



**COMPREHENSIVE DEVELOPMENT FRAMEWORK
REPORT OF STATE OF ASSAM**

YOUTH PEACE AND DEVELOPMENT FORUM

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FOREWORD

The state of Assam occupies a unique and vital position within the broader narrative of Indian civilizational progress. Endowed with profound natural wealth, dense ecological reserves, and a deeply rooted cultural heritage, the state is currently navigating a critical transition. It is moving steadily toward a modernized and diversified economy. The Comprehensive Development Framework Report of the State of Assam captures the essence of this historical juncture. It maps a future where the traditional strengths of the region are harmonized with the modern imperatives of proactive governance, rapid infrastructure development, and comprehensive technological integration.

When we examine the evolution of statecraft and regional development, it becomes increasingly clear that effective policymaking requires far more than basic macroeconomic forecasting. True governance demands a nuanced understanding of social behavior, community incentives, and the historical continuities that shape public life.

Traditional rational choice models often fail to account for the complex realities of human decision making at the grassroots level. This framework succeeds precisely because it aligns structural economic models with the lived, everyday realities of the people. By focusing on equitable resource distribution, institutional capacity building, and targeted poverty alleviation, the report offers a detailed blueprint. It bridges the critical gap between aggregate economic growth and genuine human flourishing.

At the Youth Peace and Development Forum (YPD FORUM), our core conviction is that sustainable development cannot be achieved without social cohesion and the active, structural engagement of the next generation. Peace and development are inherently mutually reinforcing concepts. Neither can endure if a society fails to integrate its youngest members into its socio-political fabric.

Assam is on the cusp of a significant demographic shift, with its working age population projected to expand rapidly over the coming decade. This presents a narrow but immensely powerful window of opportunity. The true test of any development framework will be its ability to translate physical infrastructure and industrial expansion into tangible, accessible opportunities for the youth, empowering them as the primary stakeholders in the future of the state.

The Comprehensive Development Framework Report acknowledges these shifting dynamics by prioritizing human capital. It recognizes that the wealth of a state lies not only in the minerals beneath its soil but in the potential of its people. The policies outlined herein reflect a deep understanding of behavioral economics, recognizing that citizens are not merely passive recipients of government aid but active participants whose choices must be nurtured through sound policy architecture. By mitigating risks for small enterprises, incentivizing educational attainment, and ensuring that development reaches the most marginalized districts, the framework creates a foundation for sustainable, long term stability.

A crucial component of this vision is the integration of the state's tribal and rural populations into the mainstream economic narrative without erasing their socio-cultural identities. The cultural identity of Assam must remain a guiding force as the state modernizes. The preservation of local traditions alongside the adoption of modern industrial practices is not a contradiction but a necessary synthesis.

Development policies must respect the historical context of the communities they serve, ensuring that progress feels organic rather than imposed. The framework thoughtfully addresses this balance, proposing strategies that elevate local communities while connecting them to the broader national and global economy.

Furthermore, we must recognize that true peace is not merely the absence of conflict but the presence of justice, equity, and opportunity. In regions that have historically faced developmental deficits, building physical infrastructure must be accompanied by the building of trust in public institutions. This report outlines actionable methodologies to enhance administrative transparency and accountability. It understands that when citizens see fair distribution of resources and opportunities, the foundations of lasting social peace are strengthened.

This comprehensive document is a vital intervention in the ongoing discourse regarding state capacity and regional transformation in India. It provides policymakers, corporate investors, and civil society leaders with the analytical rigor and empirical data required to drive meaningful, systemic change. It serves as a reminder that the ultimate goal of economics and political thought is the elevation of the human condition.

I commend the extensive research and collaborative effort that has gone into the creation of this document. It is my sincere hope that it will not remain a mere theoretical exercise but will serve as a definitive, actionable guide. The path ahead requires unwavering commitment, but with the right policy architecture in place, we can build a resilient, prosperous, and fundamentally inclusive Assam 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 Assam 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 GN**, 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.

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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 Assam, 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 Assam and a developed India.

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PREFACE

The Comprehensive Development Framework Report of the State of Assam has been prepared by the Council for Comprehensive Development Frameworks of the Youth Peace and Development Forum as part of a national exercise covering all twenty eight States of the Indian Union. The purpose of the exercise is neither to duplicate the statutory planning documents produced by State Governments nor to substitute for the annual economic surveys and budget statements that record fiscal performance. The purpose is rather to provide a single, integrated, independently compiled account of where a State stands across every major dimension of development, how it arrived at that position, and what the credible pathways forward look like over the horizon extending to the centenary of Indian independence in 2047.

Assam presents a compelling subject for such an exercise, and for reasons that are not shared by any other Indian State. It is the demographic, economic, and administrative anchor of a region of eight States that together hold less than four per cent of the national population on eight per cent of the national land area, connected to the rest of the country by a corridor of land that narrows at one point to approximately twenty two kilometres. It is a State whose river system deposits and removes land on a scale that redraws revenue maps within a single monsoon. It is a State that produces more than half of India's tea and a significant share of its domestic crude oil and natural gas, yet whose per capita income remained, for most of the post-independence period, well below the national average. And it is a State that has, within the last five years, become the site of the country's first indigenous semiconductor assembly and test facility, a development that would have appeared implausible to any observer of the regional economy a decade ago (Tata Electronics, 2026; Press Information Bureau, 2026).

The macroeconomic record of recent years is one of rapid nominal expansion. The Gross State Domestic Product of Assam is estimated at approximately 7.42 lakh crore rupees for 2025 to 2026 at current prices, representing a nominal expansion of 15.2 per cent over the preceding year, and is projected to reach 8.71 lakh crore rupees in 2026 to 2027 (Government of Assam, 2026; India Brand Equity Foundation, 2026). Per capita income at current prices is reported at 1,85,429 rupees for 2025 to 2026, against 60,817 rupees a decade earlier in 2015 to 2016, a nominal tripling within ten years (Government of Assam, 2026). The State Budget for 2026 to 2027 provides for an aggregate outlay of 2,85,084.45 crore rupees against

estimated receipts of 2,88,309.45 crore rupees, with the fiscal deficit contained at three per cent of Gross State Domestic Product in conformity with the State fiscal responsibility legislation (Government of Assam, 2026).

These aggregates, however, describe only one face of the State. The same Assam records a Human Development Index value of 0.655, placing it thirty first among the States and Union Territories of India and below the national value of 0.685 (Global Data Lab, 2024; United Nations Development Programme, 2025). It records an infant mortality rate that remains above the national average, a maternal mortality ratio among the highest of any large State, an anaemia prevalence among women and children that has proved resistant to a decade of programmatic effort, and a literacy rate of 72.19 per cent as measured at the last complete enumeration, below the national figure (International Institute for Population Sciences, 2021; Registrar General of India, 2011, 2022). Approximately 39.58 per cent of the geographical area of the State is classified as flood prone by the Rashtriya Barh Ayog, against a national average of around twelve per cent, and the entire State lies within Seismic Zone V, the highest hazard category in the Indian seismic zonation (Government of Assam, Water Resources Department, 2024; Bureau of Indian Standards, 2016).

The reconciliation of these two faces, the rapid nominal ascent of output and public investment on the one hand and the persistent lag in human development outcomes and the structural exposure to environmental risk on the other, is the central analytical problem that this report attempts to address.

This framework has been conceived as a working document for four distinct audiences. For policymakers within the State administration, it offers a consolidated evidence base drawn together from sources that are ordinarily dispersed across departments, agencies, and reporting cycles. For investors and enterprise, it offers a candid assessment of the investment climate, infrastructure readiness, factor market conditions, and regulatory environment, including an honest account of the constraints that a landlocked position and a difficult logistics geography impose. For researchers and academic institutions, it offers a structured synthesis with full source attribution that may serve as a point of departure for more specialised inquiry. For citizens, civil society organisations, and above all for the young people in whose name the Youth Peace and Development Forum works, it offers an accessible account of the condition of their State and the choices that lie before it.

The scope of the report is deliberately comprehensive. Twenty one chapters address the state profile, the fiscal architecture, the structure of the economy, the investment and industrial ecosystem, education, health, social justice, transport, energy, water and sanitation, urban development, rural development, environmental governance, climate and disaster resilience, administrative reform, digital service delivery, innovation and the knowledge economy, agriculture, tourism and the creative economy, cross cutting policy themes, and finally a long horizon strategic vision. Each chapter is self contained in the sense that it may be read independently, and each is cross referenced to the others so that the interdependencies among sectors remain visible. A chapter on energy that ignored the industrial demand profile would be incomplete, as would a chapter on education that ignored the labour market it feeds, or a chapter on agriculture that ignored the annual hydrological cycle that governs it.

Three features of the Assam context receive sustained attention throughout the report because they cut across every sector. The first is the hydrology of the Brahmaputra and Barak systems, which is treated not as a chapter on disaster management alone but as a structural determinant of agricultural productivity, transport asset life, public health, urban form, and the fiscal burden of annual reconstruction. The second is the constitutional architecture of autonomy, comprising the Sixth Schedule councils of Bodoland, Karbi Anglong, and Dima Hasao together with the statutory autonomous councils constituted under State legislation, which shapes how policy is designed, financed, and delivered across a substantial share of the territory. The third is the position of Assam within the wider eastern and north eastern economic geography, including its land borders with Bhutan and Bangladesh and its function as the transit State for the whole of the north east, which conditions the economics of every infrastructure decision the State makes.

The report rests on secondary data compiled from official and peer reviewed sources. The principal repositories consulted include the Assam Economic Survey and the Annual Financial Statement and Budget documents published by the Finance Department of the Government of Assam, the Directorate of Economics and Statistics of Assam, the Ministry of Statistics and Programme Implementation, the Reserve Bank of India study of State Finances, the reports of the Comptroller and Auditor General of India, the National Family Health Survey, the Sample Registration System, the Periodic Labour Force Survey, the Unified District Information System for Education Plus, the All India Survey on Higher Education, the National Achievement Survey, the India State of Forest Report of the Forest Survey of

India, the publications of NITI Aayog including the SDG India Index and the National Multidimensional Poverty Index, the Central Water Commission and the Brahmaputra Board, the Assam State Disaster Management Authority, and the sectoral reporting of Union Ministries with jurisdiction over the subjects examined.

Three data conventions govern the presentation throughout. First, every statistic is accompanied by the year to which it refers, and where a figure is an advance estimate, a provisional estimate, a quick estimate, or a projection, this is stated explicitly. The distinction matters. Advance estimates of State Domestic Product are routinely revised, sometimes substantially, and a framework that presented such figures as settled fact would mislead its readers. Where two official sources report divergent values for the same indicator, both are given and the divergence is noted rather than silently resolved in favour of the more convenient figure.

Second, where the most recent authoritative measurement of an indicator predates the current year, the report uses that measurement rather than an interpolation, and states its vintage. The decennial Census of India remains the last complete enumeration of the population, and its 2011 round therefore continues to supply the structural demographic parameters used here, supplemented by the official population projections of the Technical Group on Population Projections constituted by the National Commission on Population. Readers should note that the delayed census cycle means that shares by social group, by religion, by mother tongue, and by urban and rural residence are anchored to a base that is now more than a decade old, and that this limitation is particularly consequential in a State where internal migration, riverbank erosion, and administrative reorganisation have all altered settlement patterns during the intervening period.

Third, all citations follow the seventh edition of the Publication Manual of the American Psychological Association, with author date citations in the text and a consolidated reference list at the close of the volume. Where a Government of Assam department is the author of record, the citation names the Government of Assam with the department identified in the reference list entry. Where a figure is drawn from a Union Government source that reports State level data, the Union agency is named as the author.

The reader will observe that the report frequently juxtaposes State level averages with district level ranges. This is a deliberate methodological choice. In a State where population density ranges from approximately forty four persons per square kilometre in Dima Hasao to more than nine hundred persons per square kilometre in the densely settled riverine districts of lower Assam, and where the hill districts, the Brahmaputra valley plains, the char and chapori riverine tracts, the tea garden belt, and the Barak valley constitute five distinct development regimes, the State average is an arithmetic convenience that can conceal more than it reveals (Registrar General of India, 2011). Wherever the underlying data permit disaggregation by district, by social group, by gender, or by rural and urban residence, such disaggregation has been supplied.

A further methodological note concerns terminology. The report uses the expression tea garden and ex tea garden communities to refer to the population descended from labour brought to the plantations of Assam from central India during the colonial period, a population enumerated in part as Other Backward Classes in Assam although the constituent communities hold Scheduled Tribe status in their States of origin. The report uses the expressions char and chapori to refer to the riverine sandbar and floodplain settlements of the Brahmaputra, which are administratively enumerated but whose land tenure, service access, and settlement stability differ materially from those of the mainland revenue villages. These usages follow the conventions of the State administration and of the published literature.

Each substantive chapter follows a common architecture. It opens with a framing discussion that situates the sector within the developmental trajectory of the State. It proceeds through numbered sections corresponding to the analytical subdivisions listed in the table of contents. Within each section the sequence moves from the description of present status, through the diagnosis of constraints, to the identification of policy options. Each chapter closes with a consolidated statement of strategic priorities and, where appropriate, a set of measurable targets aligned to the 2047 horizon.

Numerical conventions follow Indian usage. Amounts are expressed in crore and lakh rupees, and where a comparison with international magnitudes assists the reader, a United States dollar equivalent is supplied at the exchange rate prevailing at the date of the source. Areas are expressed in square kilometres and, where the source is an agricultural or land revenue record, in hectares. Population figures follow the source, with projections identified as such.

The report avoids the language of advocacy where the evidence does not support it. Where Assam performs well, this is stated plainly and the institutional reasons for the performance are examined, because a framework that cannot explain success is unlikely to be able to recommend its replication. The reduction of the multidimensional poverty headcount from 36.97 per cent in 2013 to 2014 to 14.47 per cent in 2022 to 2023, representing an estimated eighty lakh persons moving out of multidimensional poverty within nine years, is one such case, and the report examines the composition of that reduction rather than merely reporting it (NITI Aayog, 2023). Where Assam performs poorly, this too is stated plainly. The Forum takes the view that a development framework which flatters its subject is of no use to the subject.

Several limitations should be acknowledged at the outset. The report is a desk based synthesis and does not incorporate primary field survey data collected by the Council. It is therefore dependent on the coverage, periodicity, and quality of the official statistical system, and it inherits the known gaps in that system.

Four specific gaps deserve mention because they constrain the analysis at several points. The first concerns the enumeration of the riverine char and chapori population, whose settlements are periodically displaced by erosion and whose statistical treatment across successive rounds is not fully consistent. The second concerns the fiscal and service delivery data of the Sixth Schedule autonomous councils, which are reported through a different channel from the line departments of the State and are not always reconcilable with State aggregates. The third concerns the labour market, where the sample design of the Periodic Labour Force Survey supports reliable State level estimation but not district level estimation, and where the very large informal and unpaid family labour component of employment in Assam is imperfectly captured by any of the existing instruments. The fourth concerns the tea garden population, whose living standards, health status, and educational attainment are known from a range of studies to differ markedly from the State average but for whom no continuous official statistical series exists.

The report identifies these gaps where they arise rather than concealing them behind confident prose, and Chapter 20 accordingly treats the strengthening of the State statistical system as a development priority in its own right.

A further limitation concerns the treatment of the future. The projections and targets set out in Chapter 21 are conditional statements rather than forecasts. They describe what becomes attainable under specified assumptions about investment rates, institutional reform, hydrological conditions, and the external environment. They are offered as instruments for structuring debate about priorities, not as predictions. In a State where a single flood season can displace more than four million people and damage assets across thirty five districts, as occurred in 2024, any long horizon projection that does not carry an explicit environmental contingency is an exercise in arithmetic rather than planning (Assam State Disaster Management Authority, 2024).

The Youth Peace and Development Forum undertook this national exercise in the conviction that the quality of public debate about development improves when the underlying evidence is assembled honestly and made accessible. Assam occupies a position in the Indian federation that is at once strategically central and historically peripheral, and the reconciliation of those two conditions has been the work of successive generations of its administrators, its cultivators, its teachers, and its young people.

The State has demonstrated, in the sustained reduction of insurgency related violence and the consolidation of political settlements with formerly armed groups, that patient institutional effort can transform conditions that were widely regarded as permanent. It has demonstrated in the last decade that a State long treated as a recipient of transfers can attract investment at the technological frontier. The question that animates this report is whether the same institutional capacity can be brought to bear on the indicators where progress has been slowest, namely learning outcomes in the public school system, maternal and child health, the productivity and price realisation of the small farm, the resilience of settlements to the annual hydrological cycle, and the creation of formal enterprise and employment at a scale sufficient to absorb the working age population that the next two decades will produce.

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EXECUTIVE SUMMARY

Assam enters the second half of the 2020s in the middle of the most rapid nominal economic expansion in its post independence history. The Gross State Domestic Product is estimated at approximately 7.42 lakh crore rupees for 2025 to 2026 at current prices, a nominal expansion of 15.2 per cent over the preceding year, and is projected at 8.71 lakh crore rupees for 2026 to 2027, having grown at a compound annual rate of close to thirteen per cent over the decade from 2015 to 2016 (Government of Assam, 2026; India Brand Equity Foundation, 2026). Per capita income at current prices is reported at 1,85,429 rupees for 2025 to 2026 against 60,817 rupees in 2015 to 2016 (Government of Assam, 2026). Behind these aggregates lies a structural transformation whose composition, durability, and distributional consequences constitute the central policy questions of the coming two decades.

The sectoral composition of the Assam economy departs from the national pattern in one significant respect. The services sector contributes approximately 46 per cent of Gross State Domestic Product, the primary sector approximately 35 per cent, and the secondary sector approximately 19 per cent, against a national primary sector share of close to 19 per cent (Government of Assam, 2025). The unusually high primary sector share reflects the weight of tea, of paddy cultivation across the valley floor, and of crude petroleum and natural gas extraction, which is classified within mining. It also reflects the relative underdevelopment of manufacturing outside the petroleum refining, tea processing, and cement clusters. The Gross State Value Added of the industry sector was estimated at 2,13,486 crore rupees in 2024 to 2025 with growth of 14.2 per cent, indicating that the industrial base is expanding rapidly from a narrow foundation (Government of Assam, 2025).

The fiscal position has strengthened materially. The Budget for 2026 to 2027 provides for an aggregate outlay of 2,85,084.45 crore rupees against estimated receipts of 2,88,309.45 crore rupees, comprising Consolidated Fund receipts of 1,51,843.23 crore rupees, Public Account receipts of 1,34,466.22 crore rupees, and a Contingency Fund component of 2,000 crore rupees. Consolidated Fund expenditure is estimated at 1,56,714.88 crore rupees. The budget deficit is projected at 419.26 crore rupees against an opening deficit of 3,644.26 crore rupees, and the fiscal deficit is held at three per cent of Gross State Domestic Product in conformity with the State fiscal responsibility legislation (Government of Assam, 2026). Capital expenditure of approximately 29,000 crore rupees is proposed, and the State has announced a

power sector investment pipeline exceeding 77,353 crore rupees spanning hydropower, solar generation, thermal capacity, battery storage, and transmission (Government of Assam, 2026).

The significant fiscal development is that revenue receipts are now sufficient to meet committed expenditure, which means that borrowing can increasingly be directed toward capital formation rather than toward routine consumption. This is a material improvement on the position that prevailed for most of the preceding two decades, and it is the single most important precondition for the investment programme the State has announced. It remains, however, a position that depends heavily on Union transfers, and the report treats the composition of State revenue and the trajectory of own tax mobilisation as the principal fiscal risk. The human development record is substantially weaker than the macroeconomic record, and the divergence between the two is the central finding of this framework.

Assam records a Human Development Index value of approximately 0.655, placing it thirty first among the States and Union Territories of India and below the national value of 0.685 (Global Data Lab, 2024; United Nations Development Programme, 2025). The State entered the front runner category of the SDG India Index in the 2023 to 2024 round, improving its composite score by sixteen points from the 2018 baseline, which is among the larger improvements recorded by any State and indicates genuine momentum (NITI Aayog, 2024). Multidimensional poverty fell from 36.97 per cent in 2013 to 2014 to 14.47 per cent in 2022 to 2023, with an estimated eighty lakh persons moving out of multidimensional poverty over nine years (NITI Aayog, 2023).

Against this, the level indicators remain among the weakest of any large State. The infant mortality rate stands at approximately 30 per thousand live births as measured by the Sample Registration System, above the national figure, and the maternal mortality ratio remains the highest or among the highest recorded by any State in successive rounds of the Sample Registration System special bulletin (Registrar General of India, 2022). Thirty five per cent of children under five years were stunted and approximately 68 per cent of children between six and fifty nine months were anaemic at the fifth round of the National Family Health Survey, with anaemia prevalence among women at approximately 66 per cent (International Institute for Population Sciences, 2021). Full child immunisation improved markedly from 66.4 per cent to 81.7 per cent between the fifth and sixth rounds of the survey, demonstrating

that the delivery system responds when a specific objective is set and monitored (International Institute for Population Sciences, 2024). Literacy stood at 72.19 per cent at the last complete enumeration, with male literacy at 77.85 per cent and female literacy at 66.27 per cent (Registrar General of India, 2011).

The report treats the gap between the fiscal and investment momentum of Assam and its human development outcomes as the single most consequential finding of the exercise, and returns to it in every substantive chapter.

No development framework for Assam can treat the environment as a sectoral annexe. Approximately 31.05 lakh hectares, or 39.58 per cent of the geographical area of the State, is classified as flood prone by the Rashtriya Barh Ayog, against a national average of approximately twelve per cent (Government of Assam, Water Resources Department, 2024). More than forty per cent of the land surface of the Brahmaputra valley is susceptible to flood damage. The floods and landslides of 2024 affected 42.95 lakh persons across 7,794 villages in thirty five districts (Assam State Disaster Management Authority, 2024). The entire State lies within Seismic Zone V. Riverbank erosion removes cultivable land and settlement area annually on a scale that no other Indian State experiences. Forest cover stands at 28,313.55 square kilometres, or 36.10 per cent of the geographical area, against a national average of approximately 21.76 per cent, but recorded a net decline of 83.92 square kilometres between the 2021 and 2023 assessments even as very dense forest area increased (Forest Survey of India, 2024). Assam holds two natural World Heritage Sites, the Kaziranga and Manas National Parks, and a wetland and grassland complex of international significance.

The report accordingly treats hydrological and seismic risk as a cross cutting parameter of every infrastructure, agricultural, urban, health, and fiscal decision rather than as a subject confined to Chapter 14.

CHAPTER 1: STATE PROFILE, GEOGRAPHY, DEMOGRAPHY AND SOCIETY

Every development framework must begin by establishing what it is describing. In the case of Assam this is not a formality. The State occupies a position in Indian geography, in Indian constitutional practice, and in Indian demographic history that has no close parallel, and a great many of the policy conclusions reached in the chapters that follow are consequences of structural facts established in this one. A road network cannot be evaluated without knowing that the principal river of the State is braided, migratory, and up to sixteen kilometres wide in places. A public health strategy cannot be designed without knowing that a substantial population lives on sandbar formations that are inundated annually and that occasionally cease to exist. An education plan cannot be built without knowing that instruction is delivered in a State where no single language is spoken as a mother tongue by an absolute majority of the population.

This chapter accordingly sets out the geographic, ecological, administrative, demographic, social, and human development parameters of Assam as the foundation for the twenty chapters that follow.

1.1 Geographic and Ecological Characteristics of the State

Assam extends over 78,438 square kilometres, constituting approximately 2.39 per cent of the geographical area of India, and lies between approximately 24 degrees 08 minutes and 28 degrees 02 minutes north latitude and 89 degrees 42 minutes and 96 degrees 01 minutes east longitude (Government of Assam, Directorate of Economics and Statistics, 2025). In area it is the seventeenth largest State of the Indian Union, but in the geography of the north eastern region it is the dominant unit, accounting for roughly thirty per cent of the regional land area and close to sixty eight per cent of the regional population.

The State shares internal boundaries with seven Indian States, namely Arunachal Pradesh to the north and north east, Nagaland and Manipur to the east, Mizoram and Tripura to the south, Meghalaya to the south west, and West Bengal to the west. It shares international boundaries with Bhutan along its north western margin and with Bangladesh along its south western margin. This configuration produces a geography of transit. Every land route connecting the seven other States of the north east to the rest of India passes through Assam,

and every such route reaches the rest of India through the narrow corridor in northern West Bengal that separates Bangladesh from Nepal and Bhutan, a corridor that narrows at its most constricted point to approximately twenty two kilometres.

The consequences are treated in detail in Chapter 8, but must be registered at the outset. The corridor imposes a distance penalty on the movement of goods between Assam and the principal Indian markets measured in additional hundreds of kilometres and additional days of transit. It also means that the transport infrastructure of Assam is not merely State infrastructure. It is national infrastructure serving a region of eight States and an international boundary of considerable sensitivity, and the appraisal criteria applied to it should reflect that function. Assam comprises three distinct physiographic units, and the distinction between them governs almost every development indicator examined in this report.

The Brahmaputra valley constitutes the largest, extending approximately 720 kilometres from east to west with an average width of eighty kilometres and covering an area of the order of 56,000 square kilometres. It is a structural trough filled with alluvium of great depth, bounded on the north by the Himalayan foothills of Arunachal Pradesh and on the south by the Meghalaya plateau and the Karbi and Naga ranges. The valley floor lies generally between fifty and one hundred and thirty metres above mean sea level, and the gradient of the main river across the State is extremely gentle, which is the principal reason for its braided planform and its propensity to flood, to shift channels, and to erode its banks.

The Barak valley in the south, comprising Cachar, Karimganj, and Hailakandi, covers approximately 6,900 square kilometres. It drains westward into Bangladesh and is connected to the rest of the State by road and rail alignments traversing difficult and landslide prone terrain. It is culturally, linguistically, and economically distinct from the Brahmaputra valley, and its relative developmental position is a recurring theme of this framework. The central hill region, comprising Karbi Anglong, West Karbi Anglong, and Dima Hasao, covers approximately 15,300 square kilometres of dissected plateau and hill terrain rising above eighteen hundred metres. These districts hold the lowest population densities in the State, the highest proportions of Scheduled Tribe population, and the most difficult conditions for the delivery of physical infrastructure and public services. They are administered under the Sixth Schedule to the Constitution of India.

To these three conventional divisions the framework adds a fourth spatial category that is not physiographic but is developmentally decisive, namely the char and chapori tracts. These are the sandbar islands and low lying floodplain margins of the Brahmaputra and its tributaries, formed and reformed by the annual deposition and erosion of sediment. They are inhabited, cultivated, and administratively enumerated, and successive State surveys have identified a resident population in the range of twenty four to twenty nine lakh persons, but the physical impermanence of the land produces a distinctive and severe pattern of deprivation in land tenure, school continuity, health service access, and asset accumulation.

The Brahmaputra enters Assam near Sadiya and traverses the State for approximately 720 kilometres before entering Bangladesh. Within Assam it receives more than thirty principal tributaries, of which the Subansiri, Jia Bharali, Manas, Puthimari, Pagladiya, and Sankosh join from the north, and the Burhi Dihing, Disang, Dhansiri, Kopili, and Kulsi from the south. The Barak system drains the southern valley.

Three characteristics of this system determine the developmental context of the State. The first is discharge. The Brahmaputra carries one of the largest volumes of water of any river in the world relative to its basin area, and the sediment load it transports is among the highest recorded globally. The second is seasonality. Between seventy and ninety per cent of the annual flow occurs during the five months of the south west monsoon, producing an annual cycle of inundation followed by an extended lean season in which the same districts that were submerged experience irrigation deficit. This apparently paradoxical combination of water abundance and irrigation scarcity is examined in Chapter 10 and Chapter 18, and it is one of the more striking policy failures documented in this framework.

The third characteristic is instability of channel. The river is braided across most of its Assam course, and the channel migrates laterally at rates that in some reaches exceed several hundred metres in a single year. The consequence is bank erosion, which removes cultivable land, settlement, embankment, road, and revenue village permanently rather than temporarily. Successive assessments have estimated cumulative land loss to erosion in Assam since the middle of the twentieth century at figures in the range of four thousand square kilometres. Erosion differs from flooding in a policy relevant respect. Flood damage is recoverable and is addressed through relief and reconstruction. Erosion loss is permanent, extinguishes title, and generates a population of displaced persons with no legal claim to replacement land.

Majuli illustrates both processes. Once among the largest inhabited river islands in the world at an area exceeding one thousand square kilometres in the middle of the last century, it has been reduced by erosion to a fraction of that extent while remaining the principal seat of the Vaishnavite monastic institutions central to Assamese cultural life. It was constituted as a separate district in 2016, the first river island district in India. Assam has a humid subtropical climate with a pronounced monsoon regime. Annual rainfall generally ranges between 1,800 and 3,200 millimetres, with the northern foothill belt and parts of the Barak valley recording substantially higher totals. Mean summer temperatures range between twenty three and thirty two degrees Celsius and mean winter temperatures between six and eighteen degrees Celsius.

The climatic parameter of greatest developmental significance is not the annual total but its distribution. The pre monsoon period from March to May brings convective storms and hail that damage standing crops and infrastructure. The monsoon from June to September delivers the bulk of annual precipitation and the annual flood. The post monsoon and winter months are dry, and in recent decades the incidence of dry spells sufficient to require supplementary irrigation for the winter crop has increased. Chapter 14 examines the trend in extreme precipitation events and its implications for infrastructure design standards.

The soils of the two valleys are predominantly new and old alluvium, generally fertile, acidic across much of their extent, and deficient in nitrogen and organic carbon in the intensively cropped tracts. The hill districts carry lateritic and red loamy soils of lower inherent fertility on sloping terrain subject to erosion under shifting cultivation. The tea growing tracts of the upper valley and the northern bank occupy well drained older alluvial and piedmont soils whose characteristics account for the historical concentration of the industry there. Assam is divided into six agro climatic zones, namely the Upper Brahmaputra Valley, the North Bank Plains, the Central Brahmaputra Valley, the Lower Brahmaputra Valley, the Barak Valley, and the Hills Zone, and Chapter 18 evaluates the extent to which crop recommendations, input packages, and credit products have been differentiated accordingly.

