institutions within the village have functional tap connections, were not confirmed in sources available to this chapter and would need to be drawn directly from the state's Rural Drinking Water and Sanitation Department dashboard.

Second, and more significant for long-term planning purposes, independent assessment of the mission nationally has surfaced a meaningful gap between infrastructure coverage and actual service functionality. A 2024 government-commissioned Functionality Assessment Survey found that although nearly 98 percent of rural households nationally now have a physical tap connection, only about three-quarters actually receive a regular, safe, and adequate water supply through that connection, with only 83 percent of households receiving water with sufficient regularity to be considered functionally served under the survey's own criteria (Sanskriti IAS, cited in this chapter's research, 2026). This functionality gap is a critical qualification for interpreting Karnataka's own strong headline coverage figure: a household counted as "connected" under Har Ghar Jal certification is not necessarily a household receiving reliable, safe water on a day-to-day basis, and the state's Rural Development and Panchayat Raj Department should, this Framework recommends, track and publicly report a Karnataka-specific functionality assessment alongside its raw connection-coverage figure, both to give an honest picture of service delivery and to identify which districts or taluks may need targeted intervention on supply reliability even where nominal household connectivity is

already high. Given Karnataka's dual profile as both a comparatively strong performer on raw connectivity and a structurally water-stressed state, this functionality question arguably carries more practical weight for Karnataka's rural population than it does for states with more abundant water resources, since the underlying hydrogeological constraint means intermittent or unreliable supply is a more probable failure mode here than in better-watered parts of the country.

12.8 Cooperative Institutions and Rural Enterprise: The Dairy Sector

Beyond the SHG-based livelihood architecture discussed in section 12.4, Karnataka's rural cooperative sector has a second, older, and economically larger pillar in dairy cooperation, organised through the Karnataka Milk Federation and marketed under the Nandini brand. The Karnataka Cooperative Milk Producers' Federation traces its cooperative origins to 1955, when the first constituent dairy cooperatives were established in Kudige, Kodagu district, and was formally founded in its present institutional form in 1974 as the Karnataka Dairy Development Corporation to implement a World Bank-supported dairy development project, before being renamed the Karnataka Milk Federation in 1984 (Wikipedia, cited in this chapter's research, 2026). KMF is owned by the Government of Karnataka's Department of Cooperation and today operates as the second-largest milk cooperative in India after Gujarat's Amul, organised through 15 constituent milk unions spanning all 31 districts of the state, which together procure milk directly from more than 26.8 lakh farmer-members through village-level Primary Dairy Cooperative Societies before processing and marketing it under the single Nandini brand (Karnataka.com, cited in this chapter's research, 2026; Wikipedia, cited in this chapter's research, 2026).

The scale of this cooperative structure is directly relevant to any assessment of Karnataka's rural livelihood architecture alongside MGNREGA and the SHG federations discussed earlier in this chapter. KMF and its 15 unions together reported a combined turnover of Rs 21,330 crore in 2023-24, up from just Rs 8.82 crore in the federation's first full year of operation in 1976-77, and on an average day during that year the federation's unions collectively procured roughly 83 lakh litres of milk, sold approximately 46.3 lakh litres of milk and 9.5 lakh litres of curd, and paid farmer-members roughly Rs 28.8 crore (Karnataka.com, cited in this chapter's research, 2026). Because each of KMF's 15 milk unions independently sets its own farmer procurement price rather than operating under a single statewide rate, the federation's pricing structure functions as a genuinely decentralised, union-level decision rather than a centrally dictated one, a structural feature that mirrors, in the dairy sector specifically, the broader decentralised governance philosophy this chapter has documented for Karnataka's Panchayati Raj institutions more generally (Karnataka.com, cited in this chapter's research, 2026).

KMF's role as a direct rural income-support mechanism has become more visible in 2025 amid rising input costs facing dairy farmers. In 2025 the federation raised its milk procurement price by Rs 4 per litre in response to rising production costs, bringing the average price paid to producers to Rs 35.30 per litre, with KMF's Managing Director framing

the increase explicitly as a measure to ensure farmers received fair compensation; farmers in Dakshina Kannada, a district that has repeatedly and publicly advocated for such price increases, specifically recalled how a comparable price rise in 2007 had previously boosted local milk production in the district (Caravan Magazine, cited in this chapter's research, 2025). Beyond direct procurement pricing, KMF has also functioned as a channel for social and nutritional policy: since August 2013 the federation has partnered with the state's Education and Women and Child Development departments to implement the Ksheera Bhagya scheme, supplying Nandini milk powder to more than one crore beneficiaries, principally schoolchildren and anganwadi-enrolled children, as a nutrition-support intervention layered directly onto the cooperative's existing procurement and processing infrastructure (Caravan Magazine, cited in this chapter's research, 2025). The federation has separately developed a STEP programme aimed at integrating women more fully into the dairy economy, which analysis of the cooperative's social outreach has credited with both enhancing rural livelihoods and promoting gender equity within Karnataka's dairy sector specifically (Caravan Magazine, cited in this chapter's research, 2025).

KMF's recent national expansion strategy is worth flagging for ministers as a distinct, and potentially double-edged, development. Having successfully launched fresh milk and curd sales in the National Capital Region in November 2024, KMF confirmed plans in March 2025 to extend Nandini-branded sales into northern Uttar Pradesh and Jaipur, including establishing a dedicated milk packaging plant in Hathras, Uttar Pradesh, explicitly framed by industry commentary as opening a new competitive front against Amul's traditional dominance in north Indian dairy markets (Dairy Dimension, cited in this chapter's research, 2025). This expansion has not been without reciprocal friction: Amul has itself made active inroads into Karnataka in recent years, a move that has drawn protests from local Karnataka dairy farmers and cooperative stakeholders concerned about the effect of external cooperative competition on the state's own dairy industry, while in the opposite direction, Kerala's own state dairy cooperative federation formally raised concern with KMF, and separately sought intervention from the National Dairy Development Board, over Nandini's expansion into Kerala on the grounds that one state's cooperative selling directly into another state's market sits in tension with cooperative movement principles, a concern that led KMF to at least temporarily pause further Kerala expansion pending direct discussions between the two federations (Dairy Dimension, cited in this chapter's research, 2025; Deccan Herald, cited in this chapter's research). For Karnataka's own state leadership, this inter-state cooperative competition is a genuinely novel policy dimension worth monitoring directly: it represents KMF transitioning from a purely intra-state rural livelihood institution into an inter-state commercial competitor, and the political and cooperative-governance sensitivities this shift has already generated with neighbouring states' dairy federations suggest the state's Department of Cooperation should have a clear, considered position on how far and how fast this expansion should proceed, distinct from KMF's own commercial growth incentives, particularly given that KMF's core mandate and its 26.8 lakh farmer-members remain overwhelmingly Karnataka-based and dependent on the federation's continued financial strength and reputation.

Read alongside the SHG-based Matsya Sanjeevini fisheries initiative discussed in section 12.4, KMF's dairy cooperative model illustrates a second, structurally distinct pathway by which Karnataka has organised rural livelihoods around cooperative rather than purely individual or state-subsidy-based models. Where the SHG federation architecture remains heavily dependent on government-facilitated credit, training, and now direct capital infusion through mechanisms like the Dakshina Kannada Community Investment Fund discussed in section 12.4, KMF represents a far more mature, financially self-sustaining cooperative enterprise operating at genuine commercial scale, generating over two decades of steadily compounding turnover growth without requiring comparable ongoing state subsidy for its core procurement and processing operations. This suggests that where Karnataka's rural livelihood strategy over the coming decade should aim, structurally, is toward more of its SHG and community-enterprise initiatives eventually achieving something closer to KMF's self-sustaining cooperative model, rather than remaining permanently dependent on the kind of government-provided common work sheds, training subsidies, and investment funds that currently characterise the Sanjeevini federation structure; KMF's own history suggests that transition, while achievable, took several decades of sustained institutional support before the federation reached its current scale, a realistic timeline ministers should bear in mind when setting expectations for how quickly newer cooperative initiatives like Matsya Sanjeevini can be expected to mature.

Chapter 13: Environment and Natural Resource Governance

13.1 Forest Cover, Biodiversity and Wildlife Conservation

Karnataka's forest cover, as recorded in the 18th India State of Forest Report released in December 2024, stands at 20.47 percent of the state's total geographical area, comprising 2.37 percent Very Dense Forest, 11.03 percent Moderately Dense Forest, and 7.07 percent Open Forest (GKToday, 2026). This state figure sits well below the national forest cover of 21.76 percent and considerably below the combined national forest and tree cover figure of 25.17 percent of India's total geographical area, even as the country's overall forest and tree cover grew by 1,445.81 square kilometres between the 2021 and 2023 assessment cycles (Drishti IAS, 2024; PIB, 2024).

Karnataka's own trajectory over this same assessment period moved in the opposite direction from the national trend. The state recorded the second largest decrease in forest and tree cover among all Indian states, losing 459.36 square kilometres, behind only Madhya Pradesh's loss of 612.41 square kilometres, and ahead of Nagaland, Bihar, and Tripura, which also recorded declines (The Wire, 2024). This decline places Karnataka in a small group of states moving against the national direction of travel at precisely the point when the country as a whole is registering its largest forest and tree cover gains in recent assessment cycles, led by Chhattisgarh, Uttar Pradesh, and Odisha (Drishti IAS, 2024).

The state's own forest cover falls well short of the target set by the National Forest Policy, which envisages 33 percent of a state's geographical area under forest cover. Editorial analysis of the preceding ISFR 2021 cycle found that Karnataka's then-forest cover of 20.19 percent fell well short of this target, and that in roughly a dozen of the state's districts, green cover stood below 10 percent, with some districts below even 3 percent (Deccan Herald, 2021a). A more granular district-level analysis of the same 2021 report found that 18 of Karnataka's 30 districts had less than 15 percent of their geographical area under forest cover, and that more than half of the state's districts had not achieved even 50 percent of the government's own 33 percent forest cover target, despite the state government having explicitly committed to that target for every district (Deccan Herald, 2021b).

District-level trends within Karnataka reveal a pronounced geographic divide between the state's Western Ghats districts, which retain substantial forest cover, and its plains districts, where forest cover remains thin. Kodagu, the state's greenest district with 79.42 percent of its geographical area under green cover, nonetheless lost 5.47 square kilometres of forest land in the 2019 to 2021 assessment period, while Udupi, the fourth greenest district at 63 percent forest cover, lost nearly 26.65 square kilometres to development activity, the single largest district-level loss recorded in that cycle (Deccan Herald, 2021b). Uttara Kannada, the state's second greenest district, moved in the opposite direction, adding 7.19 square kilometres of forest cover over the same period, and among the plains districts, Tumakuru added the highest area of any district in the state at 39.03 square kilometres, followed by Chitradurga at 30.39 square kilometres and Belagavi at 24.06 square kilometres (Deccan Herald, 2021b).

This divide illustrates that forest cover gains in Karnataka are occurring predominantly in historically low-forest plains districts through afforestation efforts, even as ecologically valuable, biodiversity-rich Western Ghats districts such as Udupi and Kodagu are recording net losses to development pressure, a pattern that raises distinct conservation concerns given the disproportionate ecological value of Western Ghats forest relative to plantation-based afforestation on the plains.

This district-level pattern is consistent with a broader national finding specific to the Western Ghats. The ISFR 2023 assessment conducted, for the first time, a dedicated evaluation of forest cover across the Western Ghats range as a whole, and found that the area formally designated as eco-sensitive by the central government had lost 58.22 square kilometres of forest cover since 2013 (PMFIAS, 2026). Given that Karnataka's own Western Ghats districts, including Kodagu, Uttara Kannada, Chikkamagaluru, and Udupi, constitute a substantial share of this eco-sensitive zone, the national finding of Western Ghats-wide forest loss directly implicates the state's own conservation performance in one of India's most biodiverse landscapes, a UNESCO World Heritage biodiversity hotspot whose degradation carries consequences well beyond the state's own administrative boundaries.

Karnataka's wildlife conservation infrastructure operates through its network of tiger reserves, wildlife sanctuaries, and national parks concentrated substantially within these same Western Ghats districts, including Bandipur, Nagarhole, and Bhadra, which together with neighbouring Kerala and Tamil Nadu reserves form part of a contiguous landscape supporting one of the largest wild tiger and Asian elephant populations in the world. The forest cover losses documented above in the very districts that host this reserve network represent a direct pressure on habitat connectivity and wildlife corridors, even where the core protected areas themselves retain strong cover, since fragmentation of the buffer and corridor forest surrounding protected areas can isolate wildlife populations and increase human-wildlife conflict incidents in the agricultural land bordering these reserves.

This link between habitat fragmentation and conflict is borne out directly in Karnataka's own human-wildlife conflict data. Karnataka holds the largest elephant population of any Indian state, estimated at 6,395 animals as of the state's most recent count, a distinction the state government has repeatedly framed as a conservation success that simultaneously carries a proportionate management burden (News On Air, 2024). Over the ten years preceding 2024, the state recorded approximately 2,500 human-elephant conflict incidents resulting in 350 human fatalities, alongside substantial and recurring crop losses in the agricultural land bordering elephant habitat (News On Air, 2024; The Week, 2025). In response to the scale of this toll, the state government has progressively raised the compensation payable to the families of conflict victims, moving from an initial 7.5 lakh rupees to 15 lakh rupees earlier in the decade, and subsequently to 20 lakh rupees, one of the highest compensation levels offered by any Indian state for wildlife-related human death (Deccan Herald, n.d.-f; The Week, 2025).

Kodagu district illustrates the geographic concentration of this conflict with particular clarity. The district is home to roughly 2,000 of Karnataka's 6,395 elephants, meaning close to a third of the state's entire elephant population is concentrated in a single district, and Kodagu correspondingly records the highest instances of wildlife-related fatalities, injuries, and crop damage anywhere in the state (NewsKarnataka, 2025). Within Kodagu's Virajpet taluk alone, wildlife conflict over the preceding decade resulted in 33 human deaths, 53 injuries, five cases of permanent disability, and 219 recorded cattle losses, with 4.7 crore rupees paid out in compensation for these incidents (NewsKarnataka, 2025). In February 2025, the state government sanctioned 21 crore rupees specifically for conflict mitigation infrastructure in Virajpet, to be used for constructing and strengthening elephant deterrent trenches and railway line barriers in the panchayats most affected, following a fatal elephant attack near Chennangolli that prompted the local legislator to seek expedited government approval for a targeted elephant capture operation (NewsKarnataka, 2025).

At the state level, Karnataka has scaled up its institutional response to this conflict considerably. By August 2024, the state had established eight dedicated elephant task forces across its major conflict zones, each led by an officer of Deputy Conservator of Forests rank, and these task forces collectively responded to more than 1,200 conflict incidents in the preceding year alone, successfully driving elephants back into forest habitat in the great majority of cases (News On Air, 2024). The state's broader mitigation strategy, branded as the Karnataka Aranya Samarasya Project, focuses on three complementary interventions: improving water availability within forest habitat so elephants have less need to move toward human settlements in search of water, undertaking habitat improvement to increase fodder availability within protected areas, and strengthening community participation in early warning and response systems (News On Air, 2024). Karnataka has also pursued inter-state cooperation on this issue, agreeing in September 2024 to a memorandum of understanding with Andhra Pradesh to exchange best practices in handling and capturing wild elephants, and in May 2025 transferring six trained kumki elephants, four from the Dubare elephant camp and two from Sakrebailu, to Andhra Pradesh specifically to help that state manage human-elephant conflict along their shared border districts (The Week, 2025).

Officials and independent conservationists attribute the underlying drivers of this conflict to a combination of habitat loss and forage scarcity within protected areas, with invasive plant species such as lantana and eupatorium displacing native fodder species and pushing elephants to forage outside forest boundaries, compounding the habitat fragmentation pressures documented earlier in this section (Deccan Herald, n.d.-g). Karnataka's Forest Department has additionally documented a significant toll on the elephant population itself from causes linked to this same human-wildlife interface, recording 79 elephant deaths in a single year, of which 17 were attributed to unnatural causes, predominantly electrocution from unauthorised or poorly insulated agricultural fencing, alongside deaths from snaring and gunshot wounds (Deccan Herald, n.d.-h). In response, the department has invested in radio-collar tracking of elephant herds and SMS-based early alert systems to warn villagers of elephant movement, interventions that officials credit with reducing conflict-related deaths even as crop damage remains a persistent and largely unresolved concern (Deccan Herald,

n.d.-g). Conflict is not confined to elephants alone: leopard attacks have caused 15 human deaths in Karnataka since 2019, and a single ten-month reporting period between April 2022 and February 2023 recorded 41 total deaths from wildlife attacks, comprising 22 from elephants, five from tigers, and four from leopards, with Nagarahole recording the highest number of incidents of any single protected area (Deccan Herald, n.d.-i). Bison-related conflict has also been documented specifically in Chikkamagaluru and Shivamogga districts, indicating that Karnataka's wildlife conflict management challenge extends beyond its most visible elephant and big cat conflict zones into a broader set of large mammal species across the state's forested districts (Deccan Herald, n.d.-g).

13.2 Land Use Change, Soil Degradation and Land Resource Management

Karnataka's land resource base is shaped by the same rural-to-urban and forest-to-development transitions documented in section 13.1, compounded by the state's status as India's third-largest state by number of colleges and a rapidly urbanising IT and industrial economy centred on Bengaluru, discussed in Chapters 4 and 11 of this framework. The district-level forest loss data in section 13.1, particularly the 26.65 square kilometre loss in Udupi district attributed explicitly to development activity, indicates that Karnataka's land use conversion pressure is not confined to its urban core but extends into ecologically sensitive coastal and Western Ghats districts as infrastructure and construction activity expands (Deccan Herald, 2021b).

Soil health management in Karnataka intersects directly with the state's mining governance record, discussed in detail in section 13.4, where decades of iron ore extraction in the Bellary, Chitradurga, Tumkur, and Vijayanagara districts have left substantial areas of degraded land requiring formal rehabilitation and reclamation. Independent case study research on waste dump rehabilitation at Karnataka's iron ore mines has documented that the scale of environmental damage from the illegal mining period identified by the state's own Lokayukta anti-corruption body was severe enough that over 90 percent of the forest area within the affected district became highly degraded as a direct consequence of indiscriminate extraction activity (Singh, 2025; SteelTimesInt, 2020). The rehabilitation of these waste dumps, now proceeding under Supreme Court-mandated Rehabilitation and Reclamation plans discussed in section 13.4, represents one of Karnataka's largest single land restoration undertakings, and its progress will directly determine whether tens of thousands of hectares of mining-affected land in the state's northern districts can be returned to productive agricultural or forest use.

A second, geographically distinct minor mineral extraction crisis has degraded Karnataka's land and river resources with comparable severity to the iron ore legacy discussed above, centred not on the state's northern hard-rock districts but on illegal sand mining along Karnataka's major rivers. In north Karnataka specifically, illegal sand mining cases rose from 4,402 in 2022-23 to 5,441 in 2023-24, even as fines collected over the same period increased by 40 percent, from 8 crore rupees to 11.11 crore rupees, indicating that enforcement activity intensified without succeeding in suppressing the underlying practice (Shastri, 2024). Officials found that 2.59 lakh tonnes of sand were illegally sourced from Koppal district

alone in 2023-24, with further illegal stockpiles totalling approximately 15,000 tonnes seized across Kalaburagi, Yadgir, Raichur, Dakshina Kannada, and Koppal districts, and district officials reported that miners were routinely excavating riverbeds to depths of 10 to 12 feet against a permitted limit of just 3 feet, using mechanised equipment despite guidelines restricting extraction to manual methods (Shastri, 2024). One constituency-level intervention illustrates that determined local enforcement can meaningfully suppress this activity: an awareness campaign combined with night patrolling launched by the legislator for the Devadurga constituency in Raichur district, situated along the Krishna river, was credited with reducing illegal sand mining in that specific area by 50 percent, though the same reporting noted that Karnataka's naturally limited sand deposits, depleted over years of river flooding, have increasingly pushed the construction sector toward manufactured sand as a substitute (Shastri, 2024).

Karnataka's coastal districts face a parallel and, by some estimates, even more severe version of this same problem. A crackdown across Coastal Karnataka between April 2024 and January 2025 resulted in more than 270 cases registered and fines of almost 1 crore rupees collected, alongside the seizure of vehicles and mining equipment, with Dakshina Kannada district alone accounting for 173 cases, 107 trucks, 91 boats, six motor machines, one dredging machine, and 13 gas cylinders used in mining operations seized, and a fine of 54.04 lakh rupees collected, while Udupi district recorded a further 103 cases, 90 vehicles and six boats seized, and a fine of 19.59 lakh rupees (Deccan Herald, n.d.-w). Within Coastal Regulation Zone areas specifically, the state's Mines and Geology Minister informed the Legislative Council that 108 cases had been booked in 2023-24 with fines of 42.90 lakh rupees, and 59 cases in 2024-25 with fines of 14.72 lakh rupees, figures that sit alongside independent expert estimates from the National Institute of Technology Karnataka-Surathkal that as much as 75 percent of sand mining along the coast is conducted illegally, with contractors using heavy machinery to excavate trenches 15 to 25 feet deep in direct violation of Coastal Regulation Zone rules (Deccan Herald, n.d.-w; ICSF, 2021). Experts have warned that this scale of extraction alters the normal course of affected rivers, causing erosion in some stretches and increased flooding risk during the monsoon in others, while depleting the sand bed itself deepens rivers and estuaries in ways that enlarge river mouths and permit saline water intrusion further upstream, a mechanism documented specifically around Pavori Uliya Kudru on the outskirts of Mangaluru (ICSF, 2021).

Enforcement of Karnataka's sand mining regulations has continued into 2026, revealing that the problem remains active and, in some cases, implicates the same regulatory institutions responsible for controlling it. In May 2026, the Karnataka Lokayukta Police registered a suo motu case against several senior government officials, including the Director of the Mines and Geology Department, the Deputy Director of Mines and Geology in Bagalkote, the Bagalkote Deputy Commissioner, and tahsildars across five taluks, over alleged large-scale illegal sand mining in the Krishna river bed, following a detailed enquiry that found indiscriminate excavation using heavy machinery across the Hunagund, Ilkal, Mudhol, and Badami taluks (Country and Politics, 2026). In a separate operation the same month, Lokayukta police seized 17,000 metric tonnes of sand and 52 vehicles in Shivamogga district

while uncovering what reporting described as alleged official collusion in the illegal mining network, and illegal sand extraction was separately detected at the Papanashini river in Kaup, Udupi district, in June 2026, indicating that enforcement action against this practice remains a live, ongoing task across multiple river systems and districts rather than a problem that earlier crackdowns have resolved (thechenabtimes.com, 2026; NewsKarnataka, 2026). Broader journalistic investigation covering the Belagavi to Raichur corridor along the Krishna, Tungabhadra, and Malaprabha rivers has documented deep excavation pits, groundwater loss, and mining-related deaths, attributing the persistence of the practice to organised extraction networks operating alongside comparatively weak on-ground enforcement capacity relative to the scale of the rivers involved (Deccan Herald, 2026b).

This pattern has previously required intervention from the National Green Tribunal, which in 2022 banned the use of heavy machinery for sand mining in river beds following a petition alleging large-scale illegal extraction using excavators in the Krishna river bed in Raichur district, directing Karnataka's Mining and Geology Department to strictly implement the state's Minor Mineral Concessions Rules and Sand Mining Management Guidelines, to establish a regular supervisory mechanism over sand mining areas, and to recover Environmental Compensation from those responsible for mining outside permitted areas (Deccan Herald, n.d.-x). The persistence of large-scale illegal extraction across the Krishna, Tungabhadra, Malaprabha, and coastal river systems four years after this Tribunal order, and the implication of the Mines and Geology Department's own officials in the 2026 Lokayukta cases documented above, indicates that Karnataka's land and river resource management faces the same underlying enforcement capacity gap already documented for its iron ore mining sector in section 13.4, namely that regulatory frameworks and judicial orders exist in reasonably developed form, but on-ground implementation, monitoring, and accountability for the officials responsible for enforcement remain the weakest link in the state's overall minor mineral governance architecture.

13.3 Water Bodies, Wetlands and River Ecosystem Health

Karnataka's water body network, once one of the most extensive tank and lake irrigation systems in peninsular India, has undergone a documented and severe contraction over recent decades. The state historically maintained approximately 40,000 lakes, and Right to Information data indicate that close to 10,000 of these lakes have already disappeared, largely through encroachment and urban expansion (Deccan Herald, n.d.-c). A 2022 survey of 18,000 of the state's remaining lakes found that more than 7,600, or roughly 42 percent, had been encroached upon, with experts noting that water bodies located adjacent to rapidly urbanising areas face the most severe degradation (Deccan Herald, n.d.-c).

Bengaluru's own lake network, historically the most celebrated feature of the city's urban water management heritage, has become the most visible symptom of this broader statewide crisis. A report filed by the Central Pollution Control Board with the National Green Tribunal on April 16, 2025, following the Tribunal's suo motu cognisance of the issue, found that over 90 percent of the water bodies in Karnataka, with the majority located in Bengaluru, are in a

state of neglect and fail to meet the water quality standards prescribed by the Karnataka State Pollution Control Board, with 172 of the 187 lakes specifically studied recording unacceptable water quality (SANDRP, 2026). More recent monitoring data published on the Karnataka State Pollution Control Board's own portal found that nearly four in ten Bengaluru lakes fell into Class E, the worst water quality category, in 2025, with high sewage inflow and faecal coliform levels persisting despite substantial state investment in sewage treatment plants, and with seasonal rainfall providing only temporary dilution rather than addressing the underlying pollution sources (Deccan Herald, 2026a).

Specific lake-level case studies illustrate the mechanics of this contamination. The Yelahanka Puttenahalli Lake, which made headlines in 2024 after sewage from upstream neighbourhoods was channelled into it via a storm water drain, required a Karnataka State Pollution Control Board assessment in February 2026 that estimated approximately six months would be needed to complete the works necessary to divert sewage away from the lake, with temporary mitigation measures recommended in the interim (SANDRP, 2026). In peri-urban areas such as Doddaballapur taluk in Chikballapur district, residents of villages near the Nagarakere, Majarahosahalli, Veerapura, and Doddatumkur lakes, all fed by the Arkavathi River, raised sustained public objections beginning in 2022 over untreated sewage and industrial effluent discharge, to the point that residents of 16 villages considered boycotting the 2024 Lok Sabha elections specifically to draw attention to the contamination (Deccan Herald, n.d.-c). Karnataka State Pollution Control Board testing of borewells in the affected Doddatumkur gram panchayat area found that 7 of 18 sampled borewells produced water unfit for use in 2021, a figure that worsened to 17 of 18 borewells found unfit just two years later in a subsequent round of testing, indicating that groundwater contamination linked to surface lake pollution intensified rather than improved over that period despite the public attention the issue had already received (Deccan Herald, n.d.-c).

River ecosystem health in Karnataka's Western Ghats and coastal river systems has also shown signs of acute stress that extend beyond urban pollution into fundamental changes in hydrology. The Nethravati river, which flows through the Western Ghats foothills near Mangaluru, was classified as a perennial river as recently as a decade ago, but has since gone completely dry near Uppinangady during parts of the year, a hydrological shift documented in the context of Karnataka's own climate action planning process and attributed to a combination of erratic monsoon patterns and upstream land use change (Down To Earth, 2024). This transformation of a historically perennial river into a seasonally dry watercourse within the span of a single decade is among the more striking individual indicators of environmental stress documented anywhere in this framework, and it illustrates that Karnataka's water resource challenges extend well beyond the urban lake contamination crisis centred on Bengaluru into fundamental changes in the state's river systems.

13.4 Mining and Mineral Resource Governance

Karnataka's mineral resource governance has been shaped for over a decade and a half by one of India's most significant judicial interventions into extractive industry regulation, centred

on iron ore mining in the state's Bellary, Chitradurga, Tumkur, and Vijayanagara districts. The Supreme Court's intervention originated from a writ petition filed by the civil society organisation Samaj Parivartana Samudaya, based substantially on findings from the Karnataka Lokayukta, the state's anti-corruption ombudsman, which exposed rampant illegal mining activity implicating both businessmen and politicians in the Bellary region (Opast Publishers, 2025). In two separate orders issued in July and August 2011, the Supreme Court imposed a complete ban on iron ore mining across the affected districts, a decision the Court explicitly grounded in findings from its own Central Empowered Committee that more than 90 percent of the forest area within Bellary district had become highly degraded as a direct result of indiscriminate mining, alongside evidence that 1,081.40 hectares of forest land had been illegally encroached upon by various mining lease holders (SteelTimesInt, 2020; Deccan Herald, n.d.-d).

Following the initial ban, the Supreme Court in April 2012 permitted a phased resumption of mining, restricted to a set of Category A mines deemed to have committed no or minor illegalities, subject to a maximum permissible annual production ceiling imposed over and above the restrictions already in place under existing mining plans and environmental clearances (ForumIAS, 2022; TheePrint, 2024). The Court additionally mandated that all accumulated iron ore stock be disposed of through e-auction, conducted under the oversight of a court-appointed Monitoring Committee, and constituted a dedicated Special Purpose Vehicle to implement mitigating environmental measures across the affected districts (TheePrint, 2024). In August 2022, the Supreme Court increased the district-wise annual production ceiling, acknowledging the need to balance ecological conservation with continued economic development in the mining-dependent local economy (ForumIAS, 2022).

More than a decade after the original ban, the industry position on Karnataka's mining restrictions has shifted markedly. In an application filed with the Supreme Court in late 2024, the southern region of the Federation of Indian Mineral Industries argued that the extraordinary circumstances that had originally justified the production ceiling, namely the large-scale illegal mining operations that caused irreparable loss to the country's forest wealth and the national exchequer, no longer exist in the four affected districts, and sought a formal review and removal of the maximum permissible annual production restriction (TheePrint, 2024). This industry position, representing public sector undertakings, steel producers, and mining companies with interests in the region, reflects a broader pattern in which the initial crisis-driven regulatory intervention of 2011 has gradually evolved, over more than a decade, into a routine but still actively contested regulatory ceiling that industry stakeholders now argue has outlived its original justification.

Separately from the production ceiling debate, the Supreme Court has continued to actively supervise the environmental remediation obligations tied to Karnataka's mining sector. In March 2024, the Court directed Karnataka's Principal Chief Conservator of Forests to conduct a detailed scrutiny and survey of Category A, B, and C mines across Bellary, Chitradurga, and Tumkur districts for which Rehabilitation and Reclamation plans had not yet been submitted or approved, with the Court specifying that these plans would be

implemented and executed either through the Karnataka Mining and Environment Restoration Corporation or through any other agency the Court considered more appropriate, and that the costs of implementing these plans would be recovered from the relevant erstwhile lease holders (LiveLaw, 2024). This ongoing judicial oversight of Rehabilitation and Reclamation plan implementation, now more than 15 years after the original Lokayukta exposé, illustrates that Karnataka's mining governance remains an unresolved, actively supervised area of environmental regulation rather than a closed chapter, and that the land restoration obligations tied to the state's mining-affected districts, discussed further in section 13.2, remain a live governance priority alongside the ongoing production ceiling dispute.

13.5 Pollution: Air, Water, Noise and Soil — Status and Regulatory Response

Air quality in Karnataka's capital, Bengaluru, presents a more nuanced picture than the state's reputation as a comparatively liveable Indian metropolis might suggest. Real-time monitoring data classify Bengaluru's air quality as generally moderate rather than severely polluted by the standards of India's most polluted northern cities, with the city's PM_{2.5} concentration nonetheless recorded at 2.8 times the World Health Organization's annual guideline value even under this moderate classification (IQAir, n.d.). Historical trend analysis covering 2020 through 2026 found that Bengaluru's annual average Air Quality Index using the United States standard rose from 86 in 2020 to a projected 113 in 2026, an increase of approximately 33.7 percent, with only 3 percent of days in the analysed 2026 period falling within the World Health Organization's safe air quality limits, a trend the analysis characterised as posing extreme risk of respiratory problems, heart disease, and related health issues, particularly for children, the elderly, and those with pre-existing conditions (AQI.in, 2026). This worsening trajectory, set against Bengaluru's continued classification as only moderately polluted in absolute terms, indicates that the city's air quality is deteriorating from a comparatively favourable baseline rather than improving from a severe one, a distinction that matters for how urgently the trend should be treated by state air quality regulators even though Bengaluru does not yet feature among India's most visibly polluted cities.

Water pollution, documented extensively in section 13.3 through the lens of Bengaluru's lake network, extends into groundwater contamination in peri-urban districts such as Chikkaballapur, where the borewell testing data discussed above showing a deterioration from 7 of 18 to 17 of 18 unfit samples over a two-year period represents one of the more alarming documented water quality trends anywhere in this framework, given that groundwater contamination of this severity directly affects drinking water access for the rural households relying on these borewells (Deccan Herald, n.d.-c). The persistence of this contamination despite sustained community advocacy, including the electoral boycott threat documented in section 13.3, illustrates a broader regulatory enforcement gap in Karnataka's approach to industrial and sewage effluent discharge into peri-urban water bodies, since public pressure alone appears to have been insufficient to reverse the underlying contamination trend over the period for which data is available.

Soil pollution and degradation in Karnataka is most acutely documented in the mining-affected districts discussed in sections 13.2 and 13.4, where the greater than 90 percent forest degradation rate recorded in Bellary district during the peak illegal mining period represents a soil and land quality crisis whose remediation, through the Rehabilitation and Reclamation plans now under Supreme Court supervision, remains incomplete more than a decade after the original judicial intervention (Singh, 2025; LiveLaw, 2024). The state's pollution control architecture, administered principally through the Karnataka State Pollution Control Board, thus faces simultaneous and geographically distinct pollution challenges: a worsening urban air quality trend in Bengaluru, a severe and only partially addressed water pollution crisis affecting both surface lakes and groundwater in and around the capital, and a long-running soil and land degradation legacy in the state's northern mining districts that continues to require active judicial oversight to resolve.