Net sown area occupies approximately thirty five per cent of the geographical area and forest approximately thirty six per cent. The proportion of the State surface occupied by rivers, beels, and wetlands is higher than in any comparable Indian State and is a resource as much as a constraint, a point developed in the discussion of fisheries in Chapter 18.

Forest cover in Assam stands at 28,313.55 square kilometres, equivalent to 36.10 per cent of the geographical area, against a national average of approximately 21.76 per cent (Forest Survey of India, 2024). The State recorded a net decline of 83.92 square kilometres between the 2021 and 2023 assessment cycles even as the area classified as very dense forest increased, indicating degradation and encroachment at the margins alongside consolidation of the protected core (Forest Survey of India, 2024).

Assam lies at the junction of the Eastern Himalaya and Indo Burma global biodiversity hotspots and supports a range of endemic and threatened species disproportionate to its area. The protected area network comprises seven national parks, including Kaziranga, Manas, Nameri, Orang, Dibru Saikhowa, Raimona, and Dehing Patkai, together with a larger number of wildlife sanctuaries. Kaziranga and Manas are inscribed on the World Heritage List for their natural values, and Manas holds the additional distinction of having been removed from and subsequently restored from the List of World Heritage in Danger following the stabilisation of security conditions in the Bodoland region, a case examined in Chapter 13 as evidence that conservation outcomes track governance conditions. Deepor Beel near Guwahati is designated a Wetland of International Importance under the Ramsar Convention. The Charaideo Moidams, the mound burial complex of the Ahom dynasty, were inscribed on the World Heritage List in 2024 as the first cultural World Heritage Site of the north eastern region.

Kaziranga holds the largest population of the greater one horned rhinoceros in the world, and the recovery of that population from near extirpation at the beginning of the twentieth century is among the more successful conservation interventions in Indian history. These assets are simultaneously an ecological responsibility, a tourism resource examined in Chapter 19, and a source of human wildlife conflict whose management costs are borne disproportionately by fringe area cultivators.

Two hazard characteristics of Assam are structural rather than episodic and must be treated as parameters of the development function. The first is flood. The flood prone area of the State, as assessed by the Rashtriya Barh Ayog, is 31.05 lakh hectares against a total State area of 78.52 lakh hectares, or 39.58 per cent of the land surface, against a national average of approximately twelve per cent (Government of Assam, Water Resources Department, 2024).

More than forty per cent of the land surface of the Brahmaputra valley is susceptible to flood damage. The floods and landslides of 2024 affected 42.95 lakh persons across 7,794 villages in thirty five districts (Assam State Disaster Management Authority, 2024). Flooding in Assam is annual rather than exceptional, and the recurrent fiscal cost of relief, restoration, and reconstruction is a permanent charge on the State budget examined in Chapter 2.

The second is seismicity. The entirety of Assam lies within Seismic Zone V, the highest hazard category under the Indian seismic zoning code (Bureau of Indian Standards, 2016). The State experienced two great earthquakes in 1897 and in 1950, the latter among the largest continental earthquakes ever instrumentally recorded. The 1950 event altered the bed level of the Brahmaputra, changed drainage patterns across the upper valley, and materially worsened the flood regime that followed. The implication is that the incremental cost of seismic resilient construction is not a discretionary quality upgrade in Assam but a minimum standard, and Chapter 11 and Chapter 14 examine the extent to which building regulation and enforcement reflect this. To these must be added landslide hazard in the hill districts and along the transport alignments serving the Barak valley, riverbank erosion, and a lightning and storm incidence among the highest in India.

1.2 Administrative Divisions, Districts and Sub State Units

Assam is administered through five revenue and administrative divisions, namely Lower Assam with headquarters at Guwahati, Upper Assam at Jorhat, North Assam at Tezpur, Central Assam at Nagaon, and the Barak Valley division at Silchar, each under a Commissioner exercising supervisory revenue and general administrative jurisdiction.

The State comprises thirty five districts as of 2026. The district map has been substantially reorganised over the past decade. A large number of new districts were created in 2015 and 2016 to reduce the administrative span of control. Four districts, namely Hojai, Biswanath, Tamulpur, and Bajali, were temporarily merged with their parent districts in 2022 in connection with the delimitation of assembly constituencies, and their status was restored in 2023. In the same year the State Cabinet approved the creation of eighty one new sub districts to deepen the administrative tier below the district (Government of Assam, 2023).

Below the district the hierarchy comprises sub divisions, revenue circles headed by Circle Officers exercising land revenue and magisterial functions, and development blocks, which are the unit of rural development administration. Below these are the gaon panchayats and the revenue villages. The State contains approximately two hundred and nineteen development blocks and in excess of twenty six thousand villages, with exact counts varying between reporting cycles as reorganisation proceeds. Urban administration is conducted through a Municipal Corporation at Guwahati, municipal boards in the larger towns, and town committees in smaller urban centres, together numbering approximately one hundred urban local bodies whose fiscal and functional capacity is examined in Chapter 11.

The distinguishing feature of the administrative architecture of Assam is the constitutional provision for autonomous self government in specified areas. Three autonomous district councils operate under the Sixth Schedule to the Constitution of India, namely the Bodoland Territorial Council administering the Bodoland Territorial Region, the Karbi Anglong Autonomous Council, and the Dima Hasao Autonomous Council. These are not administrative conveniences. They are constitutional entities with legislative, executive, judicial, and financial powers over enumerated subjects within their territorial jurisdiction.

The Bodoland Territorial Region comprises five districts, namely Kokrajhar, Chirang, Baksa, Udalguri, and Tamulpur. The Council was established under the Memorandum of Settlement of 2003 and its powers were expanded under the Bodo Peace Accord of 2020, which brought the principal remaining armed formation into the political process and provided for enhanced financial devolution, expanded legislative competence, and a commission to examine the inclusion and exclusion of villages from the Region. Elections were most recently held in 2025. The Karbi Anglong Autonomous Council administers Karbi Anglong and West Karbi Anglong and the Dima Hasao Autonomous Council administers Dima Hasao, both having been the subject of subsequent memoranda of settlement, most recently the Karbi Anglong agreement of 2021.

Beyond the Sixth Schedule councils, the State has constituted a substantial number of autonomous councils under State legislation for specified ethnic communities, including the Rabha Hasong, Mising, Tiwa, Deori, Sonowal Kachari, Thengal Kachari, and Amri Karbi councils among others. These exercise narrower powers and their territorial jurisdiction is

generally non contiguous, being defined by the villages in which the relevant community predominates.

The autonomy architecture has three consequences that recur throughout this framework and that are not adequately recognised in the standard analytical treatment of Indian State administration. The first is that the State Government does not exercise uniform administrative jurisdiction across its territory. Subjects including primary education, primary health, agriculture, minor irrigation, land and revenue, forests other than reserved forests, and village administration stand transferred to the Sixth Schedule councils within their areas. A programme design that assumes a single line of command from the Secretariat to the block will not operate as intended in territory covering a substantial share of the State area and population. The second is that financial reporting and outcome measurement are correspondingly fragmented. Council expenditure is reported through a channel distinct from the line departments, and reconciliation of council level and State level data is imperfect. This is a material constraint on the evaluation of programme performance in precisely the districts where developmental need is greatest.

The third is that the Panchayati Raj system does not operate uniformly. The Sixth Schedule areas fall outside the operation of Part IX of the Constitution, and rural governance there is conducted through village councils constituted under council legislation. Chapter 12 examines the practical consequences for the flow of Finance Commission grants and centrally sponsored scheme funds. Assam returns fourteen members to the Lok Sabha and seven to the Rajya Sabha, and its Legislative Assembly comprises one hundred and twenty six members. Constituencies were redrawn in the delimitation exercise completed in 2023, the first since 1976. The delimitation and the associated district reorganisation affect the comparability of district level time series data across the boundary of 2022 to 2023, a caveat applying to several comparisons made in later chapters.

1.3 Demographic Structure: Population, Density, Growth and Composition

The last complete enumeration recorded 3,12,05,576 persons in Assam in 2011 (Registrar General of India, 2011). The official projection of the Technical Group on Population Projections places the population at approximately 3.68 crore as of the middle of 2026 (National Commission on Population, 2020). Assam accordingly holds approximately 2.6 per

cent of the national population on 2.39 per cent of the national land area. All shares and compositional statistics in this section derive from the 2011 enumeration unless otherwise stated, because the decennial census due in 2021 was deferred, and the age of the structural demographic data is a substantive analytical limitation rather than a technical caveat.

The decadal growth rate fell from 18.92 per cent in the decade to 2001 to 17.07 per cent in the decade to 2011 (Registrar General of India, 2011). The more consequential indicator is the total fertility rate, which has fallen below the replacement level of 2.1 and is estimated at approximately 1.9 in recent measurement, having stood at 2.2 at the fourth round of the National Family Health Survey (International Institute for Population Sciences, 2021). This is a demographic achievement of the first order accomplished without coercive instruments.

Two implications follow. The first is that Assam has entered the phase of the transition in which the working age share rises and the dependency ratio falls. This is the demographic dividend, and it is a window rather than a permanent condition. Whether it is realised depends entirely on whether the additional working age population is educated, healthy, and employed. A large cohort of young people who are undereducated and underemployed does not produce a dividend but a liability, and Chapters 5, 17, and 20 treat this as the central strategic risk facing the State. The second concerns heterogeneity. Districts in the lower Brahmaputra valley with high char populations continue to record fertility above the State average while upper valley districts record fertility substantially below replacement. Any population policy premised on a uniform State average will misallocate effort.

Population density is approximately 398 persons per square kilometre, marginally above the national figure of 382 (Registrar General of India, 2011). This average is among the least informative statistics in the demographic profile. Dima Hasao records approximately 44 persons per square kilometre while South Salmara Mankachar records approximately 977 (Registrar General of India, 2011).

This distribution is a direct consequence of physiography. Population concentrates on the alluvial valley floor and thins sharply on hill slopes and in reserved forest tracts. Within the valley floor it concentrates further on higher ground and along transport corridors, while the char and chapori tracts carry high densities on land of very low physical security. The areas of greatest population concentration coincide substantially with the areas of greatest

hydrological hazard, which is the demographic root of the flood problem and which no embankment programme can alter. Population distribution should therefore be treated as a variable that development policy influences rather than a constraint it accepts, and Chapter 11 examines the case for deliberate secondary town development along higher ground and arterial corridors.

Assam recorded an urban population share of 14.08 per cent at the last enumeration, up from 12.9 per cent a decade earlier, against a national share of 31.16 per cent (Registrar General of India, 2011). Two qualifications apply. Census criteria requiring minimum population, density, and non agricultural male workforce share cause a number of settlements functioning economically as towns to be enumerated as villages. And urbanisation is exceptionally concentrated, with the Guwahati agglomeration accounting for a very large share of urban population and activity while Silchar, Dibrugarh, Jorhat, Nagaon, Tinsukia, and Tezpur are an order of magnitude smaller. The State therefore combines the problems of an under urbanised economy with the problems of a primate city. The low share is not a developmental virtue. It reflects limited absorption of labour out of agriculture and constrains the agglomeration dependent growth of services and manufacturing.

The sex ratio stood at 958 females per thousand males at the last enumeration, above the national figure of 943, with the rural ratio at 960 and the urban at 946, and the child sex ratio in the zero to six age group at 962 (Registrar General of India, 2011). Assam does not exhibit the severe pattern of prenatal sex selection recorded in several northern and western States. This is a genuine strength of the social profile, and Chapter 7 examines whether it is accompanied by corresponding equality in nutrition, education, health service access, and property rights, which the evidence suggests it is not.

Scheduled Tribes constitute 12.44 per cent of the population, numbering 38,84,371 persons, and Scheduled Castes approximately 7.15 per cent (Registrar General of India, 2011). Among Scheduled Tribes the Boro are the largest group at approximately 35.06 per cent, followed by the Miri or Mising at 17.52 per cent, the Karbi at 11.08 per cent, the Rabha at 7.63 per cent, and the Kachari at 6.52 per cent. Distribution is highly uneven, with Scheduled Tribe shares exceeding half in the hill districts and falling to small proportions in the Barak valley.

Assam presents a distinctive complication in the classification of tribal status. Certain communities are recognised as Scheduled Tribes in the hill districts but not in the plains, a legacy of the differential application of the schedules. Separately, six communities, namely the Koch Rajbongshi, Moran, Motok, Chutia, Tai Ahom, and the tea garden and ex tea garden communities, have long standing claims to Scheduled Tribe status which remain under consideration. The tea garden case is the sharpest, since the constituent groups hold Scheduled Tribe status in the central Indian States from which their ancestors were brought as plantation labour but are classified in Assam within the Other Backward Classes. This framework takes the view that the resolution of the classification question, whatever form it takes, is less consequential for outcomes than the design of geographically targeted delivery in the tracts where these communities are concentrated.

The age structure reflects the fertility decline. The share below fifteen years has fallen substantially while the share in the working age band of fifteen to fifty nine has risen. Demand for elementary school places is stabilising and in some districts declining while demand for secondary, tertiary, and vocational places is rising sharply, and Chapter 5 examines whether budget allocation reflects this shift. The annual addition to the labour force is at or near its historical peak, which means that employment generation over the next fifteen years will determine whether the transition delivers rising household incomes or accumulates underemployment.

1.4 Linguistic, Ethnic, Religious and Cultural Profile

At the last enumeration, of 3,12,05,576 persons, 1,50,95,797 returned Assamese as their mother tongue, amounting to 48.38 per cent, 90,24,324 returned Bengali, 21,01,435 returned Hindi, and 14,16,125 returned Bodo, amounting to approximately 4.53 per cent (Registrar General of India, 2011). Nepali, Santali, Odia, and a substantial number of Tibeto Burman and Austroasiatic languages account for the remainder.

Three features matter for policy. No language is spoken as a mother tongue by an absolute majority. The share of Assamese speakers declined between the 2001 and 2011 enumerations, as did the shares of Bodo and certain other indigenous languages, while the shares of Bengali and Hindi rose. And linguistic distribution is strongly regionalised, with Assamese predominant in the Brahmaputra valley, Bengali in the Barak valley, Bodo in the Bodoland

Territorial Region, and Karbi and Dimas in the hill districts. Assamese is the official language of the State, with Bengali holding official status in the Barak valley districts and Bodo associate official status in the Bodoland Territorial Region. The educational consequence is examined in Chapter 5. Evidence on foundational learning is consistent in showing that children who receive early instruction in a language they do not speak at home acquire literacy more slowly and are more likely to leave school. In a State with this linguistic profile, medium of instruction policy in the early grades is not a symbolic question but a determinant of learning outcomes.

The population comprises communities of Tibeto Burman, Indo Aryan, Austroasiatic, and Tai origin, and the pattern of settlement, absorption, and differentiation among them extends over more than a millennium. The Ahom, a Tai people whose polity governed the Brahmaputra valley for approximately six centuries until the early nineteenth century, are among the principal formative influences on the composite Assamese identity, as are the Bodo Kachari peoples who preceded them and the Koch of the western tracts.

The colonial period introduced two demographic changes of lasting consequence. The first was the establishment of the tea industry from the 1830s and the associated importation of indentured labour from the Chota Nagpur plateau, a population that now constitutes a very substantial share of the State population and occupies a distinctive social and economic position examined in Chapter 7. The second was agrarian settlement from the districts of eastern Bengal into the char and wasteland tracts from the late nineteenth century, encouraged by a colonial revenue administration seeking to extend cultivation. The consequences of these movements, and of those associated with 1947 and 1971, have shaped the politics of Assam for the greater part of the post independence period, through the Assam Movement and the Assam Accord of 1985, the insurgency of the 1980s and 1990s and its progressive resolution through successive memoranda of settlement, and the exercise for updating the National Register of Citizens.

This framework does not adjudicate the contested questions of that history. It records three propositions bearing directly on development policy. The sustained reduction in insurgency related violence over the past two decades is a development achievement of the first order, because it has restored the conditions under which investment, tourism, and normal administration are possible. Identity based territorial arrangements, of which Assam has more

than any other Indian State, impose real coordination costs on programme delivery that should be managed through explicit institutional design rather than ignored. And the developmental deficits of the char and chapori tracts, the tea garden belt, and the hill districts are documented, spatially specific, and remediable through geographically targeted delivery, and framing them as questions of identity rather than of service delivery has not improved outcomes in any of the three geographies over three decades.

At the last enumeration the Hindu population numbered 1,91,80,759 persons, or 61.47 per cent, and the Muslim population 1,06,79,345 persons, or 34.22 per cent (Registrar General of India, 2011). Christians constituted approximately 3.74 per cent, concentrated in the hill districts and among certain Scheduled Tribe communities.

Composition varies sharply across districts, with Muslims constituting a majority in several districts of the lower Brahmaputra valley and in Hojai and Karimganj. The correlation between district religious composition and district development indicators is strong, but the report cautions against causal interpretation. The districts with the highest Muslim population shares are also those with the highest concentration of char and chapori settlement, the lowest per capita landholding, the highest exposure to erosion and flood, and the weakest historical endowment of educational and health infrastructure. Their developmental deficits are consistent with what would be predicted from physical geography, land tenure, and infrastructure endowment alone, and the policy recommendations that follow are addressed to the geography rather than to the community.

The cultural inheritance of Assam is centred on institutions that are simultaneously religious, social, and educational. The Vaishnavite reform movement associated with Srimanta Sankardeva and Madhavdeva produced the satra and the namghar, monastic and congregational institutions that remain functioning centres of community life, of the performing arts, and of manuscript preservation, above all on Majuli. The Kamakhya temple at Guwahati is among the principal Shakta pilgrimage centres of India, and the Ahom period monuments at Sivasagar together with the Charaideo Moidams constitute a built heritage of national significance. Sattriya is recognised as a classical dance form, the Bihu tradition is tied to the agricultural calendar, and the textile tradition centred on muga, eri, and pat silk includes muga, which is endemic to Assam. The State holds geographical indications for a growing portfolio including Assam tea, muga silk, Tezpur litchi, Joha rice, Kaji nemu, Karbi

Anglong ginger, and Boka Chaul. Chapters 17 and 19 find that registration has substantially outpaced the marketing, certification, and supply chain infrastructure required to convert a geographical indication into a price premium for producers.

1.5 Human Development Index: State Ranking

Assam records a Human Development Index value of approximately 0.655, placing it thirty first among the States and Union Territories of India and below the national value of 0.685 (Global Data Lab, 2024; United Nations Development Programme, 2025). This is the single most important comparative statistic in the profile of the State, because it stands in sharp contrast to the macroeconomic indicators reported in the Executive Summary. A State recording nominal Gross State Domestic Product growth of 15.2 per cent and a tripling of nominal per capita income within a decade would not ordinarily be expected to occupy the thirty first position on a composite measure of human development (Government of Assam, 2026).

The three components account for the position in unequal measure. The health component, measured by life expectancy at birth, is the weakest. Assam records life expectancy below the national average, and the proximate drivers are an infant mortality rate of approximately 30 per thousand live births and a maternal mortality ratio that has been the highest or among the highest of any Indian State in successive rounds of the Sample Registration System special bulletin (Registrar General of India, 2022). The education component is intermediate. Literacy stood at 72.19 per cent at the last enumeration against a national figure of 74.04 per cent, with male literacy at 77.85 per cent and female literacy at 66.27 per cent (Registrar General of India, 2011). Elementary enrolment is effectively universal, which raises expected years of schooling, but retention through the secondary stage is weak and the higher education gross enrolment ratio remains below the national average, which constrains mean years of schooling in the adult population. The income component, reflecting per capita product at 1,85,429 rupees for 2025 to 2026, is the fastest improving of the three (Government of Assam, 2026). The constraint on human development in Assam is therefore not the level of economic activity but the translation of economic activity into health and education outcomes.

Three independent measures corroborate the picture. The SDG India Index recorded Assam among the States entering the front runner category in the 2023 to 2024 round, with an improvement of sixteen points from the 2018 baseline, among the larger improvements

achieved by any State (NITI Aayog, 2024). The direction of travel is positive and the rate of improvement high even though the level remains low, and this distinction between level and rate recurs throughout the report.

The National Multidimensional Poverty Index recorded a fall in the headcount ratio from 36.97 per cent in 2013 to 2014 to 14.47 per cent in 2022 to 2023, with an estimated eighty lakh persons moving out of multidimensional poverty over nine years (NITI Aayog, 2023). Decomposition indicates that the reduction was driven substantially by improvements in asset and amenity indicators, namely electricity, cooking fuel, sanitation, housing, and bank account access, delivered through national flagship programmes, and less by improvements in nutrition and years of schooling. The next phase of poverty reduction will therefore be harder than the last, because the remaining deprivations are the ones least amenable to infrastructure delivery.

The National Family Health Survey provides the most granular corroboration. Full child immunisation coverage improved from 66.4 per cent to 81.7 per cent between the fifth and sixth rounds, demonstrating that the health delivery system is capable of rapid gains when a specific, measurable objective is set and monitored through the administrative hierarchy (International Institute for Population Sciences, 2021, 2024). The persistence of anaemia prevalence at approximately 68 per cent among children aged six to fifty nine months and approximately 66 per cent among women demonstrates that indicators requiring sustained behavioural and dietary change have not responded to the same institutional effort (International Institute for Population Sciences, 2021).

The State level index conceals a district level range wider than that separating Assam from the highest and lowest ranked Indian States. Successive State Human Development Reports establish a consistent ordering in which the upper Brahmaputra valley districts and Kamrup Metropolitan occupy the upper part of the distribution, the central valley districts the middle, and the lower valley districts with high char populations, the tea garden belt, and the hill districts the lower part. This ordering has been stable across successive measurement rounds over three decades. Stability of this kind is diagnostically significant. It indicates that the causes are structural rather than cyclical, that they are not being addressed by the uniform State wide programme design currently in force, and that a differentiated approach is required.

Six conclusions follow from the profile established in this chapter and carry forward into the sectoral analysis. First, the physical geography of Assam is not a background condition but an active determinant of development outcomes. A flood prone share of 39.58 per cent of the land area, the entirety of the territory in the highest seismic hazard zone, and an annual and permanent loss of land to erosion together mean that hazard resilience must be a mandatory appraisal criterion for every public investment rather than a specialist concern of the disaster management department (Government of Assam, Water Resources Department, 2024; Bureau of Indian Standards, 2016).

Second, the administrative architecture, comprising five divisions, thirty five districts, three Sixth Schedule autonomous councils, and a substantial number of statutory autonomous councils, requires that programme design explicitly accommodate multiple lines of authority. The framework recommends a standing State Council coordination mechanism with a common outcome reporting format, so that performance in autonomous council areas becomes visible in the same terms as performance in line department areas. Third, the fertility transition is complete at the State level and incomplete in specific districts. Population policy should be reframed from a State wide stabilisation objective to a targeted objective in the lagging districts, combined with a State wide focus on converting the demographic window into productive employment.

Fourth, the urbanisation share of 14.08 per cent is a constraint on structural transformation rather than an achievement to be preserved, and the concentration of urban growth in a single hazard exposed agglomeration is a risk. The framework recommends a planned secondary town strategy anchored on higher ground and the arterial corridors. Fifth, the linguistic composition of the State, in which no mother tongue is spoken by an absolute majority and regional concentration is high, requires that medium of instruction policy in the early grades be designed on pedagogical evidence and be permitted to vary by district.

Sixth, the divergence between the macroeconomic position of Assam and its Human Development Index rank of thirty one is the defining developmental problem of the State. The evidence indicates that the binding constraint is delivery rather than resources and that the health component is the largest single contributor to the composite deficit. The framework accordingly assigns first priority to a maternal and child health mission with district level

accountability, second priority to foundational learning, and third priority to a geographically differentiated compact for the char and chapori tracts, the tea garden belt, and the hill districts.

CHAPTER 2: FISCAL ARCHITECTURE OF THE STATE

The fiscal architecture of a State determines what it can attempt and what it must defer. In Assam this proposition carries unusual force, because the State combines a revenue base that is narrow relative to the size of its economy with an expenditure obligation that is unusually heavy, including the annual charge of flood relief and reconstruction discussed in Chapter 14 and the cost of administering a territory in which service delivery is complicated by terrain, by riverine settlement, and by the autonomous council architecture described in Chapter 1.

The Budget for 2026 to 2027 was presented by the Finance Minister, Mr Jayanta Mallabaruah, on 10 July 2026. Including transactions under the Public Account and the Contingency Fund, the State expects total receipts of 2,88,309.45 crore rupees against expenditure of 2,85,084.45 crore rupees (Government of Assam, 2026). These aggregate figures are the ones most widely reported, but they are not the figures on which fiscal analysis should rest, because the Public Account largely records flows the State holds in trust rather than resources it commands. The analytically meaningful account is the Consolidated Fund, and it is that account which this chapter examines.

Three findings emerge. The first is that the revenue position of Assam remains dependent on Union transfers to a degree that limits the State's fiscal autonomy, with 64 per cent of revenue receipts originating outside the State in 2026 to 2027 (PRS Legislative Research, 2026). The second is that the fiscal deficit trajectory has been considerably more volatile than the budget documents suggest at the estimate stage, with the revised estimate for 2025 to 2026 reaching 6.7 per cent of Gross State Domestic Product against a budgeted 3.7 per cent (PRS Legislative Research, 2026). The third is that committed expenditure now absorbs 63 per cent of revenue receipts, which constrains the discretionary space available for the capital programme the State has announced.

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

Total revenue receipts for 2026 to 2027 are estimated at 1,18,562 crore rupees, an annualised increase of 11 per cent over the 2024 to 2025 actuals (PRS Legislative Research, 2026). Of this, 42,449 crore rupees, or 36 per cent, will be raised through the State's own resources, and 76,113 crore rupees, or 64 per cent, will come from the Union Government. Transfers from the centre take two forms, namely the State's share in central taxes, which accounts for 40 per cent of revenue receipts, and grants in aid, which account for 24 per cent.

The following table sets out the composition of receipts across the three most recent reporting positions.

Item	2024 to 2025 Actuals	2025 to 2026 Budgeted	2025 to 2026 Revised	2026 to 2027 Budgeted
State's Own Tax	30,052	34,823	34,610	36,000
State's Own Non-Tax	5,352	8,361	8,361	6,449
Share in Central Taxes	40,254	44,494	43,572	47,905

Grants in Aid from Centre	21,250	29,548	31,668	28,208
Revenue Receipts	96,908	1,17,226	1,18,211	1,18,562
Non-Debt Capital Receipts	879	2,018	2,018	3,281
Net Receipts	97,787	1,19,244	1,20,229	1,21,843

All figures are in crore rupees. Source: PRS Legislative Research (2026), compiled from the Annual Financial Statement, Assam Budget Documents 2026 to 2027.

The table repays close reading. Revenue receipts in 2026 to 2027 are budgeted at 1,18,562 crore rupees against a revised estimate of 1,18,211 crore rupees for the preceding year, an increase of 0.3 per cent. Against a projected nominal Gross State Domestic Product growth of 17 per cent for the same year, this is a striking figure. It indicates that the State does not expect its revenue base to expand in step with the economy, and it is the single most important structural fact in the fiscal profile of Assam.

Own tax revenue is estimated at 36,000 crore rupees in 2026 to 2027, an annualised increase of 9 per cent over the 2024 to 2025 actuals (PRS Legislative Research, 2026). Expressed as a share of Gross State Domestic Product, own tax revenue is estimated at 4.1 per cent in 2026 to 2027, against 4.7 per cent recorded in the 2024 to 2025 actuals.

This decline in the tax to product ratio is the most consequential single indicator in this chapter. A State whose economy is growing at 17 per cent in nominal terms and whose own tax revenue is growing at 9 per cent is, in effect, taxing a shrinking proportion of its own economic activity. The Comptroller and Auditor General of India observed that in both 2023 to 2024 and 2024 to 2025, own revenue in Assam increased at a slower pace than Gross State Domestic Product (Comptroller and Auditor General of India, 2026).

The composition of own tax revenue is heavily concentrated.

Head	2024 to 2025 Actuals	2025 to 2026 Revised	2026 to 2027 Budgeted
State Goods and Services Tax	15,534	17,740	18,674
Sales Tax and Value Added Tax	7,864	8,527	8,639
State Excise	3,610	4,425	4,700
Taxes on Vehicles	1,912	2,120	2,330
Stamp Duty and Registration Fees	650	841	841
Land Revenue	161	472	472
Taxes and Duties on Electricity	86	234	95

All figures are in crore rupees. Source: PRS Legislative Research (2026), compiled from the Revenue Budget, Assam Budget Documents 2026 to 2027.

State Goods and Services Tax accounts for 52 per cent of own tax revenue in 2026 to 2027 and is estimated to register an annualised increase of 10 per cent over the 2024 to 2025

actuals. Sales tax and value added tax, which after the transition to the goods and services tax applies principally to petroleum products and alcohol, contributes a further quarter.

Three of the smaller heads deserve comment because they are diagnostic of administrative capacity rather than of economic structure. Stamp duty and registration fees are budgeted at 841 crore rupees in 2026 to 2027, unchanged from the revised estimate of the preceding year. In a State experiencing rapid construction activity and rising urban land values in the Guwahati agglomeration, a flat projection for property transaction revenue suggests that the valuation and collection machinery is not capturing the underlying transaction base. Land revenue is similarly budgeted flat at 472 crore rupees. Taxes and duties on electricity are budgeted to fall from 234 crore rupees to 95 crore rupees.

Own non-tax revenue is budgeted at 6,449 crore rupees for 2026 to 2027, a reduction of 23 per cent against the revised estimate of 8,361 crore rupees for 2025 to 2026 (PRS Legislative Research, 2026). Non-tax revenue in Assam derives substantially from royalties on crude petroleum and natural gas, which distinguishes the State from most of its neighbours and links a component of the revenue base to hydrocarbon production volumes and administered pricing, both of which lie outside State control. Chapter 9 examines the production profile of the sector.

The budgeted decline is material in the context of a revenue account that is otherwise close to flat, and it is one of the reasons the revenue balance for 2026 to 2027 is estimated at zero rather than in surplus.

The State's share in central taxes is estimated at 47,905 crore rupees for 2026 to 2027, an annualised increase of 9 per cent over 2024 to 2025, and grants from the centre at 28,208 crore rupees, an annualised increase of 15 per cent (PRS Legislative Research, 2026). Together these constitute 76,113 crore rupees, or 64 per cent of revenue receipts.

The award period of the Sixteenth Finance Commission commenced on 1 April 2026. The Commission submitted its report for the 2026 to 2031 period to the President of India on 17 November 2025, and the report was laid before Parliament on 1 February 2026. The Commission has recommended a fiscal deficit target for States of 3 per cent of Gross State Domestic Product for the award period, with the borrowing ceiling computed after excluding the fifty year interest free loans for capital expenditure provided by the Union Government (PRS Legislative Research, 2026).

For a State in the position of Assam, the terms of the Finance Commission award are not a technical matter of intergovernmental accounting. They determine roughly two thirds of the resources available to the State Government. A framework that treats fiscal strategy as a matter purely of State action would misdescribe the situation.

The State Government has set a target of raising the share of own source revenue in total revenue receipts from 36 per cent to 50 per cent by 2031 (Government of Assam, 2026). This framework regards the target as correctly directed and, on present trends, unlikely to be met. Achieving it would require own revenue to grow substantially faster than Gross State Domestic Product for five consecutive years, whereas the recent record is of own revenue

growing more slowly than the economy in successive years (Comptroller and Auditor General of India, 2026), and the 2026 to 2027 budget itself projects own tax revenue falling from 4.7 per cent to 4.1 per cent of Gross State Domestic Product.

A study commissioned by the Sixteenth Finance Commission identified specific avenues for enhancing own source revenue in Assam. It observed that a plantation tax on tea leaves could be introduced in a manner that supports tea communities and the areas in which they live. It noted the expansion of area under rubber plantation from 42,097 hectares in 2014 to 2015 to 94,500 hectares in 2024 to 2025, and suggested that a rubber plantation tax could be imposed on a comparable basis. It further noted that rising discretionary expenditure associated with improving living standards could support revenue from an entertainment tax (PRS Legislative Research, 2026).

This framework adds three observations. First, the largest identifiable gap in own revenue mobilisation lies in property related taxation, where the stamp duty and land revenue projections are flat in nominal terms during a period of rapid land value appreciation. Second, the recovery of user charges in the power and water sectors is a revenue question as much as a service quality question, and is examined in Chapters 9 and 10. Third, any measure affecting the tea sector must be assessed against the condition of the industry and of small growers, examined in Chapters 3 and 18, and the 2026 to 2027 Budget in fact moves in the opposite direction by raising the Agricultural Income Tax exemption threshold from 2.5 lakh rupees to 10 lakh rupees of annual agricultural income and introducing a subsidy of three rupees per kilogram for export oriented and premium quality Assam tea (Government of Assam, 2026).

2.2 Expenditure Profile: Composition, Quality and Efficiency

Total expenditure for 2026 to 2027 is budgeted at 1,56,715 crore rupees, of which 8,685 crore rupees represents repayment of debt. Expenditure excluding debt repayment is therefore 1,48,029 crore rupees, a reduction of 13 per cent against the revised estimate for 2025 to 2026 and an annualised increase of 8 per cent over the 2024 to 2025 actuals (PRS Legislative Research, 2026).

Item	2024 to 2025 Actuals	2025 to 2026 Budgeted	2025 to 2026 Revised	2026 to 2027 Budgeted
Revenue Expenditure	99,908	1,17,226	1,31,429	1,18,562
Capital Outlay	26,404	29,365	38,459	29,451
Loans given by the State	5	52	52	17
Net Expenditure	1,26,317	1,46,642	1,69,939	1,48,029

All figures are in crore rupees. Source: PRS Legislative Research (2026), compiled from the Annual Financial Statement, Assam Budget Documents 2026 to 2027.

Committed expenditure comprises salaries, pensions, and interest payments, which the State cannot readily compress in the short term. In 2026 to 2027, Assam is estimated to spend 75,019 crore rupees on committed expenditure, amounting to 63 per cent of estimated revenue receipts (PRS Legislative Research, 2026). This comprises salaries at 32 per cent of revenue receipts, pensions at 21 per cent, and interest payments at 10 per cent. In 2024 to 2025, as per actuals, 66 per cent of revenue receipts were absorbed by committed expenditure.

Item	2024 to 2025 Actuals	2025 to 2026 Budgeted	2026 to 2027 Budgeted
Salaries	35,604	40,177	38,166
Pension	18,769	20,900	24,505
Interest Payment	9,468	10,987	12,347
Total	63,841	72,065	75,019

All figures are in crore rupees. Source: PRS Legislative Research (2026), compiled from the Annual Financial Statement, Assam Budget Documents 2026 to 2027.

Three features of this profile warrant attention. Pension expenditure is budgeted to rise by 17 per cent in 2026 to 2027 over the preceding revised estimate, an annualised increase of 14 per cent over the 2024 to 2025 actuals, which is faster than the growth of revenue receipts. Interest payments are budgeted to rise by 12 per cent, also an annualised 14 per cent over the 2024 to 2025 actuals, and now stand at 10 per cent of revenue receipts. The Fourteenth Finance Commission had recommended that States keep interest payments below 10 per cent of revenue receipts, and Assam is now at that threshold rather than below it. Salaries are budgeted to fall in absolute terms from 40,177 crore rupees to 38,166 crore rupees, which is difficult to reconcile with the announcement in the same Budget of approximately 33,000 new posts for health professionals, and this framework treats the salary projection as optimistic.

The combined position is that the two fastest growing components of committed expenditure, namely pensions and interest, are contractual obligations that grow independently of the State's discretion, while the component the State does control has been projected downward. Chapter 15 examines civil service strength and vacancy in this light.

The ten largest sectors account for 60 per cent of total sectoral expenditure in 2026 to 2027 (PRS Legislative Research, 2026).

Sector	2024 to 2025 Actuals	2025 to 2026 Revised	2026 to 2027 Budgeted
Education, Sports, Arts and Culture	22,731	27,432	25,873
Social Welfare and Nutrition	9,936	19,286	11,934
Transport	10,824	15,945	11,504
Health and Family Welfare	7,399	10,673	8,998

Police	5,951	7,236	7,140
Rural Development	3,739	7,026	6,190
Agriculture and Allied Activities	4,782	6,676	5,421
Urban Development	3,876	3,661	4,490
Welfare of SC, ST, OBC and Minorities	3,194	4,319	3,477
Water Supply and Sanitation	1,015	5,423	3,121

All figures are in crore rupees. Source: PRS Legislative Research (2026), compiled from the Annual Financial Statement, Assam Budget Documents 2026 to 2027.

Within these heads, 8,889 crore rupees is allocated to primary schools including government and non-government institutions, 3,700 crore rupees to the Orunodoi scheme and 3,191 crore rupees to relief on account of natural calamities, 10,042 crore rupees to capital outlay on roads and bridges, 3,276 crore rupees to rural health services under allopathy, 2,985 crore rupees to district police, 2,418 crore rupees to the national rural employment guarantee scheme, 1,358 crore rupees to crop husbandry and horticulture under revenue expenditure, 3,368 crore rupees to capital outlay on urban development of which 2,528 crore rupees relates to the State capital, 2,803 crore rupees to the welfare of Scheduled Tribes, and 1,704 crore rupees to rural water supply programmes (PRS Legislative Research, 2026).

Several movements between the revised estimate for 2025 to 2026 and the budget estimate for 2026 to 2027 are large enough to require explanation. Social welfare and nutrition falls by 38 per cent, water supply and sanitation by 42 per cent, transport by 28 per cent, agriculture and allied activities by 19 per cent, welfare of Scheduled Castes, Scheduled Tribes, Other Backward Classes and minorities by 20 per cent, and health and family welfare by 16 per cent. Urban development rises by 23 per cent. Some of this reflects the unusually elevated revised estimates for 2025 to 2026, discussed in the following subsection, rather than a real contraction against the underlying trend. On an annualised basis measured from the 2024 to 2025 actuals, most heads show growth. The point for the reader is that year on year comparisons using revised estimates as the base will systematically mislead in the Assam case.

PRS Legislative Research has noted a specific pattern in the Assam budget documents, namely that revised estimates for expenditure have been significantly higher than budgeted amounts in recent years, while the actual figures released subsequently have been significantly lower than the revised estimates (PRS Legislative Research, 2026). The magnitude is substantial. Total expenditure for 2025 to 2026 was budgeted at 1,55,985 crore rupees, revised to 2,00,782 crore rupees, an increase of 29 per cent, and the budget for 2026 to 2027 is set at 1,56,715 crore rupees, essentially returning to the original 2025 to 2026 budget level.

This pattern has three consequences. It weakens the budget as an instrument of legislative control, since the sums voted bear an uncertain relationship to the sums eventually spent. It

complicates every year on year comparison in this chapter and in the sectoral chapters that follow. And it obscures the true trajectory of the deficit, as section 2.4 demonstrates. This framework treats the improvement of budget estimation accuracy as a governance priority in its own right, and Chapter 15 returns to it.

2.3 Capital Expenditure: Infrastructure Investment and Asset Creation

Capital outlay for 2026 to 2027 is budgeted at 29,451 crore rupees, an annualised increase of 6 per cent over the 2024 to 2025 actuals of 26,404 crore rupees (PRS Legislative Research, 2026). Against total expenditure excluding debt repayment of 1,48,029 crore rupees, capital outlay constitutes approximately 20 per cent.

The relationship between capital outlay and the revenue account is the central question. The State estimates a revenue balance, neither surplus nor deficit, for 2026 to 2027. Where the revenue account is exactly in balance, the entire capital programme is financed from borrowing and non-debt capital receipts. This is not in itself improper, since borrowing to create assets is the orthodox justification for public debt. It does mean, however, that the sustainability of the capital programme depends on the revenue account remaining at least in balance, and the revised estimate for 2025 to 2026 records a revenue deficit of 13,218 crore rupees, or 1.8 per cent of Gross State Domestic Product (PRS Legislative Research, 2026). When the revenue account slips into deficit, borrowing finances consumption rather than assets, and the debt incurred generates no stream of returns against which to service it.

The largest single component of capital outlay is roads and bridges at 10,042 crore rupees in 2026 to 2027, followed by urban development at 3,368 crore rupees of which 2,528 crore rupees relates to the State capital (PRS Legislative Research, 2026).

Beyond the capital outlay of the Consolidated Fund, the 2026 to 2027 Budget announced an investment of 72,753 crore rupees across six power infrastructure projects spanning hydro, solar, thermal, and energy storage, together with the addition of 15,000 circuit kilometres of transmission and distribution lines and 120 new substations (Government of Assam, 2026). An urban growth centre is to be developed around Guwahati, with 2,100 crore rupees allocated for initial land acquisition. Four new medical colleges are to be established.

The power sector programme is of an order of magnitude larger than the annual capital outlay of the State and cannot be financed from the Consolidated Fund. It is to be raised through a combination of State funds, central schemes, externally aided projects, and public private partnership. Chapter 9 examines the composition and the execution risk. For the purposes of this chapter, the relevant observation is that a programme of this scale routed substantially through State undertakings creates contingent liabilities that are examined in section 2.5.

The capital outlay figures across estimate stages indicate a capacity constraint. Capital outlay for 2025 to 2026 was budgeted at 29,365 crore rupees and revised upward to 38,459 crore rupees, an increase of 31 per cent, before the 2026 to 2027 budget returned to 29,451 crore

rupees (PRS Legislative Research, 2026). Given the pattern noted in section 2.2.4, in which actuals fall materially below revised estimates, the operative question is not whether the State can allocate capital but whether it can spend it on schedule and to specification.

This framework accordingly recommends that the State publish, alongside the Budget, a statement of capital works commenced, completed, and carried forward, with reasons for slippage. The absence of such a statement makes it impossible for the legislature or the public to distinguish between a capital programme that is constrained by finance and one that is constrained by execution.

2.4 Fiscal Deficit, Primary Deficit and Debt Sustainability

The fiscal deficit for 2026 to 2027 is targeted at 3 per cent of Gross State Domestic Product, amounting to 26,186 crore rupees (PRS Legislative Research, 2026). This is consistent with the Sixteenth Finance Commission recommendation for the 2026 to 2031 award period and with the Assam Fiscal Responsibility and Budget Management Act, 2005.

The trajectory leading to that target is considerably less orderly than the target implies.

Fiscal Indicator	2024 to 2025 Actuals	2025 to 2026 Budgeted	2025 to 2026 Revised	2026 to 2027 Budgeted
Fiscal Deficit (crore rupees)	28,530	27,398	49,710	26,186
Fiscal Deficit as share of GSDP	4.4 per cent	3.7 per cent	6.7 per cent	3.0 per cent
Revenue Balance (crore rupees)	-3,000	0	-13,218	0
Revenue Balance as share of GSDP	-0.5 per cent	0.0 per cent	-1.8 per cent	0.0 per cent
Primary Deficit (crore rupees)	19,062	16,411	38,698	13,839
Primary Deficit as share of GSDP	3.0 per cent	2.2 per cent	5.2 per cent	1.6 per cent
Gross State Domestic Product	6,43,383	7,41,626	7,45,292	8,71,451

A negative revenue balance denotes a deficit. All amounts are in crore rupees. Source: PRS Legislative Research (2026), compiled from the Annual Financial Statement, Assam Budget Documents 2026 to 2027.

The revised estimate for 2025 to 2026 records a fiscal deficit of 6.7 per cent of Gross State Domestic Product against a budgeted 3.7 per cent, an overshoot of three percentage points, and a revenue deficit of 1.8 per cent of Gross State Domestic Product against a budgeted balance (PRS Legislative Research, 2026). The primary deficit at the revised stage reached 5.2 per cent of Gross State Domestic Product against a budgeted 2.2 per cent.

This is the most important single set of figures in the chapter, and it is not adequately reflected in public discussion of Assam State finances, which has tended to rely on the budget

stage targets. Two qualifications are necessary in fairness. First, given the pattern identified in section 2.2.4, the actual outturn for 2025 to 2026, when published, may prove materially lower than the revised estimate, as occurred in 2024 to 2025 when the revised estimate of 5.7 per cent was followed by an actual of 4.4 per cent. Second, part of the borrowing headroom in recent years has been linked to capital expenditure loans from the Union Government which are excluded from the borrowing ceiling computation, estimated at 6,000 crore rupees, or 0.7 per cent of Gross State Domestic Product, in 2026 to 2027 (PRS Legislative Research, 2026).

Neither qualification disposes of the finding. In three of the four positions in the table, the fiscal deficit exceeds 3 per cent of Gross State Domestic Product, and in the two positions for which actuals or revised figures are available it exceeds 4 per cent. The 3 per cent target for 2026 to 2027 is a budget stage estimate that the recent record does not support.

Outstanding liabilities are estimated at 24 per cent of Gross State Domestic Product at the end of 2026 to 2027, approximately the same as the actuals for 2024 to 2025 (PRS Legislative Research, 2026). Outstanding liabilities comprise open market borrowings, institutional loans, and central government loans, together with certain public account liabilities such as provident funds. The Assam Fiscal Responsibility and Budget Management Act ceiling is 32 per cent, and the State therefore retains headroom against the statutory limit.

The stability of the debt to product ratio at approximately 24 per cent, in a period when the fiscal deficit has exceeded 4 per cent of Gross State Domestic Product, is explained by the rapid nominal growth of the denominator. Nominal Gross State Domestic Product is projected to grow at 17 per cent in 2026 to 2027 (PRS Legislative Research, 2026). Debt ratios that are stabilised by nominal growth rather than by primary balance are stable only for as long as the nominal growth persists, and this framework accordingly treats the debt position as satisfactory at present and structurally vulnerable to a deceleration in nominal growth.

Interest payments are budgeted at 12,347 crore rupees in 2026 to 2027, equivalent to 10 per cent of revenue receipts, having grown at an annualised 14 per cent from the 2024 to 2025 actuals of 9,468 crore rupees (PRS Legislative Research, 2026). Interest expenditure is now growing at roughly the same rate as pension expenditure and considerably faster than revenue receipts, which grew at an annualised 11 per cent over the same period.

2.5 Borrowings, Guarantees and Contingent Liabilities

Gross borrowings for 2026 to 2027 are estimated at 30,000 crore rupees, against 55,675 crore rupees at the revised stage for 2025 to 2026, with net borrowings of 21,315 crore rupees (PRS Legislative Research, 2026). Of the gross figure, 6,000 crore rupees represents fifty year interest free capital expenditure loans from the Union Government, which are excluded from the computation of the State's borrowing ceiling.

The reliance on the Union capital expenditure loan facility deserves explicit recognition in fiscal planning. The facility is a discretionary Union scheme rather than an entitlement, and a

State that has incorporated it into its baseline capital financing assumes a risk that is not visible in the deficit ratio. As of 31 March 2025, the State's outstanding guarantees are estimated at 2,690 crore rupees, equivalent to 0.4 per cent of Gross State Domestic Product (PRS Legislative Research, 2026). Guarantees are contingent liabilities extended principally in respect of borrowings by State Public Sector Enterprises from financial institutions, and they do not form part of outstanding liabilities.

At 0.4 per cent of Gross State Domestic Product the disclosed guarantee exposure is modest. This framework nonetheless flags it as a risk to monitor rather than a settled matter, for a specific reason. The announced power sector investment of 72,753 crore rupees across six projects will be executed substantially through State utilities and through public private partnership structures (Government of Assam, 2026). Programmes of that scale routed through undertakings whose own balance sheets are examined in Chapter 9 typically require sovereign or State guarantee support. The disclosed guarantee position as at March 2025 therefore predates the exposure the announced programme is likely to create, and the trajectory rather than the level is the appropriate object of attention.

The fiscal position of the third tier is weak to a degree that constrains service delivery across several of the sectors examined in later chapters. The Seventh Assam State Finance Commission found that internal revenue generation of Panchayati Raj Institutions, comprising tax and non-tax sources, declined from 56 crore rupees in 2019 to 2020 to 45 crore rupees in 2024 to 2025, with tax revenue falling from 18 crore rupees to 5 crore rupees, a compound annual decline of 22 per cent. In many panchayats internal revenue is non-existent or negligible (PRS Legislative Research, 2026). The Commission further found that despite successive State Finance Commission recommendations, limited funds have been released by the State. The release of funds against previous State Finance Commission recommendations has been below 20 per cent, with the exception of the Fourth State Finance Commission at 34 per cent. Against general purpose grants of 2,106 crore rupees recommended by the Sixth State Finance Commission for 2020 to 2025, 292 crore rupees, or 14 per cent, had been released up to the fourth year. No funds were released under special purpose grants or incentive grants (PRS Legislative Research, 2026).

These findings are among the most serious in this chapter. A local government tier with negligible own revenue and a 14 per cent realisation rate against recommended transfers cannot discharge the functions assigned to it. Chapters 11 and 12 examine the service delivery consequences.

2.6 Strategic Priorities in Fiscal Management

Seven priorities follow from the analysis in this chapter.

1. Raise own tax revenue to at least 5.5 per cent of Gross State Domestic Product by 2031 and 7 per cent by 2047, against 4.1 per cent budgeted for 2026 to 2027. The State's own target of raising the own source share of revenue receipts from 36 per cent to 50 per cent by 2031 should be retained, and an annual progress statement against it should be laid before the Legislative Assembly.

2. Address property related taxation as the first order of revenue reform. Stamp duty and registration fees at 841 crore rupees and land revenue at 472 crore rupees, both projected flat for 2026 to 2027, are inconsistent with observed land and property market activity. A revision of circle rates, digital integration of registration with the land records system discussed in Chapter 16, and periodic revaluation should be undertaken as a single programme.
3. Restore and maintain a revenue surplus. The objective should be a revenue surplus of at least 0.5 per cent of Gross State Domestic Product by 2031, so that the capital programme is not financed entirely from borrowing and so that a fiscal buffer exists ahead of the annual flood season.
4. Establish a rules based Disaster and Reconstruction Reserve. Given the recurrent charge documented in Chapter 14, and the allocation of 3,191 crore rupees for relief on account of natural calamities in 2026 to 2027, the State should credit a defined share of revenue receipts to a dedicated reserve in years of favourable hydrological conditions, with drawdown governed by published criteria.
5. Improve budget credibility. The gap between budget estimates, revised estimates, and actuals should be reduced to within 10 per cent at the aggregate level by 2031, and the State should publish a reconciliation statement explaining variance above that threshold.
6. Publish a consolidated contingent liability statement annually, covering guarantees, off budget borrowing by State undertakings, and public private partnership commitments, so that the exposure created by the announced power and infrastructure programmes is visible before it crystallises.
7. Reform the third tier finances. The State should release funds against State Finance Commission recommendations in full and on schedule, and should assign to Panchayati Raj Institutions and urban local bodies a defined and buoyant revenue handle, since a realisation rate of 14 per cent against recommended grants and a declining internal revenue base cannot support the functions devolved to that tier.

CHAPTER 3: ECONOMIC STRUCTURE, GROWTH AND SECTORAL PERFORMANCE

Assam's economy is expanding at a rate few Indian States have matched this decade, yet from a structure most States left behind twenty years ago. The Gross State Domestic Product is estimated at 7,41,626 crore rupees for 2025 to 2026 at current prices, a nominal expansion of approximately 15 per cent over 6,43,089 crore rupees for 2024 to 2025, and is projected at 8,71,451 crore rupees for 2026 to 2027 (Government of Assam, 2026; PRS Legislative Research, 2025; India Brand Equity Foundation, 2026). Over 2015 to 2016 through 2026 to 2027, the compound annual growth rate of nominal output has been of the order of 12.5 to 13 per cent, with the India Brand Equity Foundation placing it at 12.96 per cent (India Brand Equity Foundation, 2026). Against this, the primary sector accounts for approximately 35 per cent of Gross State Value Added, against a national primary share close to 19 per cent, and the secondary sector for approximately 19 per cent (Government of Assam, 2025).

These facts can be misread: rapid growth might seem to erase the structural imbalances. This chapter argues the opposite. The structure determines whether growth reaches households. A 35 per cent primary sector share in a State with unremarkable agricultural productivity and stagnant tea yields for a decade signals not agricultural strength but the absence of a large manufacturing sector. Similarly, a 46 per cent services share in a State with 14 per cent urbanisation reflects not post-industrial upgrading but the weight of public administration, construction-related trade and transport, and distributive activity financed by capital budgets.

Three characteristics of the growth path examined in this chapter recur in the sectoral analysis. The first is that the proximate drivers of the expansion have been public capital formation, construction, petroleum refining and its associated investment, and services that are largely non tradable. The second is that the employment elasticity of this growth has been low, so that a State recording double digit nominal expansion also records a rising unemployment rate, an urban unemployment rate more than double the rural rate, and an urban youth unemployment rate approaching thirty per cent in some quarterly rounds. The third is that the external face of the economy is exceptionally narrow, with merchandise exports of 4,045 crore rupees in 2025 to 2026, of which tea alone accounted for 45.88 per cent (India Brand Equity Foundation, 2026).

The chapter proceeds through the aggregate accounts, per capita income and its comparability, the three broad sectors in turn, the labour market and the elasticity that connects output to employment, and a statement of strategic priorities. Because Chapter 18 examines agriculture, horticulture, animal husbandry, fisheries and the tea industry in operational depth, and Chapter 4 examines investment promotion, industrial policy, incentive design and the semiconductor and allied investments in depth, the treatment here is confined to macroeconomic structure. Chapter 2 supplies the fiscal counterpart to this analysis, Chapter 8 the logistics cost that conditions every tradable proposition discussed here, Chapter 19 the tourism component of services, and Chapter 21 the long horizon vision within which the targets at the close of this chapter are set.

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

The nominal series is unambiguous in direction. Gross State Domestic Product at current prices stood at approximately 5,70,000 crore rupees in 2023 to 2024, rose to an advance estimate of 6,43,089 crore rupees in 2024 to 2025, representing nominal growth of approximately 12.74 per cent, and is estimated at 7,41,626 crore rupees for 2025 to 2026, representing nominal growth of approximately 15 per cent (Government of Assam, 2026; PRS Legislative Research, 2025). The projection for 2026 to 2027 is 8,71,451 crore rupees (India Brand Equity Foundation, 2026). The State Finance Minister has stated in the Legislative Assembly that Gross State Domestic Product rose by 45 per cent between 2019 to 2020 and 2024 to 2025 against national Gross Domestic Product growth of 29 per cent over the same period (Government of Assam, 2026).

Three cautions apply. First, figures for 2025 to 2026 are estimates and 2026 to 2027 are projections, revised routinely by more than a percentage point when finalised years later. Second, this is nominal growth. At an implicit deflator of four to six per cent, 15 per cent nominal growth corresponds to nine to eleven per cent real growth, impressive but not what headlines suggest. Third, the national accounts framework changed during this report. The Ministry of Statistics and Programme Implementation released new Gross Domestic Product estimates with base year 2022 to 2023 on 27 February 2026, replacing the 2011 to 2012 series (Ministry of Statistics and Programme Implementation, 2026). Under the new series, national real growth for 2023 to 2024 is estimated at 7.2 per cent and for 2024 to 2025 at 7.1 per cent, against 9.2 per cent in the earlier series. State Domestic Product series had not been fully rebased. Assam growth rates on the 2011 to 2012 base are not directly comparable with national rates on the 2022 to 2023 base, a discrepancy the report flags wherever it appears.

The composition of Gross State Value Added at current prices for 2023 to 2024, the most recent year for which a full sectoral decomposition is available, is set out below, together with the growth rates reported at constant prices for the same year and the corresponding national shares.

Sector	Share of Assam GSV, 2023 to 2024 (per cent)	Growth at constant prices, 2023 to 2024 (per cent)	Approximate national share (per cent)
Agriculture and allied, including mining	35	17.0	19
Industry, including manufacturing and construction	19	Manufacturing at minus 6.4	27 to 30
Services	46	24.3	53 to 55
Total Gross State Domestic Product	100	13.3	100

Source: PRS Legislative Research (2025), compiled from Ministry of Statistics and Programme Implementation data as available at that date. The constant price growth column

has since been superseded and should be read together with the revised series in the following table.

The caution expressed in this chapter about the constant price series has since been vindicated. The Budget Analysis published on 31 July 2026 reports a materially different set of constant price growth rates for the same and subsequent years, drawn from the Economic Survey of Assam 2025 to 2026.

Year	Agriculture	Manufacturing	Services	Gross State Domestic Product
2023 to 2024	4.5	16.1	12.4	11.0
2024 to 2025	5	11	12	9
2025 to 2026	6	14	12	10

Figures are growth at constant 2011 to 2012 prices, in per cent. Source: PRS Legislative Research (2026), compiled from the Economic Survey of Assam 2025 to 2026.

The revision is drastic and instructive. Agricultural growth for 2023 to 2024 has moved from 17.0 per cent to 4.5 per cent, manufacturing from a contraction of 6.4 per cent to an expansion of 16.1 per cent, services from 24.3 per cent to 12.4 per cent, and aggregate product from 13.3 per cent to 11.0 per cent. The sign on manufacturing has reversed. A reader who had built a policy argument on the earlier vintage, for instance an argument that Assam manufacturing was in absolute decline and required emergency support, would have been arguing from an artefact.

The revised series is also internally plausible in a way the earlier one was not. Aggregate real growth of 11.0 per cent in 2023 to 2024, 9 per cent in 2024 to 2025 and 10 per cent in 2025 to 2026 describes a fast growing economy without requiring any sector to move by a quarter in a single year. Assam constant price growth of 10 per cent in 2025 to 2026 compares with an estimated 8 per cent for national Gross Domestic Product in the same year (PRS Legislative Research, 2026).

The sectoral shares have also moved. For 2025 to 2026 at current prices, agriculture is estimated to contribute 35 per cent, manufacturing 22 per cent and services 43 per cent (PRS Legislative Research, 2026). The primary sector share is therefore stable at approximately 35 per cent across the period, which reinforces the structural argument made below, while the industry share has risen and the services share has fallen relative to the 2023 to 2024 position.

Sources: Government of Assam (2025); PRS Legislative Research (2025). National shares are approximate and are stated for orientation only, since the national series has been rebased to 2022 to 2023 while the State series has not.

Two features of the table require comment. The first is the primary sector share of 35 per cent. This is close to double the national share and is the single most important structural fact about the Assam economy. It is inflated relative to a pure agricultural comparison because the Assam primary aggregate carries crude petroleum and natural gas extraction, which is classified within mining and quarrying and which no other Indian State of comparable size carries at this weight. Even allowing for that, the share of agriculture and allied activity

proper remains far above the national norm. The second feature is that the industry share of 19 per cent is itself substantially composed of construction and of petroleum refining rather than of diversified manufacturing, a point developed in section 3.4.

The constant price growth rates for 2023 to 2024 are implausible as described. Agriculture reportedly grew 17.0 per cent, manufacturing contracted 6.4 per cent, and services grew 24.3 per cent (PRS Legislative Research, 2025). No agricultural system expands real output by 17 per cent in one year absent recovery from catastrophe, and no services sector in a State this size expands nearly 25 per cent in twelve months through genuine activity.

Several explanations are available and the report does not adjudicate between them. Revisions to earlier year estimates mechanically inflate or deflate the growth rate computed against them. Methodological changes in the estimation of unincorporated enterprise value added, which is a very large share of both agriculture and services in Assam, can shift a whole sector level. Changes in the treatment of public administration and defence, which is estimated substantially from budgetary expenditure and which has grown rapidly with the State capital programme, will move the services aggregate. The negative manufacturing figure is likely to reflect refinery throughput and the phasing of maintenance shutdowns rather than a general contraction of manufacturing activity, given that the Gross State Value Added of the industry sector as a whole was estimated at 2,13,486 crore rupees in 2024 to 2025 with growth of 14.2 per cent (Government of Assam, 2025).

A further divergence exists. PRS Legislative Research reports Assam constant price Gross State Domestic Product growth for 2023 to 2024 at 13.3 per cent; national compilations report approximately 12.0 per cent (PRS Legislative Research, 2025; Ministry of Statistics and Programme Implementation, 2025). The 1.3 percentage point divergence likely reflects different estimate vintages rather than substantive disagreement.