13.6 Coastal and Marine Resource Management

Karnataka's coastline along the Arabian Sea, spanning the districts of Uttara Kannada, Udupi, and Dakshina Kannada, faces a distinct set of environmental governance challenges that intersect with the state's broader climate vulnerability profile discussed in Chapter 14. The state's own climate action planning documentation identifies fisheries as a sector facing direct vulnerability from sea level rise, ocean acidification, and increasingly extreme weather events along the coast, alongside broader concerns about the resilience of coastal ecosystems to these compounding pressures (NammaKPSC, 2024). This vulnerability sits alongside the hydrological stress documented in section 13.3 for coastal-draining rivers such as the Nethravati, whose transition from a perennial to a seasonally dry watercourse near Mangaluru has direct implications for the freshwater inflow that sustains estuarine and near-shore marine ecosystems along Karnataka's coast, since reduced freshwater discharge can alter salinity gradients that many coastal fish and shellfish species depend upon for breeding and juvenile development.

Karnataka's coastal geography is simultaneously being positioned as a strategic asset for the state's clean energy ambitions, discussed in greater detail in Chapter 14, with academic and industry analysis specifically identifying the state's coastal infrastructure as offering a distinct opportunity to develop green hydrogen export capacity, leveraging existing port infrastructure alongside the state's substantial and growing solar and wind generation capacity (E3S Conferences, 2023). This emerging economic use of Karnataka's coastline, while distinct from traditional marine resource management concerns such as fisheries and mangrove conservation, introduces a new category of coastal infrastructure development that the state's marine and coastal resource governance framework will need to plan for and regulate alongside its existing responsibilities for fisheries livelihoods, coastal erosion management, and estuarine ecosystem protection, particularly given the national data documented in section 13.1 showing continued net mangrove cover loss across India's coastal states even as most other categories of forest and tree cover expanded.

Chapter 14: Climate Change and Ecological Security

14.1 State Climate Vulnerability and Risk Profile

Karnataka's climate vulnerability is defined by an unusual geographic duality that its own state climate action planning documentation identifies as one of the most distinctive features of the state's risk profile. The state has been caught between two extreme conditions over the past decade, with the southern districts experiencing recurring floods and the northern and eastern districts experiencing chronic drought, a pattern that means the state cannot design a single, uniform climate adaptation strategy but must instead maintain simultaneous drought-proofing and flood-management capacity across different parts of its territory (Down To Earth, 2024).

The clearest single illustration of this vulnerability is the transformation of the Nethravati river, which flows through the Western Ghats foothills near Mangaluru and was classified as a perennial river as recently as a decade ago, but has since gone completely dry near Uppinangady, a hydrological shift documented directly in the context of the state's own climate planning process (Down To Earth, 2024). A river system moving from perennial to seasonally dry status within a single decade is a striking indicator of the pace at which Karnataka's water resource baseline is shifting, and it illustrates that the state's climate vulnerability extends well beyond gradual, incremental change into the kind of abrupt hydrological threshold crossing that adaptation planning based on historical rainfall averages may fail to anticipate.

Karnataka's own State Action Plan on Climate Change, prepared jointly by the Environment Management and Policy Research Institute and The Energy and Resources Institute, documents projected climate trends and impacts across the state's key economic sectors. The plan's climate projections indicate further temperature rise alongside mixed trends in rainfall, with an increased frequency of extreme events including both heavy rainfall episodes and drought years, and identifies varied impacts across agriculture, with productivity gains projected for some crops alongside losses for others, direct and indirect impacts on livestock from heat stress and resource reduction, vulnerability in fisheries from sea level rise, ocean acidification, and extreme weather, and shifts in forest vegetation and biodiversity, including potential dieback in some areas alongside increased productivity in others due to elevated atmospheric carbon dioxide (NammaKPSC, 2024). This sector-by-sector vulnerability assessment underscores that Karnataka's climate risk is not confined to a single dominant hazard but spans agriculture, livestock, fisheries, forestry, and water resources simultaneously, each with a distinct exposure pathway and adaptation requirement.

A fourth hazard, extreme heat, has emerged alongside flood, drought, and landslide as a distinct and rapidly intensifying dimension of Karnataka's climate vulnerability profile, with the state's own meteorological outlook for 2026 explicitly warning of a hotter summer than the one preceding it. The India Meteorological Department forecast that Karnataka's north and south interior districts would see maximum temperatures 1.6 to 3 degrees Celsius above

normal in 2026, with Bengaluru itself recording 37 degrees Celsius, following a 2025 season in which the north interior region recorded maximum temperatures between 41 and 45 degrees Celsius while coastal Karnataka, though cooler in absolute terms at below 36 degrees Celsius, experienced increasingly oppressive hot and humid conditions across Uttara Kannada, Udupi, and Dakshina Kannada districts, with coastal temperatures reaching 34.7 degrees Celsius and continuing to rise (The South First, 2026). District-specific heatwave warnings for April 2026 identified Bidar, Raichur, Kalaburagi, and Vijayapura as the districts most likely to experience sustained heatwave conditions, with intense heat beginning as early as 8:30 in the morning and continuing into the evening, a pattern the same reporting noted was disrupting daily life and making outdoor work particularly difficult for street vendors and daily wage workers, the same informal economy workforce documented in Chapter 3 of this framework as comprising a substantial share of Karnataka's labour market and one of the segments least protected against climate-linked occupational hazards (The South First, 2026). A senior scientist at the India Meteorological Department's Bengaluru Meteorological Centre attributed this rise in heat intensity to a combination of anti-cyclonic atmospheric circulation, global warming, and the state's own geography, topography, and vegetation coverage, the last of these tying directly back to the forest cover losses documented in Chapter 13, since reduced tree cover in a given district removes a natural moderating influence on local surface temperatures (The South First, 2026). A separate seasonal outlook published in February 2026 projected four to six heatwave days across Karnataka for the coming summer, with north interior and coastal districts again identified as the worst affected, and temperatures forecast to run two to six degrees Celsius above normal, an elevation attributed to the combined influence of the El Niño-Southern Oscillation and the Indian Ocean Dipole on the state's regional climate (Deccan Herald, 2026c).

Karnataka's heat trajectory sits within a broader national pattern that climate reporting has increasingly characterised as a tipping point rather than a series of unconnected hot summers. India's summers of 2024, 2025, and 2026 have each been described as more severe than the last, with the 2025 season notable for producing the country's first ever recorded winter-season heatwave, when Goa and Maharashtra recorded heatwave conditions on February 25, an event the India Meteorological Department itself described as unprecedented in India's meteorological history, since heatwaves had never previously been recorded during the winter season (Down To Earth, 2026). A Harvard-supported white paper published in April 2026 characterised extreme heat as the world's deadliest climate hazard, while simultaneously being among its least funded, a framing that carries particular relevance for Karnataka given the direct exposure of its outdoor and informal workforce documented above, and given that the state's own climate financing priorities, discussed in section 14.2, were developed before this most recent and most severe run of consecutive heat summers had fully materialised (Down To Earth, 2026).

The rainfall variability at the centre of this vulnerability profile has already produced direct economic consequences beyond the disaster losses documented in section 14.3. In the 2024-25 budget cycle, the state government explicitly attributed a power supply crisis to poor rainfall, since a substantial share of Karnataka's electricity generation historically depends on

hydroelectric capacity that is directly sensitive to reservoir inflow (Deccan Herald, 2024b). This episode illustrates that Karnataka's climate vulnerability is not confined to the agricultural, disaster, and water sectors this section has already discussed but extends directly into energy security, a linkage explored further in section 14.6 in the context of the state's renewable energy expansion.

14.2 State Action Plan on Climate Change: Review and Second Generation Reforms

Karnataka's State Action Plan on Climate Change has followed an unusually protracted path from initial drafting to formal central government approval, a delay that itself illustrates a broader institutional challenge in translating climate risk assessment into actionable, funded state policy. The plan, in its current version, was initially prepared in 2021 by the Environment Management and Policy Research Institute, but only recently received formal approval from the central government after what has been characterised as a three-year wait, with commentary explicitly noting that securing approval represents only the first step, and that proper implementation is now the key determinant of whether the plan will meaningfully contain the climate crisis the state is experiencing (Down To Earth, 2024).

The scale of financing the plan itself identifies as necessary is substantial relative to Karnataka's existing sectoral budgets discussed elsewhere in this framework. The Environment Management and Policy Research Institute's own costing indicates that the state requires 52,827 crore rupees, equivalent to approximately 6.3 billion United States dollars, between 2025 and 2030 to implement climate adaptation and mitigation measures across agriculture, horticulture, forestry, energy, water resources, and several other sectors (Down To Earth, 2024; World Bank, 2025). This financing requirement is structured around four additional elements that together define the plan's implementation boundary: the dedicated Climate Action Plan for Bangalore launched by the Bruhat Bengaluru Mahanagara Palike in 2023, a dedicated water security programme discussed further below, a set of institutional strengthening measures, and sector-specific working groups covering adaptation, mitigation, research, and extension activities, with financing drawn from central budget allocations, cess and tariff-based funds, and development partnerships (World Bank, 2025; NammaKPSC, 2024).

The most concrete second-generation implementation vehicle to emerge from this planning process is the Karnataka Water Security and Resilient Program, a Programme-for-Results operation to be implemented over the five-year period from 2025 to 2031 with World Bank support. The programme geographically prioritises Bengaluru specifically, citing the city's economic salience to the state, its population concentration, and its distinct climate vulnerability profile relative to the rest of Karnataka, even though many of the programme's results are designed to deliver statewide benefits beyond the capital (World Bank, 2025). The programme's institutional architecture draws together several previously separate agencies, including the Bangalore Water Supply and Sewerage Board, the Bruhat Bengaluru Mahanagara Palike, the Karnataka State Natural Disaster Monitoring Centre, the Karnataka

State Disaster Management Authority, and the Minor Irrigation and Groundwater Development Department, reflecting a deliberate effort to coordinate water security, sewerage, disaster monitoring, and groundwater management functions that had previously operated largely as separate silos (World Bank, 2025). This deliberate institutional consolidation, bringing together disaster monitoring and water resource agencies under a single results framework specifically because water stress, flooding, and landslides are understood to be climate change-exacerbated hazards rather than independent risks, represents the clearest evidence that Karnataka's second-generation climate planning has moved beyond the document-drafting stage documented in its original 2021 State Action Plan toward genuine cross-agency implementation architecture.

14.3 Disaster Risk Profile: Hazard, Exposure and Vulnerability Mapping

Karnataka's disaster risk profile, as documented in the state's own Flood Risk Management Action Plan of 2022, reveals a pattern of near-continuous hazard exposure rather than episodic disaster events. Over a 14-year review period, the state's Malnad region, its coastal districts, and its four major river basins experienced floods in nine of those years and landslides in 13 of those years, a frequency that led state disaster planners to characterise the underlying calamity not as a future risk but as a condition already present in the state's hydrology (Deccan Herald, n.d.-e). The last year in which Karnataka experienced no flood event at all across its territory was 2017, meaning that every subsequent year through the time of the plan's publication recorded at least some flood impact somewhere in the state (Deccan Herald, n.d.-e).

The human and economic cost documented in this same Flood Risk Management Action Plan is substantial. Between 2018 and 2021 alone, Karnataka recorded 248 deaths and damage, whether partial or severe, to 2.18 lakh houses as a direct result of flooding, with the state suffering losses of 78,575 crore rupees over just those three years from crop loss, cattle deaths, and damage to roads, bridges, irrigation tanks, government buildings, and other public infrastructure (Deccan Herald, n.d.-e). Drought exposure over a longer time horizon has been similarly pervasive, with 80 percent of the state's geographical area affected by drought conditions in 15 of the preceding 22 years documented in the plan, indicating that the great majority of Karnataka's land area has spent more than two-thirds of the recent past under some degree of drought stress (Deccan Herald, n.d.-e).

The particular severity of the 2022 monsoon season, during which excess rainfall resulted in flooding across all 31 districts of the state, a universality of impact not recorded in any of the preceding years covered by the plan, illustrates that Karnataka's flood exposure is not confined to its traditionally flood-prone Malnad, coastal, and river basin regions but can, under sufficiently extreme rainfall conditions, extend statewide (Deccan Herald, n.d.-e). This 2022 event, occurring in the same broad period as the drafting and eventual approval of the state's Climate Action Plan discussed in section 14.2, underscores the urgency behind the plan's emphasis on simultaneous flood and drought resilience rather than a single-hazard adaptation strategy.

Independent World Bank analysis of Karnataka's disaster financing gap, prepared in support of the Karnataka Water Security and Resilient Program discussed in section 14.2, found that funding available through the National Disaster Response Fund, the principal central mechanism for post-disaster financial support, covered only 8 percent of the total estimated losses the state incurred from drought events and only 6 percent of estimated losses from flood events (World Bank, 2025). This financing gap, documented by an international development institution actively engaged in designing Karnataka's climate resilience investments, indicates that the disaster loss figures reported in the state's own Flood Risk Management Action Plan substantially exceed the compensation and recovery resources currently available through the standard national disaster response architecture, leaving a large uncovered gap that either the state's own budget or additional development financing, such as the water security programme itself, must attempt to close.

14.4 Disaster Risk Reduction: Institutional Mechanisms and Preparedness

Karnataka holds a distinctive institutional legacy in disaster risk reduction, having established the first dedicated Drought Monitoring Cell in the country in 1988, well ahead of most other Indian states, as an institutional mechanism affiliated with the state's Department of Science and Technology (KSNDMC, n.d.). This early institutional investment was subsequently broadened in 2007, when the Drought Monitoring Cell was renamed and reorganised as the Karnataka State Natural Disaster Monitoring Centre, with an expanded mandate covering the full range of natural hazards the state faces rather than drought alone (KSNDMC, n.d.). The Centre now functions as the common science and technology platform serving the various response agencies involved in natural disaster management across Karnataka, providing the kind of proactive, technically grounded early warning inputs that disaster response depends upon, and it maintains a Rainfall Atlas of Karnataka alongside dedicated assessments of climate change scenarios and drought vulnerability specific to the state (KSNDMC, n.d.).

This monitoring infrastructure now sits alongside the Karnataka State Disaster Management Authority as one of the core institutions named explicitly in the Karnataka Water Security and Resilient Program's institutional architecture discussed in section 14.2, reflecting the state government's own recognition that effective disaster preparedness requires close coordination between hazard monitoring, water resource management, and urban infrastructure agencies rather than disaster response operating as a standalone function separate from routine water and infrastructure planning (World Bank, 2025). The Centre's operational role extends beyond passive monitoring into active public-facing services, including its Varuna Mitra Help Desk, which provides a direct channel for disaster-related public inquiry and support (KSNDMC, n.d.).

The heat vulnerability documented in section 14.1 has itself been formalised into Karnataka's institutional disaster preparedness architecture through a dedicated Karnataka State Heat Wave Action Plan, jointly administered by the Karnataka State Disaster Management Authority and the Revenue Department's Disaster Management wing, extending the same institutional structure responsible for flood and drought preparedness to cover extreme heat as

a distinct, actively managed hazard category (Karnataka State Heat Wave Action Plan, 2024-25). This extension of the state's disaster management mandate to heat specifically is a comparatively recent institutional development relative to Karnataka's multi-decade history of drought and flood monitoring documented above, and its effectiveness will need to be judged against the escalating frequency of heatwave days projected for the state, given that independent meteorological forecasting already anticipates four to six heatwave days in the 2026 season alone concentrated in the same north interior and coastal districts the Heat Wave Action Plan is intended to protect (Deccan Herald, 2026c).

The heat and hydroelectric vulnerabilities documented separately in sections 14.1 and this section compound one another in a way that has direct implications for the institutional coordination model discussed above. India's national electricity grid recorded an all-time peak demand of 270.82 gigawatts on May 21, 2026, surpassing the previous record of approximately 250 gigawatts set in May 2024 and closely matching the Union Ministry of Power's own summer projection of 270 gigawatts, a surge driven substantially by cooling demand during the same run of record summer heat documented in section 14.1 (Down To Earth, 2026). For a state such as Karnataka, where a substantial share of generation capacity remains hydroelectric and therefore directly exposed to the rainfall variability documented throughout this chapter, a summer combining severe heat-driven demand growth with the kind of poor rainfall that has already triggered a power supply crisis in the 2024-25 cycle represents a compounding risk in which the very conditions that increase electricity demand are also the conditions most likely to constrain hydroelectric supply, a dynamic explored further in relation to the state's broader generation diversification strategy in section 14.6.

Despite this comparatively long institutional history across flood, drought, and now heat, the persistence of the near-continuous flood and landslide exposure documented in section 14.3, spanning floods in nine of the last 14 years and landslides in 13 of the last 14 years at the time the state's own Flood Risk Management Action Plan was compiled, indicates that early warning and monitoring capacity alone has not been sufficient to prevent the scale of loss the state has experienced (Deccan Herald, n.d.-e). This suggests that Karnataka's disaster risk reduction priorities going forward need to extend beyond the monitoring and early warning function, in which the state has genuine institutional strength and a multi-decade head start relative to many other Indian states, toward the physical infrastructure resilience, land use regulation in flood-prone and landslide-prone zones, and financing capacity discussed in section 14.3, where the documented gaps appear considerably larger.

14.5 Post-Disaster Response, Relief and Reconstruction Framework

Karnataka's post-disaster response and reconstruction framework operates through the same institutional architecture documented in sections 14.2 and 14.4, with the Karnataka State Disaster Management Authority serving as the principal state-level coordinating body for relief and reconstruction activity following flood, drought, and landslide events, working alongside the Karnataka State Natural Disaster Monitoring Centre's ongoing hazard monitoring function and the state's Minor Irrigation and Groundwater Development

Department where water infrastructure damage is involved (World Bank, 2025). The financing gap documented in section 14.3, in which the National Disaster Response Fund has covered only 8 percent of estimated drought losses and 6 percent of estimated flood losses in Karnataka, represents the single most significant structural constraint on the state's post-disaster reconstruction capacity, since a recovery and reconstruction process that can draw on central disaster relief funds for only a small fraction of documented losses places a correspondingly larger burden on the state's own budget, on affected households' own resources, and on whatever supplementary development financing, such as the Karnataka Water Security and Resilient Program, the state is able to secure (World Bank, 2025).

The scale of loss documented in the state's own 2022 Flood Risk Management Action Plan, namely 248 lives lost and 2.18 lakh houses damaged between 2018 and 2021 alone, at a combined economic cost of 78,575 crore rupees over just three years, indicates that Karnataka's reconstruction obligations recur on an essentially annual basis rather than following the more traditional model of disaster response built around occasional, discrete catastrophic events (Deccan Herald, n.d.-e). This recurring pattern, given that every year since 2017 has recorded at least some flood impact somewhere in the state, means that Karnataka's disaster relief and reconstruction machinery functions less as an emergency response system activated occasionally and more as a standing, continuously operating component of the state's broader public works and rural development architecture, discussed in Chapters 8, 10, and 12 of this framework, since road, bridge, irrigation tank, and housing reconstruction following flood damage overlaps substantially with the same infrastructure categories those chapters address under ordinary, non-disaster development planning.

14.6 Green Economy Transition: Opportunities and Structural Challenges

Karnataka's green economy transition is anchored by one of the strongest renewable energy generation profiles of any Indian state. As of January 31, 2025, Karnataka's total installed renewable energy capacity stood at 23,017.97 megawatts, the fourth highest among all Indian states after Rajasthan, Gujarat, and Tamil Nadu, with solar power contributing approximately 9,282.19 megawatts and wind power contributing 6,851.90 megawatts, together accounting for 70.1 percent of the state's total renewable capacity (Renewable Watch, 2025). The remainder of the state's renewable portfolio is made up of 1,909.95 megawatts of biopower, 3,689.2 megawatts of large hydro, and 1,284.73 megawatts of small hydro capacity, with the solar component further disaggregated into 8,478.43 megawatts of ground-mounted solar, 683.60 megawatts of rooftop solar, and smaller off-grid and hybrid components (Renewable Watch, 2025). Karnataka's solar capacity includes the Pavagada Solar Park, widely recognised as one of the largest solar installations in the world, and the state's overall renewable buildout has been guided by successive dedicated policy frameworks, including the Karnataka Renewable Energy Policy 2022-2027 and the Karnataka Solar Policy 2023-2028, the latter explicitly targeting floating solar projects on reservoirs and lakes, agrivoltaic systems that combine solar generation with farming, and green hydrogen production using solar electricity as part of a stated ambition for Karnataka to become India's leading renewable energy state by 2030 (Times.Solar, 2025; Invest Karnataka, n.d.).

Karnataka's wind energy sector has shown particularly strong recent momentum. The state added 1,331 megawatts of new wind power capacity in the period recognised at the Global Wind Day 2025 celebrations held in Bengaluru, making Karnataka the national leader in wind capacity addition for that period, ahead of Tamil Nadu's 1,136.37 megawatts and Gujarat's 954.76 megawatts, and bringing the state's total installed wind capacity to 7,351 megawatts (Deccan Herald, 2025h). Karnataka's Energy Minister described this milestone as reflecting the state's policy and execution capability in the renewable energy sector, and the state has committed to implementing a further 17 gigawatts of new wind power projects, including more than 5 gigawatts under a dedicated Renewable Energy Cluster Programme, alongside more than 20 new substations, 400 kilovolt transmission corridors, and a dedicated Renewable Energy Reserve Zone to support this expansion (Deccan Herald, 2025h). These commitments sit within the state's stated support for India's national target of 500 gigawatts of renewable energy capacity by 2030, of which 100 gigawatts is targeted from wind power nationally (Deccan Herald, 2025h).

Battery energy storage and green hydrogen represent the newer, still-emerging components of Karnataka's green economy transition. The state implemented 1,000 megawatt-hours of battery energy storage system capacity across seven substations during the 2025-26 financial year, and has proposed a further 2,000 megawatt-hours of capacity at the Huliur, Pavagada, and Kushtagi substations at an estimated investment of 34 billion rupees, according to the state budget for 2026-27 (Renewable Watch, 2026). Karnataka is also developing domestic battery storage manufacturing capability, illustrated by Pace Digitek's commissioning of a battery energy storage system manufacturing facility through its subsidiary Lineage Power Private Limited in the Bidadi industrial area near Bengaluru in July 2025 (Renewable Watch, 2026). On green hydrogen specifically, the Karnataka Renewable Energy Development Limited has pursued a 300 kilowatt self-sustained pilot green hydrogen plant, considering Pavagada and Kalaburagi as potential sites, supported by a 10 crore rupee fund from the Ministry of New and Renewable Energy, while Hero Future Energies signed a memorandum of understanding with the Karnataka government in November 2024 committing to invest 110 billion rupees in renewable energy and green hydrogen within the state, and in September 2025 the firms SCC Infrastructure and InSolare Energy emerged as winning bidders under a national green ammonia auction with direct relevance to Karnataka's coastal green hydrogen export ambitions discussed in Chapter 13 (Renewable Watch, 2025, 2026).

Karnataka's clean energy transition extends beyond electricity generation into transport, where the state has positioned itself as a first mover among Indian states on electric mobility policy for close to a decade. Karnataka's Cabinet gave in-principle approval to an Electric Vehicle and Energy Storage Policy as early as 2017, with the explicit ambition of making the state, and Bengaluru specifically, the electric vehicle capital of the country, targeting 31,000 crore rupees in investment and 55,000 jobs across both the manufacturing and demand side of the emerging electric mobility sector, developed in consultation with industry, academia, and taxi aggregators (Deccan Herald, n.d.-j; Green Mobility Library, n.d.). This original policy was subsequently strengthened in 2021 to improve investor economics, and then substantially expanded on February 11, 2025, into the Karnataka Clean Mobility Policy 2025-30, which

broadened the scope beyond electric vehicles alone to explicitly integrate green hydrogen, ammonia, and other clean energy technologies within a single policy framework, and which targets 50,000 crore rupees in cumulative investment by 2030 (Bolt.Earth, 2026; Ecozaar, 2025).

The Clean Mobility Policy 2025-30 combines capital incentives, ranging from 20 to 35 percent for micro, small, and medium enterprises and up to 25 percent for large enterprises, with a substantial planned expansion of charging infrastructure, targeting more than 2,500 new charging stations to be developed through public-private partnerships, alongside a specific requirement for charging points at intervals of 60 to 70 kilometres along the state's highways to support long-distance electric vehicle travel (Bolt.Earth, 2026). The policy additionally allocates 3,400 crore rupees specifically for battery energy storage systems intended to support the electricity grid during periods of peak electric vehicle charging demand, directly linking the state's electric mobility ambitions to the broader battery storage capacity discussed earlier in this section, and establishes dedicated electric mobility manufacturing clusters in Gauribidanur, Dharwad, and Harohalli to anchor supply-side investment geographically across the state rather than concentrating it solely within Bengaluru (Bolt.Earth, 2026).

Karnataka's approach to electric vehicle taxation has evolved in a direction that illustrates the state's broader fiscal balancing act between subsidising early-stage clean technology adoption and generating revenue as that technology matures. Having offered a full 100 percent road tax exemption on electric vehicles for an extended period to stimulate early adoption, Karnataka rolled back this exemption in 2026 through a dedicated Taxation Amendment, introducing a new lifetime tax structure ranging from 5 to 10 percent based on vehicle cost (Bolt.Earth, 2026). Industry analysis has characterised this shift as establishing a balanced ecosystem in which the state moves toward a revenue-generating model specifically for higher-end vehicles, while remaining, on the manufacturing and infrastructure side, among the most aggressive Indian states in offering capital subsidies, including a full exemption on electricity duty for the first five years of operation depending on the industrial zone, and complete reimbursement of land costs for qualifying clean mobility manufacturing investments (Bolt.Earth, 2026).

Despite this considerable momentum across both electricity generation and clean mobility, Karnataka's green economy transition faces structural challenges that intersect directly with the climate vulnerability profile documented earlier in this chapter. The state's own renewable energy planning literature acknowledges that Karnataka's energy demand is growing at an annual rate of 6 percent, and that the state's sporadic and increasingly erratic rainfall patterns, the same patterns documented in sections 14.1 and 14.3 as driving both flood and drought risk, can directly impact renewable energy generation, particularly for the hydro components of the state's portfolio and for the water-intensive elements of solar panel maintenance in a state with recurring drought exposure (E3S Conferences, 2023). The 2024-25 power supply crisis documented in section 14.1, in which the state government explicitly attributed generation shortfalls to poor rainfall affecting hydroelectric output, illustrates that this tension

is not merely theoretical, and the state's budget response, targeting an increase in total installed generation capacity from 32,000 megawatts to 60,000 megawatts over seven years, reflects a deliberate strategy of diversifying and expanding generation capacity precisely because reliance on any single source, including both traditional hydro and increasingly weather-sensitive solar and wind, carries a climate risk the state's own recent experience has already demonstrated (Deccan Herald, 2024b). This creates a genuine tension within Karnataka's own green economy strategy: the same climate volatility that the state's renewable energy expansion is intended to help mitigate over the long term is simultaneously a near-term operational risk to the reliability of that same renewable generation capacity, a tension the state's integrated water security and disaster monitoring institutions discussed in section 14.2 will need to actively manage as both the renewable energy buildout and the climate adaptation programme continue to scale in parallel over the remainder of this decade.

Chapter 15: Administrative Governance Reform

15.1 Structure of State Administration and Inter-Departmental Coordination

Karnataka's administrative structure follows the standard Indian state model of a state secretariat headed by the Chief Secretary, beneath which sit individual administrative departments, each headed by a Principal Secretary or Secretary and staffed substantially through the Karnataka Administrative Service, the state's own civil service cadre and the principal feeder service into the Indian Administrative Service through periodic promotion quotas. Below the secretariat level, Karnataka's territorial administration is organised into four revenue divisions, Bengaluru, Mysuru, Belagavi, and Kalaburagi, each headed by a Divisional Commissioner, with district-level administration in turn delivered through Deputy Commissioners across the state's 31 districts, supported by Assistant Commissioners and Tahsildars at the sub-district and taluk level (KnowledgeKendra, 2026).

The Karnataka Administrative Service functions as the backbone of this district and sub-district administrative machinery, and its own internal promotion architecture is structured explicitly as a pipeline into the all-India civil services. A Karnataka Administrative Service probationer entering as an Assistant Commissioner can expect to rise through Deputy Commissioner and Secretary-level postings over the course of a career, with exceptional officers inducted into the Indian Administrative Service through the state civil service promotion quota after eight to twelve years of service, though the number of such promotion slots available in any given cycle remains limited (KnowledgeKendra, 2026; AllIndiaGovtJobHub, 2026). This promotion structure means that the same body of officers responsible for delivering the district-level administration discussed throughout this framework, from RTE admissions in Chapter 5, to drought and flood response in Chapter 14, to district-level SCSP/TSP fund disbursement in Chapter 7, are drawn substantially from a single state cadre whose recruitment and staffing adequacy is examined further in section 15.7 of this chapter.

Inter-departmental coordination in Karnataka's administration is substantially channelled through the state's dedicated e-governance nodal agency, the Centre for e-Governance, established in 2006 under the Societies Registration Act specifically to steer e-governance policy and strategy across the state (DSERT, n.d.). The Centre's institutional placement is itself a notable design feature of Karnataka's coordination architecture: it sits within the Department of Personnel and Administrative Reforms, which reports directly to the Chief Minister, making it one of the few technical coordinating bodies in the state administration with a direct line to the state's chief executive rather than sitting several layers removed within a sectoral department (DSERT, n.d.). This placement reflects a deliberate recognition that cross-cutting digital infrastructure, spanning the citizen service, grievance redressal, and data platforms discussed further in section 15.6, requires coordination authority that a single line department could not credibly exercise over its peer departments.

The practical effectiveness of this coordination architecture, however, is repeatedly tested by the kind of overlapping departmental mandates documented throughout this framework. Chapter 6 documented Karnataka's health system spanning the Department of Health and Family Welfare, the National Health Mission's district societies, and the state's mental health authority operating in coordination with a central research institute. Chapter 5 documented an education system split between the School Education and Literacy Department, the Department of Collegiate Education, and a separate Skill Development Department administering the state's vocational training policy. Chapter 14 documented a climate and disaster response architecture that required the Karnataka Water Security and Resilient Program to deliberately consolidate the Bangalore Water Supply and Sewerage Board, the Bruhat Bengaluru Mahanagara Palike, the Karnataka State Natural Disaster Monitoring Centre, the Karnataka State Disaster Management Authority, and the Minor Irrigation and Groundwater Development Department under a single results framework precisely because these agencies had previously operated as separate silos. This recurring pattern, in which effective delivery in a given sector has required an explicit, purpose-built coordination mechanism rather than relying on the state's standing administrative hierarchy to coordinate departments organically, suggests that inter-departmental coordination remains one of the more persistent structural weaknesses in Karnataka's administrative governance, notwithstanding the Centre for e-Governance's direct reporting line to the Chief Minister.

15.2 Anti-Corruption Framework: Lokayukta, Vigilance and Enforcement

Karnataka's anti-corruption institutional history is dominated by a single, decade-long episode that illustrates both the strength and the fragility of independent oversight bodies within the state's administrative architecture. The Karnataka Lokayukta was established through an Act of the state legislature in 1984 to handle complaints of corruption, nepotism, indiscipline, and administrative grievances, structured with separate administrative, inquiry, technical, and police wings, and for more than three decades it built what independent commentary has described as the best Lokayukta institution in the country, with a proven track record of investigating and exposing corrupt bureaucrats and politicians (Deccan Herald, n.d.-y).

This institutional strength was directly curtailed in 2016, when the Siddaramaiah-led Congress government issued a Government Order establishing a new Anti-Corruption Bureau as a police station under the Department of Personnel and Administrative Reforms, stripping the Lokayukta's police wing of its power to register and investigate cases under the Prevention of Corruption Act, 1988, and vesting that power instead in the newly created Bureau (Deccan Herald, n.d.-z; South First, 2022). The Anti-Corruption Bureau was headed by an Additional Director General of Police reporting directly to the state government through a secretary in the Department of Personnel and Administrative Reforms, making it, uniquely among Karnataka police stations, one that sat entirely outside the purview of the state's Director General and Inspector General of Police, and one whose chief executive, the Chief Minister, held a veto over sanctioning prosecution in any case the Bureau investigated (Deccan Herald, n.d.-z; South First, 2022). This structure created a direct conflict of interest

that the state government's own stated justification, providing transparent and efficient administration, did little to dispel, since an anti-corruption body that reports to, and requires prosecution sanction from, the very executive whose ministers and officials it might need to investigate is structurally compromised in a way the previously autonomous Lokayukta was not (Deccan Herald, n.d.-z).

The Anti-Corruption Bureau's own performance record over its six years of operation provided direct evidence of this structural weakness. Then Chief Minister Basavaraj Bommai informed the state legislature that of 1,814 cases booked since the Bureau's 2016 inception, only 10 had resulted in conviction, a further 25 accused had been tried and acquitted, chargesheets had been filed in 753 cases, and 682 cases remained under trial, a conviction rate of just over half of one percent across the Bureau's entire caseload (Deccan Herald, n.d.-aa). Separate reporting in April 2022 found that the state government had not provided prosecution sanction in 223 cases registered and investigated by the Bureau since 2017, a gap that independent commentary characterised as exposing the farcical functioning of the anti-corruption body, since a case that never receives prosecution sanction can never proceed to trial regardless of the strength of the underlying investigation (South First, 2022).

The Karnataka High Court intervened directly in this arrangement even before the Bureau's abolition, questioning in one hearing why the state government had created an entirely new anti-corruption body while more than 25 percent of sanctioned posts within the existing Lokayukta remained vacant, and asking pointedly where an ordinary citizen wishing to report corruption was meant to turn while the Lokayukta sat weakened and the Bureau remained in the process of being established, since by the time a complaint worked its way through an under-resourced system, the High Court observed, any corrupt official would already have had ample opportunity to leave the country (Deccan Herald, n.d.-bb). This judicial scrutiny culminated on August 11, 2022, when the Karnataka High Court abolished the Anti-Corruption Bureau entirely and ordered all pending cases transferred back to the Lokayukta, with the Court explicitly observing that the real motive behind the Bureau's 2016 creation must have been to shield corrupt politicians, ministers, and officers from the Lokayukta's watchful eye, notwithstanding the government's stated transparency rationale (Deccan Herald, n.d.-y; Deccan Herald, n.d.-cc). Independent editorial commentary at the time welcomed the ruling as a step that could help revive Karnataka's fight against corruption and curb the misuse of investigative agencies by incumbent governments of whichever party held office, a bipartisan framing reinforced by the fact that the opposition Bharatiya Janata Party had itself pledged, while out of power, to scrap the Bureau and strengthen the Lokayukta if returned to government (Deccan Herald, n.d.-cc; Deccan Herald, n.d.-dd).

The restoration of the Lokayukta's full investigative authority produced an immediate and dramatic surge in its caseload, a development that itself illustrates the scale of enforcement activity the Anti-Corruption Bureau's structure had effectively suppressed. Data reviewed by Deccan Herald showed the Lokayukta registering 8,664 cases in the 2022-23 financial year, an 80 percent increase over the 4,793 cases registered the previous year, with a further 5,135 cases registered between April and early November of the following year alone, on a

trajectory officials expected would reach 10,000 cases for that full financial year (Deccan Herald, n.d.-ee). By January 2024, roughly eighteen months after the Bureau's abolition, the Lokayukta was registering an average of 35 cases per day, having booked 14,000 fresh cases under the Karnataka Lokayukta Act between June 2022 and December 2023, on top of the 8,924 cases it inherited directly from the disbanded Bureau, for a combined total caseload of 22,924 cases, of which only 6,220 had been disposed of by the time of that reporting (Deccan Herald, n.d.-ff). Over the same period, the Lokayukta had additionally registered 545 cases on its own suo motu initiative, of which 356 had been closed (Deccan Herald, n.d.-ff).

This surge in caseload has itself exposed a second structural weakness distinct from the political interference documented above, namely chronic staff shortage within the Lokayukta's own investigative wing. Reporting on the institution's post-restoration performance found that many police officers remain reluctant to accept postings to the Lokayukta specifically because officers who join tend to stay for more than two years and find it very difficult to secure a transfer out, a career disincentive that has left the institution struggling to recruit sufficient investigative staff to match the scale of its restored caseload, prompting the Lokayukta to constitute a special internal committee to assess its staffing requirements against the frequency of incoming cases (Deccan Herald, n.d.-ff).

More recent enforcement activity indicates that the restored Lokayukta has continued to pursue cases implicating the state's own administrative officials directly, extending its anti-corruption mandate into the land and mineral resource governance failures documented in Chapter 13 of this framework. In May 2026, the Lokayukta Police registered a suo motu case against several senior government officials, including the Director of the Mines and Geology Department, over alleged large-scale illegal sand mining in the Krishna river bed in Bagalkote district, and in a separate operation the same month seized 17,000 metric tonnes of illegally extracted sand and 52 vehicles in Shivamogga district while uncovering what reporting described as alleged official collusion within the mining enforcement network itself (Country and Politics, 2026; thechenabtimes.com, 2026). These 2026 cases, targeting the very officials responsible for regulating the extraction activity, illustrate that Karnataka's restored Lokayukta is willing to pursue investigations that implicate the state's own regulatory apparatus, a willingness the compromised Anti-Corruption Bureau, reporting as it did directly to the Chief Minister's office, would have been structurally far less likely to exercise against sitting officials.

15.3 Legal and Judicial Administration: Pendency, Access and Reform

Karnataka's judicial system operates against the backdrop of a national case backlog of extraordinary scale. As of early 2025, more than 5.19 crore cases were pending across all courts in India, including nearly 83,000 cases pending before the Supreme Court itself, figures the Union Minister of State for Law and Justice provided to the Rajya Sabha in a written reply citing National Judicial Data Grid data, alongside confirmation that 747 fast-track special courts had been made operational nationally by the end of the preceding year as part of the government's backlog-reduction measures (News on Air, 2025).

Independent projections based on this same National Judicial Data Grid data, combined with India Justice Report efficiency rankings, estimated a national average case disposal time of approximately nine years as of 2025, with subordinate courts averaging closer to ten years and High Courts disposing of cases somewhat faster, in three to four years, though the same analysis cautioned that the national figures mask very substantial state-to-state variation, with Uttar Pradesh's average disposal time estimated at 11.5 years and smaller union territories such as Lakshadweep clearing cases in as little as 1.5 years (IndiaDataMap, 2026). The Supreme Court has itself recommended the recruitment of an additional 10,000 judges nationally as one measure to address this backlog, alongside the ongoing eCourts digitisation programme, which had brought approximately 80 percent of the country's courts onto a digital case management platform by the time of this reporting, with a stated ambition to resolve an additional 20 lakh cases annually once digitisation reaches its full target of 50 percent of courts by 2026 (IndiaDataMap, 2026).

Karnataka's own judicial pendency has historically been concentrated most heavily in its two largest urban centres. District-level analysis of National Judicial Data Grid figures found that Bengaluru and Belagavi carried the highest volume of pending cases among Karnataka's subordinate courts, at 2,34,468 and 93,929 cases respectively, figures drawn from 2017 data that nonetheless illustrate a persistent geographic concentration of case backlog in the state's largest and most economically active districts, a pattern broadly consistent with the urbanisation and population concentration dynamics documented in Chapter 11 of this framework (Daksh, n.d.). The same comparative analysis found that Karnataka's judicial efficiency, measured as case clearance rate, matched that of Madhya Pradesh at a rate of 97, despite Karnataka fielding a considerably smaller judicial cadre of 819 judges against Madhya Pradesh's 1,547, indicating that Karnataka's courts were, at that point in time, achieving a comparable disposal rate with roughly half the judicial staffing of a state carrying a similar overall pendency burden, an efficiency finding the same research used to caution against assuming that simply increasing judge numbers automatically translates into a proportionate improvement in case clearance, since Telangana was separately found to clear cases faster than Andhra Pradesh despite fielding fewer judges, 341 against Andhra Pradesh's 539 (Daksh, n.d.).

Karnataka's judicial cadre has continued to expand through regular recruitment cycles in the years since, indicating that the state has not treated its comparatively lean judicial staffing as a fixed constraint. The Karnataka High Court issued a notification on February 10, 2025, for 158 Civil Judge posts, with the online application window remaining open until March 12, 2025, and followed this in 2026 with fresh notifications for 90 further Civil Judge posts and, separately, 70 Assistant Court Secretary posts, indicating that judicial cadre expansion has continued on an annual or near-annual basis rather than as a one-time response to a particular backlog crisis (Toprankers, 2025; MySarkariNaukri, 2026). Recruitment into the Karnataka Judicial Service follows a three-stage process comprising a preliminary examination, a main written examination, and a personality test or interview, a structure broadly mirroring the Karnataka Administrative Service recruitment process discussed in section 15.7, and

reflecting the same general model of tiered competitive examination that characterises entry into most of Karnataka's higher civil and judicial services (Toprankers, 2025).

Leadership of the Karnataka High Court itself has seen frequent turnover in recent years, consistent with the standard national practice of judges being appointed and transferred across state high courts by the collegium system. Justice Nilay Anjaria served as the 34th Chief Justice of the Karnataka High Court from February 25, 2024, before his elevation to the Supreme Court of India on May 30, 2025, after which Justice V. Kameswar Rao served in an acting capacity before Justice Vibhu Bakhru was appointed as the 35th Chief Justice of the Karnataka High Court, assuming office on July 19, 2025, having previously served on the Delhi High Court since 2013 (Wikipedia, 2026a, 2026b, 2026c). This pattern of frequent chief justice transition, while standard practice within India's judicial appointment system, nonetheless means that Karnataka's highest court has operated under three different chief justices, including one acting appointment, within a period of roughly eighteen months, a leadership turnover rate that places some continuity burden on the court's own internal administrative machinery for managing the kind of pendency and case management priorities discussed throughout this section.

15.4 Police Modernisation and Internal Security Management

Karnataka's police modernisation programme is most distinctively defined by its early and sustained institutional investment in cybercrime enforcement, a priority area the state identified well ahead of most other Indian states given Bengaluru's status as the country's technology capital, documented extensively in Chapter 17 of this framework. Karnataka police established the country's first exclusive police station dedicated to handling cybercrime cases in 2001 at the Criminal Investigation Department headquarters in Bengaluru, and have since expanded this model statewide through dedicated Cyber, Economic Offences and Narcotics police stations, commonly known as CEN stations, established in all districts of the state, with 43 dedicated Cyber Crime Police Stations reported operating across Karnataka as of 2024 (Cyber Police Bangalore, n.d.; Deccan Herald, n.d.-gg).

The scale of the cybercrime challenge this infrastructure was built to address has grown at a pace that has outstripped even this early institutional head start. Statewide cybercrime case registrations in Karnataka rose from approximately 12,000 in 2019 to 22,206 in 2023, an increase of roughly 80 percent over four years, with Criminal Investigation Department officials projecting the increase would breach the 100 percent mark within the following year, and with 14,000 cases already reported in just the partial year data available at the time of that reporting (Deccan Herald, n.d.-hh). Bengaluru city specifically has driven a disproportionate share of this growth, with City Crime Records Bureau data showing cybercrime cases nearly doubling in a single year, from 9,940 cases in 2022 to 17,623 cases in 2023, having already risen from 6,422 cases in 2021 (Deccan Herald, n.d.-ii). Karnataka's Director General and Inspector General of Police noted in 2025 that in some divisions of Bengaluru, over 40 percent of all registered crimes are now cyber-related, a proportion that

illustrates how fundamentally the nature of policing in the state's capital has shifted away from traditional physical crime toward digitally mediated offences (Deccan Herald, n.d.-jj).

Detection and resolution capacity has not kept pace with this surge in reported cases, a gap Bengaluru's own police officials have attributed directly to the constantly evolving methods fraudsters employ. The number of cybercrime cases detected or solved in Bengaluru actually declined even as reported cases rose sharply, falling from 2,257 solved cases in 2021 and 2,431 in 2022 to just 1,271 in 2023, despite the underlying caseload having nearly tripled over the same period, a divergence a senior police officer attributed to the constant discovery of new fraud methods that pose an increasing challenge for investigators to decipher (Deccan Herald, n.d.-ii). The same officer nonetheless credited Bengaluru police specifically with adapting more effectively than police forces in many other Indian states, noting that Bengaluru maintains dedicated cybercrime stations in each police division, registers even the smallest cyber fraud complaints including fraudulent emails, and has developed a cyber tipline and helpline-based case registration mechanism that has itself contributed to the rising reported case volume by making it easier for victims to come forward (Deccan Herald, n.d.-ii).

Karnataka's Criminal Investigation Department has built a substantial training and capacity-building infrastructure around this cybercrime enforcement priority. The Centre for Cybercrime Investigation Training and Research, established by the Criminal Investigation Department in partnership with the Data Security Council of India and the Infosys Foundation, had trained more than 33,000 personnel from the police, judiciary, prosecution, and Indian Defence Forces by March 2024, a figure that grew to over 46,000 trained personnel across police, judiciary, prosecution, and academic sectors by the time of the Centre's second Cybercrime Investigation Summit in 2025 (Deccan Herald, n.d.-kk, n.d.-jj). Union Home Minister Amit Shah personally inaugurated the first phase of the Bengaluru Safe City project and released the third edition of the Centre's cybercrime investigation manual, a resource developed to guide police, prosecution, and judiciary personnel on digital evidence collection, preservation, and analysis, and on the latest digital forensic tools and techniques, an endorsement at the national leadership level that underscores Bengaluru's positioning as a national centre of expertise for cybercrime investigation methodology (Deccan Herald, n.d.-ll).

Persistent operational friction between the Criminal Investigation Department and the banking sector has emerged as a distinct bottleneck constraining Karnataka's cybercrime enforcement effectiveness, one the Department has moved to address directly rather than through training alone. The Department convened a high-level coordination meeting attended by top police officials, a Reserve Bank of India representative, and 93 representatives from 45 different banks, specifically to address three concerns the Department itself raised: victims lodging complaints against banks for negligence and delay in handling National Crime Reporting Portal complaints, difficulties securing bank compliance with court orders for the release of lien-marked funds following a cyber fraud, and a general lack of coordination and delayed response from banks to investigator summons seeking account information (Deccan

Herald, n.d.-mm). An investigator quoted in the same reporting noted that money lost to cyber fraud can often be recovered in full if victims report the fraud quickly through the 1930 helpline number and the National Crime Reporting Portal, provided those reporting channels themselves function effectively, directly tying the state's cybercrime recovery outcomes to the responsiveness of a banking sector coordination mechanism that sits substantially outside the Criminal Investigation Department's own direct operational control (Deccan Herald, n.d.-mm). Karnataka's Home Minister has separately announced that the state government intends to implement a dedicated cyber security policy, enlisting technology companies specialising in artificial intelligence, cyber security, and cloud computing to strengthen the state's cybercrime department further, a policy commitment that, as of the most recent reporting reviewed for this chapter, had not yet been formally notified (Deccan Herald, n.d.-jj).

15.5 Regulatory Governance: Quality, Consistency and Independence

Karnataka's sectoral regulatory bodies operate across a range of institutional models, from independent commissions with formal rate-setting authority to departmental committees convened on an ad hoc basis, and the evidence assembled throughout this framework suggests a recurring pattern in the quality and independence of this regulatory architecture: rules, rate structures, and standards exist in reasonably well-developed form, but updating or enforcing them consistently over time typically requires external prompting, whether from courts, expert committees convened years after the fact, or sustained public and media pressure, rather than occurring through the routine, self-initiated functioning of the regulatory body itself.

This pattern is visible with particular clarity in Karnataka's health insurance regulation, documented in Chapter 6 of this framework, where the package rates covering more than 2,000 medical procedures under the state's Yeshasvini health insurance scheme had gone unrevised for a sufficiently long period that an expert committee, constituted specifically to conduct a six-month market analysis, ultimately recommended rate increases of 15 to 25 percent for standard procedures and up to 50 percent for complex procedures such as paediatric heart surgery and oncology treatment. This same pattern recurs in the state's environmental regulatory architecture documented in Chapter 13, where the Karnataka State Pollution Control Board's own water quality standards for Bengaluru's lakes were found, through a National Green Tribunal-prompted Central Pollution Control Board report, to be met by fewer than 10 percent of the water bodies the Board is responsible for regulating, a finding that emerged from external tribunal intervention rather than from the Board's own proactive enforcement reporting. Karnataka's mining sector regulation, also documented in Chapter 13, followed an almost identical trajectory, in which the Supreme Court, rather than the state's own Department of Mines and Geology, has driven the establishment of Rehabilitation and Reclamation plan requirements, production ceilings, and, as documented in section 15.2 of this chapter, has required the state's own Lokayukta to investigate the Department's senior officials directly over allegations that they colluded in the very illegal extraction activity they were meant to prevent.

Karnataka's examination regulatory bodies present a comparable picture. Chapter 5 of this framework documented that the Karnataka High Court, rather than the Karnataka School Examination and Assessment Board acting independently, directed that the board's Secondary School Leaving Certificate examinations for the 2025-26 academic year be evaluated according to existing rules rather than a new grading system introduced midway through the cycle, and specifically ordered that third-language subjects be assessed using numerical marks rather than letter grades, a level of judicial specificity in dictating examination board procedure that indicates the board's own internal governance processes had not resolved the underlying dispute satisfactorily on their own. Taken together, these examples across health insurance, environmental protection, mining, and education examination regulation point to a common structural weakness in Karnataka's regulatory governance: the state's regulatory bodies are generally well specified in their formal mandate and rule-making authority, but appear to lack either the institutional independence, the routine review cycles, or the enforcement capacity needed to update standards and rates proactively, leaving courts, expert committees, and national tribunals to perform much of the ongoing quality-control function that a fully independent, self-sustaining regulator would normally exercise on its own initiative.

15.6 Reduction of Red-tapism: Simplification and Way Forward

Karnataka was among the earliest Indian states to legislate a formal, enforceable citizen service guarantee, an initiative that predates and in several respects anticipated the broader national push toward Right to Service legislation across Indian states. The Karnataka Guarantee of Services to Citizens Act was passed by the state legislature in December 2011 and implemented statewide from April 2, 2012, under the branded name Sakala, a Kannada term meaning in time or good time, chosen to reflect the scheme's core objective of ensuring public services are delivered to citizens within a stipulated, legally guaranteed timeframe (Sakala, n.d.; Political Science Teaching Aid, 2025). The scheme began on a pilot basis covering 151 civil services across a small number of taluks, including Jayanagar, before being expanded to cover the entire state, with every application for a notified Sakala service issued a Guarantee of Service to Citizen number that allows the applicant to track the status of their request and hold the responsible official accountable for any delay (Common Floor, 2012; Sakala, n.d.).

The scheme's enforcement mechanism is built around a direct financial penalty for delayed delivery. Where a designated officer fails to deliver a notified service within its stipulated deadline, the applicant is entitled to seek compensatory cost at the rate of 20 rupees per day of delay, subject to a maximum of 500 rupees per application, a modest but legally mandated penalty structure intended to give individual officials a direct financial incentive to process applications within the promised timeframe (Mangalore Today, n.d.). This design was recognised nationally within its first years of full operation, with Sakala awarded the Silver National Award for e-Governance by the Government of India for outstanding performance in citizen service delivery during the 2013-14 cycle, an award received under the leadership

of the Indian Administrative Service officer overseeing the mission at the time (Mangalore Today, n.d.).

Sakala's service catalogue has expanded considerably beyond its original pilot scope, and its administrative integration with other citizen-facing government functions illustrates a deliberate effort to consolidate rather than fragment Karnataka's digital governance infrastructure. Right to Information applications were explicitly brought under the Sakala tracking framework, alongside services spanning death and birth certificates, pension processing, First Information Reports, caste and income certificates, driving licences, vehicle registration, Anganwadi enrolment, trade licences, and building plan approvals, reflecting an ambition to bring the great majority of routine citizen-government interactions under a single, time-bound, trackable service delivery framework rather than leaving each department to manage its own service standards independently (Common Floor, 2012). This consolidation effort continues through the state's Centre for e-Governance, which now hosts Sakala alongside a broader family of integrated digital platforms including Seva Sindhu, the centralised citizen services portal already documented in Chapter 5 of this framework in the context of Karnataka's RTE admission process, an e-Gazette platform, an Online RTI portal, the e-Spandana public grievance redressal system, the Mahiti Kanaja open data platform, and a dedicated Chief Minister's Dashboard, alongside e-Pragathi and e-Taal reporting tools (Centre for e-Governance, n.d.).

This breadth of digital consolidation places Karnataka among the more institutionally mature Indian states on the specific dimension of citizen-facing e-governance infrastructure, yet the same tension documented throughout section 15.5 of this chapter, between well-designed formal systems and inconsistent underlying delivery, recurs here as well. The Sakala framework's own founding documentation candidly acknowledged, in its earliest phase, that the overall pace of citizen uptake was lower than expected specifically because of low public awareness of the scheme, indicating that even a legally mandated, financially enforced service guarantee requires sustained public communication investment to achieve its intended behavioural effect on citizen access, a lesson directly relevant to several of the other digital and administrative reforms documented throughout this framework, including the RTE portal-based admission system discussed in Chapter 5 and the Samrakshane Karnataka crop insurance application portal discussed in Chapter 18, both of which depend on a similar level of citizen awareness and digital literacy to function as intended (Common Floor, 2012).

15.7 Civil Service Strength: Vacancy Rates and Training Institutions

Recruitment into the Karnataka Administrative Service, the state's principal Group A and Group B civil service cadre, follows a three-stage examination process directly analogous to the judicial recruitment process documented in section 15.3, comprising a Preliminary Examination worth 400 marks on a qualifying basis, a Main Examination worth 1,250 marks for merit ranking alongside a further 300 qualifying marks, and a Personality Test or interview worth 25 marks, with candidates required to hold a bachelor's degree, fall within an age range of 21 to 35 years, and pass a mandatory Kannada-language qualifying paper at the

Mains stage with a minimum of 35 percent marks, a requirement the Preliminary stage does not itself test but which candidates must nonetheless prepare for as a precondition of final selection (KnowledgeKendra, 2026).

The most recent completed recruitment cycle illustrates both the substantial demand for these positions and the considerable length of time required to move from initial notification to final appointment. The 2023-24 Karnataka Administrative Service cycle, covering 384 vacancies across Group A and Group B posts including Assistant Commissioner, Deputy Superintendent of Police, and Tahsildar, saw its Preliminary Examination conducted in August 2024, its Main Examination held across four sitting days in early May 2025, interviews running from May 6 to June 10, 2026, and the final select list still awaited as of the time of this reporting in July 2026 (Testbook, 2025; Our Education, 2026; TaiyarHo, 2026). This span, from an August 2024 preliminary examination to a final select list not expected until mid-to-late 2026, represents an approximately two-year recruitment cycle for a single batch of entry-level administrative officers, a duration that carries direct implications for the pace at which Karnataka can respond to the kind of accumulated vacancy pressure documented in nearly every sectoral chapter of this framework, since a state civil service that takes close to two years to complete a single recruitment cycle cannot rapidly scale up administrative capacity in response to an emerging governance priority in the way a faster-cycling recruitment system might.

A fresh Karnataka Administrative Service notification for the subsequent cycle had not been released as of mid-July 2026, though early informal estimates pointed to a similarly sized cohort of roughly 384 vacancies once again, a figure the Karnataka Public Service Commission had not yet formally confirmed (Our Education, 2026). The broader Karnataka Public Service Commission recruitment calendar beyond the Karnataka Administrative Service itself remains active across Group A, B, and C posts spanning multiple state government departments, with the state government separately extending an age relaxation provision through December 2027, a signal that the Commission anticipates continuing to draw from an expanded eligible applicant pool over the medium term rather than reverting to standard age limits in the near future (Karnatakacareer.org, 2025).

The Karnataka Administrative Service's promotion architecture reinforces its function as a genuine career civil service rather than a purely entry-level qualifying examination, with senior Karnataka Administrative Service officers holding a defined promotion pathway to Deputy Commissioner and Divisional Commissioner rank, and with the strongest-performing officers eligible for empanelment into the Indian Administrative Service itself, a pathway industry commentary has characterised as offering a genuinely attractive alternative to the all-India service for candidates who prioritise career stability and geographic continuity, since a Karnataka Administrative Service officer typically serves within the state, managing everything from information technology parks in Bengaluru to coffee estates in Kodagu to the coastal ecosystems documented in Chapter 13, whereas an Indian Administrative Service officer from Karnataka might equally be posted to a cadre several states away for years at a stretch (KnowledgeKendra, 2026). This same commentary noted that between 2018 and

2025, the Karnataka Public Service Commission released a Karnataka Administrative Service notification in roughly eight of eight annual cycles, indicating a broadly consistent, if occasionally delayed, annual recruitment rhythm over that period, notwithstanding the extended multi-year duration documented above for any single cycle to run its full course from notification to final appointment (AllIndiaGovtJobHub, 2026).

Training infrastructure supporting Karnataka's civil service extends across multiple specialised institutions examined at various points throughout this framework, each addressing a distinct professional cadre rather than a single, unified civil service academy. The Centre for Cybercrime Investigation Training and Research, documented in section 15.4, has trained more than 46,000 police, judiciary, prosecution, and academic personnel specifically in cybercrime investigation methodology since its establishment. Karnataka's District Institutes of Education and Training, documented in Chapter 5, carry the parallel responsibility for inducting and providing ongoing professional development to the state's teaching cadre, a responsibility placed under particular strain by the scale of the 15,000-post teacher recruitment drive documented in that chapter. This pattern of institution-specific, cadre-specific training infrastructure, rather than a single centralised administrative training academy serving all of Karnataka's civil servants, mirrors the broader departmental fragmentation documented in section 15.1 of this chapter, and suggests that consolidating cross-cadre administrative competencies, project management, financial administration, digital governance tools, and citizen service delivery standards common to Karnataka Administrative Service officers, police officers, and teachers alike, could represent an efficiency opportunity the state's current training architecture has not yet fully captured.

Taken as a whole, the evidence assembled across this chapter's seven sections points to a Karnataka administrative governance system defined less by an absence of institutional design than by a persistent gap between the sophistication of that design and the consistency of its implementation. The state pioneered India's first cybercrime police station, its earliest citizen service guarantee legislation, and one of its most independent anti-corruption ombudsman institutions, yet each of these institutions has, at some point in the period examined in this chapter, required either judicial intervention, as with the Anti-Corruption Bureau's abolition and the Karnataka School Examination and Assessment Board's court-ordered evaluation procedure, external pressure, as with the Yeshasvini rate revision and the Bengaluru lakes water quality reporting, or a multi-year recruitment cycle, as with the Karnataka Administrative Service and Karnataka Judicial Service, to translate formal institutional strength into consistent operational delivery. Karnataka's administrative governance reform priority going forward, on the evidence assembled throughout this framework, lies less in designing new institutions or legislation than in building the routine, self-sustaining review, staffing, and enforcement capacity that would allow the state's already well-designed regulatory, judicial, and civil service architecture to function without requiring external intervention at each successive stage of its operation.

Chapter 16: Technology-Enabled Service Delivery

16.1 Digital Infrastructure: Broadband, Optical Fibre and Connectivity Coverage

Karnataka's digital public infrastructure has developed unevenly across the state, mirroring the geographic disparities already documented extensively throughout this Framework. The state's own e-governance platforms explicitly acknowledge this challenge: rural users of Karnataka's flagship citizen services portal continue to contend with limited broadband availability and lower digital literacy relative to urban users, a gap the state has sought to bridge specifically through Common Service Centres, which provide in-person assistance for residents navigating online services, and community digital literacy drives intended to reduce exclusion arising from infrastructure limitations (Seva Sindhu Karnataka, cited in this chapter's research, 2026).

Karnataka's rural broadband rollout under the national BharatNet project can now be assessed with genuine precision, and the data reveals both substantial progress and a still-significant completion gap. The Union Minister of State for Communications informed the Lok Sabha that a total of 14,221 kilometres of optical fibre cable had been laid under BharatNet in Karnataka as of June 2025, with 55,978 fibre-to-the-home connections provided statewide, of which just 1,618 were located in Dakshina Kannada district specifically (Deccan Herald, cited in this chapter's research, 2025). Wi-Fi hotspots have been installed under the scheme in 3,213 gram panchayats across the state, and a cumulative Rs 1,963 crore had been allocated and utilised under the project in Karnataka as of the same June 2025 reference date (Deccan Herald, cited in this chapter's research, 2025).

The completion status of this rollout, however, reveals a meaningful gap between the scheme's ultimate ambition and its current reach. Under BharatNet Phase I specifically, 6,084 of Karnataka's gram panchayats had been made service-ready, a figure that on its face suggests near-complete coverage given the state's total gram panchayat count established in Chapter 12, though the minister's own reply clarified that connectivity to the remaining gram panchayats, and further strengthening of the existing network, falls under the scope of a subsequently amended BharatNet programme rather than being already complete (Deccan Herald, cited in this chapter's research, 2025). This distinction between a gram panchayat being made "service-ready" and having actual, functioning, reliable household-level connectivity is directly analogous to the infrastructure-versus-functionality gap this Framework has already identified in the context of the Jal Jeevan Mission's tap water connections in Chapter 10, where Karnataka's own tap connection coverage, at just 38.3 percent against a 79.74 percent national average, already illustrates how far a headline "service-ready" figure can diverge from genuinely delivered household service. Just as a certified "Har Ghar Jal" village does not guarantee reliable water delivery, a "service-ready" gram panchayat under BharatNet does not necessarily translate into the kind of broadband access that would allow a rural Karnataka household to reliably use its state's online services without falling back on assisted-access models.

The scale of Karnataka's fibre-to-the-home achievement, 55,978 connections statewide, also warrants direct comparison with a genuinely instructive out-of-state benchmark: Kerala's own state-run Kerala Fibre Optic Network, K-FON, launched in June 2023 with an initial outlay of approximately Rs 1,700 crore, had achieved over 1.16 lakh connections by August 2025 alone, with an explicit target of 2.5 lakh connections by 2026, and was designed from inception as a dedicated state-owned public utility explicitly declaring internet access a basic citizen right, targeting free connectivity for 20 lakh economically backward households specifically (Grokopedia, cited in this chapter's research, 2026). Unlike Karnataka's BharatNet rollout, which operates through the centrally coordinated national scheme, K-FON is a wholly state-government-owned infrastructure asset, built by leveraging the Kerala State Electricity Board's existing utility pole network to avoid extensive new road digging, with stakeholder partners including Bharat Electronics Limited, itself headquartered in Bengaluru (Wikipedia, cited in this chapter's research; Vajiram and Ravi, cited in this chapter's research, 2025). Ground-level reporting on K-FON's rural impact describes a teacher in a tribal settlement in Thiruvananthapuram district who, prior to the network's arrival, had no mobile tower or broadband connection at his school, and who can now send educational content to his students over WhatsApp, a change he described as unimaginable even a year earlier (The Federal, cited in this chapter's research, 2025). This is a directly relevant comparative case for Karnataka's own rural connectivity strategy: where Karnataka has relied on the nationally coordinated BharatNet programme, Kerala chose to build and own its own dedicated state fibre utility, and this alternative model is one Karnataka's own Department of Electronics, IT, BT and Science and Technology could reasonably evaluate against its current, still-partial BharatNet completion status, particularly given that Karnataka already possesses its own extensive state electricity transmission infrastructure through the ESCOMs and KPTCL documented in Chapter 9, which could in principle support a similar utility-pole-leveraged fibre rollout.

16.2 E-Governance Architecture and Digital Public Infrastructure

Karnataka possesses one of India's longest-running and most substantively documented state-level e-governance histories, anchored by flagship platforms whose respective successes and limitations offer genuinely instructive lessons for the state's continued digital transformation agenda.

The oldest and arguably most foundational of these platforms is Bhoomi, Karnataka's land records computerization project, inaugurated in the year 2000 by the state's Revenue Department with co-sponsorship from the Union Ministry of Rural Development (e-governance introduction resource, cited in this chapter's research; District Bengaluru Urban, Government of Karnataka, cited in this chapter's research). Bhoomi was designed to digitize the Record of Rights, Tenancy, and Crops document, known as the RTC, the foundational legal record of land ownership, tenancy status, and crop cultivation across Karnataka's agricultural land, historically the single most consequential document determining a farmer's ability to access institutional credit, insurance, and government schemes tied to landholding. The project required collecting and digitizing manual land

records previously held at Village Administrative Offices statewide, establishing back-office computing centres at 176 taluks, one additional taluk, and 26 special taluks, each equipped with dedicated Land Records Kiosks and Application Kiosks for citizen access (District Bengaluru Urban, Government of Karnataka, cited in this chapter's research). A defining and, in retrospect, unusually decisive policy choice accompanied Bhoomi's rollout: the Karnataka government passed a specific rule that once the land records scheme became operational in a given taluk, manually written land records or RTCs became legally null and void, with only the computerized RTC, duly signed by an authorized signatory, recognized as valid (Development Alternatives, cited in this chapter's research). This decision to legally retire the manual system entirely, rather than allow it to persist alongside the digital one, is a notably more aggressive digital transition strategy than most Indian e-governance projects have attempted, and is very likely a significant factor in Bhoomi's well-documented success relative to other digitization efforts that allowed legacy paper systems to persist indefinitely, creating exactly the kind of dual-track ambiguity that invites continued corruption and inconsistency.

Official case studies and international assessors, including a World Bank case study and a National Informatics Centre review characterizing Bhoomi as a genuine e-governance success story, have credited the project with significantly reducing land disputes and improving citizen trust in government land administration, crediting the integration of Geographic Information System mapping tools and an online grievance redressal mechanism with strengthening accuracy, transparency, and accountability relative to the manual system it replaced (Academia.edu case study, cited in this chapter's research, 2025; Bhatnagar, cited in this chapter's research, 2003; World Bank, cited in this chapter's research, 2004; National Informatics Centre, cited in this chapter's research, 2007).

A fuller, more balanced treatment, however, requires engaging directly with more critical academic literature examining Bhoomi's actual, granular implementation record, since this literature meaningfully complicates the official success narrative in ways directly relevant to how state leadership should evaluate similar digitization efforts going forward. Independent, on-the-ground research into Bhoomi's rollout found that the project's core design choice of centralizing land record functions at the taluk level and closing village-level revenue offices produced a genuinely paradoxical corruption outcome. A detailed working paper examining farmer experiences in Bijapur, in north Karnataka, found that many of the more experienced respondents specifically linked increased corruption and processing time to this closure of village-level offices and centralization of functions to the taluk level, rather than crediting digitization alone with reducing bribery (CASUM-m working paper, cited in this chapter's research). Their reasoning was structural: farmers reported that bribes had to be paid even under the pre-Bhoomi system, typically to the Village Accountant or Revenue Inspector, but that the pre-Bhoomi system's village-level office location meant citizens could apply direct social and administrative pressure on local officials to actually act on their applications, a lever of accountability that disappeared once the relevant office moved to the taluk level, placing greater physical and social distance between citizens and the officials processing their records (CASUM-m working paper, cited in this chapter's research). Some respondents in this

same research went further, arguing that the village-level Accountant and Revenue Inspector had, in the pre-Bhoomi system, provided a genuinely useful service by helping farmers navigate complex land procedures, a service whose value some farmers felt justified the informal payment involved, a nuance considerably more complicated than a simple "digitization eliminated corruption" narrative allows for (CASUM-m working paper, cited in this chapter's research).

Independent Grokipedia analysis, drawing on multiple aggregated sources, reaches a broadly similar, appropriately qualified conclusion: while aggregate user feedback and service delivery metrics indicate a net reduction in systemic bribery, with government evaluations crediting the system with an estimated Rs 100 crore in annual savings in administrative costs and avoided bribes across Karnataka's roughly 30 million land parcels, some independent analyses have specifically documented isolated instances of new corrupt practices emerging within the digitized system itself, including bribes paid to kiosk operators specifically to bypass standard processing queues, and exploitation of data entry errors introduced during the initial digitization process completed by 2002 (Grokipedia, cited in this chapter's research, 2026). Digitizing a paper-based system with embedded corruption risk does not eliminate that risk, it relocates it, from the point of manual record alteration to the point of digital queue manipulation or exploitation of the digitization process's own data entry errors, and any assessment of Bhoomi's success should account for this relocation rather than treating the system as having achieved a clean, complete elimination of rent-seeking behaviour.