This methodological point matters for the entire framework. A sectoral series swinging from minus 6.4 per cent to plus 24.3 per cent across contiguous sectors in one year cannot support fine grained policy inference and did not survive the next vintage, which reported manufacturing growth of 16.1 per cent and services growth of 12.4 per cent (PRS Legislative Research, 2026). This chapter therefore rests on levels, shares and multi-year movements rather than annual sectoral growth rates. Readers should apply the same discipline to any Assam State level sectoral growth figure not yet revised.

Two comparisons frame the position of Assam within the national economy. In level terms, Assam contributes a little over two per cent of national Gross Domestic Product while holding approximately 2.6 per cent of the national population, which is the arithmetic expression of a per capita product below the national average. In rate terms, Assam has been among the faster growing States over the past five years and the State Government describes it as the fastest growing State on the 2019 to 2020 through 2024 to 2025 comparison (Government of Assam, 2026).

The key question is whether the growth differential will close the level gap. If Assam sustains a three percentage point nominal growth premium over the national rate and the per capita product ratio stands at 0.74, parity would require approximately ten years of uninterrupted

differential growth. This is arithmetically attainable but institutionally ambitious and depends on sustaining the premium rather than relying on temporary fiscal cycles or single large investments. The durability of the growth premium, not its present magnitude, is the central macroeconomic question for Assam.

3.2 Per Capita Income and Purchasing Power Analysis

Per capita income at current prices is reported at 1,39,783 rupees for 2023 to 2024, 1,54,222 rupees for 2024 to 2025, and 1,85,429 rupees for 2025 to 2026, against 60,817 rupees in 2015 to 2016 (Government of Assam, 2026). The figures for 2024 to 2025 and 2025 to 2026 are estimates rather than actuals. The decadal movement represents a nominal tripling, and the State Government has described the increase as a more than doubling within five years.

Separately, per capita Gross State Domestic Product for 2023 to 2024 is reported at 1,58,807 rupees, an increase of approximately 19 per cent over 2022 to 2023, against national per capita Gross Domestic Product of 2,15,935 rupees for the same year (PRS Legislative Research, 2025).

These series measure different things and are frequently conflated. Per capita income as reported refers to per capita Net State Domestic Product, which is output net of consumption of fixed capital and primary income adjustments. Per capita Gross State Domestic Product is a gross measure. They differ materially; for 2023 to 2024, Assam reported 1,39,783 rupees (net) and 1,58,807 rupees (gross).

The consequence is that the comparison used matters a great deal to the impression conveyed. On the gross measure for 2023 to 2024, Assam per capita product stood at approximately 74 per cent of the national figure. On comparisons circulated in 2026 that place Assam per capita income of 1,85,429 rupees for 2025 to 2026 against a national per capita income figure of the order of 2,00,162 rupees, Assam appears to stand at approximately 93 per cent of the national level. The second comparison is not sound as commonly presented, because it sets an Assam estimate for 2025 to 2026 against a national figure of a different reference year and, in some presentations, of a different concept.

The like for like comparison is now available for a more recent year and should be preferred to both. For 2025 to 2026, per capita Gross State Domestic Product at current prices in Assam is estimated at 2,03,760 rupees, an increase of 15 per cent over 2024 to 2025, against national per capita Gross Domestic Product of 2,43,803 rupees, an increase of 8 per cent (PRS Legislative Research, 2026). On this basis, both figures being gross measures for the same reference year, Assam per capita product stands at approximately 84 per cent of the national level.

This framework therefore records the comparative position as follows. Assam has closed a material part of the per capita gap, moving from approximately 74 per cent of the national level on the gross measure for 2023 to 2024 to approximately 84 per cent for 2025 to 2026, and it is converging because its per capita product is growing at 15 per cent against a national 8 per cent. It has not, however, approached parity, and the near parity claim of approximately

93 per cent circulated in 2026 remains unsound because it compares unlike concepts and reference years.

This is not pedantic. The difference between 84 per cent and 93 per cent of national income level is the difference between a State with a real convergence task and one that has essentially converged. Policy implications differ accordingly, and section 3.7's strategic priorities rest on the defensible measure.

Per capita income is an arithmetic average over a population and says nothing about its distribution. Four considerations qualify the reported improvement.

First, the composition matters. Much nominal rise reflects value added in petroleum extraction and refining, construction financed from State and Union budgets, and public administration. Extraction accrues to public sector undertakings and exchequers rather than household income. Public administration accrues to a salaried workforce that is a small fraction of the working population. Neither transmits to households proportionally.

Second, Assam households face different price levels than the national average. The logistics penalty from the Siliguri corridor and distance to principal markets raises delivered costs of manufactured goods, construction materials and fuel relative to peninsular India, analysed in Chapter 8. Purchasing power parity adjusted comparison across States is not routinely published, but a rupee of nominal income in Assam commands a smaller basket of traded goods than in coastal States, meaning nominal convergence overstates real convergence. Land and certain non-traded services are cheaper, partially offsetting this penalty.

Third, the intra State distribution is wide and stable. The district ordering established in Chapter 1, in which the upper Brahmaputra valley districts and Kamrup Metropolitan occupy the upper part of the distribution and the char and chapori tracts, the tea garden belt and the hill districts occupy the lower part, applies to income as to human development. A State average of 1,85,429 rupees for 2025 to 2026 is consistent with district averages ranging across a factor of two or more.

Fourth, multidimensional poverty fell from 36.97 per cent in 2013 to 2014 to 14.47 per cent in 2022 to 2023 (approximately eighty lakh persons), confirming broad improvement in living conditions (NITI Aayog, 2023). However, the reduction was driven by asset and amenity indicators from national programmes—electricity, cooking fuel, sanitation, housing and bank access—rather than household income growth. Poverty reduction through public asset delivery is real and valuable but differs from income convergence and lacks the self-sustainability of employment-driven growth.

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

The primary sector accounts for approximately 35 per cent of Gross State Value Added at current prices, against a national figure close to 19 per cent (Government of Assam, 2025). Within this aggregate lie four distinct activities with entirely different economics, namely field crop agriculture dominated by paddy, plantation agriculture dominated by tea, livestock and fisheries, and mining and quarrying dominated by crude petroleum and natural gas.

The high share is not evidence of agricultural dynamism but a compositional artefact. The extractive industry is unusually large relative to State output. Tea, classified within agriculture, is unusually large. Manufacturing is unusually small, so the denominator has not grown as in industrialised States. A 35 per cent primary share reflects the secondary sector's weakness, not the primary sector's strength.

The employment consequence is the material one. The primary sector produces approximately 35 per cent of output while occupying a substantially larger share of the workforce. That ratio defines a productivity gap, and the closing of that gap through the movement of labour into higher productivity activity is what structural transformation means. In Assam that movement has been slow, and the slowness is the proximate reason why rapid output growth has not produced proportionate household income growth.

Assam produced 687.76 million kilogrammes of tea in the calendar year 2025, against 658.92 million kilogrammes in 2024, an increase of 28.84 million kilogrammes. This constituted 50.20 per cent of national production of 1,369.98 million kilogrammes in 2025 (Tea Board of India, 2026). Assam accordingly produces approximately half of Indian tea and, on the customary estimate, close to one seventh of world tea. Total tea area in the State is approximately 3.47 lakh hectares, of which approximately 1.14 lakh hectares is held by roughly 1.2 lakh small tea growers who now account for more than half of State production (Tea Board of India, 2026).

The volume record conceals a value record that is poor. Four structural problems are visible in the aggregate data and are examined in operational detail in Chapter 18. The first is yield stagnation. Average yields in the organised estate sector have moved little over a decade, and a substantial share of the bush population is beyond the age at which replanting is economically indicated. Replanting rates have remained well below the rate required to maintain the age profile of the crop. The second is price realisation. Green leaf prices for small growers have fallen below cost in several districts (eleven rupees per kilogramme in 2025 against demands for thirty rupees per kilogramme). Since four to five kilogrammes of green leaf produce one kilogramme of made tea, grower share of final retail value is estimated at single digits. A sector where more than half of output originates with producers capturing minimal final value cannot generate rural income growth regardless of volume.

The third is the composition of output. The growth of the bought leaf factory segment has raised volume while shifting the quality mix toward the lower end of the market, which weakens auction realisation for the State as a whole. The fourth is the absence of value addition within the State. Assam exports predominantly bulk tea. Blending, packaging, branding, and the specialty and orthodox segments where price premia are earned are concentrated outside the State or outside the country.

Field crop agriculture in Assam is dominated by paddy across the valley floor, with cropping intensity and irrigation coverage among the lowest in India despite the highest per hectare water availability of any Indian State, a paradox examined in Chapter 10 and Chapter 18. The consequence at the macroeconomic level is that a large primary sector operates at low productivity per hectare and per worker, that marketable surplus per household is small, and

that the sector is exposed each year to a hydrological cycle that can remove a season of output across large tracts.

Three sub sectors within the primary aggregate are growing faster than field crops and are of greater strategic significance than their present weight suggests. Livestock contributed 11,222 crore rupees to Gross State Domestic Product at current prices in 2022 to 2023 with growth of 16.18 per cent, making it among the fastest growing components of the primary sector (Government of Assam, 2025). Fisheries operate in a State whose wetland, beel and riverine endowment is larger relative to area than that of any comparable Indian State, and where domestic demand is high and per capita consumption is above the national average, yet where the State has historically imported fish from outside. Horticulture, including the geographical indication portfolio of Tezpur litchi, Kaji nemu, Joha rice, Karbi Anglong ginger and Boka Chaul, faces a marketing and certification deficit examined in Chapter 17.

The primary sector of Assam is large, low in productivity, weakly integrated with processing, and poorly served by cold chain, aggregation and market infrastructure. Its principal macroeconomic significance for this chapter is that it is the largest single reservoir of underemployed labour in the State and the largest single opportunity for value addition. Food processing capacity that converts a rising share of primary output within the State would raise producer prices, create non farm employment in rural areas without requiring migration, and shift value added from the primary column to the secondary column of the national accounts. That is the classical route by which the primary share falls, and it has not been taken.

3.4 Secondary Sector: Industry, Manufacturing and Mining

The Gross State Value Added of the industry sector was estimated at 2,13,486 crore rupees in 2024 to 2025 with growth of 14.2 per cent, and the sector accounts for approximately 19 per cent of Gross State Value Added (Government of Assam, 2025). The rate of growth is high and the base is narrow. Four activities account for the overwhelming share of industrial value added in Assam, namely petroleum refining, construction, tea processing, and cement and other building materials, with plywood, plastics, fertiliser and pharmaceuticals occupying smaller positions.

Construction deserves separate notice as the most direct transmission channel from State capital budgets to measured output. A capital expenditure programme of approximately 29,000 crore rupees in the 2026 to 2027 budget, combined with Union funded highway, rail and bridge investment, generates construction value added directly and trade, transport and cement demand indirectly (Government of Assam, 2026). This growth is real but fiscal-cycle dependent, not market-driven, and will slow when capital programmes plateau. Chapter 2 examines the capital programme's sustainability; the point here is that a material share of recent growth is fiscally driven and should not be projected as market driven.

Assam is the oldest hydrocarbon province in India. It accounts for a substantial share of national onshore crude production and is among the largest gas producing States, with

contemporary estimates placing its share of national crude output in the region of fifteen per cent and its share of onshore output very much higher. Oil India Limited recorded crude output of 6.718 million tonnes of oil equivalent and natural gas production of 3.429 billion cubic metres in 2024 to 2025, both described by the company as record levels, while the Oil and Natural Gas Corporation produced approximately 877.69 thousand tonnes of crude in Assam between April 2024 and January 2025 and Oil India approximately 2,841.52 thousand tonnes over the same months (Oil India Limited, 2025; Ministry of Petroleum and Natural Gas, 2025). Both producers have missed State production targets in recent years, and the underlying fields are mature.

The refining position is changing materially. Assam hosts four refineries, at Digboi, Guwahati, Bongaigaon and Numaligarh. The Numaligarh Refinery expansion, which raises capacity from three million tonnes per annum to nine million tonnes per annum at a revised investment of approximately 33,901 crore rupees, was reported at approximately 85 per cent physical completion with expenditure of approximately 27,601 crore rupees, with commissioning indicated variously as December 2026 and as early 2027 (Numaligarh Refinery Limited, 2026). The report notes the divergence in the commissioning dates reported by different sources and treats early 2027 as the prudent assumption. The associated 1,635 kilometre Paradip to Numaligarh crude pipeline and the 610 kilometre Numaligarh to Siliguri product pipeline are integral to the project.

The macroeconomic significance is twofold. The expansion will add substantially to industrial value added and State revenue from 2027 onward but will not add substantial employment, as refining is capital intensive; tripling throughput adds direct jobs in the low thousands. The employment case rests on downstream activity. A nine million tonne refinery generates naphtha, propylene and other streams for petrochemical and plastics processing. Whether that chain locates in Assam or is railed out is the single most consequential industrial policy question of the next five years, treated in Chapter 4.

Outside refining, tea processing and cement, the manufacturing sector of Assam is small, fragmented and weakly linked to national supply chains. The reported constant price contraction of 6.4 per cent in manufacturing in 2023 to 2024 should not be read as a general collapse, for the reasons set out in section 3.1.3, but the level position it describes is accurate enough. Assam does not host a substantial engineering, automotive component, textile, apparel, chemical or capital goods base.

The reasons are structural. The logistics cost and transit time penalty of the Siliguri corridor makes weight-losing and low value density manufacturing uncompetitive for national markets, quantified in Chapter 8. Power reliability and cost (Chapter 9) constrain continuous process industry. The industrial land bank comprises twenty estates, three growth centres and eleven integrated infrastructure centres, several underutilised or lacking trunk infrastructure (Chapter 4). Ancillary and vendor ecosystems are thin, forcing large anchor investments to import supply chains. Assam should not compete across the manufacturing spectrum but concentrate on activities where the logistics penalty is small (high value to weight electronics) or irrelevant (processing locally produced raw material that would otherwise be shipped out at greater cost).

Beyond hydrocarbons, Assam holds coal, limestone, china clay, sillimanite and iron ore. Limestone supports the cement industry in the hill districts. Coal extraction, examined in Chapter 13, carries environmental and regulatory constraints, including those arising from restrictions on rat hole mining in the region.

The semiconductor assembly and test facility at Jagiroad, developed at approximately 27,000 crore rupees, is the largest single manufacturing investment in State history (Tata Electronics, 2026; India Brand Equity Foundation, 2026), examined in Chapter 4. Its significance is not the direct employment of approximately fifteen thousand but the demonstration that high value to weight, logistics-insensitive manufacturing can locate in Assam with existing power, water and connectivity. If ancillary chains of chemicals, gases, precision components, packaging and testing services localise around the anchor, it will alter State industrial structure. If not, it remains an enclave contributing value added without transforming the economy. The ancillary localisation ratio is the key metric for judging this investment over the coming decade.

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

The services sector contributes approximately 46 per cent of Gross State Value Added and was the largest single contributor to measured growth in recent years (Government of Assam, 2025). Its principal components are trade, hotels and restaurants, transport, storage and communication, financial and real estate services, and public administration and defence together with other services.

Composition matters more than aggregate. In economies where rising services shares signal upgrading, the increment comes from tradable and skill-intensive services: information technology, business services, finance, professional services, education and health sold beyond the State. In Assam, services are dominated by non-tradable domestic activity. Trade and transport expand with the construction and consumption economy. Public administration expands with State expenditure, measured substantially from wage bills rather than independent output, so growing payrolls register mechanically as growing services output.

A 46 per cent services share with 14.08 per cent urbanisation is unusual (Registrar General of India, 2011). Services are typically agglomeration-dependent; a single urban agglomeration cannot host the services sector associated with 46 per cent in a highly urbanised economy. Instead, Assam has a distributive and administrative services sector spread thinly across rural areas, with higher value concentration in Guwahati.

The credit to deposit ratio has historically stood below the national average, meaning deposits mobilised in the State are intermediated into lending elsewhere. The State Level Bankers Committee reviews this at quarterly meetings and successive Governments have pressed for improvement.

The constraint is at least as much on the demand side as supply. A low ratio in a State with small formal enterprise base, limited collateralisable land title in char and Sixth Schedule areas, and high perceived hydrological risk reflects shortage of bankable propositions as

much as lending reluctance. Raising the ratio requires enterprise formation, land record modernisation and risk transfer, not mere administrative pressure. Chapter 4 examines credit guarantee and enterprise financing architecture in detail.

Merchandise exports from Assam stood at 4,045 crore rupees in 2025 to 2026, of which tea accounted for 1,858.75 crore rupees, or 45.88 per cent (India Brand Equity Foundation, 2026). In the preceding year, 2024 to 2025, exports stood at 4,883 crore rupees, of which tea accounted for 2,361 crore rupees, or approximately 48 per cent (India Brand Equity Foundation, 2025).

Three serious observations follow. First, absolute level is very small. Merchandise exports of approximately four thousand crore rupees against Gross State Domestic Product of seven lakh crore rupees imply an export to output ratio well below one per cent, against national ratios an order of magnitude higher. Second, the base is dangerously concentrated. A single commodity, whose price is set in markets beyond State control and whose global production is rising, accounts for approximately half of exports. Third, exports fell in absolute terms between 2024 to 2025 and 2025 to 2026 by approximately 17 per cent, with tea falling 21 per cent. Though these figures come from a single source and port attribution for a landlocked State is imperfect, the picture is of a State that has not built a tradable base commensurate with output growth.

Growth not exported must be sold domestically, yet domestic demand is limited by the income levels growth is intended to raise. Without a tradable base, growth is bounded by fiscal capacity.

Two tradable services are within reach. Tourism, an export earning income from non-residents, rests on Assam's differentiated assets: Kaziranga, Manas, Charaideo Moidams, Kamakhya temple, river cruises and tea estates. Chapter 19 finds binding constraints are accommodation capacity, seasonality and last-mile connectivity rather than asset quality.

Digital and business services have endowments in young population, improving higher education anchored on Indian Institute of Technology Guwahati and central/State institutions (Chapter 17), and cost bases below metropolitan centres. Constraints are connectivity quality and reliability outside Guwahati (Chapter 16) and graduate employability. Digital services are the one tradable activity unaffected by the Siliguri corridor and warrant disproportionate weight in industrial strategy.

3.6 Employment, Labour Force Participation and the Employment Elasticity of Growth

The Periodic Labour Force Survey estimates for 2023 to 2024 place the labour force participation rate in Assam for persons aged fifteen years and above at 66.9 per cent, against a national figure of 60.1 per cent, and the unemployment rate at 3.9 per cent, against a national figure of 3.2 per cent (Ministry of Statistics and Programme Implementation, 2024; Government of Assam, 2026). The Assam unemployment rate rose from 1.7 per cent in 2022 to 2023 to 3.9 per cent in 2023 to 2024.

The disaggregation is where the diagnosis lies. Urban unemployment stood at 7.4 per cent against rural male unemployment of 3.6 per cent, and urban female unemployment at 11.8 per cent. Quarterly bulletins recorded urban youth unemployment in Assam at 27.5 per cent in the third quarter of the 2024 calendar year, up from 23.9 per cent in the first quarter (Ministry of Statistics and Programme Implementation, 2025). The pattern is unambiguous. Unemployment in Assam is concentrated among educated young people in urban areas, which is the signature of an economy that is producing graduates faster than it is producing the formal jobs that graduates will accept.

Two cautions apply. The Periodic Labour Force Survey sample design supports reliable State level but not district level estimation. The Assam series has shown sharp annual swings attributed partly to small sample effects; one unusual village result materially affected the 2022 to 2023 workforce estimate. The 1.7 per cent unemployment rate for 2022 to 2023 should be treated with scepticism; the rise to 3.9 per cent in 2023 to 2024 may reflect correction of an anomalous base as much as deterioration.

The distribution of workers across sectors in Assam retains a primary sector share substantially higher than the primary sector share of output, with a large component of self employment and unpaid family labour in agriculture and a further large component in petty trade and services. The formal, contributory, salaried segment of employment is small, and a disproportionate share of it is in government and in public sector undertakings.

The 66.9 per cent participation rate, combined with low productivity per worker and low formal employment share, describes an economy where large numbers work for very little—the classical profile of disguised underemployment rather than full employment.

Employment elasticity is the ratio of proportional employment change to proportional output change. An elasticity of one means employment grows as fast as output; approaching zero means growth without job creation.

Precise estimation is not possible from published data; the workforce series is volatile for sample reasons and the output series has been rebased. A range and direction can be established. Real output growth over five years to 2024 to 2025 has been high single to low double digits. Employment growth, measured by estimated workforce, has been much lower and in some readings nearly flat. The implied elasticity is low, plausibly 0.1 to 0.3, against 0.3 to 0.5 for the Indian economy in comparable periods.

The composition explains this. Petroleum extraction and refining are highly capital intensive and generate little direct employment per value added. Public administration grows with wage bills and adds employment only at sanctioned pace. Construction is employment intensive but generates casual, seasonal employment that terminates with projects, with significant skilled components met by outside workers. Trade and transport services generate low productivity, low earnings employment. None of Assam's principal growth drivers create large numbers of durable formal jobs.

Chapter 1 establishes that Assam has completed the fertility transition at the State level and that the annual addition to the working age population is at or near its historical peak. On a projected population of approximately 3.68 crore in 2026 and a working age share consistent with the age structure described there, the annual net addition to the labour force is of the order of four to five lakh persons (National Commission on Population, 2020; Registrar General of India, 2011).

An economy adding four to five lakh labour force entrants annually, growing at ten per cent real output with 0.2 employment elasticity and holding 1.5 to 1.6 crore workforce, generates three lakh net annual employment positions—insufficient to absorb entrants. The gap closes through low-productivity self-employment, out-migration and extended job search (high urban youth unemployment). Raising employment elasticity is not one objective among several; it is the condition for realising the demographic dividend rather than losing it.

3.7 Strategic Priorities for Economic Transformation

Assam has achieved high nominal output growth from a structure unable to convert it into household income and formal employment at scale. Growth has been driven by public capital formation, construction, hydrocarbon extraction and refining, and non-tradable services. The 35 per cent primary share reflects manufacturing smallness, not agricultural strength. The export base is narrow and contracted absolutely between 2024 to 2025 and 2025 to 2026. Employment elasticity is low. The next phase must come from activities that add value to State production, are logistics-penalty insensitive, and employ people in numbers.

Eight priorities follow, each with a measurable target aligned to the 2047 horizon and an intermediate milestone.

1. Raise the share of manufacturing in Gross State Value Added from the present level, in which the whole industry sector accounts for approximately 19 per cent, to 30 per cent by 2047, with an intermediate target of 24 per cent by 2035. The corresponding reduction in the primary sector share to below 20 per cent by 2047 should be achieved by growth of the denominator and by shifting primary output into processing, and not by contraction of agricultural output.
2. Establish a downstream petrochemical and plastics processing chain around the expanded Numaligarh refinery. The measurable target is that at least 40 per cent of petrochemical intermediate streams generated by refining capacity in Assam are consumed within the State by 2035 and at least 60 per cent by 2047, against a present position in which the great majority of value adding conversion occurs outside the State. Chapter 4 sets out the policy instruments.
3. Raise food processing intensity, measured as the share of primary agricultural, horticultural, livestock and fisheries output processed within the State, from present levels to 25 per cent by 2035 and 40 per cent by 2047. This is the single largest employment opportunity identified in this chapter, because processing capacity is located in rural areas, employs semi skilled labour, and raises farm gate prices at the same time. Chapter 18 sets out the value chain requirements.

4. Localise the ancillary chain around the semiconductor and electronics anchor investment. The measurable target is that at least 25 per cent of the non capital procurement value of electronics manufacturing operations in Assam is sourced from suppliers located within the State by 2035, rising to 45 per cent by 2047. Progress should be reported annually as a named metric, since it is the difference between an enclave and an industrial cluster.
5. Restructure the tea economy toward value rather than volume. The measurable targets are a rise in the share of State tea output sold in orthodox, specialty, packaged and branded form from present levels to 30 per cent by 2035, a doubling of the small grower share of the final retail value of made tea by 2035 through a transparent and enforceable green leaf price sharing formula, and the restoration of replanting rates sufficient to bring the average bush age profile within the economically indicated range by 2040.
6. Broaden and deepen the export base. The measurable targets are merchandise exports of 20,000 crore rupees by 2035 and 75,000 crore rupees by 2047 in constant 2025 to 2026 prices, and a reduction in the share of the single largest export commodity from 45.88 per cent in 2025 to 2026 to below 25 per cent by 2035. Chapter 8 identifies the logistics interventions on which these targets depend, and no export target in a landlocked State is credible without them.
7. Raise the employment elasticity of growth from its present estimated range of 0.1 to 0.3 to a sustained level of at least 0.4 by 2035. The operational expression of this target is that formal, contributory salaried employment should rise from its present small share of total employment to 20 per cent of the workforce by 2035 and 35 per cent by 2047. The State should publish an annual estimate of employment elasticity computed on a consistent methodology, so that the employment content of growth becomes a monitored variable rather than an inference.
8. Close the per capita income gap on a defensible measure. Assam per capita Gross State Domestic Product stood at approximately 84 per cent of the national figure in 2025 to 2026, having risen from approximately 74 per cent in 2023 to 2024 on the same gross basis (PRS Legislative Research, 2026). The target is 95 per cent by 2035 and parity by 2047, measured on the gross basis and on a common reference year, replacing the present practice of comparing concepts and years that are not comparable. Achieving this requires that the growth premium over the national rate be sustained at the order of two to three percentage points for a decade, against the seven percentage point premium in per capita terms recorded in 2025 to 2026, which in turn requires that the drivers of growth shift from the fiscal cycle to the tradable economy.

Two conditions apply to this programme. First, statistical. Targets cannot be monitored on series revised within two years from minus 6.4 to plus 16.1 per cent manufacturing growth, or comparisons changing concepts between paragraphs. Chapter 20 treats State statistical system strengthening as a development priority; credibility of every target depends on it. Second, environmental.

CHAPTER 4: INVESTMENT CLIMATE, INDUSTRIAL ECOSYSTEM AND ENTERPRISE DEVELOPMENT

For decades, the industrial narrative of Assam was defined by resource extraction and primary commodity processing. Crude oil, natural gas, tea, and timber constituted the core of the State's industrial output, while capital-intensive manufacturing and high-technology enterprise remained almost entirely absent. The structural constraints were clear and formidable: geographical isolation, the severe transport bottleneck imposed by the narrow Siliguri corridor, historical security challenges, and an uncompetitive investment climate characterized by red tape and procedural uncertainty.

By 2026, a fundamental transformation in Assam's industrial ecosystem is underway. The historic milestone of this transition is the establishment of India's first indigenous semiconductor assembly and test facility at Jagiroad in Morigaon district, developed by Tata Electronics at an investment of approximately 27,000 crore rupees (Tata Electronics, 2026; Press Information Bureau, 2026). This anchor investment, alongside the 33,901 crore rupee expansion of the Numaligarh Refinery, the development of India's first International Multi-Modal Logistics Park at Jogighopa, and the approval of the Assam MSME Facilitation Bill of 2026, signals that the State is rapidly transitioning from a raw commodity exporter into an advanced manufacturing, technology assembly, and regional logistics hub (Government of Assam, 2026; Numaligarh Refinery Limited, 2026; National Highways Logistics Management Limited, 2026).

This chapter evaluates the investment climate, industrial policy framework, enterprise growth dynamics, infrastructure clusters, public sector performance, public-private partnership pipeline, and regional economic cooperation in Assam, establishing actionable policy pathways toward industrial maturity by the centenary of Indian independence in 2047.

4.1 Investment Climate Assessment and Ease of Doing Business

The investment climate of Assam has undergone systematic regulatory simplification over the past several years under the Business Reforms Action Plan (BRAP) led by the Department for Promotion of Industry and Internal Trade (DPIIT). This framework was unable to verify, in a fresh search this session, that Assam holds "Top Achiever" classification under the current BRAP cycle, or a figure of over 350 specific regulatory reform recommendations attributed to the State; the most recent verifiable BRAP category placements identify Top Achiever States such as Madhya Pradesh and Uttar Pradesh and, within the North East specifically, Tripura as an Aspirer State recognised as a Top Achiever in only two individual reform areas at Udyog Samagam 2025, with an earlier BRAP cycle having placed Assam itself in the Aspirer category (Department for Promotion of Industry and Internal Trade, 2020, 2025). Both figures in the earlier draft of this section are accordingly withdrawn rather than reproduced.

Central to this reform architecture is the "Ease of Doing Business" (EoDB) digital portal, serving as a unified single window for land allocation, environmental clearances, power

connection sanctions, building plan approvals, and labour registrations. As reported in 2026, the portal has recorded over 4.05 lakh Common Application Form registrations and facilitated more than 33.82 lakh service applications since launch, of which 33,05,455 had been delivered, a disposal rate of 97.71 per cent (Sentinel Assam, 2026d). This verified throughput and disposal-rate figure is used in place of the earlier draft's unverified claims of 85 public services across 18 State departments and a turnaround time reduction from 120 days to 28 days, neither of which could be traced to a retrievable source this session and which have accordingly been withdrawn.

In 2026 the State Cabinet approved the Assam Micro, Small and Medium Enterprises (Facilitation of Establishment and Operation) Bill, among a group of measures directed at ease of doing business, extending a framework described as trust first (Government of Assam, 2026). Under the measure, eligible enterprises in non-polluting sectors may establish and operate without prior government approval for the first three years, with single window clearance through the Industry Department for units within an industrial area. The approach succeeds an Act of the same name of 2020 and Rules made under it in 2023, and represents a deepening rather than an initiation of the trust based approach.

Two qualifications should be recorded. The measure was approved by the Cabinet as a Bill, and this framework does not treat Cabinet approval as equivalent to enactment and commencement, which are separate steps. And a regulatory exemption operates on the cost of entry rather than on the constraints identified in section 4.1.2, namely land, power cost, skills and logistics. A three year exemption from prior clearance is valuable to an enterprise that would otherwise have been deterred by procedure. It does nothing for an enterprise deterred by a power tariff of 8.09 rupees per kilowatt hour or by the absence of contiguous flood free industrial land.

Despite the progress made on procedural simplification, factor market friction continues to shape investment realisation and operating cost across the State. Four constraints, taken together, define the operating environment as at 2025 to 2026.

1. **Land Availability and Tenure Complexity:** Plain land suitable for heavy manufacturing is naturally scarce in Assam due to mountain topographies, riverine floodplains, and complex land tenure systems, and contiguous, flood free parcels near highway corridors are scarcer still. In Sixth Schedule autonomous districts, including the Bodoland Territorial Region, Karbi Anglong, and Dima Hasao, non-tribal land transfer restrictions under constitutional provisions require specialised leasing models and autonomous council approvals (Government of Assam, Revenue Department, 2025). On the land bank the Assam Industrial Development Corporation (AIDC) itself publishes, total AIDC land holdings stood at 19,481.84 bighas, or approximately 6,440.25 acres, across 29 districts as of December 2024, of which 9,341.03 bighas, approximately 3,087.93 acres, or roughly 48 per cent of the total, remained available for industrial allotment (Assam Industrial Development Corporation, 2024). This is AIDC's own land bank alone, not a State-wide total; a verified, consolidated land bank figure spanning AIDC, the Assam Industrial Infrastructure Development Corporation (AIIDC) and the Assam Small Industries Development Corporation (ASIDC) together could not be located this session, and the

earlier draft's figure of an industrial land bank "exceeding 8,500 acres" attributed to AIDC alone is not supported by AIDC's own published land bank data and has accordingly been withdrawn.

2. **Industrial Power Tariffs and Quality:** Industrial power in Assam is not cheap, and the claim that it is competitive does not survive examination of the published tariff schedule. Under the schedule effective from 1 April 2025, High Tension Industries two above 150 kVA pay 8.09 or 7.69 rupees per kilowatt hour depending on the fixed charge option selected, Low Tension Commercial consumers pay 8.94 rupees per kilowatt hour, and the Tea, Coffee and Rubber category pays 8.04 rupees per kilowatt hour (Assam Power Distribution Company Limited, 2025). Chapter 9 establishes the reason these rates carry no relief. The subsidy declared by the State Government applies to domestic categories and tapers to zero in the higher slabs, and commercial, industrial and agricultural categories receive no subsidy at all. Industrial consumers therefore pay the full cost tariff approved by the Commission. Power quality is a separate and equally material constraint, and this framework was unable to source verified uptime or voltage stability data for industrial estates in Assam, which section 4.6 records as a measurement gap.
3. **Labour Market Mismatch:** Assam offers an abundant workforce, but a sharp mismatch exists between general skill levels and advanced industrial requirements. While routine manufacturing and construction labour is readily available, specialised technical roles in electronics assembly, precision tooling, cleanroom operations, and chemical processing require extensive state-subsidised skilling programmes (Government of Assam, Skill Development Department, 2025).
4. **Logistics Cost Premium:** The Siliguri corridor transit geography imposes a freight cost and transit time penalty on manufactured goods moving between Assam and the principal peninsular consumer markets, which functions as an implicit tax on tradable manufacturing. This framework was unable to source a verified quantification of that premium expressed as a percentage of freight cost, and does not reproduce the figures in circulation. Chapter 8 examines the structure of the penalty and the responses available to the State.

4.2 Industrial Policy Framework and MSME Development

The Industrial and Investment Policy of Assam (IIPA), updated in 2023 and extended through 2028, forms the foundation of the State's industrial incentive architecture. The policy provides tailored fiscal incentives structured by investment thresholds, sector priorities, and geographical backwardness.

Investment Category	Capital Investment Threshold	Minimum Direct Employment	Key Incentive Offerings
Micro Enterprises	Up to Rs 1 Crore	5 Persons	30 per cent Capital Investment Subsidy (Max Rs 25 Lakh); 100 per cent Stamp

			Duty Reimbursement
Small Enterprises	> Rs 1 Crore to Rs 10 Crore	20 Persons	30 per cent Capital Investment Subsidy (Max Rs 75 Lakh); SGST Reimbursement for 7 Years
Medium Enterprises	> Rs 10 Crore to Rs 50 Crore	50 Persons	20 per cent Capital Investment Subsidy (Max Rs 2 Crore); Power Tariff Subsidy Rs 2 per kWh for 5 Years
Large Projects	> Rs 50 Crore to Rs 100 Crore	100 Persons	Custom Incentive Package; 100 per cent State GST Reimbursement for 10 Years
Mega Projects	Above Rs 100 Crore	200 Persons	Customized Land Subsidy, Tailored Infrastructure Grants & Customized SGST Subsidies

Sources: Government of Assam, Industry and Commerce Department (2023, 2025); India Brand Equity Foundation (2026).

Special incentive provisions target pioneer industries in food processing, bamboo-based manufacturing, pharmaceutical formulation, electronic systems design, software development, and renewable energy equipment. For Mega Projects investing over 100 crore rupees and creating 200 permanent jobs, the Cabinet Empowered Committee can grant custom fiscal packages, including customized capital subsidies, interest subvention, and capital infrastructure assistance. This flexible policy structure proved decisive in attracting the Tata Electronics semiconductor facility to Jagiroad (Tata Electronics, 2026).

Micro, Small and Medium Enterprises (MSMEs) represent the primary engine of non-farm employment in Assam. This framework was unable to verify, in a fresh search this session, the earlier draft's figures of "over 20.27 lakh MSME units" and "38 lakh livelihoods" supported, nor a sectoral breakdown attributing 48.0 per cent of units to retail and wholesale trade, 28.0 per cent to community and personal services, and 24.0 per cent to manufacturing. No Assam-specific Udyam count or activity-wise composition at that precision could be traced to a retrievable Ministry of MSME or Udyam dashboard publication, and all of these figures have accordingly been withdrawn rather than reproduced. What can be stated with reasonable confidence is the general shape of the sector, corroborated by the national Udyam

composition, under which trading enterprises are the largest single category nationally at approximately 43 per cent of registrations, followed by services at approximately 36 per cent and manufacturing at approximately 21 per cent as of February 2026 (Development Commissioner, Ministry of MSME, 2026); Assam's own registration count and sectoral split are recorded here as a measurement gap rather than asserted from unverifiable earlier figures.

Assam's manufacturing MSMEs are qualitatively dominated by rice milling, mustard oil extraction, small tea factories, cane and bamboo furniture, bell-metal crafts, plywood fabrication, and light machinery works (Ministry of MSME, 2026). The central challenge facing Assam's MSMEs is informal operations and restricted access to institutional credit. Less than 32 per cent of registered units hold formal credit lines with commercial banks, relying heavily on non-banking finance companies and informal money lenders at elevated interest rates (Reserve Bank of India, 2025).

To accelerate MSME growth, Assam is executing the World Bank-assisted Raising and Accelerating MSME Performance (RAMP) programme. The initiative focuses on formalization through Udyam portal registration campaigns, digital onboarding, establishing enterprise facilitation centers in secondary districts, supplier development programmes for anchor industries, and credit guarantee subvention (Ministry of MSME, 2026). Specialized traditional clusters, such as the Sualkuchi silk weaving cluster, the Sarthebari bell-metal cluster, and the Barpeta brassware cluster, receive targeted support under the Micro and Small Enterprises Cluster Development Programme (MSE-CDP) to modernize machinery and access national e-commerce channels (Government of Assam, 2025).

4.3 Large and Anchor Industries: Sectoral Analysis

The establishment of the Tata Semiconductor Assembly and Test (TSAT) facility at Jagiroad in Morigaon district represents a historic turning point in Assam's economic trajectory (Tata Electronics, 2026). The greenfield facility is built on the site of the former Hindustan Paper Corporation Nagaon Paper Mill; reported figures for the plant's own developed footprint range from approximately 171 acres to 250 acres depending on source and vintage, set within a wider defunct paper mill campus reported at up to approximately 550 to 592 acres, and this framework reports the range rather than asserting a single precise acreage that could not be confirmed against a primary company or government filing this session. The aggregate capital investment is consistently reported at 27,000 crore rupees, supported by 3,789 crore rupees in State capital grants and 10,255 crore rupees under the Union Modified Assembly, Testing, Marking, and Packaging (ATMP) scheme, together approximately 14,044 crore rupees of combined Central and State government support (Press Information Bureau, 2026; Tata Electronics, 2026; India Today NE, 2026).

The facility is designed around advanced Flip-Chip and Integrated System in Package (ISIP) packaging technologies, producing chips for electric vehicles, automotive systems, telecommunications infrastructure, artificial intelligence, data centres, and consumer electronics. Chief Minister Himanta Biswa Sarma has stated a target daily production capacity of up to 48 million semiconductor chips a day at full operational scale, a figure repeated consistently across government and press reporting; this framework treats it as a

stated capacity target rather than an independently audited output figure, since production had not yet reached full scale as at mid-2026 (Government of Assam, 2025; Northeast Today, 2025). On employment, government and press sources are broadly but not exactly consistent: direct employment is reported at approximately 15,000 high-skill technical and engineering jobs, while indirect employment estimates diverge somewhat, reported variously as approximately 12,000 and as a range of 11,000 to 13,000 support, logistics and ancillary jobs, implying a combined total in the region of 27,000 jobs (Tata Electronics, 2026; Government of Assam, 2026; Tradebrains, 2026). This chapter reports the range rather than a single indirect employment figure, consistent with the disagreement in the sources themselves. Facility construction is proceeding rapidly, with initial production testing targeted for late 2026.

To maximize local economic integration, the State Government has initiated the Morigaon Electronics Manufacturing Cluster (EMC), set on 500 acres adjacent to the Tata facility, designed to accommodate upstream chemical suppliers, silicon wafer handling firms, and testing equipment manufacturers (AIDC, 2025).

The hydrocarbon sector remains Assam's largest industrial contributor to state domestic product and non-tax revenues. Crude oil extraction averages 4.1 million metric tonnes annually, while natural gas production stands at approximately 3.2 billion cubic metres, executed by Oil India Limited (OIL) and Oil and Natural Gas Corporation (ONGC) (Government of India, Ministry of Petroleum and Natural Gas, 2025).

The landmark project in this sector is the Numaligarh Refinery Expansion Project (NREP), which is expanding refining capacity from 3 MMTPA to 9 MMTPA at a revised cost of 33,901 crore rupees (Numaligarh Refinery Limited, 2026). The project includes a 1,635-kilometre crude oil pipeline from Paradip port in Odisha to Numaligarh, ensuring raw material security. Furthermore, the Assam Bio-Refinery at Numaligarh, a joint venture with Scandinavian partners, represents India's first commercial refinery producing bio-ethanol from bamboo feedstock, processing 3 lakh tonnes of bamboo annually to yield 185 kilolitres of ethanol per day (Numaligarh Refinery Limited, 2026).

Downstream petrochemical manufacturing is anchored by the Brahmaputra Cracker and Polymer Limited (BCPL) complex at Lepetkata in Dibrugarh, which produces 2.8 lakh tonnes of High-Density Polyethylene (HDPE) and Polypropylene annually. Additionally, Assam Petrochemicals Limited (APL) at Namrup expanded its methanol production capacity to 500 tonnes per day (TPD) and formalised formaldehyde manufacturing (Assam Petrochemicals Limited, 2025). Developing polymer industrial parks adjacent to BCPL to manufacture plastic pipes, agricultural film, and packaging material represents an ongoing industrial priority (AIDC, 2025).

Tea processing constitutes Assam's oldest manufacturing industry. Chapter 18 establishes the verified structure of this sector in detail, and this chapter uses those figures rather than restating a separate, uncorroborated set. On Tea Board of India data, Assam produced 687.76

million kilogrammes of tea in calendar year 2025, up from 658.92 million kilogrammes in 2024, and accounted for over 50 per cent of India's national production of 1,369.98 million kilogrammes in 2025 (Tea Board of India data, as reported in Sentinel Assam, 2026c, and recorded in Chapter 18). Of the 2025 output, big growers, the organised estate sector, contributed 345.39 million kilogrammes and small growers 342.37 million kilogrammes, an almost even split in which small growers accounted for approximately 49.8 per cent of State production, rather than the clean 52 per cent figure sometimes quoted (Sentinel Assam, 2026c). The organised sector in 2024 comprised 763 big grower gardens cultivating approximately 2.33 lakh hectares, alongside approximately 1.33 lakh registered small tea growers cultivating approximately 1.26 lakh hectares, a combined tea area of approximately 3.59 lakh hectares, with processing carried out through 481 estate factories and 331 bought-leaf factories (Directorate of Economics and Statistics, Assam, 2025; eGov Magazine, 2025, both as recorded in Chapter 18).

On employment, an industry account for June 2025 states that the tea industry directly employs approximately 7 lakh workers, with roughly twice that number engaged in ancillary activities (eGov Magazine, 2025, as recorded in Chapter 18). This figure is used in place of the earlier draft's unverified claim of 11 lakh plantation workers, which could not be traced to a retrievable source this session. The tea processing sector faces structural challenges: stagnant real auction prices, ageing tea bushes, rising energy costs, and climate-induced yield volatility. Chapter 18 documents a severe green leaf price crisis for small growers through 2025, with prices falling to Rs 10 to 15 per kilogramme against a stated production cost of Rs 25 to 27 per kilogramme, well below the Rs 216.78 per kilogramme average realisation for made leaf tea at the Guwahati Tea Auction Centre in 2023 to 2024, illustrating the scale of margin retained downstream of the grower (ETV Bharat, 2025; Directorate of Economics and Statistics, Assam, 2025, both as recorded in Chapter 18). Industrial policy interventions aim to support estate modernisation, establish tea park blending facilities near Guwahati port, expand green tea and orthodox tea manufacturing for European and Middle Eastern export markets, and enforce fair green leaf price-sharing formulas (Government of Assam, Department of Tea Tribes Welfare, 2025).

4.4 Special Economic Zones, Industrial Corridors and Clusters

Industrial land in Assam is managed by three primary state entities: the Assam Industrial Development Corporation (AIDC), the Assam Industrial Infrastructure Development Corporation (AIIDC), and the Assam Small Industries Development Corporation (ASIDC), each operating a distinct portfolio of growth centres, estates and commercial infrastructure complexes across the State.

Section 4.1.2 records AIDC's own published land bank in detail: total holdings of approximately 6,440.25 acres across 29 districts as of December 2024, of which approximately 3,087.93 acres, or roughly 48 per cent, remained available for allotment (Assam Industrial Development Corporation, 2024). This framework was unable to source comparably specific, dated figures for AIIDC's and ASIDC's own developed area and facility counts, or a verified consolidated total spanning all three agencies, this session. The earlier

draft's table asserting a combined "71 Industrial Parks and Estates" covering "approximately 8,500 Acres," built from unsourced per-agency figures of approximately 4,200 acres for AIDC, 2,800 acres for AIIDC and 1,500 acres for ASIDC, is inconsistent with AIDC's own published land bank figure above by a wide margin and has accordingly been withdrawn in full rather than partially corrected. A verified, agency-by-agency and consolidated industrial land inventory for Assam is recorded as a measurement gap.

Key specialised clusters include the Food Park at Chaygaon, the Plastic Park at Tinsukia, the Bamboo Park at Chaygaon, and the Tech City IT/IET Park at Bongora near Guwahati airport. Several older industrial estates suffer from inadequate internal drainage, road deterioration, and unstable effluent treatment infrastructure, requiring systematic modernisation under State capital grants (CAG, 2025).

Assam is developing two strategic industrial corridors to integrate domestic manufacturing with regional logistics routes:

5. **Guwahati-Bongaigaon Industrial Corridor:** Traversing National Highway 27, this corridor connects the capital region's tech nodes with Bongaigaon's refinery and logistics hubs, serving as the primary manufacturing axis.
6. **Dibrugarh-Tinsukia Industrial Axis:** Anchored on BCPL's petrochemical complex, gas fields, and tea processing networks, this corridor focuses on heavy engineering, polymers, and agro-processing.

Connecting these corridors is India's first International Multi-Modal Logistics Park (MMLP) at Jogighopa in Bongaigaon district, developed by National Highways Logistics Management Limited (NHLML) under Bharatmala Pariyojana at an outlay of 693.97 crore rupees for Phase 1 (NHLML, 2026). Spanning 317 acres along the Brahmaputra and National Highway 17, Jogighopa MMLP integrates road, broad-gauge rail, inland waterways (National Waterway 2), and air links to Guwahati Airport, and is designed to include cold storage warehouses, container freight stations, customs clearance, and a Petroleum, Oil and Lubricants terminal, serving as a freight consolidation hub for Assam, Bhutan, and Bangladesh. Reporting through 2024 described the park as in an advanced stage of construction with operationalisation targeted for the following year; as section 4.7.2 records, procurement of private developers for several of the park's commercial facilities remained in progress as at 2026, so full operationalisation should be read as an ongoing, not yet completed, process rather than a fixed and confirmed date.

4.5 Foreign Direct Investment: Inflows, Sectoral Distribution and Policy

Foreign Direct Investment (FDI) inflows into Assam are, on the verified evidence, negligible in absolute and relative terms, and materially smaller than an earlier draft of this chapter asserted. The earlier draft's claimed trajectory, rising from a cumulative 42 million dollars in 2019 to 2021 to 240 million dollars in the single year 2025 to 2026, could not be traced to any RBI or DPIIT publication this session and has been withdrawn in full. The verified figures are substantially smaller: MDoNER's Annual Report 2025 to 2026, quoting DPIIT data, records Assam's FDI equity inflow at 2.13 million dollars for the period January to

September 2025, out of a combined 2.39 million dollars across all four reporting North Eastern States in the same window, and a cumulative Assam inflow of 23.2 million dollars for the period October 2019 to December 2024, against a North East regional total of 32.72 million dollars over the same period (Ministry of Development of North Eastern Region, 2026, as reported in Sentinel Assam, 2026e). Assam nonetheless leads the North East region on this measure, reflecting how thin FDI equity participation is across the region as a whole rather than any material strength in Assam's own inflow.

An important reconciliation follows from this. The Tata Electronics investment at Jagiroad, the single largest capital commitment examined in this chapter, is undertaken by a Tata Sons subsidiary incorporated in India and is therefore domestic corporate investment, financed through Central and State capital grants and corporate balance sheet resources rather than counted as inbound FDI equity in RBI or DPIIT statistics. This explains, rather than contradicts, the coexistence of a landmark 27,000 crore rupee anchor project with an FDI equity series still measured in single-digit millions of dollars, and it means the earlier draft's narrative of an FDI "surge driven by semiconductor supply chain commitments" is not supported by the data series it cited and has been withdrawn along with the underlying figures. Geographical isolation, lack of international air connectivity, and perception of regional risk continue to limit foreign investor participation, historically confined to secondary joint ventures in tea and oil exploration, with any ancillary foreign investment in renewable energy equipment or in the semiconductor supply chain around Jagiroad not separately verifiable in the sources retrieved this session.

To sustain FDI growth, Assam established a dedicated "Invest Assam" facilitation cell within AIDC, operating international desks for East Asian and European markets (AIDC, 2025). Strategic priorities include:

- Promoting Assam as the investment gateway to South East Asia under the Act East Policy.
- Offering specialized land parcels with pre-obtained environmental clearances for international joint ventures.
- Expanding international direct air cargo flights from Guwahati's Lokpriya Gopinath Bordoloi International Airport to ASEAN capitals.

4.6 Public Sector Undertakings: Performance and Reform Agenda

State Public Sector Undertakings in Assam occupy significant commercial space across power generation, distribution and transmission, industrial finance, electronics and tea plantation management. The principal entities are the Assam Power Distribution Company Limited, the Assam Power Generation Corporation Limited, the Assam Electricity Grid Corporation Limited, the Assam Industrial Development Corporation, the Assam Tea Corporation Limited, the Assam Electronics Development Corporation and Assam Petrochemicals Limited.

This framework was unable to source a verified, current and consistent set of enterprise level financial statements for these undertakings, covering turnover, annual result and accumulated

position. An earlier draft of this chapter presented such a table. The figures in it could not be traced to the Comptroller and Auditor General reports to which they were attributed, and they have accordingly been withdrawn rather than reproduced. Section 4.6.3 treats the absence of a published, consolidated State enterprise financial statement as a governance failure in its own right.

Three propositions about the sector can nonetheless be stated on verified evidence.

The distribution utility carries a structural financial exposure that operates directly on the State budget. Chapter 9 establishes the mechanism from the published tariff schedule. The energy charge reductions effective from 1 April 2025 were achieved not by lowering the cost of supply but by a targeted subsidy and a tariff subsidy declared by the State Government, recorded on the utility's books as subsidy receivable, with the schedule stating that without the Government subsidy the full charge becomes operative (Assam Power Distribution Company Limited, 2025). The exposure grows automatically as consumption grows, and delay in release converts directly into working capital deficit at the utility and thence into delayed payment to generators.

The State tea undertaking is in distress. Assam Tea Corporation Limited manages State owned estates whose difficulties are long standing and well documented in public discussion, including low yield, ageing bushes and machinery, and accumulated statutory dues to workers. This framework was unable to verify the number of estates presently under management or the quantum of outstanding provident fund liability, and does not state figures it cannot source. The verified wage position for the plantation sector generally is set out in Chapter 7, at Rs 280 per day in the Brahmaputra valley and Rs 258 in the Barak valley with effect from 1 April 2026.

The contingent liability position disclosed in the budget documents is modest, at outstanding guarantees of Rs 2,690 crore, equivalent to 0.4 per cent of Gross State Domestic Product as on 31 March 2025 (PRS Legislative Research, 2026). Chapter 2 cautions that this predates the exposure the announced power sector programme is likely to create, and Chapter 9 argues that the subsidy commitment to the distribution utility is larger and more certain than the disclosed guarantee exposure.

The CAG Audit on State Public Sector Enterprises highlights structural governance deficits across loss-making SPSUs: delayed annual accounts compilation, lack of independent board representation, and absence of performance-linked managerial compensation (Comptroller and Auditor General of India, 2025).

The State Government's PSU Reform Framework prioritizes:

7. Operational Restructuring of ATCL: Transitioning ATCL tea estates to joint venture management under public-private partnerships or leasing arrangements to protect worker livelihoods while eliminating exchequer losses.
8. Financial Recapitalization of APDCL: Implementing smart pre-paid metering across 100 per cent of urban and commercial connections, coupled with strict tariff cost-reflective adjustments.

9. Account Normalization: Mandating all SPSUs to submit audited accounts within statutory timeframes on pain of withholding State equity support.

4.7 Public-Private Partnership Framework and Pipeline

Public-Private Partnerships (PPPs) are essential for bridging Assam's infrastructure financing gap. The State PPP Policy, administered by the Finance Department's Infrastructure Development Cell, establishes a structured framework for project identification, concession drafting, competitive bidding, and Value-for-Money (VfM) evaluation (Government of Assam, Finance Department, 2025).

To enhance bankability, the State Government provides a Viability Gap Funding (VGF) scheme, supplementing the Union VGF facility by offering up to 20 per cent of total project capital costs for social and economic infrastructure projects.

The earlier draft's PPP pipeline table has been checked project by project against fresh reporting this session. Two projects verify closely, one requires a corrected cost figure, and two could not be verified as PPP transactions on the terms originally stated and have been withdrawn from the table.

Project Name	Sector & Location	Estimated Cost (Rs Crore)	Proposed Concession Model	Current Status (2026)
Guwahati Ring Road & Bypass Complex	Transport / Guwahati	5,729.00	Build-Operate-Transfer (BOT-Toll)	Concession agreement signed April 2025; appointed date 23 January 2026; construction underway; targeted completion January 2030
Jogighopa MMLP Commercial Facilities	Logistics / Bongaigaon	Not separately published; forms part of the Rs 693.97 crore Phase 1 MMLP outlay recorded in section 4.4.2	DBFOT (Design-Build-Finance-Operate)	Developer procurement for business centre, container yard, warehousing and cold storage in progress under Jogighopa Logistics Park Ltd, the NHLML-Government of

				Assam special purpose vehicle
Kamakhya Ropeway	Urban Transport / Kamakhya	201.52 to 213.24 (figures differ between the sanctioned project cost and the tender document; both are reported here)	DBFOT (Design-Build-Finance-Operate)	Sanctioned; construction process begun in early 2026

Sources: National Highways Authority of India (2026); National Highways Logistics Management Limited (2026); India Today NE (2026); Sentinel Assam (2026f).

The flagship 5,729 crore rupee Guwahati Ring Road project, a 121-kilometre bypass incorporating a major bridge over the Brahmaputra and developed by the National Highways Authority of India rather than by a State agency, represents the largest BOT project in North East India. The earlier draft's separate table rows for a five-city solid waste processing plant PPP costed at 450 crore rupees and a riverfront cruise terminal management concession costed at 280 crore rupees could not be traced to any specific, dated PPP tender or concession document this session and have accordingly been dropped rather than reproduced. Real riverine infrastructure investment on the Brahmaputra is nonetheless under way, but on the evidence available it has proceeded as direct public capital works funded by the Inland Waterways Authority of India and the Guwahati Smart City programme rather than through a private-concession PPP structure: the Gateway of Guwahati river terminal was completed at a reported cost of 305 crore rupees, and cruise terminals at Biswanath Ghat and Neamati form part of a combined 526 crore rupee, four-project inland waterways package (Inland Waterways Authority of India, 2026, as reported in press coverage of March 2026). A genuine PPP-structured solid waste or riverfront tourism pipeline may exist at pre-tender stage, but this framework could not verify one and records the gap rather than restating the withdrawn figures. Implementing verified projects on DBFOT or BOT concessions mobilises private capital while transferring construction and market demand risk to private operators.

4.8 Regional Cooperation: Shared Region and Growth

Assam serves as the geographic anchor for India's Act East Policy, positioning the State as the land bridge to Bangladesh, Bhutan, Myanmar, and ASEAN economies. Four cross-border infrastructure axes alter Assam's economic transit geometry. On the Bhutan axis, a 58-kilometre broad-gauge rail connection under construction between Kokrajhar and Gelephu will link Assam directly to Bhutan's planned Gelephu Special Administrative Region, facilitating mineral, agricultural, and industrial freight trade (Ministry of Railways, 2025). On the Bangladesh axis, Land Custom Stations at Sutarkandi (Karimganj) and Mankachar (South Salmara) are being upgraded into Integrated Check Posts with automated customs clearing, connecting toward Chittagong port. On the inland waterway axis, National Waterway 2 on the Brahmaputra connects to the Indo-Bangladesh Protocol Routes, allowing cargo to move

directly to Chittagong and Mongla ports in Bangladesh, bypassing the congested Siliguri rail corridor. Finally, the Bangladesh, Bhutan, India, Nepal (BBIN) Motor Vehicles Agreement provides the sub-regional legal framework within which these physical corridors are intended to operate.

Under the South Asia Subregional Economic Cooperation (SASEC) and BBIN frameworks, Assam is integrating its energy and industrial grids with neighbouring nations. Electricity transmission links supply power to Bhutan during lean seasons while importing hydro-energy during peak monsoon flow. Similarly, cross-border oil pipelines, including the 131-kilometre India-Bangladesh Friendship Pipeline supplying refined diesel from Numaligarh Refinery to Parbatipur in Bangladesh, demonstrate Assam's role as a regional energy supplier (Numaligarh Refinery Limited, 2026).

Capitalizing on these sub-regional corridors requires harmonizing transit regulations, simplifying cross-border customs documentation, and establishing joint trade facilitation committees with Bhutanese and Bangladeshi counterparts.

4.9 Strategic Priorities

Five priorities follow from the evidence assembled in this chapter, each stated with a measurable target grounded in a baseline figure established above, with target years of 2031 for the medium term and 2047 for the long term, consistent with the horizon used throughout this framework. Chapter 3 separately establishes that Assam's whole industry sector, of which manufacturing forms a still-modest part, accounted for approximately 19 per cent of Gross State Value Added at the current baseline, against a framework-wide target of 24 per cent by 2035 and 30 per cent by 2047 (Government of Assam, 2025, as recorded in Chapter 3); the priorities below are the operational levers, specific to investment climate and industrial ecosystem policy, through which that cross-cutting target is to be reached, and this chapter does not restate a separate, narrower manufacturing-only figure that could not be independently verified this session.

10. **Commission the Jagiroad semiconductor facility and deepen its supplier ecosystem, rather than treating the anchor investment alone as sufficient.** Against a verified baseline of 27,000 crore rupees in aggregate capital investment, reported direct employment of approximately 15,000 jobs and indirect employment reported between 12,000 and 13,000 jobs, and a stated target production capacity of up to 48 million chips a day (Tata Electronics, 2026; Government of Assam, 2026), the target is full commissioning and stabilised production at the reported target capacity by 2031, together with material occupancy of the 500-acre Morigaon Electronics Manufacturing Cluster by upstream chemical, wafer-handling and testing equipment suppliers, so that combined direct and indirect employment in the cluster is sustained at or above the verified anchor-facility baseline rather than concentrated in the single Tata Electronics facility alone. By 2047, the objective is for Assam to be established as a recognised secondary

node in India's semiconductor assembly, test and packaging capacity, with a diversified base of supplier firms rather than a single-project dependency.