A further specific and directly quantified implementation failure, documented in an official case study prepared for the Department of Administrative Reforms and Public Grievances, concerns Bhoomi's interaction with government land acquisition processes. Because updating land ownership records following a government land acquisition, for canal construction, road development, rehabilitation projects, village or town extension, railways, military installations, or industrial development, required the same Application Kiosk operator and Bhoomi back-office mutation process as any private land transaction, the case study found that most land acquisitions were, in practice, not getting updated on the actual Record of Rights, meaning the official land records continued to depict an outdated ground reality that did not reflect the government's own acquisition of that land (Department of Administrative Reforms and Public Grievances, cited in this chapter's research). The case study's own assessment of the consequence is significant: non-updation of this kind results in substantial loss to any subsequent purchaser of such land, since a buyer relying on the Bhoomi record would have no way of knowing the land had already been legally acquired by the government (Department of Administrative Reforms and Public Grievances, cited in this chapter's research). This finding is particularly significant given this Framework's own emphasis, throughout Chapters 8, 9, and 11, on infrastructure expansion requiring substantial land acquisition, and it carries even sharper relevance in light of Chapter 10's documentation of the Upper Krishna Project's decades-long land acquisition litigation, involving 45,000 landowners disputing compensation; if Bhoomi's own land acquisition record updates remain systematically unreliable, every major infrastructure project this Framework has documented

carries an embedded legal risk of disputed or unclear land title at exactly the acquisition stage where clear title matters most.

A decade-later retrospective assessment reinforces that these are not merely early teething problems that time alone resolved. Reporting marking Bhoomi's tenth anniversary found that despite digitizing land ownership records for 6.7 million farmers, land disputes remained far from resolved in Karnataka a full decade after the project's 2002 launch, with government analysts themselves conceding that information technology cannot, by its nature, correct fraud embedded in the primary data that gets put online in the first place, meaning any ownership record that was already inaccurate or disputed before digitization would simply be carried forward as an authoritative-seeming digital record (CommonFloor, cited in this chapter's research, 2012). This is an important, more general lesson for any digitization initiative Karnataka undertakes going forward: digitizing a flawed or incomplete underlying dataset produces a flawed or incomplete digital system, however polished its user interface, and data quality auditing prior to digitization deserves at least as much institutional investment as the digitization process itself. One specific equity dimension of Bhoomi's implementation also deserves mention given this Framework's recurring attention to gender equity: land ownership in Karnataka has long been what one case study described as a male bastion, with women owning just 12 percent of land in the state at the time of that assessment (CSI SIGeGOV case study, cited in this chapter's research), and since Bhoomi digitizes existing ownership records rather than reallocating ownership itself, the system necessarily entrenches this pre-existing gender disparity rather than correcting it.

Karnataka's second major citizen service platform, Seva Sindhu, launched in 2017 as one of 31 Mission Mode Projects under the national e-Governance Plan, with the Directorate of e-Governance and Citizen Services as the state's nodal implementing agency (Bengaluru South district portal, Government of Karnataka, cited in this chapter's research). Seva Sindhu's pilot launched on May 26, 2017 statewide with the integration of 29 certificate services from the Revenue Department, and the platform's scope has since expanded dramatically: government documentation records 346 services identified for integration, comprising 71 nationally mandated services and 225 state-selected services (Bengaluru South district portal, Government of Karnataka, cited in this chapter's research), while more recent citizen-facing descriptions place the platform's current scope at over 880 government services accessible through a single unified portal (Seva Sindhu Karnataka, cited in this chapter's research, 2026). Despite this considerable scope, independent assessment identifies limitations directly analogous to the implementation-versus-design gap documented across other sectors: grievance registration is available, but response timelines and escalation paths for unresolved complaints are not always clear to users, and pending application statuses frequently reflect incomplete verification, missing documentation, or unresolved payment issues, requiring citizens to proactively contact departmental support, a workaround that reintroduces some of the manual follow-up burden the platform was designed to eliminate (Seva Sindhu Karnataka, cited in this chapter's research, 2026).

This chapter's fuller review of Karnataka's citizen service architecture reveals that its most legally significant service guarantee mechanism actually predates Seva Sindhu by six years: the Karnataka Sakala Services Act, 2011, subsequently retitled the Karnataka Guarantee of Services to Citizens Act (Wikipedia, cited in this chapter's research). Enacted in 2011, Sakala made Karnataka the tenth Indian state to adopt legislation under the national Right to Public Services movement, establishing statutory, department-specific time limits for specified citizen services, backed by an information technology system built by the National Informatics Centre specifically to monitor compliance (Wikipedia, cited in this chapter's research). Sakala's rollout followed a deliberately staged, notably equity-conscious geographic sequencing: the pilot launched on March 1, 2012 specifically in Aurad taluk, the northernmost backward taluk of Bidar district, one of the six districts constituting the constitutionally recognized Hyderabad-Karnataka region discussed extensively in Chapter 1 (Wikipedia, cited in this chapter's research). This choice to pilot the state's flagship service guarantee scheme first in one of its most structurally disadvantaged taluks stands in useful contrast to the pattern documented elsewhere in this Framework, where infrastructure quality consistently concentrates in Bengaluru and the state's more prosperous districts. Following the pilot, Sakala expanded through six successive phases within roughly two years, from 151 services across 11 departments at statewide launch to 478 services by February 2014 (Wikipedia, cited in this chapter's research), a rapid, sustained expansion indicating a genuinely committed early implementation effort.

Under Sakala's model, a citizen requesting a covered service receives a trackable acknowledgement number, and if a service is not delivered within its statutory timeframe, the citizen has a formal right to appeal to the next-level officer, with further escalation available to the Karnataka Administrative Tribunal if the departmental appeal fails (Davanagere district portal, Government of Karnataka, cited in this chapter's research). This is, at least in statutory design, a considerably more structured, multi-tier grievance escalation pathway than the comparatively opaque tracking identified within Seva Sindhu. However, independent assessment of Sakala's actual implementation reveals the same enforcement gap documented repeatedly elsewhere in this Framework: documented weaknesses include officers intentionally delaying routine document issuance to solicit unofficial payments, alongside weak grievance redressal and insufficiently enforced penalties in some cases (blogspot detailed summary of Sakala Act, cited in this chapter's research, 2025). In apparent recognition of these gaps, a further legislative instrument, the Karnataka Accountability and Grievance Redressal Bill, 2018, was proposed specifically to strengthen Sakala's objectives (blogspot detailed summary of Sakala Act, cited in this chapter's research, 2025), though this Framework's sources did not confirm whether this bill was ultimately enacted, a specific, easily verifiable follow-up question for the state's Department of Personnel and Administrative Reforms.

This pattern, a strong original statutory design followed by documented enforcement gaps significant enough to prompt a further strengthening bill whose fate remains unconfirmed, is now a recurring institutional signature across this Framework: Karnataka repeatedly designs genuinely sound governance mechanisms, whether Sakala's tiered appeal structure, the

Lokayukta's judicial-grade independence documented in Chapter 15, or Bhoomi's decisive legal retirement of manual land records, but consistently underinvests in the sustained enforcement and follow-through required to make those mechanisms perform at their designed potential over time. Karnataka's grievance infrastructure has continued to evolve beyond Sakala's original NIC-built backbone through the Karnataka Public Governance Portal's Sarkaara Janara Seva initiative, allowing citizens to submit geo-tagged grievances and track resolution in real time (Karnataka Public Governance Portal, cited in this chapter's research), a capability directly analogous to the CCTV geotagging system documented in Chapter 15's Bengaluru policing discussion, and one that could help administrators identify geographic clusters of recurring complaints through citizen-generated data rather than only top-down reporting.

16.3 Citizen Service Delivery: CSCs, Service Portals and Mobile Governance

Karnataka's Common Service Centre network functions as the essential last-mile delivery mechanism bridging the digital divide documented in section 16.1, specifically serving citizens with limited broadband access or digital literacy who would otherwise be excluded from an online-first service model (Seva Sindhu Karnataka, cited in this chapter's research, 2026). Bhoomi's own kiosk-based delivery model, predating Seva Sindhu by over a decade and established at 176 taluks statewide, represents Karnataka's original template for exactly this kind of assisted digital access, and the continued operation of Seva Sindhu 1 Service Centres alongside general-purpose CSCs suggests the state has maintained, rather than abandoned, this dual online-and-assisted-access approach as its digital service catalogue has expanded far beyond land records alone.

16.4 Data Governance, Open Data Policy and Privacy Framework

Not developed with confirmed current, Karnataka-specific sourcing in this chapter. This is a notable and concerning gap given the scale of citizen data Karnataka's platforms now hold: Bhoomi maintains land ownership records for the state's entire agricultural landholding base, and Seva Sindhu, spanning over 880 services, very likely holds detailed personal, financial, and welfare eligibility data for a very large share of the state's population. A rigorous treatment would require direct reference to the Karnataka government's own data protection and retention policies governing these platforms, and their alignment with the national Digital Personal Data Protection Act, 2023, none of which were identified with sufficient specificity in the sources reviewed. This Framework recommends the state's Department of Electronics, IT, BT and Science and Technology be asked directly to provide its current data governance framework for inclusion in any final ministerial version of this document.

16.5 Cybersecurity: State-Level Institutional Mechanisms

This chapter's earlier treatment of cybersecurity identified a significant, unresolved gap regarding the state's institutional protections for citizen data, but this chapter's fuller research has surfaced genuinely substantial, current, quantified data on a closely related dimension of

the same problem: Karnataka's actual cybercrime enforcement record against citizens and businesses, which offers a directly relevant real-world illustration of the state's broader cyber-risk exposure and its institutional capacity to respond to it.

Karnataka's cybercrime scale, measured in direct financial loss to citizens, has grown to a level that materially exceeds several other governance failures documented elsewhere in this Framework. Between 2023 and November 2025, the state recorded 57,733 cybercrime cases, with citizens losing a cumulative Rs 5,474 crore to online fraud, including investment scams and online betting, while police recovered only Rs 627 crore, an overall recovery rate of roughly 11 percent (Deccan Herald, cited in this chapter's research, 2025). The year-on-year trend within this figure reveals a genuinely important and somewhat counterintuitive pattern: case volume actually fell sharply, from 22,255 cases in 2023 to 22,478 in 2024 and then down 43 percent to roughly 13,000 cases in the first eleven months of 2025, yet the amount of money lost per year did not fall correspondingly, rising from Rs 873 crore in 2023 to a peak of Rs 2,562 crore in 2024 before settling at Rs 2,038 crore in 2025 (ETV Bharat, cited in this chapter's research, 2025; Deccan Herald, cited in this chapter's research, 2025). Home Minister G. Parameshwara, presenting this data to the state legislature, explicitly attributed the falling case count to sustained enforcement and rising public awareness, while separately acknowledging that the amount lost per incident has risen, indicating fraudsters are extracting substantially larger sums from a smaller number of successfully targeted victims rather than the state having meaningfully reduced the overall financial threat (ETV Bharat, cited in this chapter's research, 2025). This is a materially different, and considerably less reassuring, interpretation than the headline 43 percent case reduction alone would suggest, and it is worth flagging directly: a state cannot claim to be winning against cybercrime purely on the basis of falling case counts if the average financial damage per successful fraud is simultaneously rising, since this pattern is equally consistent with criminals becoming more selective and more sophisticated in targeting fewer, wealthier, or more vulnerable victims for larger individual sums.

Bengaluru, consistent with its status as the state's technology and financial hub documented extensively in Chapter 3, remains overwhelmingly the epicentre of this problem within Karnataka. The city alone accounted for 9,326 cybercrime cases in 2025, by far the highest of any Karnataka district, followed at a considerable distance by Vijayapura at 340 cases, Tumakuru at 243, Ramanagara at 192, Udupi at 171, and Mysuru city and district combined at roughly 222 (Cybercrimeindia.today, cited in this chapter's research, 2025). At the city level specifically, Bengaluru residents lost a record Rs 1,242.7 crore to cybercriminals in just the first eight months of 2024 alone, an amount Rs 214.6 crore greater than the combined losses recorded across the entire preceding three years of 2021, 2022, and 2023 (Deccan Herald, cited in this chapter's research, 2024), illustrating an exceptionally steep escalation in the financial scale of the problem within a single city over a very short period. Bengaluru's own detection and recovery performance during this period was similarly modest: of 12,356 cases reported through August 31, 2024, police solved only 552, a 4.4 percent clearance rate, and recovered just Rs 111.8 crore of the Rs 1,242.7 crore lost, an 8.9 percent recovery rate

(Deccan Herald, cited in this chapter's research, 2024), broadly consistent with the roughly 11 percent statewide recovery rate documented above for the 2023-to-2025 period as a whole.

Beyond Bengaluru, Karnataka's coastal Mangaluru Commissionerate offers a useful smaller-scale, more granular case study of how this fraud is actually structured. In 2024, Mangaluru recorded its largest-ever annual financial impact from cybercrime, with over Rs 40.46 crore lost, of which Rs 9.32 crore was frozen and Rs 2.55 crore ultimately released back to complainants, even as the raw case count had actually declined that year, from 196 cases at the dedicated Cyber, Economic, and Narcotics police station in 2023 to just 72 in 2024 (Deccan Herald, cited in this chapter's research, 2024), reinforcing the same falling-case-count-but-rising-loss pattern documented at the state level. The Mangaluru Commissioner's breakdown of fraud typology is genuinely instructive for any citizen-facing prevention campaign: investment frauds accounted for fully 50 percent of reported cases and approximately 75 percent of total money lost, with 67 such cases alone responsible for Rs 30.3 crore in losses, while so-called digital arrest scams involving fake courier and customs officials accounted for 25 cases and Rs 7.1 crore, with job frauds and matrimonial frauds accounting for smaller but still meaningful shares (Deccan Herald, cited in this chapter's research, 2024). This granular local breakdown suggests that a targeted state-level public awareness campaign focused specifically on investment fraud recognition, given that this single category drives three-quarters of all financial loss, would likely deliver disproportionately higher returns than a more generally framed cybercrime awareness effort. Notably, of the 42 persons arrested in Mangaluru's cybercrime cases during 2024, only 15 were from Karnataka itself, with 27 originating from other states, including 11 from Kerala and nine from Tamil Nadu (Deccan Herald, cited in this chapter's research, 2024), indicating this fraud activity operates substantially as an inter-state, and likely inter-state-coordinated, criminal enterprise rather than one confined to Karnataka's own resident population, a jurisdictional complexity that helps explain the persistently low recovery and conviction rates documented throughout this section.

On institutional response, Karnataka has taken a genuinely distinctive and, by the state's own characterization, nationally pioneering structural step: it became the first Indian state to establish a dedicated cyber crime vertical headed by its own Director General of Police, organizationally equivalent in seniority to the state's existing CID and Prisons departments, now operating 43 dedicated cyber police stations under a unified cyber command (Deccan Herald, cited in this chapter's research, 2025; Cybercrimeindia.today, cited in this chapter's research, 2025). Home Minister Parameshwara has directly credited this structural investment with the case-count decline documented above (Deccan Herald, cited in this chapter's research, 2025). This institutional innovation is worth reading alongside the broader personnel-and-follow-through pattern this Framework identified across the judiciary, Lokayukta, and general police staffing in Chapter 15: unlike those examples, where institutional design was sound but chronically understaffed, Karnataka's cyber policing vertical appears to represent a case where the state has both designed a genuinely novel institutional structure and backed it with the specific staffing and station-level buildout, 43 dedicated stations, needed to make that structure operationally real, a meaningfully more

complete execution than several of this Framework's other institutional case studies. What remains unresolved, however, is the gap between this improving case-detection trend and the state's still-modest roughly 11 percent overall financial recovery rate, indicating that even a well-structured, well-staffed cyber enforcement apparatus faces a genuinely difficult technical and jurisdictional challenge in actually tracing and clawing back money once it has left a victim's account, particularly given the inter-state and likely international dimension of the criminal networks involved, a limitation that additional state-level policing capacity alone is unlikely to fully resolve without deeper coordination with national financial intelligence and banking fraud tracing mechanisms.

16.6 Emerging Technologies: AI, Geospatial Systems and Smart Governance

Karnataka has established an AI Skilling Council and a dedicated Rs 100 crore AI Innovation Fund to develop specialized artificial intelligence training programs (Elets eGov, cited in this chapter's research, 2025), part of a broader talent development push including a target of 1 lakh internships with reimbursement incentives for participating companies, discussed further in Chapter 17. The state's Startup Policy 2025-30 specifically prioritizes artificial intelligence, robotics, and quantum technologies among its target sectors for the ELEVATE NxT deep-tech grant programme, a Rs 150 crore initiative offering milestone-based grants of up to Rs 1 crore per startup (Elets eGov, cited in this chapter's research, 2026), and Karnataka has separately launched India's first state-level Quantum Technology Roadmap, targeting recognition as Asia's leading Quantum Innovation Hub by 2035 and a \$20 billion quantum economy, as documented in Chapter 3.

On governance-facing application of these technologies, Karnataka's revamped Single Window System for investment approvals, discussed in Chapter 4, featuring a Common Application Form allowing investors to apply for both district and state-level approvals through one unified interface (Elets eGov, cited in Chapter 4's research, 2025), represents the clearest current example of the state applying its digital governance ambitions specifically to economic administration. Bengaluru's own citywide CCTV geotagging initiative, documented in Chapter 15, integrating over five lakh cameras into the Mobile Crime and Criminal Tracking Network System under the Rs 667 crore Safe City project, further illustrates the application of emerging technology to public safety governance, using the same category of geospatial and AI-enabled tooling this section's broader mandate covers.

Reading this chapter's sections together yields a clear overall picture. Karnataka now operates at least three major, sequentially built citizen-facing digital governance systems, Bhoomi for land records from 2000, Sakala for time-bound service guarantees from 2011, and Seva Sindhu for integrated multi-department service delivery from 2017, alongside a more recently added geo-tagged grievance portal, representing a genuinely deep, continuously expanding institutional investment in digital citizen service delivery spanning nearly a quarter century. The state has more recently layered a forward-leaning artificial intelligence and quantum technology innovation agenda on top of this base. Yet the specific implementation gaps documented within each existing system, Bhoomi's exemplary but narrowly scoped success

now shown to carry real corruption-relocation and land-title reliability risks, Sakala's strong statutory design undermined by acknowledged enforcement weaknesses, and Seva Sindhu's expanded catalogue paired with unclear grievance escalation timelines, together with the wholly undocumented data governance and cybersecurity framework identified in sections 16.4 and 16.5, suggest that Karnataka's next phase of digital governance investment would benefit less from building a fourth new platform than from a dedicated, cross-platform audit of grievance resolution timelines, land acquisition record accuracy, and citizen data protection, paired directly with its continued AI and quantum ambitions, since the state's own citizens, and increasingly its own infrastructure pipeline, are the ones bearing the risk of that governance gap in the interim.

Chapter 17: Innovation, Research and Knowledge Economy

17.1 State Innovation Ecosystem: Startups and Accelerators

Karnataka's startup ecosystem is, by a wide margin, the largest and most mature of any Indian state, a position that reflects several decades of cumulative technology sector development documented throughout Chapter 4's treatment of Karnataka's investment climate. The state hosts more than 4,000 active startups, 45 unicorns, 144 incubators and accelerators, and 1,565 venture capital funds concentrated substantially in Bengaluru, alongside more than 400 global research and development centres, figures that collectively confirm Karnataka's position as India's leading state-level innovation hub and that connect directly to the industrial corridor and cluster infrastructure documented in Chapter 4 (Invest Karnataka, n.d.-a). Karnataka was the first Indian state to announce a dedicated, multisector startup policy, launching its Startup Policy in 2015 and following this with the Startup Karnataka booster kit in 2016, an early-mover institutional advantage that has compounded over the subsequent decade into the scale figures cited above (Invest Karnataka, n.d.-a).

Bengaluru's specific standing within this ecosystem has continued to strengthen through 2026. The city is home to 45 of India's approximately 112 unicorns according to the state government's Bengaluru Innovation Report, and functions as the largest startup hub outside the United States, Europe and China and the fifth largest unicorn hub globally, a ranking articulated directly by the state's Minister for Electronics, IT and Biotechnology (Business Standard, 2026; Startup Point, 2026). Bengaluru-based startups have collectively raised \$70.1 billion in funding since 2010 (Deccan Herald, 2026), and the ecosystem's momentum has continued into 2026 specifically, with the city securing 89 funding deals worth \$823 million in the first quarter of 2026 alone, comfortably ahead of Delhi NCR's \$538 million across 74 deals and Mumbai's \$402 million across 34 deals over the same period (Startup Point, 2026). January 2026 saw payments infrastructure company Juspay reach a \$1.2 billion valuation, becoming one of the year's first new unicorns and illustrating that Karnataka's unicorn pipeline, despite the ecosystem's overall maturity, continues to generate fresh billion-dollar outcomes rather than resting solely on its existing cohort (Startup Genome, 2026).

Industry analysis of this Q1 2026 performance identifies a more nuanced underlying pattern than the headline funding figures alone convey. Deal volume actually fell 38 percent to 117 rounds even as total capital raised remained nearly steady, a divergence that a Tracxn report attributes to investors concentrating their bets by writing fewer but larger cheques rather than retreating from the market altogether, with the top four largest rounds of the quarter all going to companies founded before 2020, meaning mature businesses continuing to scale rather than new entrants breaking through (Startup Point, 2026). Prashanth Prakash, Chairman of Karnataka's Startup Vision Group and a founding partner at Accel, has characterised this as reflecting genuine strength in capital depth and talent diversity that nonetheless requires further competitiveness-building specifically in deep tech, industrial infrastructure, physical AI, semiconductors and frontier technology, areas where he notes considerable policy focus exists already but where the state needs to accelerate its pace of implementation (Startup

Point, 2026). This assessment from within Karnataka's own startup leadership complicates any reading of the ecosystem's scale statistics as evidence that the state's innovation economy has already achieved full maturity across every technology domain, rather than achieving disproportionate strength in software and fintech relative to still-developing deep tech and hardware capability, a distinction directly relevant to the state's semiconductor and defence technology ambitions documented in section 17.6.

The Government of Karnataka's own direct financial support to this ecosystem operates through the ELEVATE programme and the Local Economy Accelerator Programme, or LEAP. Under ELEVATE, the state's Department of Electronics, IT, Biotechnology and Science and Technology has supported 983 startups with a committed seed fund of 224.06 crore rupees, with women entrepreneurs representing 25 percent of participants and roughly 30 percent of entrepreneurs drawn from Tier-II and Tier-III cities across Karnataka rather than Bengaluru alone, a geographic distribution that mirrors the "Beyond Bengaluru" diversification theme running throughout this chapter (Business Standard, 2026). LEAP, a 110 million dollar state programme, has separately established new Centres of Excellence in Defence Technology and Industry 5.0, Agriculture and Allied sectors, and Artificial Intelligence and Quantum Computing, hosted across leading institutions statewide, with associated grant programmes such as ELEVATE Nxt providing up to 110,000 dollars specifically to deep tech startups (Startup Genome, 2026). Taken together, this institutional architecture indicates a state government deliberately using its own capital, in combination with the private venture capital base documented above, to steer ecosystem growth toward the frontier technology domains that Prakash's assessment identifies as Karnataka's current relative weak point, rather than allowing the ecosystem's evident software and fintech strength to crowd out investment in the hardware and deep tech capability the state's longer-term competitive position appears to require.

The 25 percent female participation rate recorded under the ELEVATE programme, while a meaningful baseline, sits alongside the broader gender participation themes examined in Chapter 7's treatment of women's economic participation, and suggests that Karnataka's startup ecosystem, notwithstanding its overall scale and dynamism, has not yet achieved gender parity among founders and entrepreneurs receiving direct state seed capital, a gap that the state's dedicated mentorship and outreach programming would need to close further if Karnataka's innovation economy is to draw on the full breadth of the state's educated workforce documented in Chapter 5 rather than a disproportionately male founder population. Similarly, the roughly 30 percent Tier-II and Tier-III representation among ELEVATE beneficiaries, though a considerably higher proportion than a purely Bengaluru-centric baseline would predict, still leaves the substantial majority of state-backed seed funding concentrated within Bengaluru itself, indicating that the "Beyond Bengaluru" diversification principle, examined at greater length in sections 17.4 through 17.6 of this chapter, remains at an early rather than fully realised stage specifically within the startup seed-funding component of Karnataka's innovation policy, even as it appears considerably further advanced within the state's Centre of Excellence, AI University and GCC policy architecture.

Karnataka's incubation infrastructure, comprising the 144 incubators and accelerators documented above, is itself unevenly distributed in ways that partially explain this seed-funding concentration. The state's most prominent incubators, including those affiliated with IISc, the Indian Institute of Management Bangalore, and a dense cluster of corporate-backed and independent accelerators, remain heavily concentrated within Bengaluru's metropolitan boundary, meaning that a startup founder based in Mysuru, Hubballi-Dharwad or Mangaluru seeking access to Karnataka's most experienced mentorship networks and investor relationships must typically do so either remotely or by relocating to Bengaluru, a structural friction that the LEAP programme's Beyond Bengaluru Cluster Seed Fund, documented further in section 17.6, is specifically designed to reduce over the course of the state's current policy period.

17.2 Research and Development: Academic-Industry Linkages

Karnataka's research institution base is anchored by the Indian Institute of Science, Bengaluru, which ranked first nationally in both the University and Research Institutions categories and second in the Overall category of the National Institutional Ranking Framework 2025, a ranking that confirms IISc's position not merely as Karnataka's leading research institution but as one of India's two or three most research-productive higher education institutions of any kind (Grokopedia, 2026). IISc's research activity extends well beyond conventional academic output into applied rural and industrial partnership work: the institute's Society for Innovation and Entrepreneurship has expanded activities at its Challakere campus to work directly with local farmers and shepherds on sustainable agriculture practices and the revival of traditional blanket weaving, while separately partnering with Hindustan Aeronautics Limited on a dedicated Skill Development Centre under construction with laboratories, classrooms and an auditorium (Grokopedia, 2026). This dual character, frontier scientific research alongside grassroots rural livelihood partnership, illustrated further by a planned rural entrepreneurship incubator at Challakere, distinguishes IISc's institutional model from a purely elite research posture and connects directly to the rural livelihood and Panchayati Raj institutional themes documented in Chapter 12.

Karnataka's research infrastructure investment has continued to deepen through dedicated Centres of Excellence built in direct partnership with IISc and other anchor institutions. The AI and Robotics Technology Park, developed jointly by IISc, the Government of Karnataka and the central Department of Science and Technology, is designed to drive frontier research in artificial intelligence and robotics aimed at transformative societal applications, while the Centre of Excellence for Data Science and Artificial Intelligence, a public-private partnership between the state government and NASSCOM, is intended to catalyse Karnataka's broader AI ecosystem growth (Elets eGov, 2025). In June 2025, the state Cabinet approved a 48 crore rupee grant for Phase 2 of a Quantum Research Park at IISc, developed in partnership with the Foundation for Science, Innovation and Development, which the state's Minister for Electronics and IT described as strengthening Karnataka's leadership in quantum research, skill-building and innovation by offering a collaborative space where academia, startups and industry can work together on cutting-edge quantum technologies, alongside a parallel

function as a training centre to upskill youth, reskill professionals and train faculty (Careers360, 2025). This quantum investment connects directly to the LEAP-funded Artificial Intelligence and Quantum Computing Centre of Excellence documented in section 17.1, indicating a genuinely coordinated rather than duplicative state investment strategy across Karnataka's various innovation funding vehicles.

Beyond IISc, Karnataka's broader research base includes IIT Dharwad and the state-run Karnataka State Council for Science and Technology, which coordinates smaller-scale applied research and outreach activity spanning agricultural science workshops, intellectual property rights training, and school-level science engagement programmes, indicating a research ecosystem that operates simultaneously at the frontier-science level represented by IISc's quantum and AI work and at a broader grassroots science literacy level intended to widen the population from which future researchers and innovators are drawn (KSCST, n.d.). Karnataka's talent base supporting this research ecosystem is substantial in scale: the state is home to more than 10,000 aeronautical engineers, over 10,000 analog engineers, more than 100,000 PhD holders, and more than 20,000 chip designers, a talent concentration that underpins both the aerospace and defence R&D infrastructure documented in Chapter 4, including the Aerospace Research and Innovation Centre co-located with IISc at Chitradurga and the roughly 1,000-acre Hi-Tech Aerospace and Defence Park at Devanahalli, and the semiconductor design capability discussed further in section 17.6 (Invest Karnataka, n.d.-b). The state's E-R&D Policy 2021-26 is explicitly designed to attract multinational R&D centres and bridge the gap between academia and industry, a policy framework that, read alongside the more than 400 global R&D centres already operating in Karnataka documented in section 17.1, suggests the state's research and development strategy rests on deepening an already well-established multinational R&D presence rather than building this category of investment from a low base (Invest Karnataka, n.d.-b).

Karnataka's Industrial Policy 2020-25, examined in greater sectoral detail in Chapter 4, segments the state into three distinct incentive zones based on project location, with tools such as an incentive calculator and a chatbot-based advisory system, referred to within the policy documentation as UMA, helping prospective investors identify the applicable zone and corresponding rebate structure for a given research or manufacturing project (Invest Karnataka, n.d.-b). This zonal incentive architecture, while designed primarily to steer conventional manufacturing investment toward less-developed talukas and districts, applies equally to R&D-classified investment under the E-R&D Policy, meaning that a multinational firm establishing a new research centre outside Bengaluru's core zone can access materially more favourable incentive terms than an equivalent Bengaluru-based centre, a structural incentive that connects directly to the Beyond Bengaluru dispersal themes examined at length in sections 17.4 through 17.6 of this chapter, and that represents a further, less publicly visible mechanism, alongside the more prominent AI University and GCC Policy dispersal provisions, through which the state is attempting to redirect its research investment gravity away from Bengaluru's already saturated innovation core.

The comparative question of whether Karnataka's research and development spending intensity, measured as a share of state GSDP, matches the scale of its research institution and patent output documented in this section and in section 17.3 is one this report's available sources do not allow it to resolve with precision, since a Karnataka-specific R&D intensity figure comparable to the national R&D-to-GDP ratio was not identified within the sources reviewed for this chapter. What the evidence does establish clearly is that Karnataka's research achievements, IISc's top national ranking, the AI Robotics Technology Park, the Quantum Research Park, and the state's overall 8,371 annual patent filings documented in section 17.3, are concentrated substantially within a comparatively small number of flagship institutions and Centres of Excellence rather than distributed evenly across Karnataka's broader university system, a pattern that mirrors the flagship-versus-broad-based research investment tension this report's parallel analysis of Kerala's Trivandrum Research Cluster identified as a defining feature of that state's own research economy, and that raises an analogous policy question for Karnataka regarding whether future capital should deepen support for already-successful institutions such as IISc or instead broaden research funding and infrastructure access across the state's wider, less individually prominent engineering college network.

17.3 Intellectual Property: Awareness, Registration and Commercialisation

Karnataka's patent filing performance places the state consistently among India's top three, though second rather than first, in the national patent landscape. State-level data for the 2024-25 fiscal year shows Tamil Nadu leading with 15,440 patent filings, representing 23 percent of the national resident total and driven substantially by biotechnology and healthcare research hubs linked to IIT Madras, while Karnataka follows with 8,371 filings, fuelled primarily by Bengaluru's information technology, software and biotechnology clusters (Global Patent Filing, 2026). A separate multi-year statistical analysis covering 2020 to 2025 confirms this same ordering, finding that Tamil Nadu has consistently led national patent application volume, followed by Karnataka and Maharashtra, though Tamil Nadu's growth trajectory over this period has been considerably sharper, with filings increasing more than fivefold, than the growth recorded in Karnataka and Maharashtra, both of which have maintained their top-three positions without matching Tamil Nadu's acceleration (Intellopedia, 2026). This finding carries a direct implication for Karnataka's innovation policy: despite the state's overwhelming lead in startup density, venture capital concentration and unicorn count documented in section 17.1, Karnataka's patent output, a narrower but arguably more durable measure of genuine research and invention activity, has not kept pace proportionately with Tamil Nadu's more recent research and development policy push, suggesting that Karnataka's innovation ecosystem strength is currently weighted more heavily toward commercially oriented software and fintech venture activity than toward the patentable, hardware- and biotechnology-oriented invention that Tamil Nadu's growth appears to be capturing at a faster rate.

A structural, administrative dimension of Karnataka's patent ecosystem merits specific note: all patent and trademark filings originating from Bengaluru-based applicants are processed

through the Chennai Patent Office rather than a dedicated Karnataka-based office, since India's patent office jurisdiction is organised regionally rather than by individual state (Lattice Law, 2026). This jurisdictional arrangement means that Karnataka's substantial patent filing volume, despite constituting the state's own inventors' and firms' intellectual property, is administratively processed through an office located in a different state, a structural detail that has not prevented the emergence of a substantial cluster of specialised intellectual property law and consulting firms based in Bengaluru and extending their services to Mysuru, Dharwad and Mangaluru, indicating that Karnataka's private-sector patent support infrastructure has developed independently of, rather than in direct dependence on, the location of the formal patent examination office itself (Lattice Law, 2026; IPflair, n.d.).

Karnataka's public institutional support for intellectual property commercialisation operates at multiple levels, from direct startup financing to broader awareness building. The Karnataka State Council for Science and Technology has conducted dedicated intellectual property rights training workshops in partnership with academic institutions, extending basic patent literacy beyond the more sophisticated technology startup founder population who form the primary users of dedicated commercialisation financing schemes (KSCST, n.d.). At the startup-specific level, private intellectual property firms operating in Bengaluru have entered into formal memoranda of understanding with the state government to support participating cohorts of the state's flagship Elevate 100 startup programme with patent filing and protection services, indicating a public-private delivery model for patent support that channels commercialisation assistance specifically to the state's most promising, already-selected startup cohort rather than to the broader population of Karnataka inventors and small enterprises (IPflair, n.d.). This concentration of patent support on already-selected, high-potential startups, while an efficient use of limited support resources, leaves open the question, not resolved within the sources reviewed for this chapter, of whether Karnataka's much larger population of small and medium manufacturing and traditional craft enterprises, documented in Chapter 4's treatment of the state's industrial base, receives comparable patent awareness and filing support, or whether intellectual property commercialisation assistance in Karnataka remains concentrated within the technology startup sector specifically, a pattern this report's counterpart analysis of Kerala's innovation ecosystem identified as a comparable structural gap in that state's own intellectual property architecture.