11. **Close the MSME data gap this chapter has identified, and raise formal credit access from a verified low base.** Section 4.2.2 records that a verified, dated count of Assam's registered MSME units and their sectoral composition could not be sourced this session, and that formal institutional credit reaches less than 32 per cent of registered units (Reserve Bank of India, 2025). The target is for the Directorate of Industries and Commerce, in coordination with the Ministry of MSME's Udyam platform, to publish an annual, dated, Assam-specific MSME count and sectoral breakdown from 2028 onward, ending reliance on unverifiable secondary figures, while raising formal institutional credit access to a majority of registered units by 2031 and to the large majority by 2047, building on the Assam MSME Facilitation Act of 2026 and the World Bank-assisted RAMP programme. The EoDB portal's verified 97.71 per cent service disposal rate as of 2026 (Sentinel Assam, 2026d) should be sustained at or above that level as registration volumes grow.
12. **Complete the Numaligarh Refinery expansion and convert downstream capacity into polymer manufacturing.** Against the verified baseline of the Numaligarh Refinery Expansion Project, raising capacity from 3 MMTPA to 9 MMTPA at a cost of 33,901 crore rupees, and the Assam Bio-Refinery's 185 kilolitre per day bamboo-to-ethanol capacity (Numaligarh Refinery Limited, 2026), the target is full commissioning of both by 2031, together with the establishment of operating polymer industrial parks adjacent to the Brahmaputra Cracker and Polymer Limited complex at Lepetkata and at Tinsukia, converting a larger share of Assam's own HDPE and polypropylene output into finished plastic pipe, agricultural film and packaging products within the State by 2047 rather than exporting primary polymer feedstock unprocessed.
13. **Operationalise the Jogighopa Multi-Modal Logistics Park in full, including the commercial facilities still at the developer-procurement stage.** Against the verified Phase 1 outlay of 693.97 crore rupees across 317 acres (National Highways Logistics Management Limited, 2026), and given that procurement of private developers for the business centre, container yard, warehousing and cold storage facilities remained in progress as at 2026 rather than complete, the target is full commercial operationalisation, including these facilities, by 2031, with seamless containerised freight transit connecting National Waterway 2, broad-gauge rail and the national highway network. By 2047, the objective is for Jogighopa to function as the principal freight consolidation hub for Assam, Bhutan and Bangladesh trade under the Act East Policy, with a verified, publicly reported annual freight throughput series, which does not yet exist and is recorded as a measurement gap to be closed once the park is operational.
14. **Publish a consolidated, audited State public sector enterprise financial statement, and complete the restructuring the current data gap has so far obscured.** Section 4.6.1 records that this framework could not source a verified, current set of enterprise-level financial statements for Assam's State Public Sector Undertakings, and that the disclosed contingent liability position of 2,690 crore rupees, equivalent to 0.4 per cent of Gross State Domestic Product as of 31 March 2025 (PRS Legislative Research,

2026), understates the exposure Chapter 9 identifies in the power distribution subsidy mechanism. The target is publication of a consolidated, audited financial statement covering all major SPSUs, including the Assam Tea Corporation Limited and the Assam Power Distribution Company Limited, by 2028, together with completion of ATCL's transition to joint-venture or leasing management and 100 per cent smart, pre-paid metering coverage for APDCL's urban and commercial connections by 2031. By 2047, the objective is a State PSU portfolio that no longer carries a structural, recurring, undisclosed exposure on the State budget.

CHAPTER 5: EDUCATION, ACCESS, QUALITY AND FUTURE READINESS

The education system of Assam is the mechanism through which the demographic transition described in Chapter 1 will either be converted into productive capacity or allowed to dissipate. The State has passed below replacement fertility, the working age share of its population is rising, and the annual addition to its labour force is at or near its historical peak. The window during which that additional labour can be equipped with capability is measured in years rather than decades.

The record is one of substantial success in access and substantial failure in outcome. Assam has brought almost all of its children into elementary school. It has not yet succeeded in teaching a satisfactory proportion of them to read, calculate, and reason at the level their grade implies, and it loses an unusually large share of them at the secondary stage. At the tertiary level the State reports one of the lowest gross enrolment ratios in India, though the measurement itself is contested for reasons examined in section 5.3.

Two features of the Assam context recur throughout this chapter and distinguish it from the general Indian discussion. The first is language. As established in Chapter 1, no mother tongue is spoken by an absolute majority of the population, and linguistic distribution is strongly regionalised. The medium of instruction question in the early grades is therefore not symbolic but pedagogical. The second is the geography of disadvantage. The char and chapori tracts, the tea garden belt, and the hill districts present conditions of seasonal inaccessibility, household labour demand, and settlement impermanence that uniform programme design does not address.

A note on evidence is necessary before proceeding. Assam has a weaker published education statistics base than several comparable States, and this chapter reports what can be sourced and identifies what cannot. Where a figure commonly cited in State documents could not be traced to a verifiable published source, it has been omitted rather than reproduced. Section 5.6 treats this as a governance problem in its own right.

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

Participation at the elementary stage in Assam is effectively universal in the sense that the great majority of children of the relevant age are enrolled in an institution. This is the achievement of three decades of school construction, teacher appointment, incentive provision, and the statutory entitlement created by the Right of Children to Free and Compulsory Education Act, 2009. It should be recorded plainly, because the discussion that follows is critical and the criticism is meaningless without the acknowledgement.

Elementary schooling in Assam is delivered through a mixed system comprising State Government schools, provincialised schools that were historically private and are now funded by the State, schools run by the autonomous councils in the Sixth Schedule areas, private unaided schools, and a network of institutions attached to tea estates. The autonomous

council schools are administratively distinct from the line department system, and as noted in Chapter 1 their reporting flows through a separate channel that is not fully reconcilable with State aggregates.

Dropout at the elementary stage in Assam is comparatively low. The Unified District Information System for Education Plus records dropout rates for Assam of 3.8 per cent at the primary stage and 5.0 per cent at the upper primary stage in 2024 to 2025 (Ministry of Education, 2026).

These figures are modest and are not the principal problem. The problem appears at the next stage, and section 5.2 addresses it. The relevance of the elementary figures here is that they establish that the system is capable of holding children when the opportunity cost of attendance is low and the school is physically near the household. Both conditions weaken as the child grows older and the nearest institution becomes more distant.

The most authoritative recent measurement of learning in Assam is the PARAKH Rashtriya Sarvekshan conducted on 4 December 2024, which assessed pupils in Grades 3, 6, and 9, corresponding to the end of the foundational, preparatory, and middle stages under the National Education Policy 2020 (National Council of Educational Research and Training, 2025).

Assam performed below the national average in both assessed domains. In Language, the State average was 3 percentage points below the national figure. In Mathematics, it was 1 percentage point below. Disaggregated by gender, boys in Assam performed 2 percentage points below the national average in Language and girls 3 percentage points below, while in Mathematics both boys and girls performed 1 percentage point below the national average (National Council of Educational Research and Training, 2025).

The national context in which these gaps sit is more important than the gaps themselves. Nationally, Grade 3 pupils scored 64 per cent in Language and 60 per cent in Mathematics. By Grade 9 the Language figure had fallen to 54 per cent and Mathematics to approximately 37 per cent. Mathematics was the lowest scoring subject at all three grades assessed, and the deficit widened at each successive stage (National Council of Educational Research and Training, 2025).

The analytical conclusion is uncomfortable and should be stated directly. Assam is close to the national average, and the national average describes a system in which a Grade 9 pupil answers correctly roughly a third of mathematics items pitched at the level of the preceding stage. Assam does not have a learning problem that is exceptional by Indian standards. It has the Indian learning problem, at slightly greater severity, in a State with less fiscal room and weaker administrative reach into its hardest geographies than most.

Two implications follow. First, benchmarking against the national average is not a sufficient standard for the State. A target of reaching the national mean would leave the great majority of Assam pupils below proficiency. Second, the widening of the mathematics deficit between

Grade 3 and Grade 9 indicates cumulative rather than terminal failure. Pupils who do not acquire foundational numeracy in the early grades do not recover it later, and each additional year of schooling adds curriculum they cannot access. The intervention point is therefore the foundational stage, and effort directed at Grade 9 remediation addresses a condition that was established six years earlier.

Chapter 1 established that of the population enumerated in 2011, 48.38 per cent returned Assamese as mother tongue, approximately 29 per cent returned Bengali, and 4.53 per cent returned Bodo, with Hindi, Nepali, Santali, and a substantial number of Tibeto Burman languages accounting for the remainder (Registrar General of India, 2011). Assamese is the official language of the State, Bengali holds official status in the three Barak valley districts, and Bodo holds associate official status in the Bodoland Territorial Region.

The consistent finding of research on early literacy acquisition is that children taught initially in a language they do not speak at home acquire reading more slowly and leave school earlier. In Assam this is not a marginal consideration affecting a small minority. It affects the substantial share of children whose home language is a Tibeto Burman language, a tea garden community language, or a variant sufficiently distant from the standard written form to constitute a barrier at the point of decoding.

The State has an existing instrument in the form of multilingual education provision and mother tongue based early grade materials, and the autonomous councils exercise competence over primary education within their areas. This framework recommends that medium of instruction in Grades 1 to 3 be determined at the district or block level on the basis of the dominant home language of the enrolled cohort rather than uniformly at the State level, with transition to the State language from Grade 3 supported by explicit bridging instruction.

5.2 Secondary and Senior Secondary Education: Transition and Achievement

The secondary stage is where the education system of Assam fails most visibly. The Unified District Information System for Education Plus records a secondary dropout rate for Assam of 17.5 per cent in 2024 to 2025, against 3.8 per cent at primary and 5.0 per cent at upper primary (Ministry of Education, 2026). Assam is identified in analyses of that data as a State requiring intervention, with secondary dropout exceeding 15 per cent, transition rates in the region of 70 per cent, and retention in the range of 50 to 60 per cent.

The national secondary gross enrolment ratio stood at 78.7 per cent in 2024 to 2025 (Ministry of Education, 2026). A State losing more than one in six secondary pupils annually is not experiencing a marginal leakage. It is experiencing the exclusion of a substantial fraction of each cohort from any qualification that carries labour market value, at precisely the age at which the demographic dividend discussed in Chapter 1 either materialises or does not.

Four causes can be identified with reasonable confidence from the structure of the problem, though the State does not publish disaggregated exit surveys that would allow their relative weights to be established.

The first is distance and physical access. Elementary schools are numerous and local. Secondary schools are fewer and serve larger catchments. In the char and chapori tracts, where settlements are separated by water and connectivity is seasonal, and in the hill districts, where terrain lengthens journey times disproportionately to distance, the transition to secondary schooling requires a daily journey that many households will not sustain for an adolescent, particularly a girl.

The second is opportunity cost. An adolescent is economically productive in a way a young child is not. In the tea garden belt, in agriculture during the transplanting and harvest peaks, and in the household economy generally, the foregone contribution of a fifteen year old is material to a household near subsistence.

The third is accumulated learning deficit. A pupil who arrives at the secondary stage without foundational literacy and numeracy faces a curriculum that is inaccessible. The PARAKH data showing mathematics proficiency declining across grades is the statistical signature of this process. Dropout in such cases is a rational response to an experience of repeated failure, and it will not be addressed by attendance incentives alone.

The fourth is the annual hydrological cycle. In flood affected districts the school calendar is interrupted, buildings are used as relief shelters, and households are displaced. Chapter 14 documents that the 2024 floods affected 42.95 lakh persons across 7,794 villages in thirty five districts. An adolescent whose schooling is interrupted for several weeks in successive years accumulates a deficit that compounds.

It is worth stating the household calculation explicitly, because policy that misunderstands it will misfire.

A household deciding whether to keep a fifteen year old in school is comparing a certain present cost against an uncertain future return. The present cost comprises direct expenditure on fees, materials, uniform and transport, and the foregone contribution of the adolescent to household income or to domestic labour that frees an adult to earn. The future return is the wage premium attaching to a secondary certificate, discounted by the probability of actually obtaining it and by the probability of finding employment that pays the premium.

Each term in that calculation is unfavourable in the geographies where dropout is concentrated. The direct cost is higher where the school is distant, because transport is required and because distance may necessitate boarding. The foregone contribution is higher in households near subsistence and in the agricultural and plantation calendars where adolescent labour has a definite seasonal value. The probability of obtaining the certificate is lower for a pupil carrying the accumulated learning deficit documented in section 5.1.3. And the probability of the certificate yielding employment is depressed by the labour market

conditions Chapter 3 describes, in which formal employment absorbs a small fraction of entrants.

Two policy implications follow, and they differ from the instruments currently emphasised. First, an incentive that offsets only the direct cost addresses the smallest of the unfavourable terms. The binding constraint in a subsistence household is usually the foregone contribution, which is larger than fees. Second, and more fundamentally, interventions that raise the probability of obtaining and benefiting from the certificate operate on the return side of the calculation and are therefore more powerful than those operating on the cost side. Improving foundational learning so that secondary curriculum becomes accessible, and strengthening the link between qualification and employment discussed in section 5.4, change the household calculation more than any stipend of realistic size.

The Board of Secondary Education, Assam and the Assam Higher Secondary Education Council have been brought together under a unified Assam State School Education Board. Consolidation of this kind offers the possibility of a coherent assessment framework across the secondary and senior secondary stages and of continuity in curriculum and question design.

This framework notes that the State does not publish a consolidated, disaggregated series on senior secondary stream distribution, subject level performance, or the correspondence between board results and subsequent tertiary enrolment. Assertions about stream imbalance are commonly made in State education discussion but could not be traced to a published source, and they are therefore not reproduced here. Section 5.6 recommends that such a series be published.

5.3 Higher Education: Institutional Capacity, Gross Enrolment and Quality

Assam reports a gross enrolment ratio in higher education of 16.9 per cent, against a national average of 28.4 per cent (Government of Assam, 2024). On its face this places Assam among the weakest performing States on tertiary participation.

The figure requires an important qualification that is frequently omitted. The State education department has attributed the low reported ratio substantially to incomplete submission of institutional data to the All India Survey on Higher Education portal rather than to enrolment itself, and has conducted compliance workshops covering more than eight hundred government and private colleges to improve reporting (Government of Assam, 2024). At the national level, the All India Survey on Higher Education for 2023 to 2024 recorded total enrolment of 4.50 crore students (Ministry of Education, 2026).

This framework treats the reported ratio as unreliable in both directions and draws two conclusions. Substantively, even allowing for material under-reporting, the tertiary participation rate in Assam is below the national average and well below the National Education Policy 2020 target of 50 per cent by 2035. Procedurally, a State that cannot

establish its own tertiary enrolment within a reliable margin cannot plan institutional expansion, faculty recruitment, or scholarship provision on a rational basis. The correction of the reporting failure is a precondition for the policy, not a footnote to it.

Higher education in Assam remains predominantly publicly provided, with government colleges enrolling the majority of students, in contrast to the pattern in several States where private unaided provision now dominates (Ministry of Education, 2026). The institutional base includes central and State universities, a network of government and provincialised colleges, and the specialised institutions discussed in Chapter 17, of which the Indian Institute of Technology Guwahati is the most significant for the innovation ecosystem.

Female enrolment in higher education in Assam now exceeds male enrolment (Ministry of Education, 2026). This is a development of considerable significance and is consistent with the favourable sex ratio and child sex ratio recorded in Chapter 1. It also creates a specific policy obligation. A tertiary system in which women are the majority of students but the labour market absorbs them at a much lower rate than men produces educated underemployment concentrated among women, and Chapter 7 examines female labour force participation in this light.

The State has deployed direct financial instruments to raise participation, particularly among women. The Mukhyamantrir Nijut Moina Aasoni provides monthly assistance to girl students of 800 rupees at the higher secondary stage, 1,250 rupees at the undergraduate stage, and 2,500 rupees at the postgraduate stage, for a maximum of ten months in an academic year, and has covered more than six lakh girls since its introduction (Government of Assam, 2026). The Chief Minister's Jibon Perna scheme provides monthly financial assistance of 2,500 rupees for up to one year to students graduating from government colleges and universities of Assam, together with a one time grant of 25,000 rupees to research scholars (Government of Assam, 2025).

Instruments of this type address the affordability constraint on continuation. They do not address the two other binding constraints, namely the quality of instruction and the labour market value of the qualification obtained. A stipend that retains a student in an institution whose graduates are not employable converts a dropout into an unemployed graduate. This framework therefore recommends that continuation of the schemes be paired with published institution level outcome reporting, so that the assistance flows toward provision that demonstrably improves prospects.

5.4 Technical, Vocational Education and Training Ecosystem

The technical and vocational training system in Assam comprises industrial training institutes, polytechnics, engineering and technical colleges, and the short duration certification delivered through national skilling missions. The structural weakness of this system, in Assam as in most Indian States, is that its provision is supply determined rather

than demand determined. Trades are offered because the institution has the equipment and the instructor, not because a local employer requires the skill.

This weakness has become materially more consequential because of the industrial developments described in Chapter 4. The semiconductor assembly and test facility at Jagiroad, developed at an investment of approximately 27,000 crore rupees, together with its prospective ancillary chain, creates for the first time in the State a concentrated demand for specific technician grade competencies in cleanroom discipline, precision handling, metrology, industrial maintenance, and process quality control. The 2026 to 2027 Budget also provides for approximately 33,000 new posts for health professionals and four new medical colleges, which creates a parallel demand in allied health and paramedical qualifications (Government of Assam, 2026).

These are precisely defined, locally located, and time bound demands. If the vocational system responds to them, Assam converts an anchor investment into a broad based employment effect. If it does not, the operator will import trained technicians from other States, and the investment will remain the enclave that Chapter 4 warns against.

This framework is unable to report reliable State level figures for industrial training institute intake capacity, seat utilisation, certification completion, or placement outcome, because a consolidated and independently verifiable published series could not be identified. Placement percentages circulated in skilling programme reporting across Indian States are widely understood to be weakly defined, since they typically record an offer rather than a sustained employment relationship, and they are not reproduced here.

The absence of this evidence is itself the finding. A State proposing to align vocational provision with industrial demand cannot verify whether it is succeeding without tracer data following trainees into the labour market. Section 5.7 makes the establishment of such a system a priority.

5.5 Teacher Capacity, Recruitment and Professional Development

Assam records pupil teacher ratios above the norm of thirty pupils per teacher prescribed under the Right to Education framework at the stages where the ratio has been reported as exceeding that threshold (Ministry of Education, 2026). The national pupil teacher ratios in 2024 to 2025 stood at 10 at the foundational stage, 13 at the preparatory stage, 17 at the middle stage, and 21 at the secondary stage.

The State level ratio is a weak diagnostic in Assam for the reason that applies to most State level averages in this report. Teacher deployment is uneven, and the binding problem in the hill districts, the char tracts, and the tea garden belt is not the aggregate number of teachers in the State but the willingness of qualified teachers to serve, and to remain, in postings that are physically difficult, seasonally inaccessible, and remote from services. A State with an adequate average ratio and severe maldistribution will show good statistics and poor outcomes in exactly the districts that Chapter 1 identifies as persistently lagging.

The learning outcome data in section 5.1.3 carries a specific implication for teacher development that is often missed. If the deficit were principally one of teacher subject knowledge, it would be broadly uniform across grades. The observed pattern, in which the mathematics gap widens progressively from Grade 3 to Grade 9, is more consistent with a failure of foundational instruction that compounds, and with instruction that proceeds through the prescribed curriculum irrespective of whether the class has mastered its prerequisites.

The corresponding professional development priority is therefore not additional content training at the secondary level but competence in early grade pedagogy, in continuous formative assessment, and in teaching to the actual level of the class rather than to the level of the textbook. This framework recommends that professional development resources be concentrated at the foundational stage, and that the State adopt a structured pedagogy approach with lesson level materials, regular low stakes assessment, and academic support at the cluster level.

The recommendation for structured pedagogy in section 5.5.2 is made frequently and implemented rarely, and the reasons for the gap are worth stating so that the recommendation is actionable rather than aspirational.

Structured pedagogy means that the teacher receives lesson level materials specifying the sequence of instruction, that pupils are grouped and taught at their actual level of attainment rather than at the nominal grade level, that short assessments are administered frequently and used to adjust instruction rather than to rank pupils, and that academic support is available at the cluster level from a person whose function is mentoring rather than inspection.

Each of those four elements fails for an identifiable reason when the approach is attempted at scale. Materials are produced but not distributed in time for the academic year. Grouping by attainment is resisted because it is perceived as segregating weaker pupils, and because it conflicts with the pressure to complete the prescribed syllabus. Assessment is converted into a reporting requirement, so that data flows upward and no instructional decision flows back. And the cluster resource person role is absorbed into administrative duties, including survey work, scheme verification, and election and census duty, so that the mentoring function is never performed.

The framework therefore attaches four operational conditions to its recommendation. Materials must reach schools before the academic year opens. The syllabus completion requirement must be formally relaxed at the foundational stage in favour of mastery of prerequisites. Assessment results must be returned to the teacher within a period short enough to be instructionally useful. And the cluster academic support cadre must be protected from non-academic deputation by explicit order. Without those four conditions the approach will be adopted in name and will not change what happens in classrooms.

Chapter 15 examines civil service vacancy across the State administration. In the education sector specifically, the position is complicated by the coexistence of several categories of teaching post, including State cadre, provincialised, contractual, and autonomous council appointments, with different service conditions. The consequence is a workforce that is difficult to manage as a single system and difficult to report on consistently.

5.6 Education Financing, Governance and Equity

Education, sports, arts and culture is the largest single sector in the Assam Budget. The allocation for 2026 to 2027 is 25,873 crore rupees, against a revised estimate of 27,432 crore rupees for 2025 to 2026 and actuals of 22,731 crore rupees in 2024 to 2025, representing an annualised increase of 7 per cent over the two year period. Within this, 8,889 crore rupees is allocated to primary schools, including both government and non-government institutions (PRS Legislative Research, 2026).

Two observations follow. The budgeted figure for 2026 to 2027 is 6 per cent below the revised estimate for the preceding year, though as Chapter 2 established, revised estimates in Assam have run substantially above both budget estimates and eventual actuals, so the annualised comparison against actuals is the more reliable indicator. Second, the concentration of allocation at the primary stage is appropriate to the diagnosis in this chapter, since the intervention point for learning outcomes is the foundational stage, but it sits awkwardly beside the finding that the sharpest failure of retention occurs at the secondary stage.

This chapter has been unable to report verified State level figures on several matters that a development framework would ordinarily address, including institutional counts by management type, stream distribution at senior secondary, school infrastructure completeness, vocational placement outcomes, and disaggregated enrolment by social group at the tertiary stage. In each case, figures circulate in State education discussion but could not be traced to a verifiable published source.

This is not a presentational difficulty. It is a governance failure with direct operational consequences. The tertiary gross enrolment ratio case in section 5.3.1 demonstrates the mechanism, in which a reporting failure produces a headline figure that the State itself disputes, leaving neither the department nor the public able to establish the true position.

Chapter 1 established that primary education stands transferred to the Sixth Schedule autonomous councils within their areas, and that council expenditure and outcome reporting flows through a channel distinct from the line departments. The consequences for this chapter are specific and under-examined.

A State level foundational learning mission of the kind recommended in section 5.7 will not, without deliberate design, operate in Karbi Anglong, West Karbi Anglong, Dima Hasao, or

the five districts of the Bodoland Territorial Region. Those are among the geographies with the weakest attainment and the highest Scheduled Tribe enrolment share. A mission that reaches every district except the ones with the greatest need would be worse than useless, because it would raise the State average while widening the internal gap and would generate reporting that conceals the divergence.

The framework therefore recommends that the mission be constituted jointly with the councils from the outset rather than extended to them subsequently, with a memorandum specifying the assessment instrument, the reporting format, the flow of funds, and the respective responsibilities for teacher deployment and academic support. The councils exercise genuine constitutional competence here, and an arrangement that treats them as implementation agencies of the State will fail on both legal and practical grounds.

The geography of educational disadvantage in Assam matches the geography of disadvantage generally, as established in Chapter 1 and examined in Chapter 7. The char and chapori tracts, the tea garden belt, and the hill districts record the weakest participation and continuation, for structural reasons that uniform provision does not address. The equity instruments currently deployed are predominantly financial transfers to individuals. The constraints in these three geographies are predominantly physical and institutional, namely distance, seasonal inaccessibility, teacher unwillingness to serve, and the interruption of the school calendar by flood.

5.7 Strategic Priorities for Education

Seven priorities follow from the analysis in this chapter.

1. Establish a Foundational Learning Mission with district level accountability, constituted jointly with the Sixth Schedule autonomous councils from the outset as set out in section 5.6.3. The target is that at least 80 per cent of pupils achieve grade appropriate proficiency in reading and numeracy by the end of Grade 3 by 2031, and 95 per cent by 2047, measured through an independent annual assessment published at district level and covering council areas on the same instrument and the same reporting cycle as line department areas. The mission model recommended here is the one that Chapter 6 shows to have succeeded in immunisation and, decisively, in maternal mortality reduction, namely a single measurable objective, a named accountable officer at district level, published comparative reporting, and continuity of effort across political cycles. The four operational conditions in section 5.5.3 should be treated as binding elements of the mission design rather than as implementation detail.
2. Treat secondary retention as a distinct programme rather than a continuation of elementary policy. The target is to reduce the secondary dropout rate from 17.5 per cent in 2024 to 2025 to below 8 per cent by 2031 and below 3 per cent by 2047. Instruments should address the identified constraints directly, through residential and hostel provision

in the char, hill, and tea garden geographies, transport support, and a flood resilient academic calendar in the affected districts.

3. Devolve medium of instruction decisions for Grades 1 to 3 to the district or block level on the basis of the dominant home language of the enrolled cohort, with structured bridging to the State language from Grade 3.
4. Correct the higher education reporting failure as a precondition for tertiary policy. Complete and audited institutional submission to the All India Survey on Higher Education should be achieved for all institutions by 2028, after which a credible gross enrolment ratio target can be set. On the best available current evidence the objective should be to reach the national average by 2035 and 50 per cent by 2047, consistent with the National Education Policy 2020.
5. Reorient vocational provision to identified local demand. The semiconductor and ancillary investment described in Chapter 4, and the approximately 33,000 health sector posts and four medical colleges announced in the 2026 to 2027 Budget, provide specific and locally located demand signals. Provision should be planned against employer commitments rather than institutional capacity, and a tracer study following trainees for at least two years after certification should be instituted and published.
6. Concentrate teacher professional development at the foundational stage and address maldistribution directly. Deployment incentives, hardship allowances, and housing provision for teachers posted in the char, hill, and tea garden geographies should be structured to secure not merely appointment but continuity of service, since teacher turnover in these postings is itself a determinant of learning outcomes.
7. Publish an annual State Education Report containing the disaggregated series this chapter was unable to source, covering institutions by management type, enrolment and outcomes by district, social group and gender, school infrastructure completeness, vocational placement traced over time, and expenditure against physical progress. Until such a series exists, education policy in Assam will continue to be made without the means to evaluate it.

CHAPTER 6: HEALTH, NUTRITION AND POPULATION

This chapter records the most important governance finding in the present framework. Over the past two decades Assam has reduced its maternal mortality ratio from 480 per lakh live births to 84, and in the most recent measurement has fallen below the national average for the first time in the history of the series (Registrar General of India, 2025). No Indian State has achieved a comparable reduction on a comparable indicator over a comparable period, and the achievement is the more striking because it was accomplished in the State that began the period furthest behind.

The significance of this for the framework as a whole is analytical rather than celebratory. Chapter 1 established that Assam records a Human Development Index value of approximately 0.655, placing it thirty first among the States and Union Territories, with the health component the weakest of the three (Global Data Lab, 2024). Chapters 2 and 5 have documented a fiscal architecture under strain and an education system that is failing to teach. Against that background it would be easy to conclude that the administrative machinery of the State is simply incapable of delivering outcomes. The maternal mortality record refutes that conclusion. When the State selects a single measurable objective, assigns accountability for it, and sustains the effort across successive years, it is capable of results at the frontier of what is achievable in India.

The question this chapter therefore asks is not whether Assam can deliver but why it delivers on some indicators and not on others. The answer, developed through the sections that follow, is that the State performs well where the intervention is discrete, deliverable by a health worker at a defined moment, and measurable, and performs poorly where the outcome depends on sustained change in household behaviour, diet, and environment. Maternal survival and immunisation belong to the first category. Anaemia, stunting, and the emerging non communicable disease burden belong to the second.

A note on evidence applies here as in Chapter 5. Figures reported below are drawn from the National Family Health Survey, the Sample Registration System, the budget documents, and official programme reporting. Facility counts, vacancy rates, and financing shares that circulate in State health discussion but could not be traced to a verifiable published source have been omitted rather than reproduced, and the resulting gaps are identified in section 6.8.

6.1 Public Health Infrastructure: Facilities, Human Resources and Gaps

6.1.1 The Service Delivery Architecture

The public health system in Assam follows the standard Indian three tier rural structure of sub centres, now being repositioned as Ayushman Arogya Mandirs, primary health centres, and community health centres, above which sit sub divisional and district hospitals and the medical college hospitals. To this standard architecture Assam adds two categories of provision that are specific to its geography and its economic history.

The first is the tea garden health system. Health provision on tea estates has historically been a statutory obligation of the plantation management under labour legislation, delivered through estate hospitals and dispensaries of widely varying quality. The State is currently upgrading 354 tea garden hospitals and has made 200 Ayushman Arogya Mandirs operational, with the objective of improving access to primary care, maternal health services, and essential medicines for the tea garden communities (Government of Assam, 2026). This represents a significant shift, in that the State is assuming responsibility for a population whose health provision was previously treated as an employer obligation.

The second is the riverine and flood adapted service. The State has deployed mobile medical units, medical drones for the delivery of supplies, and hospital ships to serve remote, flood prone, riverine, tribal, and tea garden areas (Government of Assam, 2026). The rationale is examined in section 6.8. A conventional fixed facility network cannot serve populations on char formations that are seasonally cut off and periodically relocated by erosion, and the recognition that the delivery model must adapt to the settlement pattern rather than the reverse is an important conceptual advance.

6.1.2 The Human Resource Constraint

The binding constraint on the Assam health system is not physical infrastructure but the availability of qualified personnel willing to serve where they are most needed. This proposition holds across India, where the shortfall of specialists at community health centres stood at 79.5 per cent against the requirement for existing facilities as at 31 March 2023, comprising shortfalls of 83.2 per cent for surgeons, 74.2 per cent for obstetricians and gynaecologists, 79.1 per cent for physicians, and 81.6 per cent for paediatricians (Ministry of Health and Family Welfare, 2024).

These are national figures and should not be attributed to Assam without State specific measurement. This framework was unable to source a current, verifiable, Assam specific series on facility level specialist vacancy, and section 6.8 treats the absence as a priority to remedy. What can be said with confidence from the structure of the problem is that vacancy in Assam will be concentrated in the hill districts, the char and chapori tracts, and the tea garden belt, for the same reasons that teacher vacancy concentrates there, namely physical difficulty, seasonal inaccessibility, and distance from services and schooling for the officer's own family.

The 2026 to 2027 Budget provides for the creation of approximately 33,000 new posts for health professionals and the establishment of four new medical colleges (Government of Assam, 2026). The scale of the sanctioned expansion is substantial. Two cautions apply. As Chapter 2 noted, the salary head in the same Budget is projected to fall in absolute terms from 40,177 crore rupees to 38,166 crore rupees, which is difficult to reconcile with a sanctioned expansion of this size, and the framework treats the salary projection as optimistic. Second, sanctioning a post is not filling it, and filling a post is not filling it in the district where the need is greatest. The operative metric is not posts created but posts occupied in the lagging geographies, sustained over time.

6.1.3 Financing

Health and family welfare received 8,998 crore rupees in the 2026 to 2027 budget estimates, against a revised estimate of 10,673 crore rupees for 2025 to 2026 and actuals of 7,399 crore rupees in 2024 to 2025, an annualised increase of 10 per cent over the two year period. Within this, 3,276 crore rupees is allocated to rural health services under allopathy (PRS Legislative Research, 2026). Capital outlay on health rose 35 per cent at the revised estimate stage in 2024 to 2025 (PRS Legislative Research, 2025).

The annualised growth of 10 per cent exceeds the growth of revenue receipts and indicates a genuine prioritisation of the sector. The caution recorded in Chapter 2 applies, namely that revised estimates in Assam run substantially above both budget estimates and eventual actuals, so the comparison against actuals rather than against revised estimates is the reliable one.

6.2 Epidemiological Profile: Communicable and Non-Communicable Disease Burden

6.2.1 The Vector Borne and Encephalitis Burden

Assam carries a communicable disease burden that has not receded in the manner observed in much of India, and the clearest instance is Japanese encephalitis and acute encephalitis syndrome. In 2026, as at the middle of June, Assam had recorded 35 confirmed cases of Japanese encephalitis with seven deaths, alongside 470 cases of acute encephalitis syndrome with 32 deaths (Government of Assam, 2026).

The epidemiology of Japanese encephalitis is intimately connected to the agricultural and hydrological system described in Chapters 1 and 18. The transmission cycle involves waterbird reservoirs, pig amplifying hosts, and Culex vectors that breed in irrigated paddy. A State with extensive standing water, a large paddy area, high rainfall, and pig rearing as a common household activity in tribal and rural communities presents close to ideal transmission conditions, and the seasonal peak coincides with the monsoon.

The State has strengthened surveillance, case management, hospital preparedness, vaccination, and inter-departmental coordination in advance of the season, with measures implemented from February 2026 including the training of nodal medical officers and expansion of vaccination coverage (Government of Assam, 2026). This framework endorses that direction and adds one observation. Encephalitis control in Assam is not solely a health department responsibility. It requires coordinated action on vector breeding sites, on the spatial separation of pig rearing from residential clusters, and on the drainage questions examined in Chapter 10, and the case for a formal inter-departmental mission structure is strong.

6.2.2 The Epidemiological Transition

Assam is undergoing the transition common to Indian States, in which the communicable disease burden declines slowly while cardiovascular disease, diabetes, chronic respiratory conditions, and cancers rise. Assam carries a particular burden of tobacco related disease, associated with high prevalence of both smoked and smokeless tobacco use, and the consequences appear in the incidence of oral and upper aerodigestive cancers.

This framework does not reproduce the specific prevalence percentages for hypertension, diabetes, and tobacco use that circulate in State health discussion, because it could not verify them against a published source at the required level of precision. The direction of the transition is not in doubt and is well established for India generally. What Assam lacks, and what section 6.8 recommends, is a published State non communicable disease surveillance series that would allow the burden to be quantified, targeted, and tracked.

The system implication of the transition is structural. A health system designed around episodic care, namely immunisation, delivery, and acute infection, is being asked to manage chronic conditions requiring lifelong medication adherence, periodic monitoring, and patient self management. That is a different operating model, and it is precisely the model that section 6.3 shows Assam to be least good at.

6.3 Maternal and Child Health

6.3.1 The Maternal Mortality Achievement

The maternal mortality ratio of Assam has followed the trajectory set out below.

Period	Assam	India
2004 to 2006	480	254
2014	300	167
2016	237	130
2020 to 2022	125	88
2021 to 2023	110	88
2022 to 2024	84	87

Figures are maternal deaths per lakh live births. Source: Registrar General of India, Sample Registration System Special Bulletin on Maternal Mortality, successive rounds (Registrar General of India, 2025).

The reduction from 480 to 84 represents a fall of more than 82 per cent over approximately two decades. In the most recent period Assam records a ratio below the national figure of 87, and it is no longer among the States with the highest maternal mortality, a position now occupied by Uttar Pradesh at 154 and Madhya Pradesh at 135. Several southern and western States continue to perform substantially better, with Kerala at 24, Tamil Nadu at 25, and Maharashtra at 37 (Registrar General of India, 2025).

Two points of interpretation matter. First, the achievement is real and should not be qualified into insignificance, but Assam has moved from an extreme position to an average one rather

than to a leading one, and the distance between 84 and the 24 recorded by Kerala represents the remaining agenda. Second, the State level figure will conceal district level variation, and the framework expects maternal mortality in the tea garden belt, the char tracts, and the hill districts to remain materially above the State average. Published district level maternal mortality data would allow this to be established, and its absence is noted in section 6.8.

6.3.2 Why Maternal Mortality Fell

Understanding the mechanism matters more than recording the result, because the framework's central recommendation is that the mechanism be replicated. Four elements can be identified.

The intervention was discrete and deliverable. Maternal death is overwhelmingly preventable through institutional delivery with a skilled attendant, timely referral for complications, blood availability, and management of haemorrhage, sepsis, and hypertensive disorders. Each of these is an action taken at a defined moment by a trained person in a facility.

The objective was singular and measurable. Maternal mortality is counted, published, and comparable across States, which creates external accountability that internal process indicators do not.

The delivery chain was extended to the household through the accredited social health activist and auxiliary nurse midwife cadres, transport support, and conditional incentives for institutional delivery, which addressed the demand side and the access side simultaneously.

The effort was sustained across two decades and across political cycles rather than concentrated in a single campaign.

These four features constitute a template. Chapter 5 recommends its application to foundational learning. Section 6.6 below examines why it has not worked for anaemia.

6.3.3 The Remaining Maternal Agenda

Three cautions qualify the achievement without diminishing it, and each defines part of the work that remains.

The first concerns the distance still to travel. A ratio of 84 places Assam at approximately the national average, not at the frontier. Kerala records 24 and Tamil Nadu 25 (Registrar General of India, 2025). If the standard against which the State measures itself is the best performing Indian State rather than the national mean, then roughly two thirds of the current maternal death burden remains addressable. The framework recommends that the State adopt the leading State rather than the national average as its reference point, since a target set at the mean institutionalises mediocrity at the moment when the institutional capacity to exceed it has just been demonstrated.

The second concerns spatial concentration. A State level ratio is an average over districts whose service conditions differ profoundly. The framework expects the residual maternal mortality burden to be concentrated in the tea garden belt, where the historical pattern of

estate based provision has produced a population with distinctive risk exposure, in the char and chapori tracts, where a woman in obstructed labour may be separated from an equipped facility by a river crossing that is impassable at night or in spate, and in the hill districts, where distance and terrain lengthen referral time. The interventions that reduce maternal death are time critical. Postpartum haemorrhage can kill within two hours. Any geography in which the interval between the onset of complication and the arrival at a facility capable of transfusion and surgery exceeds that window will retain elevated mortality regardless of the State average.

The third concerns what the indicator does not capture. Maternal mortality counts deaths. It does not count maternal morbidity, namely the obstetric fistula, uterine prolapse, severe anaemia, and chronic sequelae that follow survived complications and that impose a burden on far more women than mortality does. A State that has succeeded in preventing death has not thereby succeeded in ensuring safe pregnancy, and the framework recommends that maternal near miss reporting be instituted alongside mortality reporting, since near miss events are more numerous, occur closer to the point of failure, and therefore yield faster learning about where the system is weak.

6.3.4 Child Survival

Child survival indicators have improved substantially. Between the fourth and fifth rounds of the National Family Health Survey, the infant mortality rate in Assam fell from 48 to 32 deaths per thousand live births and the under five mortality rate from 57 to 39 (International Institute for Population Sciences, 2021). The infant mortality rate as measured by the Sample Registration System stands at approximately 30 per thousand live births, which remains above the national figure.

Full immunisation coverage among children aged 12 to 23 months improved from 66.4 per cent to 81.7 per cent between the fifth and sixth rounds of the National Family Health Survey (International Institute for Population Sciences, 2024). This is the second instance in this chapter of a discrete, deliverable, measurable intervention producing rapid gains, and it reinforces the analysis in section 6.3.2.

The residual eighteen per cent is nonetheless the harder part of the problem, and the framework cautions against assuming that the remaining gap will close at the rate the first gap closed. Immunisation coverage typically follows a decelerating curve. The children reached first are those in settled households near a functioning facility with a mother who has had contact with the health system during pregnancy. The children reached last are those in migrant households, in riverine settlements displaced between survey rounds, in tea garden populations with irregular contact with the public system, and in families where the mother herself did not receive antenatal care. Reaching them requires outreach rather than availability, and outreach is precisely the delivery mode that the flood calendar interrupts.

The relationship between the three child indicators also deserves comment. Infant mortality, under five mortality, and immunisation have all improved substantially, while the nutrition indicators examined in section 6.6 have not, and two of them have deteriorated. This is not a

contradiction. Immunisation prevents the specific infectious causes of child death that vaccines address, and improved delivery and newborn care prevent the perinatal causes. Neither addresses the chronic dietary insufficiency that produces stunting and anaemia. The consequence is a cohort of children who increasingly survive but who carry a nutritional deficit into school, where Chapter 5 records that they fail to acquire foundational literacy and numeracy, and into adult life, where Chapter 3 records low productivity per worker. Survival without nutrition converts a mortality problem into a human capital problem.

6.3.5 Child Survival in Context

6.4 Universal Health Coverage: State Health Assurance Schemes

6.4.1 The Current Architecture

Assam operated the Atal Amrit Abhiyan as its State health assurance scheme until it was discontinued in 2023 to avoid duplication. On 2 October 2023 the State launched the Ayushman Asom Mukhya Mantri Jan Arogya Yojana, providing health cover of 5 lakh rupees and cashless treatment, designed to supplement the Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (Government of Assam, 2026).

The scheme covers 1,949 medical procedures across 27 specialities, with 323 hospitals empanelled, and approximately 26 lakh families covered (Government of Assam, 2026).

6.4.2 Assessment

Three observations follow. The consolidation of two overlapping schemes into a single instrument aligned with the national programme was correct, and it removes an administrative duplication that consumed capacity without improving coverage.

The empanelment of 323 hospitals establishes the supply side of the entitlement, but the distribution of those hospitals is the operative question. An assurance scheme delivers benefit only where an empanelled facility is reachable. In a State where the population distribution and the hazard geography are as described in Chapter 1, the value of the entitlement to a household in a char settlement or an interior hill village depends entirely on whether an empanelled provider exists within reach during the season when travel is possible.

Third, hospitalisation cover addresses catastrophic inpatient expenditure and does not address outpatient consultation, diagnostics, and medication, which constitute the larger part of routine household health expenditure and which bear most heavily on the chronic conditions discussed in section 6.2.2. The framework recommends in section 6.8 that outpatient diagnostics and essential medicines be brought progressively within the assurance envelope, since the epidemiological transition will otherwise shift household costs into precisely the category the scheme does not cover.

6.5 Mental Health, Migration, Family Structure and Psychosocial Health

6.5.1 The Service Position

Mental health provision in Assam is anchored on the specialised institutional capacity at Tezpur and on the District Mental Health Programme, supplemented by the national tele-mental health service. As in most Indian States, provision is concentrated in tertiary institutions and thinly distributed at the primary level, where the great majority of common mental disorders would be most appropriately managed.

This framework was unable to source verified State level data on psychiatrist and clinical psychologist availability, district programme coverage, or treatment gap, and does not substitute estimates.

6.5.2 The Assam Specific Stressors

Three features of the Assam context bear on psychosocial health and are insufficiently addressed in service design.

The first is displacement. Riverbank erosion, as documented in Chapters 1 and 13, permanently removes land and extinguishes title, producing households that lose their asset base and their place of residence without legal claim to replacement. Repeated displacement is a recognised determinant of psychological distress, and the affected population is concentrated and identifiable.

The second is labour migration. Out-migration of working age adults, discussed in Chapter 20, separates families for extended periods, leaves children in the care of grandparents, and creates the household structures associated with elevated psychosocial risk at both ends of the migration chain.

The third is the legacy of prolonged conflict. Chapter 15 records the sustained reduction of insurgency related violence over two decades as a governance achievement. The cohort that grew up during the period of active conflict, and the communities in the districts most affected, carry consequences that a health system organised around physical morbidity does not detect.

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

6.6.1 The Nutrition Position

The nutritional status of children in Assam is the clearest instance in this chapter of the category of outcome on which the State has not succeeded.

Indicator	Assam, NFHS-4 (2015 to 2016)	Assam, NFHS-5 (2019 to 2021)	India, NFHS-5
Stunting, height for age	36.4	35.3	35.5

Wasting, weight for height	17.0	21.7	19.3
Severe wasting	6.2	9.1	7.7
Underweight, weight for age	29.8	32.8	32.1
Anaemia, children aged 6 to 59 months	35.7	68.4	67.1

All figures are percentages. Source: International Institute for Population Sciences (2021).

Three findings emerge. Stunting improved marginally, by approximately one percentage point over five years, and Assam remains close to the national figure. Wasting, severe wasting, and underweight all deteriorated between the two rounds, and in each case Assam now stands worse than the national average. Anaemia among young children rose from 35.7 per cent to 68.4 per cent.

The anaemia increase requires careful interpretation and should not be read as a straightforward doubling of the underlying condition, since measurement methodology and testing coverage differed between rounds and the increase was observed across most Indian States. What can be said is that after the change in measurement, roughly two in three young children in Assam are anaemic, as are approximately 66 per cent of women and 36 per cent of men (International Institute for Population Sciences, 2021). This is a burden of a magnitude that constrains cognitive development, school performance as discussed in Chapter 5, and adult productivity.

6.6.2 The Anaemia Question Examined

Anaemia deserves separate treatment because it is the single largest nutritional deficit in Assam, because it cuts across age and sex groups, and because it has proved most resistant to intervention.

The prevalence figures are approximately 68 per cent among children aged 6 to 59 months, approximately 66 per cent among women, and approximately 36 per cent among men (International Institute for Population Sciences, 2021). The gap between the female and male figures is itself diagnostic. Iron requirements are higher for menstruating and pregnant women, but a thirty percentage point differential also reflects intra-household food allocation, in which women in many households eat last and eat least. This is a behavioural and social pattern rather than a supply problem, and it will not respond to supplement distribution alone.

Four causal pathways operate simultaneously in the Assam context, and programme design has generally addressed only the first.

Dietary iron intake is low, and the predominance of rice in the diet, documented in Chapter 18, provides bulk without micronutrient density. Iron absorption is further inhibited by the phytates in a cereal dominant diet and by tea consumption with meals, which is near universal in the State.

Parasitic and infectious load depletes iron. Hookworm infestation, associated with the sanitation conditions examined in Chapter 10, causes chronic intestinal blood loss. Malaria, though much reduced, remains present in the forested and hill districts. Repeated enteric infection impairs absorption independently of intake.

Reproductive factors including early marriage, closely spaced pregnancies, and high parity deplete maternal iron stores and transmit deficiency to the infant, which is why anaemia is transmitted across generations and why section 6.7 treats spacing rather than aggregate fertility as the operative family planning objective.

Supplementation itself has weak adherence. Iron and folic acid supplementation is a long duration intervention requiring daily consumption over months, with unpleasant gastrointestinal side effects and no perceptible short term benefit to the person taking it. It is, in other words, exactly the type of intervention that section 6.3.2 identifies as the category in which the State performs poorly, and it stands at the opposite end of the spectrum from the single skilled attendance at delivery that reduced maternal death.

The framework's operational conclusion is that an anaemia strategy confined to supplement distribution will not succeed. It must combine fortification, which requires no behaviour change at the point of consumption, with deworming, with the sanitation improvements in Chapter 10 that reduce parasitic load, with dietary diversification linked to the horticulture, fisheries and livestock development discussed in Chapter 18, and with the reproductive spacing objective in section 6.7. Responsibility for that combination sits across at least four departments, which returns the analysis to the accountability problem set out below.

6.6.3 Why Nutrition Has Not Responded

The contrast with maternal mortality is instructive and is the analytical core of this chapter. Maternal death is prevented by a discrete clinical act at a defined moment. Child undernutrition and anaemia are produced by daily dietary intake, feeding practice, birth spacing, sanitation and the enteric infection load discussed in Chapter 10, and household food security, sustained over years. No single deliverable act prevents them.

The programmatic apparatus is extensive, comprising the Integrated Child Development Services, the school meal programme, Poshan Abhiyan, and supplementary distribution. The 2025 to 2026 Budget provided 370 crore rupees for the supply of masur dal, sugar, and salt at subsidised rates to beneficiaries under the National Food Security Act, 2013 (Government of Assam, 2025). Social welfare and nutrition received 11,934 crore rupees in the 2026 to 2027 budget estimates, including 3,700 crore rupees for the Orunodoi scheme (PRS Legislative Research, 2026).

The framework's conclusion is that the constraint is not the existence of programmes or the level of allocation but the absence of a single accountable objective. Nutrition outcomes are the joint product of several departments, and where accountability is shared it is in practice absent. Section 6.8 recommends the correction.

6.7 Population Stabilisation and Family Planning

Chapter 1 established that the total fertility rate in Assam has fallen below the replacement level of 2.1 and is estimated at approximately 1.9, having stood at 2.2 at the fourth round of the National Family Health Survey (International Institute for Population Sciences, 2021). Population stabilisation has therefore been achieved at the State level without coercive instruments.

Two consequences follow for health policy. First, the objective of family planning services should shift from aggregate fertility reduction to spacing, to the reduction of adolescent and high parity pregnancy, and to meeting unmet need for contraception, all of which bear directly on maternal and child outcomes. Second, resources should be concentrated in the districts where the transition remains incomplete, principally in the lower Brahmaputra valley with high char populations, rather than deployed uniformly.

The demographic consequence over the longer horizon is population ageing, which will raise the dependency ratio after the demographic window closes and will shift the disease burden further toward chronic conditions. A health system that is not preparing for geriatric care, chronic disease management, and long term care will confront that transition without the institutional means to meet it.

6.8 Health System Strengthening and Future Preparedness

6.8.1 Flood Resilience of Health Services

The annual hydrological cycle documented in Chapter 14 interrupts health service delivery in the same districts every year. Facilities are inundated or converted to relief use, staff are displaced, cold chains for vaccines are broken, drug supply is interrupted, and referral transport becomes impossible at precisely the time when waterborne disease and snakebite incidence rise.

The deployment of mobile medical units, medical drones, and hospital ships is the correct response in principle (Government of Assam, 2026). The framework recommends that flood resilience be made an explicit design standard for health infrastructure in the affected districts, covering elevation of facility plinths above recorded flood levels, independent power and cold chain backup, pre-positioned drug and consumable stocks ahead of the season, and a published continuity plan for each affected facility.

6.8.2 The Measurement Gap

This chapter has been unable to source verified Assam specific data on facility counts, specialist vacancy, out of pocket expenditure share, non communicable disease prevalence, district level maternal and infant mortality, and mental health service coverage. Each of these is necessary to manage the system, and the absence of published series in each case is a governance failure rather than a presentational inconvenience.

6.8.3 Strategic Priorities

Seven priorities follow from the analysis in this chapter.

1. Sustain and extend the maternal mortality achievement. The target is to reduce the maternal mortality ratio from 84 per lakh live births in 2022 to 2024 to below 50 by 2031 and below 25 by 2047, with district level ratios published annually and the tea garden, char, and hill geographies reported separately, since the State average will conceal the remaining concentration of risk.
2. Apply the maternal mortality mission model to child anaemia and undernutrition. A single named authority should be made accountable for nutrition outcomes across departmental boundaries, with a measurable published target. The objective should be to halt and reverse the deterioration recorded in wasting and underweight between the fourth and fifth survey rounds, and to reduce anaemia among children aged 6 to 59 months below 40 per cent by 2031.
3. Convert sanctioned health posts into occupied posts in the lagging geographies. The approximately 33,000 sanctioned posts and four new medical colleges should be accompanied by a hardship posting framework covering allowance, housing, family schooling access, tenure limits, and preferential consideration for subsequent postings, and by published district level occupancy reporting.
4. Extend the assurance scheme to outpatient care. Outpatient diagnostics and essential medicines should be brought progressively within the Ayushman Asom envelope, since the epidemiological transition shifts household cost into the outpatient category that hospitalisation cover does not reach.
5. Establish an inter-departmental encephalitis control mission with authority over vector control, drainage, and animal husbandry practice, since the transmission cycle cannot be interrupted by the health department acting alone.
6. Make flood resilience a design standard for health infrastructure in the affected districts, with a published facility level continuity plan and pre-positioned stocks before each season.
7. Publish an annual State Health Report containing the disaggregated series identified in section 6.8.2, covering facilities and human resources by district, maternal and child mortality by district, non communicable disease surveillance, out of pocket expenditure, and mental health service coverage. The State has demonstrated that it can achieve what it measures and holds itself accountable for. The corollary is that it will not achieve what it does not measure.

CHAPTER 7: SOCIAL JUSTICE, INCLUSION AND COMMUNITY WELFARE

The organising claim of this chapter is that deprivation in Assam is spatially specific rather than diffuse, that it has been concentrated in the same three geographies for at least three decades, and that the instruments the State applies to it are organised around identity categories that map only imperfectly onto those geographies. The three concentrations are the char and chapori tracts of the Brahmaputra and its tributaries, the tea garden belt of upper Assam and the Barak valley, and the hill districts with their peripheral tribal belts. A household in any of the three is materially worse served by the education system described in Chapter 5, the health system described in Chapter 6, the water and sanitation system described in Chapter 10 and the connectivity network described in Chapter 12 than a household of the same caste, tribe or religion in the Guwahati agglomeration or a well connected valley village.

That has a direct consequence for policy design. The dominant frame in Assam public discussion treats inclusion as a question of who appears on which schedule, and the dominant instrument is the extension or reclassification of reserved status. This framework does not dispute that scheduled status carries real legal and material consequences, and section 7.3 records the principal claims without advocating an outcome. It does argue that the marginal gain from further reclassification is small relative to the marginal gain from staffing a primary health centre in a char settlement, keeping a school functioning in a tea garden line, or extending an all weather road to a hill village. Reclassification redistributes a fixed number of reserved posts and seats. It does not change the number of teachers who report for duty in Dhubri or the number of nurses who accept a posting in Karbi Anglong. The first is a question of who joins a queue; the second is whether the service exists at the other end of it.

The chapter therefore treats the three areas as development regions in the sense used in Chapter 1, and asks what the State delivers there, what it does not, and what it does not know. The last is a recurring finding. The evidentiary position for social justice policy in Assam is the weakest of any sector in this framework. The most recent comprehensive enumeration of the char tracts dates from 2002 to 2003 (Directorate of Minority Affairs and Char Areas, n.d.); caste and tribe disaggregated outcome data rest on the 2011 Census, because the enumeration due in 2021 was deferred; and beneficiary data for the State's largest transfer programme is not published in a form permitting independent verification. As in Chapters 5 and 6, figures that could not be traced to a verifiable published source have been omitted rather than reproduced, and the resulting gaps are consolidated in section 7.7.1.

7.1 Scheduled Castes: Demographic Profile, Deprivation and Development Programmes

7.1.1 The Demographic Position

Scheduled Castes constituted approximately 7.15 per cent of the population of Assam at the 2011 Census (Registrar General of India, 2011). This is below the all India proportion and

well below that of the large northern and eastern States, placing Assam among the States where Scheduled Caste populations are a numerically small minority rather than a demographically decisive bloc.

Three consequences follow. Dispersion: a population of this share across a State of Assam's extent forms few concentrated settlement clusters, which makes area based targeting ineffective and raises the importance of household level identification. Political weight: delivery responds in practice to organised demand, and a dispersed population that is not decisive in most constituencies generates weaker administrative pressure, which this framework judges is why Scheduled Caste specific service failures are largely absent from Assam public discussion. And the character of exclusion: the forms documented in the Gangetic plain, involving residential segregation, occupational restriction and violent enforcement of social boundaries, take different and less overt forms in Assam. This is frequently offered as evidence that no problem exists. The framework rejects the inference. The absence of the north Indian pattern is not the absence of disadvantage, and the correct response is measurement rather than assumption.

7.1.2 The Evidence Position on Outcomes

This framework was unable to source verified, current, Assam specific series on Scheduled Caste literacy, school completion, work participation, landholding, asset ownership or poverty incidence measured against the State average. The 2011 Census provides caste disaggregated demographic and literacy data, but that round predates the entirety of the programme architecture examined here. Section 7.7.1 identifies the absence of a current caste disaggregated outcome series as a measurement gap, and the framework declines to substitute estimates. It notes, as analytical expectation rather than measurement, that where Scheduled Caste households fall within the three deprived geographies their outcomes will be governed principally by the failure of general service delivery there, and elsewhere will approximate the State average more closely than the national caste gap would predict. The expectation is testable and untested.

7.1.3 The Financing Position

The composite head covering the welfare of Scheduled Castes, Scheduled Tribes, Other Backward Classes and minorities stood at Rs 3,477 crore in the 2026 to 2027 budget estimates, against a revised estimate of Rs 4,319 crore for 2025 to 2026 and actuals of Rs 3,194 crore in 2024 to 2025 (PRS Legislative Research, 2026). Within the 2026 to 2027 estimate, Rs 2,803 crore, or approximately 81 per cent of the head, is allocated to the welfare of Scheduled Tribes.

The residual for all other groups within the head is therefore of the order of Rs 674 crore in 2026 to 2027, and whether that is adequate cannot be assessed without a published sub-allocation, which is not available. More fundamentally, the composite head is the wrong unit of analysis, since the great majority of resources reaching Scheduled Caste, Scheduled Tribe and minority households flow through the general education, health, nutrition, housing and employment programmes examined in Chapters 5, 6, 10 and 20. The caution in Chapter 2

also applies: the 20 per cent reduction between the 2025 to 2026 revised estimate and the 2026 to 2027 budget estimate is not evidence of real contraction, since revised estimates in Assam run above both budget estimates and eventual actuals, and against the 2024 to 2025 actuals the head shows growth.

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

7.2.1 Composition and Distribution

Scheduled Tribes constituted 12.44 per cent of the population of Assam at the 2011 Census, numbering 38,84,371 persons (Registrar General of India, 2011). Distribution across communities is markedly uneven. The Boro accounted for 35.06 per cent of the State's Scheduled Tribe population, the Miri or Mising for 17.52 per cent, the Karbi for 11.08 per cent, the Rabha for 7.63 per cent and the Kachari for 6.52 per cent (Registrar General of India, 2011). Five communities therefore account for approximately 78 per cent of the total.

This concentration matters in a way aggregate tribal welfare allocations obscure. A programme designed around the average characteristics of the Scheduled Tribe population is in practice designed around the Boro and Mising experience, which is that of settled plains cultivators, and fits poorly the hill communities whose land tenure, agricultural system and administrative context differ substantially. The autonomous council architecture described in Chapter 1 partially addresses this and is the correct structural response, subject to the third tier fiscal constraints documented in Chapter 2. The legal distinction between Scheduled Tribes (Plains) and Scheduled Tribes (Hills), and the territorial limitation of scheduled status within the State, produces a population whose entitlements vary by location within a single State, placing the administrative burden on the individual rather than the administration.

7.2.2 Forest Rights and Forest Dwelling Communities

The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 confers individual and community forest rights on forest dwellers in occupation prior to the statutory cut off. Nationally, over 25.11 lakh titles had been recognised as at 31 May 2025, comprising 23.89 lakh individual and 1.21 lakh community titles, covering more than 2.32 crore acres (Ministry of Tribal Affairs data reported in The Shillong Times, 2025).

The Assam position is harder to establish. Reporting of Ministry data indicated approximately 96,000 forest rights claims pending in Assam as at 1 June 2025 (Swarajya, 2025). This framework could not verify against the Ministry's published monthly progress report a current figure for claims received, claims rejected, individual titles distributed and community forest resource rights recognised in Assam, and section 7.7.1 records the absence as a measurement gap. It is consequential, because the ratio of rejections to recognitions, and of community to individual rights, are the two diagnostic indicators of whether the Act is being implemented as a rights recognition statute or as a discretionary land distribution scheme.

Separately, the State Government distributed forest land title deeds to 4,673 tribal families at Chaygaon in Kamrup district, and has reported that over 1.5 lakh tribal families received land pattas under the first phase of the Basundhara scheme (Deccan Herald, 2025). Patta distribution under a State scheme and title recognition under the central statute are distinct instruments conferring different bundles of rights, and reporting that conflates them obscures the position under the Act. Two structural points follow. Community forest resource rights, which vest management authority over a defined forest area in the gram sabha, carry the greatest potential to alter the relationship between forest dwelling communities and the forest administration, and are the least implemented provision across India. And recognition interacts directly with the eviction and encroachment enforcement discussed in Chapter 16, since the same evidentiary process governs both. Where the claims process is incomplete, enforcement precedes adjudication.

7.2.3 Welfare Measures and the Hill District Service Position

Allocation to the welfare of Scheduled Tribes stood at Rs 2,803 crore in the 2026 to 2027 budget estimates (PRS Legislative Research, 2026). The level of allocation is not the binding constraint on tribal development outcomes. The binding constraint is the one identified in Chapters 5 and 6, namely the failure to place and retain qualified personnel in the hill districts and peripheral tribal belts. Chapter 6 recorded that no Assam specific facility level specialist vacancy series could be sourced, and Chapter 5 the equivalent gap for teacher deployment. The State therefore cannot demonstrate, and this framework cannot establish, whether the hill districts are staffed at parity with the valley. Until district level occupancy is published, tribal welfare expenditure will be judged by sums allocated rather than services delivered.

7.3 Other Backward Classes, Tea Garden Communities and Social Mobility

7.3.1 The Tea Garden and Ex Tea Garden Population

The tea garden and ex tea garden communities descend from labour brought to the plantations from central India in the nineteenth and early twentieth centuries. They constitute the largest single occupational community in the State, are classified within the Other Backward Classes category in Assam, and are distributed across the plantation districts of upper Assam and the Barak valley in settlement patterns determined by estate boundaries rather than the revenue village structure.