Beyond patents specifically, Karnataka's broader intellectual property commercialisation infrastructure encompasses trademark and design registration services delivered through the same cluster of Bengaluru-based specialist firms documented above, with typical government processing timelines for a granted patent running between two and five years from initial filing, a duration that includes examination periods, response windows for office actions raised during examination, and, where contested, formal hearings (Escalade Legal, 2026). Government filing fees for patent registration in India range between 1,600 and 8,000 rupees depending on applicant category, with meaningfully reduced fees available to individual inventors and registered startups relative to larger corporate entities, a fee structure that in principle lowers the financial barrier to formal patent protection for Karnataka's individual inventors and early-stage founders, though professional patent attorney fees, which are not

centrally regulated, typically represent a considerably larger share of the total cost of securing a granted patent than the government filing fee itself (Escalade Legal, 2026). This cost structure reinforces the concern raised earlier in this section regarding Karnataka's MSME and traditional craft sector, since professional patent attorney costs, rather than government fees alone, are likely to represent the more binding financial constraint facing smaller enterprises and individual artisans considering formal intellectual property protection for the first time.

17.4 Knowledge Institutions as Engines of Development

Karnataka's knowledge institution base functions as the foundational infrastructure underpinning both the startup ecosystem documented in section 17.1 and the research output documented in section 17.2, and its most visible recent expansion is the state government's July 2026 announcement of India's first government-led AI University. Chief Minister D. K. Shivakumar announced the initiative while inaugurating Google I/O Connect India 2026 in Bengaluru, describing the proposed university as intended to build world-class AI talent, advance research, and strengthen collaboration between academia, industry and government (Tech Observer, 2026). The university will be developed on a 100-acre campus in Bengaluru, with regional campuses additionally planned for Kalaburagi, Belagavi, Hubballi-Dharwad, Mangaluru and Mysuru, a deliberate geographic distribution that extends the "Beyond Bengaluru" principle documented in sections 17.1 and 17.6 into the state's most advanced emerging-technology education infrastructure rather than concentrating this capacity in Bengaluru alone (Business Standard, 2026). The announcement was accompanied by plans for a dedicated AI Hub functioning as an incubation centre for startups, companies and researchers, a forthcoming Karnataka AI Policy aimed at attracting investment and building a globally competitive AI ecosystem, the introduction of AI education into the school curriculum beginning in Class VI, and the development of two hyperscale green data centres to support the state's AI infrastructure needs (Business Standard, 2026; Tech Observer, 2026).

Karnataka's existing higher education and Centre of Excellence architecture, distinct from this newly announced AI University, has already generated measurable innovation outcomes. At the May 2026 Campus to Career Summit, jointly organised by the Karnataka Higher Education Department and the Karnataka Digital Economy Mission, Dr Manjula N., Secretary to the state's Department of Electronics, IT, Biotechnology and Science and Technology, disclosed that Karnataka has invested more than 500 crore rupees in Centres of Excellence spanning artificial intelligence, robotics, biotechnology and semiconductors, an investment that has supported more than 750 startups with a combined valuation exceeding 4,000 crore rupees and helped generate over 250 patents (ETV Bharat, 2026). This 250-patent figure, generated specifically through the Centre of Excellence architecture, represents a meaningful fraction of Karnataka's broader 8,371 annual patent filing volume documented in section 17.3, and suggests that the state's more recent, deliberately structured innovation infrastructure investment is beginning to generate a disproportionate share of the state's overall patent output relative to the comparatively longer-established but less centrally coordinated broader research ecosystem.

Karnataka's knowledge economy strength extends into its role as the preferred national destination for Global Capability Centre investment, a phenomenon documented in greater sectoral depth in Chapter 4 but directly relevant here as a knowledge-institution outcome, since Bengaluru's position as host to more than 1,100 operational GCCs, the highest concentration of any city globally, with 66 new centres established in the first half of 2026 alone, rests substantially on the depth of the city's academic and research institution base, including IISc and the Indian Institute of Management Bangalore, which industry analysis identifies explicitly as providing the skilled graduate talent pool that continues to make Bengaluru the preferred gateway for global businesses establishing technology, engineering, research and innovation functions in India (Trade Brains, 2026). Karnataka's contribution of 40 percent of India's total information technology exports further situates the state's knowledge institution base within a national economic context, confirming that Karnataka's research and education infrastructure functions not merely as a domestic development asset but as a nationally significant contributor to India's broader technology export economy (Elets eGov, 2025).

The physical and economic footprint of this knowledge-institution-driven GCC growth is itself a useful proxy for the underlying strength of Karnataka's academic pipeline, since employers locating capital-intensive research and engineering functions in Bengaluru rather than a lower-cost alternative city are making an implicit, continuous judgement about the depth and renewability of the graduate talent pool the state's universities produce. Bengaluru absorbed approximately 11.9 million square feet of GCC-related office leasing in a single recent year, a volume of commercial real estate demand considerably ahead of any other Indian city and one that reflects sustained large-scale campus expansion by multinational employers rather than a one-time or speculative property cycle (Flexiple, 2026). India's national GCC market, valued at approximately 64.6 billion dollars in the 2024 fiscal year, is projected to grow to between 99 and 105 billion dollars by 2030, with GCCs expected to contribute roughly 2 percent of India's GDP by that point, and given Karnataka's approximately 35 percent share of India's total GCC workforce documented in section 17.6, the state stands to capture a proportionate and substantial share of this projected national growth, provided its universities and Centres of Excellence continue to produce graduates at the pace and technical depth the sector's employers currently expect (Flexiple, 2026). This dependence of a multi-billion-dollar, rapidly growing sector of Karnataka's economy on the continued output quality of the state's knowledge institutions elevates the stakes attached to the higher education and skilling reforms documented in section 17.6 considerably beyond a conventional education-policy concern, positioning university and Centre of Excellence performance as a direct determinant of Karnataka's ability to retain its currently dominant national position within the GCC economy specifically.

17.5 Building a Youth Innovation and Research Ecosystem

Karnataka's approach to youth innovation extends the state's Centre of Excellence and research infrastructure documented in sections 17.2 and 17.4 downward into secondary and vocational education specifically. The Samsung Skill Development Centre inaugurated in

July 2025 at the Government Polytechnic in Kolar Gold Fields illustrates this approach in practice: developed as a corporate social responsibility initiative by Samsung Semiconductor India Research, the centre comprises five dedicated laboratories covering artificial intelligence and machine learning, cybersecurity, automation, robotics and core engineering, explicitly targeted at empowering youth in what the company's leadership described as remote parts of the country, extending industry-grade skilling infrastructure beyond Bengaluru into a Tier-III industrial town with its own distinct, historically mining-dependent economic base (Samsung Newsroom, 2025). Samsung's Executive Vice President and Managing Director framed the initiative as bridging the digital divide by equipping students with knowledge in AI, IoT and other emerging technologies, a framing that positions this single facility as directly continuous with the "Beyond Bengaluru" geographic distribution strategy running throughout this chapter's treatment of Karnataka's GCC policy, AI University campus network, and startup support programmes (Samsung Newsroom, 2025).

Karnataka's youth innovation infrastructure additionally operates through the state's own dedicated skilling summits and competitive platforms. The Bengaluru Skill Summit, whose inaugural 2025 edition drew more than 6,500 combined attendees under the theme "Workforce 2030: Scale, Systems, Synergy," included Skillathon, a national competition challenging college teams to design solutions addressing the future of skills, education and employment, with a confirmed second edition scheduled for November 2026 (Financial Content, 2026). The Summit's stated ambitions extend beyond a single annual event, explicitly aiming to position Karnataka as India's "AI Skilling Lighthouse" and to reach every young learner in the state with entrepreneurship training by 2030 (Financial Content, 2026), an ambition that, if realised, would extend entrepreneurship exposure considerably beyond the current population of formally enrolled engineering and management students who have historically formed the primary beneficiary group of Karnataka's startup and innovation support architecture documented in section 17.1.

The state government's youth skilling investment has also taken the form of large, dedicated capital commitments rather than programmatic initiatives alone. A 300 crore rupee skill training initiative launched in September 2024 is being implemented in close collaboration with the Karnataka State Electronics Development Corporation and the Karnataka Digital Economy Mission, structured specifically to ensure extensive industry outreach and to maximise the skilling reach achieved among Karnataka's youth population (Deccan Herald, 2024). Read alongside the more than 500 crore rupees in Centre of Excellence investment documented in section 17.4, this indicates that Karnataka's youth innovation and skilling investment now operates at a scale of several hundred crore rupees annually across multiple parallel funding vehicles, a level of sustained fiscal commitment that distinguishes Karnataka's youth innovation strategy from a purely programmatic or pilot-stage effort and instead positions it as a core, ongoing component of the state's broader innovation and industrial policy architecture documented throughout Chapter 4 and this chapter.

The planned introduction of artificial intelligence education into the state school curriculum from Class VI onward, documented in section 17.4 as a component of the July 2026 AI

University announcement, represents a further, considerably earlier intervention point in Karnataka's youth innovation pipeline than the polytechnic- and university-level initiatives discussed above, extending the state's innovation-readiness strategy into the general secondary education system documented in Chapter 5 rather than confining it to students who have already self-selected into engineering, science or vocational tracks. If implemented at the scale and consistency the announcement implies, this curriculum change would mean that Karnataka's youth innovation ecosystem, currently anchored substantially in Centres of Excellence, polytechnic partnerships and post-secondary skilling summits, begins to draw on a materially broader and younger population of prospective innovators than the current ecosystem's beneficiary base, a shift with potentially significant long-term implications for the depth and diversity of Karnataka's future startup founder and researcher pipeline, though the practical quality and consistency of implementation across the state's school system, a theme this report has examined critically in Chapter 5's broader treatment of teacher training and digital education infrastructure, will substantially determine whether this curriculum ambition translates into genuine youth innovation capacity or remains a comparatively symbolic policy announcement.

17.6 Skill Development, Employability and Workforce Alignment

Karnataka's skill development strategy is inseparable from the state's Global Capability Centre economy, which has emerged as the single largest structural driver of demand for the state's higher-order technical talent. Bengaluru alone hosts more than 880 individual GCC units, accounting for approximately 36 percent of all GCC talent in India and housing over 660,000 professionals directly, while commanding roughly 40 percent of all engineering research and development talent across India's GCCs nationally (GCC Journal, 2026). Karnataka's GCC Policy 2024-2029 sets an explicit target of attracting more than 500 new Global Capability Centres to the state, alongside a goal of creating 350,000 new jobs in the GCC sector and achieving 50 billion dollars in economic output from GCCs by 2029 (Inductus GCC, 2025). The policy's workforce component explicitly prioritises lifelong learning, upskilling and reskilling, with dedicated mentorship support for women and transgender employees, alongside state funding for joint academic-industry research collaboration intended to encourage the industrial application of academic research, directly connecting the GCC policy's skilling ambitions to the academic-industry linkage themes examined in section 17.2 (NASSCOM, 2025).

The GCC Policy's most structurally significant provision for the purposes of this chapter's broader argument is its explicit "Beyond Bengaluru Initiative," which is designed to spread Karnataka's GCC ecosystem to Mysuru, Mangaluru, Hubballi-Dharwad-Belagavi and Tumakuru, backed by a dedicated Beyond Bengaluru Cluster Seed Fund intended to support early-stage startups specifically in these secondary cities, alongside a 100 crore rupee Innovation Fund supporting joint research projects and an AI Skilling Council tasked with developing AI-focused curricula delivered through a hub-and-spoke model connecting Bengaluru's Centre of Excellence for AI with academic institutions statewide (NASSCOM, 2025). This geographic dispersal strategy for the GCC sector specifically mirrors, and is

directly reinforced by, the AI University's planned regional campus network documented in section 17.4 and the Samsung skilling centre's location in Kolar Gold Fields documented in section 17.5, together constituting a consistent, multi-programme state policy pattern in which Karnataka's newest waves of innovation and skilling infrastructure investment are deliberately routed toward secondary cities rather than reinforcing Bengaluru's already dominant concentration of the state's technology economy.

Karnataka's skilling architecture also addresses workforce readiness at the level of formal higher education curriculum reform rather than through standalone training programmes alone. At the May 2026 Campus to Career Summit, jointly convened by the state's Higher Education Department and the Karnataka Digital Economy Mission, ministers, vice chancellors, industry leaders and skilling organisations outlined a Vision 2030 roadmap explicitly intended to make Karnataka's higher education system more industry-oriented, skill-driven and aligned with artificial intelligence, semiconductors and advanced manufacturing, with dedicated sessions addressing semiconductor talent pipelines, startup ecosystem readiness, and workforce development in banking, financial services and insurance specifically (ETV Bharat, 2026). Participation from global technology firms including HP Inc., Adobe and VMock in these curriculum discussions indicates that Karnataka's higher education reform process is being shaped with direct input from the same category of multinational employers whose Global Capability Centre investment decisions, documented earlier in this section, depend most heavily on the quality and industry-readiness of the graduate talent pool Karnataka's universities produce, creating a feedback loop in which GCC employer demand is feeding relatively directly into state curriculum design rather than the two processes operating independently of one another.

A further workforce alignment signal specific to Karnataka's GCC-dominated skilling economy concerns the sector's evolving hiring pattern for early-career talent. National industry analysis finds that 64 percent of GCCs operating in India expect to increase fresher hiring by up to 20 percent heading into the 2025-26 period, often bypassing traditional campus recruitment channels in favour of hackathons and specialised internship programmes designed to identify product-grade engineering talent directly, with GCC roles generally commanding a salary premium of between 12 and 20 percent over comparable positions at conventional IT services firms (GCC Journal, 2026). Given Karnataka's approximately 35 to 36 percent share of India's total GCC workforce documented earlier in this section, this national fresher-hiring trend implies a correspondingly large absolute volume of early-career GCC positions opening within Karnataka specifically, positions that increasingly reward the hackathon-demonstrable, product-oriented technical skills the state's Vision 2030 curriculum reform and AI Skilling Council, both documented above, are explicitly designed to cultivate, rather than the more generic, examination-oriented technical competencies that Karnataka's conventional engineering college curriculum has historically emphasised, a distinction that underscores why the curriculum reform agenda examined in this section carries direct and fairly immediate labour-market consequences for the state's graduating engineering cohorts rather than functioning as a longer-horizon policy ambition alone.

This close alignment between employer demand and state skilling investment carries a risk that this report's evidence does not allow it to resolve definitively but flags as a priority monitoring concern for the statistical strengthening agenda developed in Chapter 20: a skilling and higher education reform strategy this closely calibrated to the specific talent demands of the GCC and deep tech sectors risks under-investing in the broader vocational and workforce readiness needs of Karnataka's much larger population of workers outside the technology economy specifically, including the informal economy workforce documented in Chapter 3 and the agricultural and allied sector workforce documented in Chapter 18, a tension between frontier-sector skilling intensity and broad-based workforce readiness that mirrors the flagship-institution-versus-broad-based-investment tension this report's Kerala counterpart analysis identified within that state's own research funding architecture, and that represents a structurally similar policy trade-off facing Karnataka's innovation and skilling investment despite the two states' considerably different starting scale and sectoral composition.

Taken as a whole, the evidence reviewed across this chapter's six sections points toward a Karnataka innovation economy operating simultaneously at two distinct speeds. On one axis, the state's startup, GCC and Centre of Excellence infrastructure, concentrated substantially though not exclusively in Bengaluru, continues to post the scale, funding and unicorn statistics that place Karnataka unambiguously first among Indian state-level innovation ecosystems, a position this chapter's opening section confirmed against Karnataka's principal comparator states. On the other axis, a set of more specific structural indicators examined throughout this chapter, Karnataka's second-place rather than first-place national patent filing ranking, the state's comparatively slower patent growth rate relative to Tamil Nadu's more recent research policy push, the continuing geographic concentration of incubation and seed-funding infrastructure within Bengaluru itself, and the unresolved question of whether intellectual property support has meaningfully reached the state's broader MSME base beyond its technology startup cohort, together suggest that Karnataka's headline innovation leadership coexists with specific, addressable gaps rather than representing an already-complete innovation ecosystem. The state government's own policy architecture, spanning the GCC Policy's Beyond Bengaluru Initiative, the AI University's planned regional campus network, and the Local Economy Accelerator Programme's deep tech and quantum computing Centres of Excellence, indicates that Karnataka's policymakers have identified substantially the same gaps this chapter has documented and are directing new capital deliberately toward closing them, a trajectory this report's future editions will be positioned to assess against the concrete implementation outcomes these programmes deliver over the remainder of the current policy period.

Chapter 18: Agriculture, Allied Sectors and Food Security

18.1 Cropping Pattern, Agricultural Productivity and Input Use

Karnataka's cropping pattern reflects the state's considerable agro-climatic diversity, spanning the finger millet, or ragi, cultivation concentrated across the southern plateau districts of Bengaluru Rural, Ramanagara and Mandya, and the maize and sorghum cultivation that dominates the drier northern districts of Dharwad, Belagavi and Raichur, a north-south agronomic divide that mirrors the broader climatic and land use variation documented in Chapter 13 (Farmonaut, 2025). This diversity extends into the state's plantation and horticultural crops as well, with Kodagu, Chikkamagaluru and Hassan collectively producing approximately 70 percent of India's coffee output, a concentration examined in greater depth in Chapter 19's treatment of Kodagu's coffee-estate tourism economy, alongside a growing area under banana, mango and grape cultivation supported by government drip irrigation subsidies and export incentives (Farmonaut, 2025).

An academic analysis of Karnataka's crop diversification and cropping pattern dynamics, drawing on Directorate of Economics and Statistics data spanning 1998-99 to 2020-21, applies a Composite Entropy Index alongside double-log and Markov chain modelling to assess the underlying determinants of the state's cropping pattern shifts, finding that Kodagu, Dakshina Kannada, Yadgir, Udupi and Shivamogga districts exhibit comparatively low crop diversification relative to the state average (Nature Humanities and Social Sciences Communications, 2023). While Karnataka's overall crop diversification trend is positive, the study's own coefficient estimate for this trend is close to zero, a finding the authors interpret as indicating a genuine threat to the state's longer-term crop diversification trajectory rather than a settled positive trend (Nature Humanities and Social Sciences Communications, 2023). The same analysis finds that although cereals and millets continue to occupy the largest share of Karnataka's cropped area, this category shows a negative net gain in the probability of area retention under the study's transition matrix modelling, meaning that land currently under cereal and millet cultivation is, on average, more likely to shift toward other crop categories than to remain under cereals and millets over time, a dynamic the study attributes in part to Minimum Support Price levels for coarse cereals, the ratio of gross to net irrigated area, agricultural credit inflow from scheduled commercial banks, and highway connectivity, each of which the double-log model identifies as a statistically positive influence on crop diversification (Nature Humanities and Social Sciences Communications, 2023).

This finding carries a direct implication for Karnataka's food security policy that this report's evidence does not allow it to resolve definitively but flags for further monitoring: if cereal and millet area continues to shift toward higher-value horticultural and plantation crops at the pace this academic modelling implies, the state's food security policy architecture, examined further in section 18.3's treatment of Minimum Support Price and procurement, will need to increasingly plan around a smaller relative cereal and millet production base even as Karnataka's horticultural output, documented in section 18.7, continues to expand from an already nationally leading position. India's own national foodgrain production context

provides a useful benchmark against which to read this Karnataka-specific diversification trend: the central government's first advance estimates for the 2025-26 kharif season put national kharif foodgrain output at 173.33 million tonnes, including rice production of more than 124 million tonnes, a national increase that suggests any relative decline in Karnataka's cereal area share is occurring against a backdrop of overall national foodgrain growth rather than a national production crisis that would make Karnataka's specific diversification trend more urgent from a pure food security standpoint (News on Air, 2025).

Precision farming technologies are increasingly being layered onto this shifting cropping base, with satellite-based monitoring, artificial intelligence-driven agricultural advisory platforms, and digital tools offering real-time soil health and irrigation data now in growing use among Karnataka's farmers, part of a broader climate-smart and digitally enabled farming trend that industry analysis identifies as central to how the state is managing the water scarcity, fragmented landholding and climate variability pressures documented at greater length in Chapters 13 and 14 (Farmonaut, 2025). This technology adoption connects directly to the innovation ecosystem themes examined in Chapter 17, since several of the digital agricultural advisory platforms operating in Karnataka draw on the same artificial intelligence and data science capability that Chapter 17 documented as concentrated substantially within Bengaluru's Centres of Excellence, indicating a still-developing but potentially significant linkage between Karnataka's urban technology economy and its rural agricultural productivity base.

Karnataka's input use patterns, spanning seed, fertiliser and integrated pest management, are similarly undergoing a gradual shift toward more resource-efficient practice, with growing urban consumer demand for organic produce and high-value horticultural and exotic crops identified as a further driver of change in the state's cultivation practices, distinct from the climate and market-access drivers already discussed above (Farmonaut, 2025). This organic and high-value demand shift is concentrated substantially among urban and peri-urban consumers in Bengaluru and Karnataka's other major cities, creating a distinct market segment that rewards a different input-use profile, generally lower synthetic fertiliser and pesticide application in favour of organic or integrated approaches, than the input-intensive cultivation practices that have historically characterised much of Karnataka's cereal and coarse grain production documented earlier in this section. The extent to which this urban-driven organic demand shift is translating into a measurable statewide change in aggregate fertiliser and pesticide consumption, as distinct from a smaller but growing niche segment serving urban premium consumers specifically, is not established with precision by the sources reviewed for this chapter, and represents a further area this report flags for the statistical strengthening agenda developed in Chapter 20, given the direct relevance of accurate input-use trend data to both the environmental themes examined in Chapter 13 and the farmer income themes examined in section 18.3 of this chapter.

18.2 Irrigation and Water Use Efficiency in Agriculture

Karnataka's irrigation profile is distinguished nationally by its comparatively advanced adoption of micro-irrigation technology relative to its overall net irrigated area. State-level data places Karnataka among the small group of states, alongside Sikkim, Andhra Pradesh and Maharashtra, where more than half of net cultivated farmland is under some form of micro-irrigation, a categorisation that includes both drip and sprinkler systems (Testbook, 2023). More granular national agriculture data for 2024 places Karnataka among the five leading Indian states specifically by area covered under combined drip and sprinkler micro-irrigation, with the state recording 18.01 lakh hectares under micro-irrigation, a figure that positions Karnataka within India's top tier of micro-irrigation adopters even though a separate national coverage-percentage ranking places Karnataka fourth, at 10.89 percent of eligible area, behind Rajasthan, Maharashtra and Andhra Pradesh specifically on the percentage-coverage measure (SAAI Academy, 2024; India Water Portal, 2023). This distinction between Karnataka's strong performance on absolute micro-irrigation area and its more moderate performance on percentage coverage suggests that the state's very large overall net irrigated area base, rather than an exceptionally high micro-irrigation penetration rate specifically, substantially explains Karnataka's strong absolute standing on this measure.

The Government of Karnataka's Micro Irrigation Policy, developed with technical support from the Global Green Growth Institute, estimates the state's total micro-irrigation potential at between 2.2 and 2.7 million hectares of the state's net irrigated area, a potential considerably larger than the 1.8 million hectares currently under micro-irrigation documented above, implying that Karnataka's micro-irrigation expansion, notwithstanding its already leading national position, remains at roughly two-thirds to three-quarters of its estimated technical potential (Global Green Growth Institute, n.d.). The policy's implementation roadmap specifically recommends establishing an autonomous, single-window institutional system for subsidy disbursement calibrated to repeat adoption behaviour, exploring domestic and international financing options to expand coverage at lower cost to the state exchequer, and prioritising low-cost micro-irrigation technologies as a deliberate stepping-stone toward eventual adoption of conventional drip and sprinkler systems by farmers who might otherwise be deterred by the higher upfront capital cost of conventional micro-irrigation infrastructure (Global Green Growth Institute, n.d.).

Karnataka's state budget has continued to layer targeted irrigation subsidies onto this broader micro-irrigation policy framework, with recent budget allocations providing a 90 percent drip irrigation subsidy for Scheduled Caste and Scheduled Tribe farmers and a 75 percent subsidy for other farmer categories, a differentiated subsidy structure that connects directly to the social justice and inclusion themes examined in Chapter 7's treatment of Scheduled Caste and Scheduled Tribe welfare programming (Deccan Herald, n.d.-s). This same budget allocated 35 crore rupees toward a public-private partnership cold storage facility at Toravi in Vijayapura district, a key grape-producing area, specifically to manage the storage, conservation and cold-chain transportation of grapes, illustrating how Karnataka's irrigation

and water-use policy is increasingly integrated with downstream post-harvest infrastructure investment rather than treated as a standalone input-supply concern (Deccan Herald, n.d.-s).

Karnataka's irrigation performance should also be read against the national irrigation context documented in Chapter 8's treatment of water infrastructure more broadly: India's national irrigation coverage rose from 49.3 percent to 55 percent of gross cropped area between the 2016 and 2021 fiscal years, with irrigation intensity rising from 144.2 percent to 154.5 percent over the same period, a national improvement driven substantially by the Pradhan Mantri Krishi Sinchayee Yojana's Per Drop More Crop component, under which more than 21,968 crore rupees had been released to states through the end of 2024, covering 95.58 lakh hectares nationally, more than double the area covered in the pre-PDMC period (PIB, 2025). Karnataka's position among the leading states on the micro-irrigation-specific measures documented above indicates the state has captured a disproportionate share of this national irrigation efficiency investment, consistent with historical analysis finding that just five states, Andhra Pradesh, Karnataka, Gujarat, Maharashtra and Tamil Nadu, together accounted for 78 percent of national micro-irrigation coverage expansion during a recent single-year measurement period, a concentration that leaves considerable room for the national programme's benefits to reach a broader set of Indian states even as it confirms Karnataka's comparatively strong absorptive capacity for this specific category of central irrigation investment (PressReader, 2018).

18.3 Agricultural Marketing, Price Realisation and Farmer Income

Karnataka's agricultural marketing architecture has undergone significant institutional change over the past several years, centred on the state's Agricultural Produce Market Committee, or APMC, system. The APMC Act was substantially amended in 2020 to remove restrictions on farmers selling agricultural produce outside notified APMC market yards, part of a broader national legislative shift examined in the food processing investment context documented in section 18.4, but Karnataka's current state government reversed key elements of this deregulation after taking office in 2023, restoring APMC powers that the previous administration had curtailed (Deccan Herald, n.d.-t). The state's Minister for Textiles, Sugarcane Development and APMC disclosed that this restoration produced a measurable revenue recovery: APMC income, which had fallen from 618 crore rupees before the 2019 deregulation to 294 crore rupees in the year deregulation took effect, and continued declining to 199 crore rupees in 2021-22 and 194 crore rupees in 2022-23, recovered to 133 crore rupees in just the first four months of the restored regime, compared with 77 crore rupees over the same four-month period the previous year, with the government projecting full-year APMC income of 380 to 400 crore rupees following the restoration (Deccan Herald, n.d.-u). This trajectory, a roughly two-thirds decline in APMC revenue following 2019 deregulation followed by a partial but incomplete recovery following 2023 re-regulation, illustrates directly how sensitive Karnataka's formal agricultural marketing infrastructure has proven to state-level regulatory policy shifts, a volatility that stands in some tension with the price stability and farmer income predictability that agricultural marketing reform, in either direction, is typically intended to deliver.

Karnataka's own State Agricultural Price Commission has separately pushed for further APMC reform, with the commission's chairman proposing amendments to restrict middlemen from purchasing agricultural produce, introduce punitive action against traders buying farm produce below the announced support price, formally legalise support price enforcement, and establish a dedicated secretary-level ministry specifically for agricultural price policy (Deccan Herald, n.d.-v). These proposals, which predate the more recent APMC restoration documented above, indicate that Karnataka's agricultural price policy debate has consistently centred on farmer price protection and middleman disintermediation as core objectives across multiple different state government administrations, even as the specific regulatory mechanism favoured to achieve these objectives, whether through APMC strengthening, Minimum Support Price legal guarantees, or direct government procurement, has shifted considerably depending on the governing party's broader agricultural policy orientation.

Minimum Support Price policy itself operates as a central government mechanism within which Karnataka's farmers participate alongside those of other states, with national MSP payouts reaching 3.33 lakh crore rupees in the 2024-25 fiscal year against total procurement of approximately 117.5 million tonnes, a substantial increase from 1.06 lakh crore rupees and 76.14 lakh tonnes recorded a decade earlier in 2014-15 (Padhai, 2026). Karnataka-specific MSP procurement has featured prominently within this national framework for the state's plantation crops specifically: the central government enhanced its 2024-season milling copra procurement quota for Karnataka from an initial 2,999 tonnes to 10,500 tonnes at an MSP of 11,995 rupees per quintal, following a direct request from the state's Union Minister of State for Railways to the Union Agriculture Minister, with the enhanced procurement specifically benefiting farmers across Tumakuru, Ramanagara, Mandya, Mysuru, Chamarajanagar and Hassan districts (Deccan Herald, n.d.-w). This copra procurement episode illustrates a recurring pattern in Karnataka's agricultural marketing and farmer income policy: state-level political intervention with the central government to secure enhanced MSP procurement quotas for crops of particular regional significance, a mechanism that operates alongside, rather than as a substitute for, the state's own APMC and price commission policy architecture documented above.

18.4 Food Processing Industry and Value Chain Development

Karnataka's food processing industry benefits from the state's position as India's largest producer of coffee, areca nut, cocoa, vanilla and a range of spices, a raw material base that the central Ministry of Food Processing Industries identifies as providing the state with an unusually strong natural foundation for food processing sector growth, further reinforced by the presence of the numerous universities and technology companies documented in Chapter 17 that the Ministry's own state profile analysis credits with fostering innovation and efficiency specifically within food processing operations (Ministry of Food Processing Industries, n.d.). Karnataka's dairy surplus, examined in greater depth in section 18.5, is separately identified within this same central government analysis as a distinct value-added processing opportunity, alongside a broader range of processing opportunities spanning the

state's fruit, vegetable, spice and plantation crop production base (Ministry of Food Processing Industries, n.d.).

The state's flagship food processing infrastructure investment under the central government's Mega Food Park Scheme is the Integrated Mega Food Park located in Tumkur district, one of only seventeen Mega Food Parks operational nationally as of late 2025, which has generated employment for approximately 5,400 people through its combination of large-scale processing and logistics operations (Vajiramandravi, 2026). While this employment figure is considerably smaller than the roughly 17,200 jobs generated by India's first Mega Food Park in Andhra Pradesh's Chittoor district, it nonetheless represents a meaningful concentration of formal food processing employment within a single Karnataka district, and connects directly to the industrial cluster and Special Economic Zone themes documented in Chapter 4's broader treatment of Karnataka's industrial infrastructure (Vajiramandravi, 2026). Beyond the Tumkur Mega Food Park, Karnataka's investment promotion architecture documents four additional upcoming food parks alongside growing warehousing, logistics and cold storage investment opportunities, supported by the central Pradhan Mantri Kisan Sampada Yojana's one billion dollar national modernisation package, which offers financing of up to seven million dollars per Mega Food Park project, covering as much as 50 percent of project cost, alongside separate financing tranches of up to 1.4 million dollars each for cold chain infrastructure and agro-processing cluster projects designed to create forward and backward market linkages for farmers (Invest Karnataka, n.d.-c).

Karnataka's own state-led food processing infrastructure investment includes the Ramthal Drip-to-Market Agro Corridor, described within the state's investment promotion materials as the largest drip irrigation project undertaken jointly by the Government of Karnataka and the 2030 Water Resources Group, a World Bank subsidiary, and structured around 285 Farmer Producer Organisations and 22 public-private-partnership-integrated value chain interventions (Invest Karnataka, n.d.-c). This corridor's explicit "drip-to-market" framing, connecting irrigation infrastructure directly through to market access rather than treating water delivery and agricultural marketing as separate policy domains, represents a deliberate institutional integration of the irrigation themes documented in section 18.2 with the marketing and price realisation themes documented in section 18.3, and offers a template that the state's broader agricultural infrastructure planning could in principle extend to other high-value crop corridors beyond the specific geography the Ramthal project currently covers.

The state budget has additionally directed targeted food processing investment toward specific regional crop specialisations, including the establishment of a dedicated mango processing centre at Hangal in Haveri district and a research centre for quality chillies and spices at Byadgi, also in Haveri district, alongside a 5 crore rupee allocation to popularise and expand production of Kodagu and Jamboti honey (Deccan Herald, n.d.-s). This pattern of geographically targeted, crop-specific processing infrastructure investment, rather than a uniform statewide food processing subsidy, indicates that Karnataka's food processing policy is being calibrated deliberately to the specific crop specialisations documented in section

18.1's treatment of the state's north-south agronomic divide, concentrating processing infrastructure investment in the districts where each relevant crop's raw material base is already concentrated rather than dispersing investment evenly regardless of local production patterns.

18.5 Animal Husbandry, Dairy and Poultry: Economic Contribution

Karnataka's dairy sector is organised through the Karnataka Cooperative Milk Producers' Federation, universally known by its Nandini brand, which stands as the second-largest milk cooperative in India after Gujarat's Amul and the largest in South India specifically, both by procurement volume and by sales (Karnataka.com, 2026; Icons of Indian Business, n.d.). KMF's origins trace to 1955, when the first primary dairy cooperative societies were established in Kudige, in Kodagu district, with the federation itself formally constituted in 1974 as the Karnataka Dairy Development Corporation to implement a World Bank-funded dairy development project, before being renamed KMF in 1984 (Karnataka.com, 2026). The federation follows the three-tier "Anand Pattern" cooperative structure used across India's dairy sector, in which village-level Dairy Cooperative Societies feed into district-level milk unions, which in turn constitute the state federation, with KMF's 15 milk unions currently spanning 31 districts and procuring milk from more than 26.8 lakh farmer-members statewide (Karnataka.com, 2026).

KMF's scale, by recent measurement, places it firmly among India's largest dairy cooperative enterprises: KMF and its constituent milk unions reported a combined turnover of 21,330 crore rupees in the 2023-24 fiscal year, procuring an average of approximately 83 lakh litres of milk per day across the federation's full network (Karnataka.com, 2026). This procurement volume has not, however, followed a uniformly upward trajectory. KMF experienced its first measured production decline in at least five years beginning in mid-2022, with daily procurement falling from an average of 84.5 lakh litres in 2021-22 to roughly 75.6 lakh litres, a decline of nine to ten lakh litres per day that the federation attributed to a combination of lumpy skin disease, foot and mouth disease outbreaks, flooding, and fodder scarcity, disruptions that pushed up prices for milk by-products including ghee, butter and paneer by 30 to 40 rupees per kilogram and forced several of the federation's milk unions to scale down milk powder supply to the state's Ksheera Bhagya school milk programme (Deccan Herald, n.d.-x). This episode illustrates a direct vulnerability running from Karnataka's livestock disease and climate resilience infrastructure, documented in Chapter 14's treatment of disaster risk and Chapter 6's treatment of epidemiological surveillance, through to the state's dairy cooperative economy and, via the Ksheera Bhagya programme specifically, to the child nutrition architecture examined in Chapter 6's treatment of the Mid-Day Meal and Poshan Abhiyan programmes, confirming that Karnataka's dairy sector functions simultaneously as an agricultural livelihood system and as critical nutritional infrastructure for the state's school-going population.

KMF's more recent performance indicates a degree of recovery and continued institutional adaptation. In 2025, the federation responded to rising production costs by raising

farmer-facing milk procurement prices by four rupees per litre, a direct price intervention intended to ensure farmer compensation kept pace with input cost inflation, while simultaneously expanding its retail product range with 18 new bakery products launched around World Milk Day specifically to promote broader milk consumption (The Caravan, 2025). The federation's Good Life milk brand has additionally gained market traction in states neighbouring Karnataka, and KMF's cultural outreach extended in 2025 to a partnership with the retail chain Chai Point to serve one crore cups of tea using Nandini milk at the Maha Kumbh Mela, illustrating a deliberate brand-building strategy that extends Nandini's market presence and cultural association well beyond Karnataka's own state boundaries (The Caravan, 2025). KMF additionally operates a distinct social welfare function through its Ksheera Sanjeevini programme, a dedicated women's empowerment initiative that provides training specifically to women engaged in milk production activities, connecting the federation's core commercial dairy function to the gender equity themes examined in Chapter 7 (Icons of Indian Business, n.d.).

18.6 Fisheries: Inland, Marine and Aquaculture

Karnataka's 320-kilometre Arabian Sea coastline, spanning Dakshina Kannada, Udupi and Uttara Kannada districts, supports a marine fisheries sector sustaining the livelihoods of more than 1.5 lakh fishermen and fisherwomen, with the state's marine fish landings historically ranking among the top four Indian coastal states alongside Tamil Nadu, Kerala and Gujarat (Austin Publishing Group, n.d.). Karnataka's marine fishery has experienced considerable year-on-year volatility over the past several fishing seasons. Fish production in the state, combining inland and marine sources, totalled 9,62,959 metric tonnes in the 2024-25 fishing season, a modest 1.33 percent decline from the 9,75,998 metric tonnes recorded in 2023-24, with marine production specifically across Dakshina Kannada, Udupi and Uttara Kannada falling five percent, from 5,42,675 metric tonnes to 5,13,168 metric tonnes, and Dakshina Kannada district alone recording a considerably sharper 28 percent marine catch decline, from 2.39 lakh metric tonnes to 1.72 lakh metric tonnes (Deccan Herald, n.d.-y). This marine decline was substantially offset within the state's overall fish production total by a striking 24 percent increase in inland fish production, which rose from 4,33,323 metric tonnes in 2023-24 to 5,74,792 metric tonnes in 2024-25, a divergence that the state's Fisheries Department Director attributed to a series of targeted inland fisheries support initiatives, including the free transfer of 25 acres of land at Alamatti in Vijayapura district from the Krishna Bhagya Jal Nigam Limited to the Department of Fisheries for the establishment of a 13 crore rupee fish seed production farm designed to meet north Karnataka's fish seed requirements (Deccan Herald, n.d.-y).

The state's marine sector subsequently recovered sharply in the following season. ICAR-Central Marine Fisheries Research Institute data released in April 2026 recorded a 44 percent surge in Karnataka's marine fish landings during 2025, following the sharp 2024 decline documented above, a recovery that CMFRI's Director attributed to favourable environmental conditions supporting the revival of small pelagic fish stocks, reinforced by regulated fishing pressure that allowed breeding populations the time and ecological space

needed to recover (CMFRI, 2026). This 44 percent rebound was among the strongest of any major Indian coastal state in the 2025 assessment, exceeded only by Maharashtra's 18 percent growth among the other states CMFRI's national assessment specifically highlighted, even as national marine fish production overall grew by a comparatively modest 3 percent to 35.7 lakh tonnes, with Tamil Nadu overtaking Gujarat for the national leadership position and Kerala retaining third place (CMFRI, 2026). Despite this recovery, industry reporting from the close of the 2025-26 season indicates that many Karnataka boat owners continue to report thin profit margins due to rising diesel costs, even as landed catch volumes improved, a cost-price squeeze that connects the state's fisheries economy directly to the broader input cost inflation themes examined in section 18.5's treatment of KMF's dairy pricing response (The Hans India, 2026).

Karnataka's fisheries management framework includes an annual 61-day mechanised fishing ban running from June 1 to July 31 along the state's coastline, implemented specifically to facilitate fish breeding and stock replenishment during the monsoon period, a conservation measure that fisheries experts credit, alongside favourable environmental conditions, with supporting the 2025 landings recovery documented above (The Hans India, 2026). More than 3,500 mechanised fishing boats currently operate along the Karnataka coast, with more than half configured for multi-day deep sea fishing specifically from the Mangaluru Fishing Harbour, which functions as the state's most prominent fish landing centre and has separately attracted dedicated processing infrastructure investment, including a European Union standards-compliant seafood processing plant established by the Karnataka Fisheries Development Corporation at Hoige Bazar, developed with 5 crore rupees drawn from a broader 25 crore rupee Rashtriya Krishi Vikas Yojana allocation earmarked for strengthening the state's fish marketing activities (Deccan Herald, n.d.-y; Deccan Herald, n.d.-z).

18.7 Horticulture, Floriculture and Medicinal Plants

Karnataka holds the distinction of ranking first among all Indian states by total area under horticultural cultivation, with a total horticulture area of 26.32 lakh hectares following a recent single-year extension of 34,700 hectares, a national leadership position that stands in useful contrast to the state's second-place national ranking on patent filings documented in Chapter 17, confirming that Karnataka's various sectoral leadership claims are genuinely domain-specific rather than reflecting a uniform first-place position across every measured category (Deccan Herald, n.d.-s). This horticultural leadership spans a wide range of crop categories beyond the coffee and plantation crops documented in section 18.1, including extensive fruit cultivation, banana, mango, sapota, coconut and arecanut prominent among the larger-scale crops, alongside smaller-scale but locally significant cultivation of oil palm, cashew, jasmine, cocoa, amla, cherry and kamarak documented at the district level across Karnataka's various agro-climatic zones (Shivamogga District, n.d.).

Karnataka's floriculture sector operates as a distinct but closely related horticultural sub-sector, with rose, jasmine, aster, crossandra and tuberose cultivation practised widely across the state's flower-growing districts, complemented by a growing area under protected

cultivation of anthurium and gerbera specifically within greenhouse and polyhouse structures, a controlled-environment cultivation approach that district-level horticulture department reporting identifies as an increasingly important growth segment within the state's overall floriculture output (Shivamogga District, n.d.). The state's medicinal and aromatic plants sub-sector, coordinated in part through the National Medicinal Plants Board's Karnataka-specific programming, has generated applied research findings of direct relevance to farmer crop selection decisions: intercropping trials conducted under Dharwad's northern transitional agro-climatic zone conditions found that medicinal and aromatic species including patchouli, lemongrass, aloe vera, tulsi, Japanese mint, palmarosa and citronella perform well when intercropped under coconut plantation shade, while stevia, coleus, ashwagandha, khus and kalmegh perform best under open, unshaded cultivation conditions, with the latter group additionally producing higher concentrations of their commercially valuable active compounds when grown in open conditions specifically (National Medicinal Plants Board, n.d.). Based on prevailing market prices at the time of the trial, stevia, coleus, khus and patchouli were specifically recommended for large-scale cultivation by farmers in Karnataka's northern transitional zone, illustrating a direct, research-to-recommendation pipeline connecting Karnataka's agricultural university research infrastructure, documented further through the University of Agricultural Sciences, Bangalore's dedicated Horticulture Department, to practical, district-level farmer crop selection guidance (National Medicinal Plants Board, n.d.; University of Agricultural Sciences Bangalore, n.d.).

The University of Agricultural Sciences, Bangalore's Horticulture Department has additionally developed several applied propagation and cultivation technologies with direct commercial relevance to Karnataka's horticulture sector, including a standardised soft-wood grafting technique for mass multiplication of cashew, mango and jackfruit planting material, a tissue-culture-based mass multiplication protocol for multiple banana varieties including Grand Naine, Elakki Bale, Nanjangudu Rasabale and Nendran, and a rejuvenation protocol for economically underperforming cashew plantations (University of Agricultural Sciences Bangalore, n.d.). State budget support for the horticulture sector has extended into dedicated infrastructure and market-access investment as well, including the Toravi cold storage facility for grapes documented in section 18.2, a dedicated mango processing centre and spice research centre documented in section 18.4, and the 5 crore rupee honey production initiative documented in the same section, together indicating that Karnataka's horticultural leadership position, while resting substantially on the state's underlying agro-climatic diversity, is being actively reinforced through targeted state capital investment across the full value chain from cultivation technology through to post-harvest processing and cold-chain market access.

18.8 Agricultural Credit, Insurance and Risk Management

Karnataka's farmers participate in the national Pradhan Mantri Fasal Bima Yojana crop insurance framework, which the Union Cabinet approved for continuation, alongside the complementary Restructured Weather Based Crop Insurance Scheme, through the 2025-26 fiscal year with a combined national budget of 69,515.71 crore rupees (PIB, 2025). PMFBY's premium structure caps farmer contributions at 2 percent of the sum insured for kharif food

and oilseed crops, with the remaining premium cost subsidised jointly by the central and state governments, while horticultural and other annual commercial crops carry a somewhat higher farmer premium cap of 5 percent, a differentiated premium structure directly relevant to Karnataka's horticulture-heavy cropping pattern documented in section 18.7, since Karnataka farmers cultivating the state's nationally leading horticultural area face a comparatively higher out-of-pocket premium burden under PMFBY than farmers growing kharif foodgrains specifically (Kshema, 2026). The scheme has increasingly incorporated satellite imagery, drone and remote sensing technology into its yield loss assessment process, formalised through the YES-TECH, or Yield Estimation System Based on Technology, framework introduced from the 2023 kharif season onward, which blends technology-based yield estimates with traditional manual assessment specifically to reduce claim settlement delays and improve the transparency of loss assessment for participating farmers, including those in Karnataka (PIB, 2025).

Karnataka's own state-level crop insurance administration operates through a dedicated Department of Horticulture-managed digital portal that processes both PMFBY and Weather Based Crop Insurance Scheme enrolments specifically for horticultural crops, distinguishing between "major" crops notified at the Gram Panchayat or Urban Local Body level as the applicable insurance unit and "other" crops, including many horticultural crops, notified at the more localised hobli level instead (SLBC Karnataka, n.d.). This administrative distinction between major and other crops, and the correspondingly different geographic scale at which each category's insurance unit is defined, reflects a deliberate calibration of the insurance scheme's local coverage granularity to the underlying spatial variability of yield outcomes across Karnataka's diverse cropping pattern documented throughout this chapter, since horticultural crops grown on smaller, more geographically dispersed plots benefit from finer-grained hobli-level insurance units in a way that larger-scale, more spatially uniform cereal cultivation does not require to the same degree.

Beyond crop insurance specifically, Karnataka's agricultural credit architecture operates substantially through the same scheduled commercial banking channels documented in the academic crop diversification analysis discussed in section 18.1, which identified agricultural credit inflow from scheduled commercial banks as a statistically significant positive influence on the state's crop diversification trajectory, alongside highway connectivity and irrigation ratio measures (Nature Humanities and Social Sciences Communications, 2023). This finding suggests that Karnataka's agricultural credit policy functions not merely as a risk-mitigation and working-capital mechanism in isolation, but as a structural determinant of the state's broader cropping pattern evolution, since farmers with reliable access to institutional credit are, on this evidence, more able to diversify into higher-value but more capital-intensive horticultural and plantation crops than farmers reliant on informal or constrained credit sources, a dynamic that connects this chapter's credit and insurance discussion directly back to the cropping pattern themes examined in section 18.1 and closes the analytical loop this chapter has traced across Karnataka's agricultural input, marketing, processing and risk-management architecture as a single, interconnected rural economic system.

Karnataka's cooperative credit infrastructure additionally intersects with the dairy sector documented in section 18.5 through national-level financial inclusion measures, including the issuance of RuPay Kisan Credit Cards specifically tailored to dairy cooperative members, part of a broader national push, documented in the Economic Survey 2024-25, to strengthen Primary Agricultural Credit Societies and extend banking access, including retail petrol and diesel outlets and micro-ATM facilities, through cooperative society infrastructure, with more than 9,000 new Primary Agricultural Credit Society, dairy and fishery cooperatives registered nationally under this initiative (PIB, 2025). Given Karnataka's more than 26.8 lakh KMF-affiliated dairy farmer-members documented in section 18.5, the state stands to be a substantial beneficiary of this dairy-specific credit card initiative, representing a further concrete linkage between Karnataka's agricultural credit architecture and its dairy cooperative economy that reinforces, rather than operates independently of, the broader institutional interconnection this chapter has traced across Karnataka's agriculture and allied sectors.

Taken together, the evidence reviewed across this chapter's eight sections describes an agricultural economy whose different components are considerably more interdependent than a sector-by-sector reading might initially suggest. Karnataka's cropping pattern shifts documented in section 18.1 are shaped directly by the credit and irrigation access examined in sections 18.2 and 18.8; the state's marketing and price realisation architecture documented in section 18.3 determines much of the incentive structure behind those same cropping decisions; the food processing investment examined in section 18.4 is being deliberately targeted at the specific crop and livestock specialisations that sections 18.1, 18.5, 18.6 and 18.7 document as geographically concentrated; and the insurance framework examined in this final section has been calibrated specifically to the spatial and crop-type variability that the chapter's earlier sections establish as a defining feature of Karnataka's agricultural landscape. This degree of interconnection carries a clear implication for the state's future agricultural policy design: interventions in any one of the eight domains examined in this chapter, whether a change to APMC regulation, a new dairy pricing decision, or an expansion of micro-irrigation subsidy, are unlikely to remain contained within that single domain, and Karnataka's policymakers would be better served by continuing to design agricultural interventions, in the manner the Ramthal Drip-to-Market Agro Corridor and the state's crop-specific processing centres already exemplify, as integrated value-chain investments rather than as isolated single-sector measures.

Chapter 19: Tourism, Culture and Creative Economy

19.1 Tourism Asset Inventory: Natural, Heritage, Religious and Adventure

Karnataka's tourism asset base is unusually broad even by the standards of India's larger states, encompassing historical monuments, natural landscapes, wildlife reserves, and cultural heritage sites that together draw millions of visitors annually, and the state maintains 1,275 registered tourist destinations, the highest number of any Indian state as of 2025 (Grokikipedia, 2026). This breadth spans multiple distinct tourism categories that the state's own tourism policy explicitly seeks to promote in parallel, including adventure, agriculture, caravan, coastal, beach, cuisine, cultural, traditional, environmental, educational, film, golf, sports, tribal, and wedding destination tourism, alongside dedicated health tourism promotion (Deccan Herald, n.d.-p).

Karnataka's most internationally recognised heritage assets are its UNESCO World Heritage Sites, comprising the Group of Monuments at Hampi, inscribed in 1986, and the Group of Monuments at Pattadakal, inscribed in 1987, both discussed in greater detail in section 19.4 (World Heritage Explorer, n.d.). Hampi itself contains more than 1,600 surviving physical remains spanning forts, riverside features, royal and sacred complexes, temples, shrines, pillared halls, memorial structures, gateways, defence checkpoints, stables, and water structures, reflecting the scale of the former Vijayanagara Empire capital that once stood on the site (UNESCO World Heritage Centre, 2023). Beyond Hampi's scale, the site's water management systems merit particular note within Karnataka's broader heritage inventory, since the Vijayanagara-era canals, tanks, and aqueducts documented among Hampi's surviving structures reflect an engineering sophistication that modern heritage tourism marketing has only partially incorporated into visitor programming, which has historically emphasised the site's temple and royal architecture over its hydraulic infrastructure. This represents an underdeveloped interpretive angle relative to comparable World Heritage sites elsewhere in India, where water-management heritage has increasingly been packaged as a distinct visitor theme.

Karnataka's coffee-growing hill districts of Kodagu and Chikkamagaluru, documented in detail in Chapter 18 for their agricultural output, function simultaneously as major tourism destinations in their own right, with Kodagu's more than 1,000 coffee estates producing approximately 35 percent of India's coffee output while also offering plantation tours and harvest experiences that have become a significant draw for domestic and international visitors alike (Grokikipedia, 2026).

Karnataka's natural and wildlife tourism assets connect directly to the forest and biodiversity resources documented in Chapter 13, with the state's Western Ghats wildlife reserves, including Bandipur and Nagarhole, forming part of a broader adventure and eco-tourism circuit that the state's tourism policy explicitly identifies as a priority growth area, alongside the coastal and beach tourism potential of the state's Arabian Sea coastline in Uttara Kannada, Udupi, and Dakshina Kannada districts (Deccan Herald, n.d.-p). This dual emphasis on

wildlife and coastal tourism means that Karnataka's tourism sector carries a direct exposure to the same climate vulnerability, deforestation pressure, and coastal ecosystem stress documented throughout Chapters 13 and 14 of this framework, since degradation of the underlying natural assets that draw visitors would directly undermine the tourism sector's own long-term growth prospects.

19.2 Tourism Infrastructure: Hotels, Connectivity and Facilitation

Karnataka's tourism infrastructure development is currently governed by the Karnataka Tourism Policy 2024-29, cleared by the state Cabinet with an explicit investment target of 1,500 crore rupees in the sector, alongside dedicated subsidies and grants to be released under the policy framework (Deccan Herald, n.d.-p). As part of this policy, the state government has identified 46 specific tourism projects for special promotional impetus, spanning apartment and hotel development, service apartments, aquariums, beach shacks, and amusement parks, indicating a deliberate effort to diversify Karnataka's accommodation and attraction base beyond its traditional heritage and nature tourism offerings (Deccan Herald, n.d.-p).

The policy's stated vision extends beyond simple infrastructure expansion toward a more sustainability-oriented development model. The current tourism policy framework describes itself as a strategic blueprint focused on sustainability, inclusivity, and innovation, designed to unlock Karnataka's diverse landscapes, cultural heritage, and adventure hubs through a combination of investor incentives, responsible tourism frameworks, and infrastructure improvement initiatives, with a strong stated push toward eco-tourism, heritage conservation, wellness tourism, and rural tourism specifically (Karnataka Tourism, n.d.). Reflecting this rural and small-accommodation emphasis, the Department of Tourism notified new guidelines for the registration and operation of homestays in Karnataka on April 29, 2026, alongside a supporting circular issued two days earlier, formalising a regulatory framework for the smaller-scale, community-based accommodation model that the state's rural and eco-tourism ambitions depend upon (Karnataka Tourism, n.d.). The practical effect of formalising homestay registration is to extend regulatory legitimacy, and by implication access to state subsidy and promotional support, to a segment of Karnataka's accommodation base that had previously operated largely outside the tourism department's direct oversight. Given that rural and eco-tourism growth depends on exactly this kind of small-scale accommodation capacity, the timing of the 2026 guidelines suggests the state government views homestay formalisation as a prerequisite for meaningfully expanding visitor capacity in districts such as Kodagu and Chikkamagaluru, where large-format hotel development is both less feasible and less consistent with the sustainability language embedded in the current tourism policy.

Karnataka's air connectivity infrastructure, anchored by Bengaluru's international airport, plays a disproportionately important role in the state's tourism facilitation relative to most other Indian states, given the airport's function as a major national gateway independent of its tourism role. Bengaluru contributed 8.40 percent of India's total foreign tourist arrivals

through international airports in 2024, ranking behind only New Delhi, Mumbai, and Chennai among Indian cities, a position that reflects Bengaluru's role as a major international business and technology hub, documented extensively in Chapter 17, rather than purely a leisure tourism gateway (TTG India, 2026). This dual function, in which Bengaluru's airport serves simultaneously as India's technology capital's primary international gateway and as a key entry point for the state's tourism sector, means that Karnataka's inbound tourism infrastructure benefits from connectivity investment that would likely occur regardless of tourism-specific policy, a structural advantage few other Indian tourism destinations of comparable heritage significance possess.

19.3 Domestic and International Tourist Flows: Trends and Targets

Karnataka's domestic tourism performance in 2024 placed the state third among all Indian states, with 304.56 million domestic tourist visits recorded, accounting for 10.33 percent of India's total domestic tourist arrivals that year, according to statistics maintained by India's Ministry of Tourism (TTG India, 2026). International arrivals told a markedly different story, standing at just 0.485 million for the same year, a figure the same reporting explicitly characterised as indicating considerable scope for further growth in Karnataka's inbound international tourism segment relative to its strong domestic performance (TTG India, 2026). Separate analysis covering the broader 2019 to 2023 period found that Karnataka ranks fourth among Indian states for domestic tourist arrivals and sixth for foreign tourist arrivals, with approximately 800 million total tourist visits recorded across that five-year window, figures that are broadly consistent with, though not identical to, the more recent single-year 2024 data given differing measurement periods and methodologies across sources (Grokikipedia, 2026).

The scale of the gap between Karnataka's current international arrivals and its own stated ambitions is considerable. Under the Karnataka Tourism Policy 2024-29, the state government has set an explicit target of attracting 20 lakh, or 2 million, foreign tourists annually in order to rank among the top five Indian states on this measure, alongside a domestic tourism target of 48 crore, or 480 million, visitors annually to rank among the top three states nationally (Deccan Herald, n.d.-p). At the time the policy was announced, the state's law and parliamentary affairs minister acknowledged that Karnataka's actual foreign tourist arrivals stood at only 12 to 14 lakh annually, meaning the state needed to grow international arrivals by roughly 40 to 65 percent to reach its own five-year target, while domestic footfall at existing tourism points stood at approximately 30 to 32 crore annually against the 48 crore target, implying required growth of roughly 50 to 60 percent over the policy period (Deccan Herald, n.d.-p). The 304.56 million domestic visits recorded for 2024 under the Ministry of Tourism's own measurement suggests Karnataka's domestic tourism trajectory is tracking meaningfully toward, though still short of, its 480 million target, while the 0.485 million international arrivals figure for the same year indicates the state remains considerably further from its 2 million foreign tourist target than its domestic ambitions.

Karnataka's tourism sector also faces periodic safety and security challenges that carry direct reputational consequences for the state's international tourism ambitions specifically. Reporting in early 2025 documented a serious criminal incident near the Hampi UNESCO site, an event that occurred in immediate proximity to the state's most internationally recognised heritage asset and that carries the kind of reputational risk capable of affecting international visitor perceptions independent of the underlying strength of Karnataka's heritage and natural tourism assets documented in section 19.1 (Grokikipedia, 2026). Ensuring visitor safety at high-profile heritage sites of this kind is a direct precondition for closing the gap between Karnataka's domestic and international tourism performance documented above, since international travellers, who typically have a wider range of destination choices available to them than domestic travellers with existing cultural or regional ties to Karnataka, are likely to weigh safety perceptions more heavily in their destination decisions.

Karnataka's tourism authorities face a further structural constraint in translating the state's asset base into international arrivals growth, namely the concentration of promotional effort on a small number of headline sites relative to the 1,275 registered destinations the state maintains overall. International travel decision-making tends to reward destinations with a small number of clearly branded, easily searchable anchor attractions, meaning that Karnataka's very breadth of tourism inventory, spanning adventure, wildlife, coastal, wellness, and heritage categories simultaneously, may work against rather than for its international marketing effectiveness unless the state's promotional strategy prioritises a narrower set of internationally legible flagship experiences.

19.4 Cultural Heritage Preservation and Institutional Framework

Karnataka's formally recognised UNESCO World Heritage assets have expanded in recent years beyond the state's two long-standing sites at Hampi and Pattadakal. The Sacred Ensembles of the Hoysalas, comprising the temple complexes at Belur, Halebidu, and Somanathapura, were inscribed on the UNESCO World Heritage List in 2023, joining Hampi and Pattadakal as Karnataka's third World Heritage designation and reflecting the exceptional craftsmanship of the Hoysala dynasty's detailed soapstone carvings and architectural finesse (Travel And Tour World, 2026; Legacy IAS, 2026). This 2023 inscription places Karnataka's most recent addition alongside Santiniketan in West Bengal, both recognised in the same UNESCO cycle, and reflects a broader, ongoing expansion of India's total World Heritage Site count, which stood at 38 sites nationally, comprising 30 cultural, seven natural, and one mixed site, as of the most recent comprehensive listing reviewed for this chapter (NammaKPSC, n.d.).

Karnataka's cultural heritage institutional framework operates through the Archaeological Survey of India, which manages and protects sites such as Pattadakal under Indian law, working alongside the state's own tourism and heritage departments in the promotion and conservation of these assets (World Heritage Explorer, n.d.). Pattadakal itself, located in Bagalkot district on the banks of the Malaprabha River, comprises a cluster of ten major temples built across the Kadamba, Early Chalukya, and Vijayanagara dynastic periods, with

its most celebrated structure, the Virupaksha Temple, built around 740 CE by Queen Lokamahadevi to commemorate her husband King Vikramaditya II's military victory over the Pallava kings of the south (NammaKPSC, n.d.; World Heritage Explorer, n.d.). Karnataka Tourism has actively promoted these heritage assets on the international stage, showcasing Hampi and its fellow UNESCO sites at the South Asia Travel and Tourism Exchange 2026, held in New Delhi from February 25 to 27, with the explicit aim of connecting with international buyers, tour operators, and other tourism industry stakeholders to strengthen partnerships in the global travel market (Travel And Tour World, 2026).

Heritage conservation in Karnataka's tourism hotspots has also required active management of visitor pressure rather than promotion alone. In September 2025, the Kodagu district administration introduced sustainable tourism measures specifically to protect the district's ecologically sensitive coffee estates, including caps on vehicle entry during peak tourist seasons to mitigate soil erosion and preserve the terrain, alongside ongoing proposals for an e-pass system designed to manage over-tourism and reduce landslide risk in the district's most heavily visited estate areas (Grokikipedia, 2026). This intervention illustrates a direct tension between Karnataka's tourism growth ambitions, documented in section 19.3, and the environmental carrying capacity of its most popular natural and agricultural tourism destinations, a tension that mirrors the broader land use and forest cover pressures documented in Chapter 13 for the same Western Ghats districts, and that suggests future tourism infrastructure investment under the state's 2024-29 policy will need to be paired with visitor management systems of the kind piloted in Kodagu if the state's growth targets are to be pursued without accelerating the ecological degradation already documented elsewhere in this framework. This visitor-management tension is not unique to Kodagu among Karnataka's heritage and natural sites. The Hoysala temple complexes at Belur, Halebidu, and Somanathapura, despite their 2023 UNESCO inscription, do not yet appear to have generated equivalent public reporting on visitor caps or carrying-capacity measures, which may reflect either genuinely lower current footfall relative to Hampi and Kodagu or simply a lag in policy attention following the sites' comparatively recent formal recognition, a gap worth monitoring as the state's international marketing of its UNESCO portfolio, documented through events such as SATTE 2026, begins to direct greater visitor volume toward these newer designations.

19.5 Creative Industries: Handicrafts, Performing Arts and Cultural Economy

Karnataka holds the distinction of having the highest number of Geographical Indication tagged products of any Indian state, with counts across different reporting periods placing the state's total between 42 and 50 or more registered products, spanning agriculture, handicrafts, and manufactured goods, and reflecting what industry commentary has described as a testament to the state's rich cultural tapestry and its role as an ambassador of indigenous produce and craftsmanship (KSTDC, n.d.-a, n.d.-b; Outlook Traveller, 2025; StudyIQ, 2025). Karnataka's Geographical Indication portfolio includes internationally recognised names such as Mysore Silk, Mysore Sandalwood Oil, and Dharwad Pedha, with the state's sericulture sector, documented in detail in Chapter 18, producing approximately 9,000 metric tons of

mulberry silk annually, accounting for close to 45 percent of India's total mulberry silk output, concentrated substantially in Mysore district and marketed under the patent-registered Mysore Silk brand maintained by the Karnataka Silk Industries Corporation (StudyIQ, 2025; KSTDC, n.d.-a).

Karnataka's handicraft traditions extend well beyond silk into a wide range of distinct regional craft forms, each carrying its own Geographical Indication recognition or protected regional identity. These include Mysore Rosewood Inlay, a technique of inserting contrasting materials such as ivory shells, mother-of-pearl, horn, and sandalwood into rosewood objects to create ornamental pictures, produced primarily by artisans based in Srirangapatna and marketed through the state government's own Karnataka State Handicrafts Development Corporation retail network (KSTDC, n.d.-a; Outlook Traveller, 2025). Kasuti, a traditional folk embroidery form practised across Karnataka, involves work of such intricacy that a single piece can require up to 5,000 hand stitches, and is traditionally seen on Ilkal sarees, traditional jackets, coats, and kurtas (KSTDC, n.d.-a). Karnataka's broader craft inventory additionally spans sandalwood carving, Channapatna lacquerware and wooden toys, Bidri ware metalwork, Kinhal toys, Navalgund durries, stone carving, traditional jewellery, mirror work embroidery, banana fibre products, terracotta, bronze icons, and pile carpets, with the state-run Cauvery Handicrafts Emporium serving as the principal retail and promotional channel for this diverse craft ecosystem (Cauvery Handicrafts Emporium, n.d.).

Mysore Agarbathi, the state's Geographical Indication-tagged incense product, illustrates how Karnataka's craft economy has historically combined indigenous raw material availability with organised industrial production, having grown into an organised industry in Bangalore during the early twentieth century using sandalwood and *Ailanthus malabaricum* bark sourced from the state's own forests, the same forest resource base documented in Chapter 13 (KSTDC, n.d.-b). Mysore Sandalwood Oil carries a similarly distinctive institutional history, having originally been exported to Germany for distillation before the outbreak of the First World War severed this trade route, prompting the Maharajah of Mysore to commission local scientists to develop indigenous distillation capacity, a piece of industrial heritage that today underpins the product's continued Geographical Indication protection and commercial value (KSTDC, n.d.-b).

Karnataka's creative economy extends beyond material craft into a distinctive and geographically concentrated performing arts tradition centred on Yakshagana, a composite theatre form combining dance, music, dialogue, elaborate costume, and stagecraft to enact stories from the Ramayana, Mahabharata, and other Puranas. Yakshagana is native to the coastal and Malenadu regions of Karnataka, principally the districts of Dakshina Kannada, Udupi, Uttara Kannada, and Shivamogga, with a parallel form performed in adjoining Kasaragod district in neighbouring Kerala, and traces its origins to temple-associated musical performance emerging from the Bhakti devotional movement of the fifteenth century (Model Diplomat, n.d.; Hidden Mantra, 2026). The form is traditionally performed at night, combining a narrator known as the Bhagavata with percussion instruments including the chande and maddale, and is organised into two principal regional stylistic traditions,

Tenkutittu and Badagutittu, reflecting the distinct performance conventions of southern and northern coastal Karnataka respectively (Model Diplomat, n.d.). Independent fact-checking of India's official UNESCO Intangible Cultural Heritage List confirms that Yakshagana as a whole is not currently inscribed on that list, distinguishing it from forms such as Chhau dance or Vedic chanting that do carry formal UNESCO recognition (Careers360, n.d.). Individual troupes have nonetheless secured narrower forms of international recognition on their own merits, most notably the Idagunji Yakshagana Mandali, led by director Shivananda Hegde and employing more than 15 artists, which received a UNESCO acknowledgement in November 2024 explicitly framed by the troupe's leadership not as a bid for financial aid but as a global recognition of Yakshagana's cultural importance and a platform for cross-cultural dialogue around traditional Indian performing arts (NewsKarnataka, 2024).

Yakshagana functions economically as what specialist commentary on India's performing arts landscape describes as a temple-supported art form, meaning its financial sustainability has historically depended substantially on religious festival patronage rather than commercial ticketing alone, a funding model that carries its own distinct preservation-versus-adaptation policy questions as younger audiences increasingly encounter the form through touring troupes and digital platforms rather than through temple festival attendance (Model Diplomat, n.d.). The tension between temple patronage and commercial touring is compounded by a generational shift in how younger audiences in Karnataka's coastal districts encounter performing arts more broadly, with digital platforms increasingly substituting for in-person festival attendance as a primary point of exposure. This shift carries implications not only for Yakshagana specifically but for the wider folk repertoire documented alongside it, including Dollu Kunitha and Bhoota Kola, since forms that depend on live ritual context for their full meaning are comparatively harder to translate into recorded or streamed formats without altering the audience's relationship to the material, a preservation challenge distinct from, though related to, the funding question.

Karnataka's broader traditional dance repertoire includes Dollu Kunitha, a folk dance associated with Lord Shiva and rooted in the Kuruba community of North Karnataka, alongside Veeragase, Puili Kunitha or tiger dance performed during Dasara in coastal and Malnad regions, and the Bhoota Kola spirit-worship ritual of coastal Karnataka, in which costumed performers embody local deities through trance dance accompanied by the pambai and chande drums, a ritual form that has itself been identified by cultural documentation as a candidate for future UNESCO intangible heritage consideration (BookMyDance, n.d.). These folk and ritual performance traditions, concentrated substantially in the same coastal and Malnad districts that host Karnataka's Western Ghats forest and wildlife tourism assets documented in section 19.1, represent a further dimension of the state's creative economy that intersects directly with its cultural tourism ambitions, since festivals such as Dasara and Hampi Utsav function simultaneously as living performance traditions and as significant annual tourism draws in their own right.

19.6 Film, Media and Content Industries as Economic Drivers

The Kannada film industry, commonly known as Sandalwood, has transformed over the past decade from a predominantly regional cinema industry into a significant contributor to India's pan-national and even international box office economy. This shift is anchored by KGF: Chapter 2, released in 2022 and directed by Prashanth Neel, starring Yash, which grossed over 1,200 crore rupees worldwide, making it the highest-grossing Kannada film ever produced and, according to industry commentary, single-handedly putting the Kannada film industry on the global map and opening the door for the wave of pan-India Kannada productions that followed (Tenvow, 2026). Kantara, released in 2022, followed with approximately 400 crore rupees in worldwide collections, and its 2025 prequel, Kantara Chapter 1, grossed approximately 853 crore rupees worldwide, cementing the Kantara franchise alongside KGF as Sandalwood's second major pan-India commercial success story, with KGF: Chapter 1 at approximately 250 crore rupees, Su From So at 123 crore rupees, Vikrant Rona at approximately 104 crore rupees, and 777 Charlie at approximately 103 crore rupees rounding out the industry's highest all-time grossing films (Tenvow, 2026).

Industry analysis attributes the success of these pan-India Kannada productions to a combination of factors distinct from the industry's earlier, more regionally confined era. Content built around themes of power, mythology, and identity has proven able to transcend language and regional boundaries, with dubbed Hindi, Telugu, Tamil, and Malayalam versions significantly expanding these films' reach and revenue beyond Karnataka and the broader Kannada-speaking diaspora (Tenvow, 2026). At the same time, several of Sandalwood's biggest recent commercial successes have come from first-time or comparatively unknown directors working with modest production budgets, illustrating that content quality rather than star power or budget scale alone increasingly determines a film's box office trajectory within the industry, even as established stars including Yash, Rishab Shetty, Rakshit Shetty, Shivarajkumar, Upendra, and Kichcha Sudeep continue to command strong opening weekends (Tenvow, 2026). The industry's total collections across all Sandalwood releases in 2025 reached approximately 1,500 crore rupees, according to aggregated box office tracking, with prominent 2026 releases including KD: The Devil at 21.77 crore rupees, Love Mocktail 3 at 9.50 crore rupees, and Landlord at 6.91 crore rupees among the year's early top performers (Wikipedia, 2026; FilmiBeat, 2026).

The industry's growing reliance on international markets specifically has become an increasingly explicit commercial consideration in film scheduling and release strategy. The release of Yash's 2026 film Toxic: A Fairy Tale for Grown-Ups was moved from its originally planned March 19 date to June 4, 2026, a decision producers attributed directly to ongoing geopolitical tensions in the Middle East, a territory that has evolved into what industry reporting describes as a cornerstone for the commercial success of pan-India South Indian superstars, particularly Yash, given the region's Indian diaspora of approximately 10 million residents (Sacnilk, 2026). KGF: Chapter 2 had previously delivered extraordinary box office numbers in the Middle East specifically, setting a benchmark that Toxic's producers were reportedly determined to protect by avoiding a release window that risked being undermined

by regional instability, illustrating that Sandalwood's commercial calculus now extends well beyond domestic Indian and even pan-India considerations into genuinely international market risk management, a level of commercial sophistication that would have been unusual for the Kannada film industry before the KGF franchise's emergence (Sacnilk, 2026).

Behind this headline commercial success, however, Karnataka's film industry faces structural exhibition and policy challenges that stand in some tension with its pan-India box office achievements. In its most recent memorandum to the state government, submitted by its President Jayamala to Chief Minister D. K. Shivakumar, the Karnataka Film Chamber of Commerce disclosed that the number of cinema halls in Karnataka has declined from around 1,200 to just 400, a contraction of roughly two-thirds, and sought government incentives for constructing new theatres in urban extensions and rural areas, tax benefits, infrastructure support, and concessional four percent interest loans for renovating and modernising ageing single-screen theatres (Deccan Chronicle, 2026; The Hans India, 2026). The Chamber additionally noted that more than 250 Kannada films are released every year, yet many multinational streaming platforms decline to acquire lower-budget Kannada productions, and proposed that the state government launch its own dedicated streaming platform to support Kannada cinema that mainstream commercial platforms overlook, alongside a request for archival support given that more than 3,000 Kannada films shot on celluloid between 1934 and 2010 require preservation and many rare titles are already deteriorating, a preservation effort for which the state had allocated 3 crore rupees in its 2025-26 budget without any archiving work yet begun at the time of the Chamber's representation (Deccan Chronicle, 2026; The Hans India, 2026). The scale of the preservation task facing Karnataka's celluloid archive, more than 3,000 films spanning seven decades of production, stands in some contrast to the comparatively well-resourced promotional apparatus supporting the industry's current pan-India releases, and illustrates a broader pattern visible elsewhere in this chapter: Karnataka's cultural economy has proven considerably more effective at generating new commercial and creative output than at systematically conserving the output of previous decades, a pattern that mirrors the heritage-conservation-versus-growth tension already documented for Kodagu's coffee estates and the state's wider natural tourism assets. Chief Minister Shivakumar responded by assuring the delegation of discussions on a comprehensive new film policy, a subsidy review, establishment of a film archive, and release of previously announced funding for a proposed dedicated film city, following consultation with the state's Finance Department (The Hans India, 2026).

This policy engagement continues a long-running state tradition of direct fiscal support for the Kannada film industry, dating to a fifty percent tax exemption for Kannada films made entirely within Karnataka introduced in the 1980s, later expanded into a full entertainment tax exemption for Kannada, Tulu, Kodava, Konkani, and Lambani language films in the mid-1990s, an exemption credited by industry figures with helping the annual volume of Kannada film production grow from around 70 to roughly 200 films per year at the time (Cinema of Karnataka, n.d.; Newsable, 2018). The subsequent introduction of the Goods and Services Tax regime in July 2017 complicated this long-standing exemption model, since GST applies a uniform national tax structure that individual states cannot simply exempt

films from, prompting the state government to instead explore reimbursement mechanisms for tax collected on Kannada film tickets, and, in individual cases such as the 2022 release of 777 Charlie, to grant time-limited State GST exemptions directly following a formal petition from the film's lead actor (Newsable, 2018; Deccan Herald, n.d.-q). The state's most recent film subsidy framework retains this tax exemption approach, extending full tax exemption to remake films on the same basis as original productions, alongside a 1 crore rupee corpus for industry workforce welfare and a 25 lakh rupee subsidy specifically for films that win national awards, and connects the film industry directly to Karnataka's broader tourism ambitions documented in section 19.1 through the dedicated Karnataka Film Tourism Policy of 2018, which offers filmmakers incentives of up to 2.5 crore rupees for productions with budgets exceeding 5 crore rupees that prominently showcase the state's tourist destinations, an incentive design explicitly modelled on similar overseas film tourism promotion schemes (Professional Utilities, 2026; Deccan Herald, n.d.-r).

Chapter 20: Cross-Cutting Themes and Integrated Policy Imperatives

20.1 Sustainable Development Goals of the State

Karnataka's engagement with the Sustainable Development Goals has been tracked since 2018 through NITI Aayog's SDG India Index, a composite measure spanning 113 indicators across all 16 Goals for which India's overall national score rose from 57 in 2018 to 66 in 2020-21 and further to 71 in the fourth edition released in July 2024, with individual state scores in that most recent edition ranging between 57 and 79 (India Briefing, 2024; India-UN, 2024). Karnataka achieved Front Runner status, defined as a composite score between 65 and 99, in the Index's 2019 edition, joining Andhra Pradesh, Telangana, Sikkim, and Goa in newly entering that category alongside the original three Front Runners, Himachal Pradesh, Kerala, and Tamil Nadu, from the 2018 baseline year (Gulf News, 2019). The state's own precise composite score and rank in the most recent 2023-24 edition were not confirmed in the sources reviewed for this chapter, and this framework recommends consulting NITI Aayog's own current dashboard directly for the authoritative current figure rather than relying on an unverified estimate.

Karnataka's relationship with this Index has itself been a source of direct friction between the state and the central government's data collection process. Following the 2019 edition, in which Karnataka's score rose only marginally to 66 from 64 the previous year, and in which the state's own reported performance had actually declined on several individual indicators including poverty, hunger, quality education, and industry, innovation and infrastructure, the state's then Chief Secretary publicly disputed the underlying data NITI Aayog had used, citing specific factual errors, most notably that the Index recorded zero percent of Karnataka's habitations as connected under the Pradhan Mantri Gram Sadak Yojana rural roads scheme when the state had, in fact, already achieved 100 percent habitation connectivity and consequently had no new projects to report under that specific scheme category, and that the Index recorded internet penetration in the state at just 10 percent against an actual figure the state government placed at 44 percent (Deccan Herald, n.d.-nn). This episode, discussed further in section 20.6 of this chapter, illustrates that Karnataka's own SDG performance as reported nationally has, at least on one documented occasion, been directly shaped by data reporting gaps between state departments and the central statistical apparatus rather than by the state's underlying substantive performance alone.

Cross-referencing the sector-specific evidence assembled throughout this framework against the sixteen Sustainable Development Goals reveals a state making uneven progress across the goals set. On Sustainable Development Goal 3, Good Health and Well-being, Karnataka has already surpassed the 2030 Maternal Mortality Ratio and Under-5 Mortality Rate targets, as documented in Chapter 6, placing the state among a small group of national leaders on these specific health outcome indicators. On Sustainable Development Goal 4, Quality Education, Karnataka's performance is markedly weaker, with Chapter 5 documenting foundational

learning outcomes in rural government schools that trail even educationally disadvantaged Indian states. On Sustainable Development Goal 5, Gender Equality, a goal on which India's overall national score remains below 50, the lowest of any of the sixteen goals nationally, Karnataka's own gender budget architecture, documented in Chapter 7 and revisited in section 20.2 of this chapter, has been characterised by independent policy analysis as expanding financial reach to women faster than it has improved measurable outcomes in women's asset ownership, labour force participation, or bargaining power. On Sustainable Development Goal 13, Climate Action, the goal on which India's national score improved most sharply of any goal between the 2020-21 and 2023-24 editions, Karnataka's own performance runs directly counter to this positive national trend, since Chapter 13 documented the state recording the second largest decrease in forest and tree cover of any Indian state over almost exactly this same assessment period, a divergence that suggests Karnataka's own contribution to India's national Goal 13 improvement has been considerably weaker than the national aggregate figure would suggest.

The clearest illustration of how Karnataka's aggregate SDG-linked performance can mask acute sub-state deprivation is provided by the state's participation in NITI Aayog's Transformation of Aspirational Districts Programme, a companion initiative to the SDG India Index launched in January 2018 to drive coordinated Centre-state development action in India's most underdeveloped districts, measured across health and nutrition, education, agriculture and water resources, financial inclusion and skill development, and basic infrastructure, the same broad indicator categories underpinning the SDG framework itself (Deccan Herald, n.d.-pp; Education for All in India, 2025). Karnataka contributed two of the programme's original 112 districts, Raichur and Yadgir, both located in the state's drought-prone Kalyana Karnataka region documented throughout Chapters 14 and 18 of this framework, with the Union Minister for Statistics and Programme Implementation announcing, shortly after the programme's launch, that a coordinated action plan built around 70 specific improvement parameters would be developed jointly by the Centre and the state government, with regular review meetings focused especially on the education and health sectors (Deccan Herald, n.d.-qq).

Karnataka's two Aspirational Districts have followed markedly divergent, and in Raichur's case internally inconsistent, trajectories under this programme. In an early ranking of all participating districts nationally, Raichur secured the 12th position and Yadgir the 39th, with Dahod district in Gujarat topping the overall table (Deccan Herald, n.d.-rr). Raichur's own performance across the programme's six developmental domains revealed a striking internal disparity: the district ranked first nationally among all Aspirational Districts on the health and nutrition indicator set, the same domain in which Chapter 6 of this framework documented Raichur's Devadurga block hosting the Karnataka Multi-sectoral Nutritional Pilot Project between 2015 and 2018, yet the same district ranked 106th nationally on basic infrastructure, a gap a NITI Aayog official attributed directly to persistent shortfalls in drinking water and road access even as the district's health outcomes improved (Deccan Herald, n.d.-rr). This single-district finding offers a striking, granular confirmation of the inter-departmental coordination weakness documented in Chapter 15 of this framework, since it shows a district

capable of delivering nationally leading results in one sector while lagging severely in another within the very same administrative boundary and under the very same coordinated action plan.

Karnataka's response to this infrastructure gap included designating Raichur as the state's first digital district under a Reserve Bank of India initiative implemented through the State Bank of India, with the explicit goal of making the district 100 per cent digitally enabled for payments within one year, and with the initiative deliberately converged with the district's broader Aspirational Districts Programme development plan (Deccan Herald, n.d.-ss). At the time of the announcement, however, Raichur's own Deputy Commissioner candidly noted that the district was still processing pension payments through the postal service rather than digitally, and that basic banking penetration, opening an account for every resident, remained a necessary first step before digital payment adoption could meaningfully proceed, illustrating that Karnataka's genuine strength in digital governance infrastructure, documented in section 20.5 of this chapter and in Chapter 15, had not yet reached its own most underdeveloped district at the time this initiative was launched (Deccan Herald, n.d.-ss).

More recent evidence indicates that this uneven progress has persisted, and in at least one sector has actively worsened, in the years since the programme's launch. The second Delta ranking released by NITI Aayog, measuring incremental improvement rather than absolute standing, named Yadgir among the three least-improved Aspirational Districts nationally, specifically in education, alongside Pakur in Jharkhand and Malkangiri in Odisha, a finding reported as recently as November 2025 and one that sits in direct tension with the comparatively stronger state-level education access indicators documented in Chapter 5 of this framework, such as Karnataka's near-universal pre-primary enrolment and contained primary-stage dropout (Business Standard, 2025). This divergence between Yadgir's persistently weak, and apparently worsening, educational trajectory and Karnataka's reasonably strong aggregate education access statistics is among the clearest illustrations in this entire framework of how state-level averages can obscure severe and even deteriorating district-level deprivation in precisely the districts NITI Aayog's own targeted programme was designed to elevate, and it reinforces the case, developed further in section 20.6 of this chapter, for sustained, disaggregated district-level monitoring as an essential complement to the state-level indicators this framework has relied upon throughout.

20.2 Gender Mainstreaming Across Sectors

Gender mainstreaming across Karnataka's policy architecture presents a genuinely mixed record when synthesised across the sectoral evidence assembled throughout this framework, one in which the state has achieved striking parity or even female advantage on some measures while continuing to show entrenched disparities on others. In secondary education, documented in Chapter 5, girls substantially outperformed boys in the 2025 Secondary School Leaving Certificate examination, passing at a rate of 74.00 per cent against just 58.07 per cent for boys, a reversal of the gender gap that characterises many other education systems and one that raises a distinct policy question about what is driving comparatively

poorer academic outcomes among boys specifically at the terminal secondary stage. In maternal and child health, documented in Chapter 6, Karnataka's sex ratio at birth has nonetheless been specifically flagged in national reporting as worsening over six years even as the national sex ratio at birth improved, a divergence that indicates gender-based prenatal discrimination remains an active concern in the state notwithstanding its otherwise strong maternal and child mortality performance.

Karnataka's gender budget architecture, documented extensively in Chapter 7, illustrates the central tension running through the state's gender mainstreaming effort. Category A gender budget allocations, defined as schemes where the full benefit accrues to women, grew more than sevenfold between 2021-22 and 2025-26, driven substantially by the Gruha Lakshmi cash transfer and Shakti free bus travel schemes, while Category B allocations, covering gender-mainstreamed general public services where 30 to 99 percent of the benefit reaches women, collapsed from a peak of 51.6 percent of total gender-linked spending in 2019-20 to below 20 percent from 2022 onward. This shift, independent policy analysis has argued, reflects a broader move toward visible, individually attributable cash transfers at the expense of harder-to-brand but potentially more transformative investments in gender-responsive general infrastructure and services, a pattern the same analysis found was not clearly linked to improvements in women's asset ownership, labour force participation, or secure employment, even as national data show women's labour force participation in India standing at just 43.6 percent as of 2023-24.

The gender dimension of Karnataka's social justice architecture, documented in Chapter 7, extends into the state's approach to gender-based violence and child protection, where Protection of Children from Sexual Offences Act cases rose from 3,209 in 2022 to 4,064 in 2024, a nearly 26 percent increase over two years, with conviction rates remaining persistently low, a pattern that indicates gender mainstreaming in Karnataka's legal and prosecutorial architecture has not kept pace with the state's financial gender mainstreaming commitments documented above. Taken together, these findings across education, health, economic empowerment, and legal protection indicate that Karnataka's gender mainstreaming effort, while substantial in financial scale, remains uneven in its practical translation into measurable gender equity outcomes, a pattern consistent with the state's below-50 national Sustainable Development Goal 5 score documented in section 20.1.

20.3 Youth Policy and Demographic Dividend Realisation

Karnataka's prospects for realising a demographic dividend, the economic benefit a country or state can capture from having a large working-age population relative to its dependent population, rest substantially on whether the state's education and skilling systems, documented in Chapter 5, can be brought into closer alignment with the employment opportunities its innovation economy, documented in Chapter 17, is generating. The evidence assembled in those two chapters reveals a significant misalignment risk: Karnataka's secondary-stage dropout rate stood at 18.3 percent in 2024-25, well above the national figure of 11.5 percent, meaning a meaningful share of the state's youth population is exiting the

formal education system before completing the secondary stage at precisely the point in the youth demographic dividend calculus when secondary and higher education completion becomes most consequential for lifetime earning potential.

For the youth cohort that does progress through Karnataka's education system, the state's Global Capability Centre and startup ecosystem, documented in Chapter 17, offers a genuinely large and growing pool of technically skilled employment opportunities, with the state's own Global Capability Centre strategy targeting 350,000 new jobs by 2029 and its new Startup Policy 2025-2030 targeting 25,000 new startups over the same horizon. However, Chapter 17 also documented that 64 percent of Global Capability Centres nationally are shifting toward fresher hiring models that emphasise hackathons and specialised technical screening over traditional campus placement, and that these roles increasingly demand skills in artificial intelligence, cybersecurity, and semiconductor design specifically, areas in which Karnataka's own undergraduate discipline mix, documented in Chapter 5 as weighted toward Arts at 33.5 percent against Engineering and Technology at just 11.9 percent, may not be producing graduates in sufficient numbers or with sufficient specialisation to fully capture this opportunity.

Karnataka's Skill Development Policy 2025-32, documented in Chapter 5, represents the state's most direct policy instrument for addressing this alignment gap, with its explicit curricular targets in automation, robotics, advanced manufacturing, renewable energy, and cybersecurity corresponding closely to both the frontier technology sectors prioritised under the state's Startup Policy and the high-growth roles documented within its Global Capability Centre ecosystem. The policy's explicit targeting of women, persons with disabilities, and marginalised communities for special skilling interventions, alongside its Beyond Bengaluru decentralisation mandate mirroring the equivalent provision in the state's Startup Policy, indicates that Karnataka's youth policy architecture has been deliberately designed to extend demographic dividend capture beyond the urban, technically credentialed cohort that has historically captured the greatest share of the state's innovation economy benefits.

20.4 Migration: Internal, Inter-State and International Dimensions

Karnataka functions simultaneously as one of India's principal destination states for internal migration and as a state whose own residents migrate to other parts of the country in substantial numbers, a dual pattern that the 2011 Census, India's most recent full enumeration, captured with considerable precision. According to that Census, 32 lakh migrants had moved into Karnataka from other Indian states, while 25 lakh Karnataka-origin migrants were found residing in other states, a net positive migration balance that places Karnataka, alongside Goa, Delhi, Maharashtra, Gujarat, Tamil Nadu, and Kerala, among the small group of relatively more developed Indian states that government economic analysis has identified as net in-migration destinations (The News Minute, 2023; Socio. Health, 2026). The same 2011 Census data found that interstate migrants constituted 37.82 per cent of Karnataka's total migrant population, a figure the underlying research contrasted with a national average of 4.48 per cent for this specific proportion, indicating that migration into

Karnataka is disproportionately drawn from beyond the state's own borders relative to the more typically intra-state migration pattern that characterises most of India (The News Minute, 2023).

The overall scale of migration into Karnataka has grown substantially across successive Census cycles, with the total number of migrants recorded in the state rising from 1.34 crore in 1991 to 1.66 crore in 2001 and further to 2.65 crore by 2011, according to Registrar General and Census Commissioner data, a near-doubling over two decades that reflects both the state's own population growth and its increasing pull as an economic destination, particularly for the construction, domestic work, and low-end manufacturing sectors that government economic analysis has identified as disproportionately reliant on interstate migrant labour (CEIC, 2022; Socio. Health, 2026). More recent, though considerably narrower, state labour department data found 97,000 registered interstate migrant workers in Karnataka as of mid-2025, with 85 per cent of this registered cohort originating from just six states, Bihar, Assam, Odisha, Jharkhand, West Bengal, and Uttar Pradesh, and with Bengaluru functioning as the principal destination hub within the state (Deccan Herald, 2025i). The gap between this 97,000-worker registered figure and the multi-crore migrant population documented in Census data indicates that formal registration captures only a small fraction of Karnataka's actual interstate migrant workforce, a data quality limitation with direct relevance to the statistical system strengthening priorities discussed in section 20.6 of this chapter.

Karnataka's migrant workforce has demonstrated both its economic importance to the state and its underlying vulnerability during periods of acute disruption. During the early phase of the COVID-19 pandemic in 2020, approximately 6 lakh migrant workers registered on the state's Seva Sindhu portal, the same centralised citizen services platform documented in Chapter 15, seeking transport home, prompting the state government to simultaneously arrange special trains for departing workers while appealing to others to remain, offering free food at dedicated camps, out of explicit concern that a mass departure of migrant labour would complicate the state's post-lockdown economic reopening given migrant workers' concentration in construction, street vending, and transport driving roles central to Bengaluru's daily urban economy (Karnataka.com, n.d.). This episode illustrates that Karnataka's migrant workforce, despite its economic centrality to the state's construction, informal, and gig economy sectors documented in Chapter 3, remains one of the more precarious and under-registered segments of the state's labour market, a vulnerability that a 2011 Census-based data foundation, now more than a decade and a half old, is increasingly poorly positioned to characterise with the currency policymakers require.

20.5 Science, Technology and Innovation for Development

Karnataka's standing as India's leading state for science, technology, and innovation, documented extensively in Chapter 17, has been consistently validated across successive editions of NITI Aayog's own India Innovation Index, a ranking Karnataka topped for a second consecutive year in the index's 2020 edition, scoring 42.5 against an average of 25.35

among major states, a margin of nearly 17 points that the index's own methodology attributed to the state's venture capital deal volume, its registered Geographical Indications, its information and communication technology exports, and the innovation-enhancing effect of its high foreign direct investment inflows (Deccan Herald, n.d.-oo). This 2020 result extended a leadership position Karnataka had already established in the index's first edition in October 2019, and Chapter 17 documented that the state has gone on to hold the top position for four consecutive years in the most recent ranking cycle reviewed for this framework, indicating a sustained rather than transient innovation leadership across the second half of this decade.

This innovation leadership manifests concretely across the specific technology domains documented throughout this framework. Chapter 17 documented Karnataka's position as home to more than 870 Global Capability Centres, the largest concentration of any Indian city at Bengaluru specifically, alongside the Indian Institute of Science's five-consecutive-year hold on India's top research institute ranking and Samsung's Bengaluru research centre filing more than 11,000 global patents. Chapter 14 documented the state's parallel leadership in clean energy technology, with Karnataka adding more new wind capacity than any other Indian state in the most recent reporting period and pursuing green hydrogen pilot projects explicitly positioned to leverage the same technology ecosystem underpinning its digital economy leadership. Chapter 6 documented the state's e-Manas digital mental health registry as one of the more advanced state-level digital health governance tools in the country, while Chapter 15 documented Karnataka's pioneering 2001 establishment of the country's first dedicated cybercrime police station and its Centre for Cybercrime Investigation Training and Research, which had trained more than 46,000 police, judiciary, and prosecution personnel by 2025.

The consistency of this innovation leadership across such disparate domains, digital technology, clean energy, health informatics, and law enforcement technology alike, suggests that Karnataka's science and technology advantage is not confined to its well-known information technology sector but reflects a broader institutional capacity for absorbing and deploying new technology across government functions, a capacity the state's own Centre for e-Governance, documented in Chapter 15, has actively worked to extend into citizen service delivery through platforms including Sakala, Seva Sindhu, and e-Spandana. This same evidence, however, sits alongside the persistent gap documented in Chapter 5 between Karnataka's technology sector reputation and its actual school-level digital infrastructure, where computer availability and internet penetration in the state's schools trail national averages, indicating that Karnataka's science, technology, and innovation advantage remains concentrated substantially at the frontier of its economy and governance system rather than having yet fully diffused into the foundational public infrastructure that will determine whether the next generation of Karnataka's workforce can participate in that same innovation economy. Raichur's own experience as Karnataka's designated first digital district, documented in section 20.1, provides a granular illustration of precisely this diffusion gap between the state's frontier technology capability and its reach into the districts that most need it.

20.6 Statistical System Strengthening and Evidence-Based Policymaking

Karnataka's capacity for evidence-based policymaking depends fundamentally on the quality and currency of the underlying statistical data its departments generate and report, and the evidence assembled throughout this framework reveals a recurring pattern of data quality gaps, reporting delays, and inter-agency discrepancies that constrain the precision with which the state's own development trajectory can be measured. The clearest single illustration of this challenge is the 2019 dispute documented in section 20.1, in which Karnataka's own Chief Secretary publicly challenged NITI Aayog's SDG India Index data because it had recorded zero percent Pradhan Mantri Gram Sadak Yojana habitation connectivity in a state that had, according to its own departmental records, already achieved 100 percent connectivity, and had recorded internet penetration at less than a quarter of the state government's own figure, with the underreporting identified as spanning departments including women and child development, health, social welfare, and rural development and panchayat raj (Deccan Herald, n.d.-nn). The state's Planning, Programme Monitoring and Statistics department was directed to identify the source of these discrepancies and rectify the underlying data gaps, an instruction that illustrates both the seriousness with which the state treated the reputational consequences of the disputed ranking and the practical difficulty of reconciling departmental administrative records with the standardised indicators a national index requires.

This pattern of data quality uncertainty recurs across multiple sectoral chapters of this framework. Chapter 5 documented that UDISE+ dropout figures for Karnataka have themselves been the subject of independent analytical caution, with education researcher Arun C. Mehta's own commentary flagging the possibility that the Ministry of Education's own methodology may be underestimating the true scale of dropout nationally, a caution with direct relevance to interpreting Karnataka's own already elevated secondary dropout figures. Chapter 7 documented a comparable divergence in child protection data, where different reporting windows from the state's own Agriculture and Revenue Departments produced materially different farmer suicide counts for overlapping years, discussed further in Chapter 18, a discrepancy this framework noted illustrates a data quality and inter-departmental coordination challenge within the state's own farmer distress monitoring system. Chapter 13 documented that Karnataka's own state-specific total fertility rate could not be verified with a current, authoritative figure from the sources available for this framework, given that India's most recent full population census remains the 2011 count, with all subsequent state-level demographic estimates relying on sample surveys such as the National Family Health Survey and Sample Registration System rather than a fresh, complete enumeration, a national data currency gap section 20.4 of this chapter noted directly constrains the precision of Karnataka's own migration statistics as well.

The Aspirational Districts Programme discussed in section 20.1 adds a further, methodologically distinct dimension to this statistical strengthening challenge, since NITI Aayog's own district rankings under that programme are explicitly compiled from data self-reported by the participating districts and state governments themselves, a design choice

a NITI Aayog official acknowledged directly at the time the first rankings were released (Deccan Herald, n.d.-rr). A ranking methodology reliant on self-reported district data carries an inherent verification limitation distinct from, though related to, the departmental underreporting problem documented in the SDG Index dispute above, since a district administration has some incentive to report favourably on the same indicators against which its own comparative national standing, and by extension its access to continued central attention and resources, will be judged.

Addressing this recurring pattern of data quality and currency limitation represents one of the more foundational, if less immediately visible, governance priorities emerging from this framework, since the specific sectoral policy priorities identified in Chapters 5 through 19, from foundational literacy intervention targeting to non-communicable disease screening to climate adaptation financing, all depend on the underlying statistical base being sufficiently accurate and current to correctly identify where the state's most acute needs actually lie. Karnataka's Directorate of Economics and Statistics, whose crop diversification data underpinned the agricultural analysis in Chapter 18, and its Planning, Programme Monitoring and Statistics department, directly implicated in the 2019 SDG Index dispute discussed above, represent the state's principal institutional capacity for this statistical strengthening function, and the evidence assembled throughout this framework, reinforced by the Raichur and Yadgir case study in section 20.1, suggests both agencies would benefit from strengthened inter-departmental data validation protocols, independent third-party verification of self-reported district data, and more frequent, granular sub-state data collection cycles than the current reliance on decadal Census enumeration and periodic national sample surveys currently provides.

20.7 Public Participation: Behavioural Change and Citizen Engagement

Karnataka's mechanisms for public participation in governance span a formal, legislated citizen service architecture alongside a pattern of organic, issue-specific community mobilisation that recurs throughout the sectoral evidence assembled in this framework. At the formal end of this spectrum, Chapter 15 documented Karnataka's Sakala citizen service guarantee, in place since 2012, and its associated e-Spandana grievance redressal platform, both designed to give citizens a structured, trackable channel for holding individual government officials accountable for service delivery delays, with Sakala's own founding documentation candidly acknowledging that citizen uptake in its earliest phase lagged expectations specifically due to low public awareness of the scheme, a finding that underscores that formal participation mechanisms require sustained public communication investment to translate legal entitlement into actual citizen engagement.

Beyond this formal architecture, this framework has documented repeated instances of organic community mobilisation emerging directly in response to specific governance failures, providing a revealing picture of where Karnataka's citizens have felt compelled to supplement formal participation channels with direct collective action. Chapter 13 documented residents of 16 villages in Chikkaballapur district's Doddaballapur taluk

considering an electoral boycott of the 2024 Lok Sabha elections specifically to draw attention to untreated sewage and industrial effluent contamination of their local lakes, a dramatic escalation that occurred only after sustained public objections beginning in 2022 had failed to produce a resolution through ordinary administrative channels. Chapter 18 documented Karnataka's sugarcane farmers staging a successful 2025 protest that secured an additional 100 rupees per tonne price increase from the state government, illustrating that direct collective action, in this instance, achieved a concrete policy concession that individual farmer grievance mechanisms likely would not have secured. Chapter 19 documented the Kodagu district administration's introduction of visitor caps and a proposed e-pass system for the district's coffee estates, a regulatory response to over-tourism pressure that itself emerged from local community concern about soil erosion and landslide risk rather than from proactive state tourism department planning.

These recurring instances of issue-specific mobilisation, spanning environmental contamination, agricultural price disputes, and tourism carrying capacity, suggest that Karnataka's formal citizen participation architecture, however well designed on paper, has not yet fully displaced the need for direct, often confrontational, community action as a mechanism for securing governance responsiveness on issues that fall outside the specific, itemised service categories the Sakala framework and its associated e-governance tools are structured to address. This pattern connects directly to the broader theme running through Chapter 15's assessment of Karnataka's administrative governance, namely that the state's institutional and legislative design for citizen-responsive governance is frequently more sophisticated than the routine, self-initiated implementation capacity needed to make that design consistently effective, a gap that public participation, in its more organic and confrontational forms, has repeatedly stepped in to fill across the sectors this framework has examined.

Chapter 21: State Vision 2047 — Strategic Priorities and Development Roadmap

21.1 Long-Term Vision and Flagship Missions

Karnataka's long-term development vision has been articulated through a sequence of overlapping trillion-dollar economy targets rather than a single, stable benchmark, and a ministerial audience should understand this succession of targets as reflecting genuine economic acceleration rather than institutional confusion. The earliest formal articulation came in October 2022, when then Chief Minister Basavaraj Bommai constituted a vision group after receiving a report titled "Karnataka: A 1 Trillion GDP Vision," authored by T.V. Mohandas Pai and Nisha Holla of 3one4 Capital, which set interim goals of a 500 billion dollar economy by 2026 and a full one trillion dollar economy by 2032, up from the state's 2022 GDP of approximately 273 billion dollars, and explicitly flagged the structural headwind of an ageing, gradually shrinking workforce as a risk to sustaining the growth rate required (Deccan Herald, cited in this chapter's research, 2022; NammaKPSC, cited in this chapter's research, 2022). More recent commentary has compressed this timeline further, with Deccan Herald's own 2026 opinion coverage framing Karnataka's trillion-dollar milestone as achievable by 2031 rather than 2032, reflecting the state's continued above-trend nominal growth performance (Deccan Herald, cited in this chapter's research, 2026).

Nested within this medium-term target is a considerably longer-range 2047 ambition, aligned with the centenary of India's independence and the national Viksit Bharat framework that has similarly shaped comparable vision documents in neighbouring states. Independent strategic analysis has projected Karnataka's economy expanding to as much as 3.7 trillion dollars by 2047, a nearly tenfold increase from its current size of roughly 360 billion dollars, built on a proposed blended financing model in which the private sector and global institutional investors would contribute 60 percent of a mobilisation target of Rs 142.5 lakh crore through an envisioned 100 billion dollar Karnataka Growth Fund (Statutory SOS, cited in this chapter's research, 2026). A separate, more conservative op-ed projection published in Deccan Herald has instead modelled Karnataka's nominal GDP reaching Rs 333 lakh crore, or approximately 2.12 trillion dollars, by 2047, assuming an 8.5 percent compound annual growth rate and a 3 percent annual depreciation of the rupee against the dollar, a rate the same analysis notes is not far-fetched given that India's own economy grew at 8.2 percent CAGR between 1991 and 2022 (Deccan Herald, cited in this chapter's research). That same analysis flags a demographic dimension directly relevant to the state's long-term planning: Karnataka's total fertility rate, at 1.7, already sits below the national average and below the replacement rate, meaning the state's population, currently 6.66 crore, is projected to peak near 7 crore between 2030 and 2034 before declining to roughly 6.58 crore by 2047, with the share of residents above 60 years of age rising rapidly over the same period, a trajectory the analysis suggests will require Karnataka to build an adequate social security net well before it reaches the income levels typically associated with ageing, developed economies (Deccan Herald, cited in this chapter's research).

Institutionally, Karnataka's principal vehicle for translating this vision into governance practice has been the State Institute for Transformation of Karnataka, or SITK, established explicitly as the state's own analogue to NITI Aayog at the national level, making Karnataka the first Indian state to establish such a body (NammaKPSC, cited in this chapter's research, 2022). The original 2022 vision group report that catalysed SITK's establishment identified a specific set of innovation-oriented growth levers for the state to pursue, including economy greening, formalisation of employment data, geo-enabled governance practices, sustainable urbanisation, and, notably, a dual-track approach explicitly distinguishing focused development of Bengaluru itself from a parallel Beyond Bengaluru strategy for the rest of the state, a distinction that has subsequently become a recurring structural theme across the state's innovation policy, discussed in Chapter 17, section 17.1, and its urban and regional development policy discussed in Chapters 3 and 11 (NammaKPSC, cited in this chapter's research, 2022).

The report underlying SITK's creation was also explicit that human capital, rather than capital investment alone, would be the most significant driver of Karnataka's socio-economic development over the coming decades, a framing that anticipated the demographic concerns discussed above and that connects directly to the state's more recently articulated skill development strategy discussed in Chapter 17, section 17.6, including the Skill 2025-2032 policy framework and the Karnataka Workforce Blueprint 2030. Read together, these two threads, SITK's original human-capital-centred diagnosis in 2022 and the state's subsequent, more elaborated skilling architecture unveiled at the 2025 Bengaluru Skill Summit, suggest a reasonably consistent through-line in the state's long-term planning logic: successive Karnataka governments, across different political administrations, have converged on the view that the state's long-term growth trajectory depends less on any single flagship industrial announcement and more on whether the state can convert its existing demographic base into a sufficiently skilled, sufficiently large workforce before that base itself begins to shrink in the 2030s, a genuinely narrow window within which to execute the kind of decade-plus workforce transformation programme that ambition implies.

21.2 Medium-Term Priority Action Plan (2025–2030)

Karnataka's medium-term roadmap to 2030 is anchored on a cluster of strategic pillars that were made most explicit through the trio of policies the state unveiled at the November 2025 Bengaluru Tech Summit: the Karnataka Startup Policy 2025-2030, the Karnataka Information Technology Policy 2025-2030, and the state's first dedicated SpaceTech Policy 2025-2030, discussed in full in Chapter 17, sections 17.1 and 17.4 (Deccan Herald, cited in this chapter's research, 2025). Taken together with the state's continuing Semiconductor Mission discussed in Chapters 2 and 4, this policy cluster represents a deliberate strategy of moving Karnataka's economy further up the technology value chain, building on Bengaluru's existing position as the country's largest research and development and product development hub, a status Chief Minister Siddaramaiah has himself emphasised, alongside the state's existing contribution of 42 percent of India's total information technology exports, valued at more than Rs 3.2 lakh

crore and growing at 27 percent year on year (Deccan Herald, cited in this chapter's research, 2025).

A second pillar of the medium-term plan is industrial corridor development, extending the state's manufacturing and logistics capacity beyond the Bengaluru metropolitan region. Karnataka currently has active project development underway at two nodes of national industrial corridors, the Tumakuru Industrial Area on the Chennai-Bengaluru Industrial Corridor and the Dharwad node on the Bengaluru-Mumbai Economic Corridor, and industry bodies including the Karnataka Chamber of Commerce and Industry have separately proposed a new Mangaluru-Bengaluru Industrial Corridor that would connect the state's only all-weather port, New Mangalore Port, with the capital through National Highway 75, passing through the hinterland districts of Dakshina Kannada, Hassan, and Bengaluru Rural (Deccan Herald, cited in this chapter's research). This corridor strategy is directly complementary to the Beyond Bengaluru approach discussed in section 21.1, since each of these three corridors is explicitly designed to extend industrial investment into districts and regions outside the capital's existing metropolitan footprint.

Achieving this medium-term plan will also require directly addressing Karnataka's own significant intra-state disparities, most concretely embodied in the Kalyana Karnataka region, comprising the districts of Kalaburagi, Bidar, Raichur, Koppal, Yadgir, and Ballari, which received special constitutional status under Article 371J of the Constitution, introduced through the 98th Constitutional Amendment Act of 2012 and effective from October 1, 2013, specifically to address the region's historical backwardness relative to the rest of the state (IJCRT, cited in this chapter's research, 2026; Wikipedia, cited in this chapter's research). Over the past decade, the state government has approved Rs 19,778 crore in funding for the region, with the Kalyana Karnataka Region Development Board separately allocating a further Rs 11,174 crore, and the current government has committed an additional Rs 5,000 crore annually for the next four years (IJCRT, cited in this chapter's research, 2026). Independent academic assessment of the provision's first decade of implementation, however, finds that while Article 371J has measurably expanded access to education and public employment in the region, significant disparities in economic development and infrastructure persist, and a 2022 performance audit by the Comptroller and Auditor General specifically found that key institutional mechanisms the provision requires, including an advisory council, a perspective plan, and dedicated expert and implementation committees, were not in place (IJCRT, cited in this chapter's research, 2026; Deccan Herald, cited in this chapter's research). This finding is a direct and sobering illustration of the broader caution this Framework has raised elsewhere regarding the gap between announced funding commitments and functional, on-the-ground institutional delivery, and it should be read as a specific, named risk to the credibility of Karnataka's medium-term inclusive growth ambitions rather than a resolved historical episode.

The Kalyana Karnataka Region Development Board's own institutional history reinforces this caution. The Board was constituted in September 2013 following presidential consent, chaired by the Governor of Karnataka and formally tasked with creating and implementing

development plans and allocating funds specifically for the six-district region, with the state government subsequently shifting the special implementation cell responsible for Article 371J from Bengaluru to Kalaburagi, the region's largest city, in an apparent effort to ground the Board's functioning more directly within the region it serves (Wikipedia, cited in this chapter's research). Notwithstanding this administrative relocation, political demands for a dedicated ministry devoted specifically to Article 371J implementation have continued, suggesting that stakeholders within the region itself do not regard the existing Board structure as having fully resolved the institutional gaps the 2022 CAG audit identified (Wikipedia, cited in this chapter's research). For state leadership, the Kalyana Karnataka experience offers a directly transferable lesson for the Beyond Bengaluru strategy discussed in section 21.1 and the industrial corridor development discussed above: a special constitutional provision or dedicated funding stream, however generously resourced, does not by itself guarantee functioning regional development outcomes without the accompanying institutional architecture, adequately staffed and consistently audited, to translate that funding into delivered infrastructure and services on the ground.

21.3 Financing Strategy: Resource Mobilisation, Revenue Enhancement and Expenditure Rationalisation

Karnataka's pursuit of its trillion-dollar economy target is directly bound up with the state's fiscal position, and the state government has, on its own account, worked to maintain fiscal discipline even as it has expanded welfare commitments. For 2025-26, the state budgeted a fiscal deficit of 2.9 per cent of GSDP, or Rs 90,428 crore, with total outstanding liabilities estimated at Rs 7,64,655 crore, or 24.91 per cent of GSDP, figures Chief Minister Siddaramaiah has specifically cited as remaining within the limits mandated under the Karnataka Fiscal Responsibility Act (Deccan Herald, cited in this chapter's research, 2025). Independent budget analysis places the state's actual 2025-26 performance marginally above target, with revised estimates suggesting a fiscal deficit closer to 3 per cent of GSDP, and projects a further tightening to 2.9 per cent of GSDP, or Rs 97,448 crore, for 2026-27 (PRS Legislative Research, cited in this chapter's research, 2026). The state's own tax revenue base has strengthened over this period, rising from 6.2 per cent of GSDP in the 2025-26 revised estimate to a targeted 6.7 per cent, or Rs 2,20,000 crore, in 2026-27, a 14 per cent increase over the prior year's revised figure (PRS Legislative Research, cited in this chapter's research, 2026).

A significant and politically prominent driver of the state's expenditure commitments is its five flagship guarantee schemes, for which the state allocated Rs 51,034 crore in the 2025-26 budget, with the Chief Minister explicitly framing the maintenance of fiscal deficit and debt-GSDP norms alongside this guarantee spending as evidence of continued fiscal discipline rather than fiscal slippage (Deccan Herald, cited in this chapter's research, 2025). This tension, between sustaining large-scale, politically significant welfare guarantees and preserving the fiscal headroom needed to fund the capital expenditure and infrastructure investment that the state's trillion-dollar vision requires, is a structural feature of Karnataka's current fiscal strategy that this Framework recommends state leadership continue to monitor

explicitly, particularly given that Karnataka's debt-GSDP trajectory has moved in a somewhat different direction over different periods: total liabilities stood at 27.49 percent of GSDP in 2022-23, prompting the state to amend its own Fiscal Responsibility Act that year to raise the permissible fiscal deficit ceiling to 3.5 percent and to explicitly permit debt beyond the previously stipulated 25 percent of GSDP limit, before the more recent 2025-26 figure of 24.91 percent suggested some subsequent stabilisation (Deccan Herald, cited in this chapter's research, 2022; Deccan Herald, cited in this chapter's research, 2025).

This debt trajectory is worth setting in slightly longer historical context, since the direction of travel matters as much as any single year's figure for assessing the credibility of the state's Vision 2047 financing strategy. The state's own Medium Term Fiscal Plan, tabled in the Assembly during the previous government's tenure, had projected Karnataka's outstanding liabilities climbing from Rs 4.58 lakh crore to Rs 5.91 lakh crore, then to Rs 6.60 lakh crore in 2024-25, and further still to Rs 7.38 lakh crore in 2025-26, a trajectory that at the time prompted the state's own Fiscal Management Review Committee to formally call on the government of the day to produce a roadmap toward becoming a revenue-surplus state and reducing total outstanding liabilities (Deccan Herald, cited in this chapter's research). The subsequent government's own 2025-26 figure of Rs 7,64,655 crore in total liabilities sits broadly in line with, if marginally above, that earlier projection, suggesting that while the state's debt-to-GSDP ratio has stabilised somewhat in percentage terms as the denominator, GSDP itself, has grown, the absolute rupee value of Karnataka's outstanding liabilities has continued to climb consistently across successive governments and budget cycles, a distinction ministers should bear in mind when assessing whether the percentage-based stabilisation cited above represents genuine fiscal consolidation or simply reflects the state's underlying nominal economic growth outpacing its borrowing growth.

On the revenue side, Karnataka has made an explicit and public case to the Sixteenth Finance Commission for an increased share of central tax devolution, with Chief Minister Siddaramaiah urging the Commission to strike what he termed a judicious balance between equity and growth considerations in evolving a harmonious and healthy fiscal federalism, and specifically cautioning that continued support from economically advanced states such as Karnataka for less developed states should not come at the expense of Karnataka's own residents or economic efficiency (Deccan Herald, cited in this chapter's research, 2025). This advocacy appears to have yielded some concrete result: the state's share in central taxes is estimated to rise to Rs 63,050 crore in 2026-27, a 24 percent increase over the 2025-26 revised estimate, which independent analysis attributes at least in part to an increase in Karnataka's devolution share under the Sixteenth Finance Commission's recommendations (PRS Legislative Research, cited in this chapter's research, 2026). Alongside this improved devolution outlook, the 2026-27 budget also increased the proportion of the state's own revenue devolved to local bodies from 48 to 50 percent, a fiscal federalism measure operating at the state-to-local level that runs in parallel to, and mirrors in structure, the Centre-to-state devolution debate discussed here and further in section 21.4 (PRS Legislative Research, cited in this chapter's research, 2026).

21.4 Centre-State Partnership: Centrally Sponsored Schemes and Special Grants

Karnataka's relationship with the Union Government on fiscal transfers has, at various points over the past several years, become a genuinely contentious feature of the state's development planning, a pattern that predates and extends beyond the current government. As far back as the 2022-23 fiscal year, under the previous Bommai administration, Karnataka faced a shortfall of Rs 7,850.29 crore in its share of the divisible pool of central taxes relative to budget estimates, alongside a larger Rs 8,507.88 crore shortfall in grants-in-aid disbursement by the December-end point of that fiscal year, illustrating that gaps between budgeted and actually disbursed central transfers have been a recurring planning challenge for the state across different political administrations rather than a phenomenon specific to the current government (Deccan Herald, cited in this chapter's research). A more specific and longer-running grievance concerns the Krishna Water Disputes Tribunal: Karnataka's Law and Parliamentary Affairs Minister H.K. Patil has stated that for the past ten years the state has been demanding the Union Jal Shakti Ministry issue the Gazette notification of the Tribunal's final award, with the continued delay, most recently extended to a Tribunal tenure deadline of July 31, 2026, resulting in Karnataka losing access to an estimated 200 thousand million cubic feet of Krishna river water it believes it is entitled to under the award (Deccan Herald, cited in this chapter's research, 2026).

This pattern of contested Centre-state fiscal and administrative relationships connects directly to the broader national dynamics documented elsewhere in comparable state development assessments, including the kind of centrally sponsored scheme funding-ratio disputes and disaster relief allocation friction that have also characterised Karnataka's own MGNREGA implementation experience discussed in Chapter 12, section 12.2, where the state advanced roughly Rs 803 crore from its own resources in 2019-20 specifically to maintain timely wage payments pending delayed central reimbursement. Taken together, these episodes, spanning tax devolution shortfalls, water tribunal notification delays, and centrally sponsored scheme cash-flow friction, suggest that Karnataka's Vision 2047 financing strategy discussed in section 21.3 will need to continue building in a structural assumption of periodic Centre-state fiscal friction, rather than treating any single dispute as an isolated or fully resolved episode, and that sustained, constructive engagement with successive Finance Commissions and the relevant central ministries will remain a necessary, if not always fully controllable, condition for the state's continued fiscal health.

It is worth noting explicitly, for a balanced ministerial assessment, that this pattern of friction has recurred under successive Karnataka governments of different political affiliations, from the Bommai-era devolution shortfall discussed above through to the current government's own advocacy before the Sixteenth Finance Commission discussed in section 21.3, and is not therefore attributable to any single administration's relationship with the Centre. This continuity across political transitions is itself informative: it suggests the underlying friction is substantially structural, rooted in the mechanics of India's fiscal federalism as they apply to a comparatively high own-revenue-generating state like Karnataka, rather than being primarily a function of the particular political alignment, or lack thereof, between the state

government in office at any given moment and the Union Government. For state leadership, this structural framing carries a practical implication: institutional capacity for anticipating, documenting, and advocating around these recurring friction points, rather than any single administration's individual negotiating relationship with the Centre, is likely to be the more durable determinant of how effectively Karnataka manages this dimension of its Vision 2047 financing strategy over the multi-decade horizon the vision itself spans.

21.5 Inter-State Cooperation: Regional Development Councils and River Boards

Karnataka's economic geography places it in close and often contested functional interdependence with each of its neighbouring states, most visibly through a cluster of inter-state river water disputes that have periodically generated significant political and social tension. The longest-running of these is the Cauvery dispute with Tamil Nadu, which resurfaced acutely in August 2023, when Karnataka's refusal to release additional water amid drought conditions triggered widespread protests, more than 700 detentions, and estimated economic losses of up to Rs 4,000 crore, before the Cauvery Water Management Authority directed Karnataka to release a reduced volume of 5,000 cusecs per day for fifteen days, a level of tension the underlying dispute, rooted in 1892 and 1924-era agreements between the Madras Presidency and the Kingdom of Mysore, continues to carry the potential to reproduce during future drought years (Wikipedia, cited in this chapter's research, 2023). A second, more recent front opened in February 2026, when the Supreme Court directed the Union Government to constitute a new tribunal within one month to adjudicate a separate, long-pending dispute between Tamil Nadu and Karnataka over the Pennaiyar River, a case Tamil Nadu had originally filed in 2018 challenging Karnataka's construction of check dams and diversion works on the river (News on Air, cited in this chapter's research, 2026).

To the north and west, Karnataka's dispute with Goa and Maharashtra over the Mahadayi river basin remains similarly unresolved. The 2018 Mahadayi Tribunal award allocated Karnataka a total of 13.42 thousand million cubic feet, including 3.9 TMC of water exportable to the Malaprabha river via the Kalasa-Banduri nalas specifically to supply drinking water to the Hubli-Dharwad-Gadag-Belagavi urban cluster, yet as of May 2026 the underlying diversion project remained stalled pending forest clearance, National Board for Wildlife clearance, and an ongoing Goa legal challenge before the Supreme Court, with Goa separately filing a contempt petition in the 2025-26 period alleging Karnataka was already diverting Mahadayi water in violation of both the Tribunal award and pending Supreme Court proceedings (BharatNotes, cited in this chapter's research, 2026). This dispute is directly relevant to the urban drinking water security of one of Karnataka's own major Beyond Bengaluru urban clusters discussed in section 21.1, meaning the Mahadayi impasse is not merely an abstract inter-state legal dispute but a live constraint on the water security of exactly the kind of secondary-city growth centre the state's regional development strategy is designed to strengthen. Simultaneously, Karnataka's Krishna river dispute with Andhra Pradesh and Maharashtra, discussed in section 21.4 in its fiscal dimension, illustrates how a single inter-state river dispute can carry both a water-allocation dimension and a distinct,

compounding grants-and-notification dimension that together constrain the state's water security planning discussed in Chapter 11, section 11.7.

Against this backdrop of contested river-sharing arrangements, Karnataka's industrial corridor cooperation with neighbouring states, discussed in section 21.2, represents a comparatively more constructive and functioning model of inter-state economic cooperation, with the Tumakuru node on the Chennai-Bengaluru Industrial Corridor and the Dharwad node on the Bengaluru-Mumbai Economic Corridor both proceeding with active project development in coordination with the relevant national corridor authorities and neighbouring state governments (Deccan Herald, cited in this chapter's research). This contrast between genuinely difficult, decades-old water-sharing disputes and comparatively smoother industrial corridor cooperation suggests that Karnataka's inter-state relationships are not uniformly adversarial but rather vary considerably by policy domain, a distinction state leadership should bear in mind when calibrating its approach to different categories of inter-state engagement rather than treating neighbouring-state relations as a single undifferentiated diplomatic relationship.

The Cauvery Water Management Authority's own institutional role illustrates a further, intermediate category between outright dispute and functioning cooperation: a standing, tribunal-mandated body capable of issuing binding short-term release directives, as it did during the August 2023 crisis discussed above, but one whose directives, even when complied with, tend to be treated by both riparian states as a minimum compliance floor rather than a durable settlement of the underlying allocation dispute. This dynamic, of formal institutional machinery successfully managing acute, short-term crises without resolving the longer-run structural disagreement that produces those crises in the first place, recurs across each of the river disputes discussed in this section, and is a pattern this Framework recommends Karnataka's Department of Water Resources and Law and Parliamentary Affairs Department continue to plan around explicitly, rather than treating any single favourable tribunal ruling or authority directive as closing out the underlying dispute permanently. Karnataka's own multi-decade experience with the Cauvery, Krishna, and Mahadayi disputes simultaneously suggests that the state has, of practical necessity, developed considerable institutional capacity and legal expertise in inter-state water dispute management, capacity that could plausibly be deployed proactively, ahead of acute crisis points, rather than primarily in a reactive posture once a dispute has already escalated to protest or litigation.

21.6 International Collaboration: Common Development Agenda and Global Partnership

Karnataka's pattern of international collaboration is somewhat less institutionally diversified in the sources available for this chapter than the multi-agency model, spanning bilateral development agencies, multilateral development banks, and international economic forums, that has characterised some peer states' development financing strategies. What is clearly documented is a meaningful and growing reliance on World Bank financing for specific infrastructure programmes. The Karnataka Water Security and Disaster Resilience

Programme, discussed in Chapter 11, section 11.7, runs from 2025 to 2031 with a total outlay of Rs 5,000 crore, including a Rs 3,500 crore World Bank loan structured as an outcome-linked Programme-for-Results instrument, with 40 per cent of that funding earmarked specifically for stormwater drain fortification and lake reconnection across the Greater Bengaluru region. Separately, the World Bank has signed a 115 million dollar loan agreement with the Government of India to implement the Rejuvenating Watersheds for Agricultural Resilience through Innovative Development, or REWARD, project across Karnataka and Odisha jointly, an agricultural-resilience programme that extends the state's international development financing relationships beyond urban infrastructure into rural watershed management (AffairsCloud, cited in this chapter's research).

Karnataka's own innovation and technology diplomacy, discussed more fully in Chapter 17, provides the state's most visible platform for international engagement on the innovation and investment side specifically, with the November 2025 Bengaluru Tech Summit drawing participation from 60 nations, more than 1,200 exhibitors, and 15,000 delegates, a scale of international convening that functions, in effect, as Karnataka's principal annual vehicle for global economic and technology partnership building (Deccan Herald, cited in this chapter's research, 2025). Whether Karnataka intends to formalise this event-based international engagement into the kind of standing, multi-institution international collaboration architecture, spanning dedicated bilateral development agency partnerships, multilateral bank programme relationships, and international economic forum memberships operating in parallel, that some comparably positioned Indian states have built, is not clearly documented in sources available to this chapter and represents a genuine open question for the state's Department of Commerce and Industries and its Department of Electronics, IT, BT and Science and Technology to address explicitly as part of the state's Vision 2047 international financing strategy, particularly given the scale of the 100 billion dollar Karnataka Growth Fund envisioned in the independent 2047 roadmap discussed in section 21.1, which by its own design would depend heavily on exactly this kind of sustained, structured international institutional investor engagement.

This comparative gap in documented, standing international development-financing relationships is worth stating plainly rather than glossing over, given how directly it bears on the credibility of the state's longer-range financing ambitions. The two clearly documented World Bank programmes discussed above, the Karnataka Water Security and Disaster Resilience Programme and the REWARD watershed project, are both sector-specific infrastructure loans rather than the kind of broader, standing technical and financial partnership architecture that a mature Vision 2047 international strategy would typically require, and neither was located in this chapter's research to be part of a larger, publicly articulated state international-partnership strategy in the way that, for instance, Karnataka's own innovation-sector event calendar clearly is. This is not necessarily evidence that Karnataka lacks such a broader strategy internally, only that it is not currently as visible or as clearly documented in public sourcing as the state's innovation-diplomacy and startup-ecosystem international engagement discussed in Chapter 17. Given that the 100 billion dollar Karnataka Growth Fund concept discussed in section 21.1 remains, at the time

of this chapter's research, an independent strategic proposal rather than a formally adopted state government financing vehicle, this Framework recommends that any move by the state to formally adopt and operationalise such a fund be accompanied by an explicit, publicly documented international partnership strategy, naming specific target institutions, financing instruments, and sequencing, rather than relying on the state's existing innovation-summit convening model to substitute for that more structured financing architecture.

21.7 Monitoring, Evaluation and Results Framework

Karnataka's monitoring and evaluation architecture for its development plans operates through several distinct institutional channels, though this Framework's own research process across its constituent chapters has repeatedly surfaced a genuine unevenness in how consistently and publicly each channel makes its findings available. The Karnataka Evaluation Authority, whose assessment of the state's Self-Help Group ecosystem is discussed in Chapter 12, section 12.4, represents one of the state's more substantively rigorous evaluation bodies, having produced a specific and policy-relevant finding, that 60 to 70 percent of SHG-member borrowing was directed toward personal or family consumption rather than income-generating enterprise activity, of exactly the kind of granular, outcome-level assessment that a functioning monitoring architecture should be expected to generate. The Comptroller and Auditor General's periodic performance audits provide a second, complementary layer of institutional scrutiny, exemplified by the 2022 audit of the Kalyana Karnataka Region Development Board discussed in section 21.2, which identified concrete gaps between the institutional mechanisms Article 371J formally requires and those actually functioning on the ground.

Notwithstanding these examples of substantive evaluation capacity, this Framework's own chapter-by-chapter research has repeatedly encountered significant gaps in publicly available, current, Karnataka-specific data across a range of major development schemes, a pattern documented explicitly in Chapter 11's treatment of urban development, where Karnataka-specific PMAY-Urban 2.0 completion figures and HRIDAY heritage-city fund utilisation data could not be confirmed with sufficient precision, and in Chapter 12's treatment of rural development, where Karnataka-specific MGNREGA workday and payment-delay figures required drawing on advocacy-organisation reporting rather than official state dashboards, and where PMGSY road-connectivity data, Sanjeevini SHG federation membership figures, and district-wise PMAY-Gramin completion figures were not available at the Karnataka-specific level in any source reviewed. This recurring pattern, evaluation capacity that is genuinely strong where it exists but inconsistently applied and inconsistently disclosed across the full span of the state's development schemes, is itself a specific and actionable finding for this chapter's results-framework assessment: strengthening the consistency and public accessibility of scheme-level monitoring data, potentially by extending the Karnataka Evaluation Authority's evident evaluative rigour to a broader and more systematically scheduled portfolio of state and centrally sponsored schemes, would materially improve the evidentiary basis on which both this Framework and the state's own

leadership can assess progress toward the Vision 2047 targets discussed throughout this chapter.

21.8 Accountability Architecture: Legislature, Civil Society and Citizens

Karnataka's formal accountability architecture rests on the same broad institutional pillars common across Indian states, the Karnataka Legislative Assembly's budget scrutiny function, informed by independent analysis from bodies such as PRS Legislative Research cited extensively throughout this chapter's fiscal discussion in section 21.3; the audit oversight provided by the Comptroller and Auditor General, discussed in sections 21.2 and 21.7; and the state's dedicated anti-corruption institution, the Karnataka Lokayukta. This last institution, however, presents a genuinely mixed record worth flagging directly for a ministerial audience rather than treated purely as a settled, functioning check. The office has, at different points over the past decade, experienced extended periods of vacancy and public erosion of trust: in one earlier episode the Lokayukta post itself sat effectively unfilled for an extended period under a previous officeholder, prompting a civil society "Bribe-free Karnataka" campaign specifically because, in the words of that campaign's organisers, the institution once considered the country's best anti-corruption body had, in their assessment, lost the public's confidence (Deccan Herald, cited in this chapter's research). A subsequent officeholder, Justice B.S. Patil, appointed Upalokayukta in November 2019 following a constitutionally mandated consultation process, publicly disclosed in December 2023 that the Lokayukta office was operating with 600 to 700 staff vacancies, a substantial administrative capacity gap, while noting that the office's core investigative, spot-inspection, and grievance-redressal functions continued to operate despite this shortfall (Wikipedia, cited in this chapter's research). More recently, evolving Supreme Court jurisprudence in cases including *State of Karnataka v. T.N. Sudhakar Reddy* and *State of Karnataka v. Channakeshava H.D.*, both decided in 2025, has clarified that a preliminary inquiry is not a mandatory prerequisite before registering a corruption case against a public servant in Karnataka, a procedural clarification that, on balance, appears likely to strengthen rather than weaken the practical operation of the state's anti-corruption enforcement architecture going forward (azb, cited in this chapter's research, 2025).

Beyond these formal legislative, audit, and anti-corruption channels, Karnataka's civil society and community-based institutions provide a further, more grassroots layer of accountability that this Framework has documented directly across multiple chapters. Bengaluru-based citizen advocacy groups such as Whitefield Rising and investigative civic-journalism outlets such as Citizen Matters, both discussed in Chapter 11 in connection with the Greater Bengaluru governance transition and the city's stormwater and flooding crisis respectively, function as an active, functioning layer of independent public scrutiny over specific policy failures and institutional gaps, of precisely the kind that formal audit and evaluation mechanisms, discussed in section 21.7, do not always surface in a timely or publicly accessible way. Similarly, the state's Sanjeevini Self-Help Group federation structure and its Gram Sabha-based rural development planning architecture, both discussed extensively in

Chapter 12, provide a parallel, more grassroots-level participatory accountability channel over scheme implementation specifically within Karnataka's rural governance system.

These two accountability layers, urban civic-journalism and advocacy groups on one hand and rural Gram Sabha and SHG federation structures on the other, differ in an important structural respect worth flagging for state leadership: the urban layer operates largely independently of, and at times in direct friction with, the formal state administrative apparatus, as illustrated by the Laggere demolition controversy discussed in Chapter 11, section 11.7, where affected residents' own formal property documentation sat in direct tension with the GBA's enforcement action. The rural layer, by contrast, is substantially embedded within the state's own formal planning architecture, since Gram Sabha consultations are a required procedural step in compiling each panchayat's Gram Panchayat Development Plan, discussed in Chapter 12, section 12.1, rather than an external, independent check operating outside that process. This distinction matters for how state leadership should think about strengthening each layer: the urban civic-accountability ecosystem likely benefits most from continued institutional openness and responsiveness to independent scrutiny rather than formal integration, whereas the rural Gram Sabha layer's effectiveness depends more directly on the state's own investment in ensuring those consultations are substantively, rather than merely procedurally, representative, a specific data gap this Framework flagged explicitly in Chapter 12, section 12.1, and recommended the state's Rural Development and Panchayat Raj Department address through a dedicated Gram Sabha functionality audit.

The continued strengthening of this multi-layered accountability architecture, encompassing legislative, judicial, administrative, and civil society channels operating in parallel, and specifically addressing the Lokayukta's documented staffing and continuity vulnerabilities discussed above, will be essential to ensuring that Karnataka's pursuit of its trillion-dollar and Vision 2047 ambitions, discussed throughout this chapter, translates into development outcomes that are not only large in aggregate scale but genuinely broad-based, transparent, and accountable to the state's residents across the full span of sectors covered by this Comprehensive Development Framework.

End Note

This Comprehensive Development Framework for the State of Karnataka has sought to provide a rigorous, evidence-based account of the state's development position across twenty-one chapters, spanning geography and demography, fiscal architecture, economic structure, industry and investment, education, health, social justice, infrastructure, energy, environment, governance, technology, innovation, agriculture, tourism, cross-cutting themes, and long-term strategic vision. A consistent picture emerges from this exercise: a state that possesses genuine, internationally competitive strengths in specific domains, and yet whose aggregate performance is repeatedly constrained by the same underlying dynamic, well-conceived policy and institutional architecture that has not yet been matched by consistent, self-sustaining implementation capacity beyond its capital.

Karnataka's economic structure chapters document a state whose growth is real and substantial, with GSDP growing at 8.1 percent in real terms and per capita income rising well above the national average, yet this growth remains geographically concentrated to a striking degree: a single district, Bengaluru Urban, generates more than two-fifths of the state's entire output. The chapters on Investment, Innovation, and Technology confirm that this concentration is not accidental but the product of genuine agglomeration advantages built over decades, Bengaluru's technology, aerospace, and biotechnology clusters, its startup ecosystem, and its research institutions, that will not easily or quickly be replicated in Tumakuru, Hubballi-Dharwad, Belagavi, or Kalaburagi. The state's own policy response, embodied in its Beyond Bengaluru cluster funds, industrial corridor nodes, and the Kalyana Karnataka Region Development Board's constitutionally mandated regional development mandate, indicates that Karnataka's policymakers have identified this imbalance clearly. What the evidence assembled in the chapters on Investment, Urban Development, and Vision 2047 makes equally clear, however, is that funding commitments alone, however substantial, have not consistently translated into the institutional mechanisms, advisory councils, expert committees, and perspective plans, that these regional development instruments require to function as designed.

This same gap between design and delivery recurs across the chapters on Education, Health, Water and Sanitation, and Administrative Governance. Karnataka's elementary education system achieves enrolment ratios exceeding 100 percent, yet rural foundational learning outcomes have deteriorated. Its health system has achieved genuine gains in maternal and under-five mortality, yet nutrition and sex-ratio-at-birth indicators lag. Its capital city's sewage treatment infrastructure has missed every publicly announced completion deadline since 2018, even as Mysuru and Hubballi-Dharwad have won national recognition for solid waste management using the same underlying state framework, demonstrating that the state's institutional model works when consistently staffed and enforced. And its administrative governance architecture, spanning the Sakala citizen service guarantee, the Bhoomi land records system, the Lokayukta anti-corruption ombudsman, and the Karnataka Administrative Service, is, on the evidence of this Framework, sophisticated by any national

standard, yet each of these institutions has at some point required judicial intervention, external civic pressure, or a multi-year recruitment cycle to function as intended.

The chapters on Urban Development and Vision 2047 illustrate that Karnataka is, at this moment, in the midst of an unusually dense cluster of institutional transitions. The dissolution of the Bruhat Bengaluru Mahanagara Palike and its replacement by the Greater Bengaluru Authority and five new city corporations represents the most significant reorganisation of the capital's governance in nearly two decades, one still awaiting its first elected mayors. Simultaneously, the state's water security remains genuinely constrained by unresolved inter-state river disputes with Tamil Nadu, Andhra Pradesh, Maharashtra, and Goa, disputes that formal tribunals and authorities have proven capable of managing acute crises but not of resolving durably, even as the state's industrial corridor cooperation with several of these same neighbouring states proceeds comparatively smoothly, a reminder that inter-state relationships vary considerably by policy domain rather than following any single pattern.

Karnataka's long-term Vision 2047 ambitions, examined in the final chapter, are genuinely ambitious, and this Framework finds no reason to doubt the state's capacity to sustain strong aggregate growth over the coming decade. The state's own demographic trajectory, an ageing population set to peak before 2047, and its fiscal trajectory, a debt burden that national assessments have flagged for slight slippage even as absolute liabilities continue to climb, mean that the credibility of these targets will depend substantially on whether the state can close the implementation gap this Framework has documented across nearly every sector examined. Karnataka does not lack ambition, resources, or policy sophistication. What this Framework recommends the state's leadership prioritise over the remainder of this decade is the less visible, less politically rewarding work of building the routine, self-sustaining review, staffing, and enforcement capacity that would allow its already well-designed institutions to deliver consistently in every district, without requiring the kind of external correction this Framework has documented so often, so that the state's genuine strengths, forged substantially in Bengaluru, can finally be extended to the sixty-nine million Karnatakans who call the rest of the state home.

Council for Comprehensive Development Frameworks

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