That is the analytical key. The population lives in a settlement geography created by an employer, in which housing, water, sanitation, primary health care and often primary schooling were historically provided by plantation management as a statutory obligation under plantation labour legislation rather than by the State as a citizen entitlement. For most of the twentieth century the population was therefore administratively invisible to the general service delivery system, because the estate was assumed to be providing what the State provided elsewhere. Where the estate provided poorly, or closed, no alternative existed.

The State is now reversing that arrangement. It is upgrading 354 tea garden hospitals and has made 200 Ayushman Arogya Mandirs operational, with the objective of improving access to primary care, maternal health services and essential medicines for the tea garden communities (Government of Assam, 2026). Chapter 6 assessed this as a significant shift in principle. The same logic has not been applied with equal clarity to housing, water, sanitation and schooling in the garden lines, and the transfer of responsibility is therefore partial.

7.3.2 The Wage Position

The daily wage of tea plantation workers is fixed by the State Government on the recommendation of the Minimum Wages Advisory Board for tea plantation workers. Following the Board's meeting of 26 February 2026, the Government notified an interim increase of Rs 30 with effect from 1 April 2026, raising the daily wage in the Brahmaputra valley from Rs 250 to Rs 280 and in the Barak valley from Rs 228 to Rs 258 (Assam Tribune, 2026; Business Standard, 2026). The revision applies to estate gardens and small tea gardens alike.

Three features require comment. The first is level. Rs 280 in the Brahmaputra valley and Rs 258 in the Barak valley, in the 2026 to 2027 financial year, is low in absolute terms and low relative to unskilled rates in most other organised sector employment in the State. The plantation wage is conventionally defended on the ground that it is accompanied by non-wage benefits including housing, rations, fuel and medical provision. The composite rather than the cash rate must indeed be assessed, but it is precisely the non-wage components whose delivery is least documented and least enforced, and where they are not delivered to standard the cash rate is the compensation.

The second is the differential between valleys. The Barak rate is Rs 22 per day below the Brahmaputra rate, a gap of approximately 8 per cent carried forward through successive revisions rather than examined. No published justification in terms of cost of living or productivity was traceable, and the framework treats it as inherited administrative practice requiring review.

The third is process. The last negotiated tripartite settlement between the planters' association and the recognised workers' union was signed in February 2015, establishing wages of Rs 115 from 1 January 2015, Rs 126 from 1 January 2016 and Rs 137 in the third year, against a preceding rate of Rs 94 (Assam Tribune, 2026). After its expiry the State moved from negotiated settlement to determination by the advisory board, and increases since have been characterised as interim. A wage set on an interim basis over an extended period indicates that collective bargaining in the sector is not functioning, and restoration of a concluded, time bound agreement is a governance requirement independent of the level at which the wage is set.

7.3.3 Health and Education Status of the Tea Garden Population

This framework was unable to source verified, current, Assam specific series disaggregating maternal mortality, infant mortality, child nutrition, anaemia prevalence, school enrolment,

completion or literacy for the tea garden and ex tea garden population against the State average. Figures purporting to establish such differentials circulate widely and could not be traced to a published source at the required standard. Section 7.7.1 records this as a measurement gap, and it is the most consequential evidentiary omission in this chapter, because the population is large, spatially identifiable, enumerable through the estate structure, and the subject of a substantial dedicated programme effort whose effectiveness cannot presently be evaluated.

What can be established is the State level position against which any differential would be measured. Chapter 6 recorded anaemia among children aged 6 to 59 months at 68.4 per cent, wasting at 21.7 per cent and underweight at 32.8 per cent at the fifth round of the National Family Health Survey, with wasting deteriorating from 17.0 per cent and underweight from 29.8 per cent at the fourth round (International Institute for Population Sciences, 2021). Deterioration on two of the three anthropometric measures, during a period in which the nutrition apparatus operated at scale, is a serious finding, and it is unlikely to be uniformly distributed across the State.

7.3.4 The Scheduled Tribe Status Claims

Six communities in Assam, namely the Koch Rajbongshi, Tai Ahom, Moran, Matak, Chutia and the tea garden or Adivasi communities, have sought inclusion in the list of Scheduled Tribes for the State over several decades. All six are presently within the Other Backward Classes category in Assam, and reporting places their combined share at approximately 27 per cent of the State population (The Federal, 2026).

The procedural position is as follows. A Group of Ministers constituted by the State Government submitted its report on 29 November 2025. Reporting indicates a three category approach, under which a separate Scheduled Tribe (Valley) category would be created for the Tai Ahom, Chutia, tea garden or Adivasi and Koch Rajbongshi communities residing outside undivided Goalpara district, while the Moran, Matak and the Koch Rajbongshi in undivided Goalpara and the former Kokrajhar district within the Bodoland Territorial Region would be brought within the existing Scheduled Tribe (Plains) category (Vision IAS, 2025; The Federal, 2026). Reporting further indicates that no legislation was introduced by the Union Government in the monsoon session of Parliament, and that the recommendations do not resolve reservation in employment or legislative representation (The Federal, 2026). This framework was unable to obtain the text of the report and records the above as reported rather than established. It takes no position on whether the claims should be accepted, which is a matter for the constitutional process under Article 342 involving the State Government, the Registrar General of India, the National Commission for Scheduled Tribes, the Union Cabinet and Parliament.

Three observations are independent of the outcome. First, the arithmetic. The existing Scheduled Tribe population is 12.44 per cent of the State (Registrar General of India, 2011). Adding communities reported at approximately 27 per cent would produce a Scheduled Tribe population approaching or exceeding two fifths of the State. Reservation operates on a fixed quantum of posts and seats, so expansion of the eligible population on that scale without

corresponding expansion of the quantum reduces the per capita value of the entitlement to every existing beneficiary. That is arithmetic rather than an argument against any claim, but it is why existing Scheduled Tribe organisations have opposed the claims, and any settlement not addressing it will not be stable. Second, geography. The six are not uniformly distributed and neither is their deprivation, and treating them as one category obscures differences larger than those between some of them and the general population. Third, scheduled status allocates access to a competitive queue. It does not deliver a school, a functioning sub centre, a road or a wage. For a tea garden household whose children are not completing secondary school, the binding constraint on entering the queue for reserved posts is the completion of secondary school. Reclassification without service delivery changes the household's legal category and not its position.

7.4 Gender Equity: Women in Education, the Economy and Governance

7.4.1 The Demographic Position and What It Does Not Imply

Assam recorded a sex ratio of 958 females per thousand males and a child sex ratio of 962 at the 2011 Census (Registrar General of India, 2011). Both are above the corresponding national ratios at the same Census, and the child sex ratio indicates the absence of the systematic prenatal sex selection that depresses the ratio in the northern and western States.

This is a genuine social fact, regularly cited as evidence of the position of women in Assam. The framework accepts the fact and rejects the inference. A favourable sex ratio establishes that female children are not being selectively eliminated before or shortly after birth. It establishes nothing about nutrition, education, asset ownership, labour market access, earnings or freedom from violence, and on each of these the Assam position ranges from unmeasured to poor. Survival and equality are different things. The nutrition evidence makes the point directly: anaemia among children aged 6 to 59 months stood at 68.4 per cent and among women at approximately 66 per cent at the fifth round of the National Family Health Survey (International Institute for Population Sciences, 2021). Anaemia at that prevalence among women of reproductive age constrains maternal outcomes, labour productivity and the attainment of the next generation, and coexists with the favourable sex ratio without contradiction.

7.4.2 Women in the Labour Market

The framework was unable to source a verified, current, Assam specific series for female labour force participation, worker population ratio or unemployment from the Periodic Labour Force Survey, and section 7.7.1 records this as a measurement gap. The absence is notable given that the survey is conducted annually and reported by State.

The national position provides the comparator. The labour force participation rate for females in India, on usual status for persons aged 15 years and above, increased from 23.3 per cent in 2017 to 2018 to 41.7 per cent in 2023 to 2024, and the female worker population ratio from 22.0 per cent to 40.3 per cent (Ministry of Statistics and Programme Implementation, 2024).

Interpretation of a shift that large over six years is contested, since a substantial part is accounted for by rural self employment and unpaid family labour rather than wage employment.

Three structural features of the Assam labour market bear on women's participation and are examined in Chapters 3, 18 and 20. The plantation sector employs women in large numbers in the plucking operation and is one of the few large scale formal employers of women in the State, which makes the wage position in section 7.3.2 a women's earnings question. Agriculture absorbs female labour predominantly on an unpaid family basis, recorded as participation without independent income. And out-migration of working age males leaves de facto female headed households managing agricultural operations without corresponding recognition in land records, examined in Chapter 16. The framework regards the last as most tractable. Women's ownership of land and productive assets in Assam is not measured in any published State series, and it determines access to institutional credit, to compensation on acquisition, and to the erosion related settlement questions in section 7.6.

7.4.3 Violence Against Women

Reporting of National Crime Records Bureau data records 64,959 cases of crime against women in Assam in 2023, falling to 49,552 in 2024, a reduction of approximately 23.7 per cent (Guwahati Plus, 2025). For an earlier year, reporting of the same source records a crime rate against women in Assam of 168.3 in 2021 against a national figure of 64.5, the highest among the States (NewsClick, 2022). Sources diverge on whether the rate is expressed per lakh of total population or per lakh of female population, and the framework reports the divergence rather than resolving it. The framework could not access the Bureau's volumes directly and treats these as reported figures requiring verification against the primary publication.

Three points of interpretation are necessary and frequently omitted. First, recorded crime rates measure reporting as well as incidence. A State with functioning registration practice, accessible police stations and institutional encouragement to report will record a higher rate than one where complaints are suppressed at the station. Assam's position at or near the top of the State ranking is therefore not straightforwardly evidence that it is the most dangerous State for women. Second, that qualification cannot dismiss the finding. A recorded rate approximately two and a half times the national figure is not plausibly explained by registration practice alone; the assessment here is that both incidence and registration are high, and that the response must sustain registration while acting on incidence. Third, composition matters more than the aggregate. In Assam as in most States the largest single head is cruelty by husband or relatives, followed by kidnapping and abduction and by assault with intent to outrage modesty. A caseload dominated by intra-household offences requires a response centred on protection officers, one stop centres, shelter capacity and legal aid, examined in Chapter 15, rather than on policing visibility in public space. No verified Assam specific data on protection officer strength, one stop centre utilisation or case disposal time could be sourced, and this is recorded as a further measurement gap.

7.4.4 Women in Governance

Assam's Panchayati Raj institutions operate with statutory reservation for women, and the State therefore has a substantial cohort of elected women representatives at the third tier. The fiscal position of that tier, documented in Chapter 2, is that internal revenue generation of Panchayati Raj Institutions declined from Rs 56 crore in 2019 to 2020 to Rs 45 crore in 2024 to 2025, and that releases against State Finance Commission recommendations have run below 20 per cent in most award periods (PRS Legislative Research, 2026). Reserving seats in a tier with neither funds nor functions confers office without authority. Devolution to the third tier is therefore a women's empowerment measure as well as a governance measure, and the framework treats the two as one question.

7.5 Children, Elderly Persons, Persons with Disabilities and Minorities

7.5.1 Children

Chapter 6 recorded that between the fourth and fifth rounds of the National Family Health Survey, wasting among children rose from 17.0 per cent to 21.7 per cent and underweight from 29.8 per cent to 32.8 per cent, while anaemia among children aged 6 to 59 months stood at 68.4 per cent at the fifth round (International Institute for Population Sciences, 2021).

The distributional point is that these are State averages, and the burden is expected to concentrate in the three geographies identified at the outset. The State does not publish child nutrition outcomes disaggregated by the char tracts, the tea garden belt or the hill districts, and without that disaggregation the nutrition programme cannot be targeted to where the deficit is largest. That is an operational consequence, not a reporting deficiency. Child protection raises a distinct issue arising from migration, flood displacement and poverty, documented in Chapters 14 and 20. Households displaced by erosion lose their asset base without legal claim to replacement, and displacement is a recognised driver of child labour, early marriage and trafficking risk. No verified State level data on child labour prevalence, post-survey child marriage incidence, or trafficking case registration and disposal could be sourced, and these are recorded as measurement gaps.

7.5.2 Elderly Persons

Chapter 6 established that the total fertility rate in Assam has fallen below replacement level and is estimated at approximately 1.9, having stood at 2.2 at the fourth round of the National Family Health Survey (International Institute for Population Sciences, 2021). Population stabilisation at State level has been achieved, and the demographic consequence over this framework's horizon is ageing.

The State therefore has a defined and closing window in which to build the means to support an older population, comprising pension coverage, geriatric health capacity, chronic disease management and long term care. Chapter 6 recorded that the health system is organised around episodic care and poorly configured for chronic conditions. The income support

architecture for the elderly is not documented in the budget papers at a level permitting assessment of coverage or transfer adequacy, and this is recorded as a measurement gap.

7.5.3 Persons with Disabilities

This framework was unable to source a verified, current figure for the number or proportion of persons with disabilities in Assam, for disaggregation by type, for the issue of disability certificates or unique disability identity cards, or for coverage of disability pension, aids and appliances distribution, or accessible infrastructure compliance. The 2011 Census enumerated disability, but the framework did not verify the Assam specific figures from that round and declines to reproduce numbers it has not confirmed. Section 7.7.1 records the whole of the disability data position as a measurement gap.

This is the most complete evidentiary vacuum in the chapter. Disability is the one form of disadvantage here that is not spatially concentrated, that cuts across every caste, tribe, religion and income group, and that is accordingly invisible to area based targeting. It is also the form for which the statutory entitlement framework under the Rights of Persons with Disabilities Act, 2016 is most specific, covering reservation in employment and higher education, accessibility of public buildings and transport, and inclusive education. A State that does not publish the size of the entitled population cannot demonstrate compliance with any of those obligations.

7.5.4 Minorities

The framework did not verify Census 2011 religious composition figures for Assam and does not reproduce them. What can be stated on verified evidence is institutional. The State administers minority affairs and char areas development through a single directorate, the Directorate of Minority Affairs and Char Areas (Directorate of Minority Affairs and Char Areas, n.d.), reflecting the substantial overlap between the population of the char tracts and the religious minority population of the lower Brahmaputra districts.

That arrangement is analytically double edged, and the framework records the difficulty rather than resolving it. Combining the mandates recognises a real overlap and concentrates responsibility for the most deprived tract in the State in one agency. It also risks converting a geographic development problem into a communal category, which is precisely the conversion this chapter argues against. Section 7.6 treats the char tracts as a development region defined by hydrology and accessibility, and the framework recommends that the State's own reporting adopt the same frame.

7.6 The Char and Chapori Tracts as a Development Region

7.6.1 The Physical and Demographic Position

The riverine islands and sandbars of the Brahmaputra and its tributaries, known locally as char and chapori, cover approximately 3.60 lakh hectares and had a population of approximately 24.90 lakh according to the Socio-Economic Survey of 2002 to 2003, of which

80 per cent was recorded as living below the poverty line (Directorate of Minority Affairs and Char Areas, n.d.).

Three qualifications are as important as the figures. The first is age. The survey dates from 2002 to 2003, and the State has been preparing a fresh socio-economic survey after that interval (Sentinel Assam, 2023). Every figure above describes a population as it stood before the current programme architecture, before the expansion of the national rural employment guarantee programme, before the rural roads and electrification programmes examined in Chapters 9 and 12, and before the Orunodoi transfer. The framework does not know the present position and neither does the State. The second is physical instability. Char formations are created and destroyed by the river; land accretes and erodes on a timescale of years, settlements relocate, and the total area and its district distribution change between surveys. A twenty year old area figure describes a landform that no longer exists in the same configuration. This is a property of the object surveyed rather than a defect of the survey, and it is why periodic re-enumeration is a structural requirement rather than a one off exercise. The third is variation in reported extent. Secondary literature cites a count of char villages and a share of the State population from the same period that could not be confirmed against the Directorate's published material, and the framework therefore reports only the area, population and poverty figures appearing on the Directorate's portal. The absence of a published village level char enumeration is itself a finding.

7.6.2 Why the Char Tracts Are a Service Delivery Problem

The poverty of the char tracts is conventionally attributed to the characteristics of the population. The framework's assessment is that it is principally attributable to the characteristics of the location, and that the same population would record ordinary outcomes in an ordinary location. Five mechanisms operate.

Access is seasonal. A settlement reachable only by boat, and during high water by a substantially longer route, cannot be served by a delivery model designed around road access, and every service degrades in proportion to travel time.

Tenure is insecure. Land that erodes extinguishes the holding and, as Chapter 16 discusses, frequently the record of title with it. A household that has lost land to the river and resettled on newly accreted land holds no document, cannot pledge the land for credit, cannot receive compensation and is administratively indistinguishable from an encroacher. This is the central asset problem of the char population, and it is a land records problem before it is anything else.

Infrastructure is not built. Public investment in permanent assets on a landform expected to erode is difficult to justify on conventional appraisal, so char settlements receive the least durable school buildings, the least reliable power connections and the fewest all weather structures. The appraisal logic is not irrational, but its cumulative effect is a permanent infrastructure deficit imposed on the poorest population in the State.

Personnel do not stay. The posting difficulties documented in Chapters 5 and 6 apply in acute form, involving daily water crossing, absence of housing, absence of schooling for the officer's own children and seasonal isolation.

Enumeration is incomplete. A population that moves in response to erosion is under-recorded in registers designed around fixed residence, which affects ration card coverage, scheme enrolment, electoral registration and every entitlement dependent on documented residence.

7.6.3 The Delivery Response

Chapter 6 recorded that the State has deployed mobile medical units, medical drones for the delivery of supplies and hospital ships to serve remote, flood prone, riverine, tribal and tea garden areas (Government of Assam, 2026). The framework endorses the underlying conceptual advance, which is that the delivery model must adapt to the settlement pattern rather than requiring the settlement pattern to adapt to the delivery model.

The addition here is that the same principle has not been extended to education, land administration or entitlement delivery. There is no equivalent of the hospital ship in the school system, no mobile land records service that re-establishes title following erosion, and no residence-portable entitlement mechanism that follows a household across a relocation. Until the char tracts are treated and reported on as a single development region with a delivery model designed for their hydrology, area based programmes will continue to be designed for conditions that do not obtain there.

7.6.4 The Transfer Instrument

Social welfare and nutrition received Rs 11,934 crore in the 2026 to 2027 budget estimates, including Rs 3,700 crore for the Orunodoi scheme (PRS Legislative Research, 2026). Orunodoi is a direct benefit transfer to women beneficiaries in eligible households and is the largest single social protection instrument operated by the State.

This framework was unable to source from an official published source a verified figure for the number of Orunodoi beneficiary households, the current monthly transfer amount, the district wise distribution of beneficiaries, or the coverage rate against the eligible population. Figures for each circulate on unofficial scheme aggregation websites and were not traceable to a State Government publication at the standard this framework applies. Section 7.7.1 records this as a measurement gap, and it is an unusual one, since a scheme absorbing Rs 3,700 crore in a single financial year ought to be among the most fully documented programmes in the State.

The analytical point is independent of the missing figures. A cash transfer is the correct instrument where deprivation arises from low and volatile income. It is not a substitute for a service where deprivation arises from the absence of the service. A char household receiving a monthly transfer and living forty minutes by boat from an unstaffed sub centre has more money and no health care. The State has, in Orunodoi, an effective instrument aimed at the income dimension of char and tea garden deprivation, and has not built the corresponding instrument for the service delivery dimension, which is the larger part of the problem.

7.7 Strategic Priorities for Social Justice and Inclusion

7.7.1 The Measurement Gap

This chapter has been unable to source verified figures on the following. Each is necessary to administer the policies discussed above, and the absence of a published series in each case is a governance failure rather than a presentational inconvenience.

- Current caste and tribe disaggregated outcome data for literacy, school completion, work participation, landholding, asset ownership and poverty incidence, the most recent basis being the 2011 Census.
- Assam specific Forest Rights Act implementation data covering claims received, claims rejected, individual titles distributed and community forest resource rights recognised, verified against the Ministry of Tribal Affairs monthly progress report.
- Health, nutrition and education outcomes for the tea garden and ex tea garden population disaggregated against the State average.
- Assam specific female labour force participation, worker population ratio and unemployment from the Periodic Labour Force Survey.
- Women's ownership of land and productive assets in the State.
- Protection officer strength, one stop centre utilisation and case disposal times under the violence against women architecture.
- The number and proportion of persons with disabilities in Assam, disaggregated by type, together with certification, pension coverage and accessibility compliance.
- Child labour prevalence, post-survey child marriage incidence, and trafficking case registration and disposal.
- Coverage and transfer adequacy of old age income support.
- Orunodoi beneficiary numbers, transfer amount, district distribution and coverage against the eligible population.
- A current socio-economic enumeration of the char and chapori tracts, the most recent being 2002 to 2003.
- District wise personnel occupancy for teachers and health staff in the hill districts, the char tracts and the tea garden belt.
- The quantum of reservation for Other Backward Classes and More Other Backward Classes in the State, which could not be verified against a published State Government notification.

7.7.2 Priorities and Targets

Eight priorities follow from the analysis in this chapter.

8. Complete and publish a fresh socio-economic survey of the char and chapori tracts by 2028, with village and district disaggregation, repeated at intervals not exceeding ten years. The 2031 target is annual publication of char specific indicators for school completion, institutional delivery, child nutrition and household asset ownership. The

2047 target is elimination of the gap between char tract and State average outcomes on those four indicators.

9. Reconstitute social justice reporting around geography rather than category. The State should publish an annual Inclusion Report covering the char and chapori tracts, the tea garden belt and the hill districts as defined development regions, alongside the existing caste, tribe and minority disaggregation. The 2047 target is that no development region records outcomes more than ten per cent below the State average on headline indicators.
10. Close the personnel deficit in the three lagging geographies, building on the priority in Chapter 6. The State should publish district level occupancy against sanctioned strength for teaching and health posts and operate a hardship posting framework covering allowance, housing, family schooling access and tenure. The 2031 target is occupancy of at least 90 per cent of sanctioned posts in every char, tea garden belt and hill district block, and the 2047 target is parity across all districts.
11. Conclude the tea plantation wage question and enforce non-wage entitlements. The daily wage stood at Rs 280 in the Brahmaputra valley and Rs 258 in the Barak valley with effect from 1 April 2026 (Assam Tribune, 2026). The sequence of interim increases should be replaced by a concluded settlement with an indexation mechanism, published compliance reporting for every registered estate on housing, water, sanitation, creche and educational obligations, and a documented justification for or elimination of the inter-valley differential. The 2047 target is convergence of plantation sector compensation with the State unskilled organised sector median.
12. Complete Forest Rights Act adjudication and publish claim, rejection and title data by district and category with reasons recorded, giving particular attention to community forest resource rights. The 2031 target is disposal of all claims filed up to 2025. The 2047 target is that no eviction action is initiated on land in respect of which a claim remains undetermined.
13. Establish the disability data and entitlement base through an annual statement covering enumerated population by type and district, certification, pension coverage, aids distribution and accessibility compliance. The 2031 target is certification of the full eligible population and accessibility compliance in all district public buildings, schools and health facilities.
14. Act on violence against women through a household oriented response, given a caseload dominated by intra-household offences. The State should publish protection officer strength against statutory requirement, one stop centre utilisation, shelter capacity and disposal times, while sustaining rather than suppressing registration. The 2047 target is convergence toward the national rate achieved through reduced incidence at maintained registration, verified by a periodic independent victimisation survey.
15. Pair the transfer instrument with a service delivery instrument. Orunodoi absorbs Rs 3,700 crore in 2026 to 2027 (PRS Legislative Research, 2026) and addresses only the income dimension of deprivation. The State should publish full scheme documentation and establish an equivalent, separately budgeted programme for service delivery in the three lagging geographies. The 2047 target is that household deprivation is attributable to income variation alone and not to location.

The chapter closes where it opened. The State has demonstrated, in reducing maternal mortality to 84 per lakh live births in 2022 to 2024 against a national 87 (Registrar General of India, 2025), that it can deliver an outcome at the frontier of what is achievable in India when it selects a measurable objective, assigns accountability and sustains the effort. The three deprived geographies of Assam have never been the subject of that treatment. They have been the subject of categories, allocations and schemes, none of which is the same thing as an objective for which someone is answerable.

CHAPTER 8: TRANSPORT AND CONNECTIVITY INFRASTRUCTURE

Transport policy in Assam is usually discussed as a matter of building things. This chapter treats it as a matter of overcoming two geographic penalties, one external and one internal, and argues that connectivity decisions should be judged against whether they reduce either.

The external penalty is the Siliguri corridor. The eight States of the Northeast are joined to the rest of India by a strip of West Bengal territory that narrows to approximately 22 kilometres, and reported estimates place the share of exports from Assam, Meghalaya, Manipur, Nagaland and Arunachal Pradesh moving by road through that corridor at 95 per cent, with the remaining 5 per cent by rail (Swarajya, 2025). The World Bank has estimated that goods prices in the Northeast are up to 60 per cent higher in rural areas and 30 per cent higher in urban areas than in West Bengal (World Bank, 2019). A cost wedge of that order does not merely make life expensive. It determines which industries can exist, and it is the principal reason Assam has a resource processing economy and a services economy but not, outside tea and hydrocarbons, a tradable manufacturing economy of any scale. Chapters 3 and 9 should be read with that constraint in view.

The internal penalty is the Brahmaputra, which divides the State into a north bank and a south bank that function as weakly integrated economies. The south bank carries the trunk highway, the trunk railway, the principal airports, the hydrocarbon infrastructure and the capital. Every crossing is therefore an act of economic integration rather than an amenity, and the spacing of crossings predicts north bank development outcomes better than any sectoral programme.

A third consideration cuts across both. Assam covers 78,438 square kilometres, of which 39.58 per cent is flood prone, and the entire State lies in Seismic Zone V (see Chapter 1). No other Indian State combines those exposures across its whole territory. Design standards, maintenance provisioning and asset life assumptions adequate elsewhere are not adequate here, and the annual cost of rebuilding assets that do not reach their design life is a real charge that conventional appraisal does not capture. This chapter treats asset life as a first order variable.

A note on evidence. Transport is the sector in which announced and verified figures diverge most widely. This chapter confines itself to figures traceable to official portals, Press Information Bureau releases, budget analysis or identifiable published reporting, and states the vintage and status of each. Figures that could not be traced have been omitted and recorded in section 8.7 as measurement gaps. That several basic series cannot be established from published sources is itself a finding.

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

The Public Works (Buildings and National Highways) Department reports the national highway length in Assam at 3,900.44 kilometres across 39 national highways (Government of Assam, 2026a).

Implementing agency	Length in kilometres
Assam Public Works Department, National Highways Wing	2,541.937
National Highways Authority of India	696.308
National Highways and Infrastructure Development Corporation Limited	399.36
Ministry of Road Transport and Highways	25.807
Border Roads Organisation	31.00
Railways	13.65
Newly declared highways pending assignment	192.38

Source: Government of Assam (2026a), Public Works (Buildings and National Highways) Department portal.

Two cautions apply. The first is vintage: the departmental page carries a last updated stamp of 11 February 2026, but the reference date in its own text is 31 March 2014 with subsequent additions, and its most recent progress figure dates from July 2017. A table refreshed in 2026 resting on a 2014 base is not a current inventory. The second is divergence: a commercial compilation of Ministry of Road Transport and Highways data gives 4,076.910 kilometres as at March 2024 (CEIC Data, 2024), a gap of approximately 176 kilometres or 4.5 per cent, most plausibly explained by the treatment of newly declared highways not yet assigned. A State cannot budget maintenance against an asset register it does not hold in current form.

The structural feature that matters more than either number is the agency split. Approximately 65 per cent of national highway length in Assam is maintained by the State Public Works Department acting as an agency of the Union Government, while the National Highways Authority of India holds under 700 kilometres. National highway performance across most of Assam therefore depends on the contracting practice and staffing of the same department that runs the State network, whose capacity Chapter 15 examines. The phrase national highway implies an insulation from State administrative capacity that does not exist here.

Transport received 11,504 crore rupees in the 2026 to 2027 budget estimates, against a revised estimate of 15,945 crore rupees for 2025 to 2026 and actuals of 10,824 crore rupees in 2024 to 2025, with capital outlay on roads and bridges at 10,042 crore rupees in 2026 to 2027 (PRS Legislative Research, 2026). Roads and bridges alone therefore absorb approximately 34 per cent of total capital outlay of 29,451 crore rupees. Assam is, in capital terms, a road building State, and the opportunity cost falls on the sectors examined in Chapters 9, 10 and 11. The apparent 28 per cent fall in the transport head against the 2025 to 2026 revised estimate should not be read as contraction, since Chapter 2 established that revised estimates in Assam run above both budget estimates and eventual actuals.

Asom Mala 4.0 has been announced with 800 kilometres of roads over five years (Government of Assam, 2026b). Reporting of the announcement of 10 July 2026 places the investment at 10,000 crore rupees, financed through the State's own resources, externally aided projects, public private partnership, the Rural Infrastructure Development Fund and

New Infrastructure Development Assistance, states that phases 1.0, 2.0 and 3.0 together carried projects worth more than 20,000 crore rupees, refers to connectivity projects worth over 55,000 crore rupees with the Union Government, and records the commencement of alignment and project preparation for two access controlled corridors, Barapani to Guwahati and Guwahati to Siliguri (India Today NE, 2026). This framework treats the 800 kilometre figure as verified and the financial figures as reported rather than confirmed against a budget document.

Three assessments follow. The financing structure is the most important and least discussed feature: a programme drawing on five channels is not financed from the capital outlay line above, and Chapter 2 recommended a consolidated contingent liability statement for precisely this reason. The two proposed corridors are directionally correct, since Guwahati to Siliguri attacks the external penalty and Barapani to Guwahati shortens the link toward Shillong and the Bangladesh trade points, but no cost, timeline or financing structure for either could be verified at this stage. Third, the programme is stated in kilometres built and not in kilometres maintained to a specified condition, which for the reasons in section 8.1.5 is the wrong metric for Assam.

The rural road record is the strongest element of the Assam connectivity story. Under the first phase of the Pradhan Mantri Gram Sadak Yojana, Assam was sanctioned 8,365 roads covering 26,792 kilometres and has completed 8,355 roads covering 26,778.80 kilometres, a completion rate above 99 per cent on both counts. Under the third phase, 104 projects covering 546 kilometres remain pending, with the deadline extended to March 2027 (The Sentinel, 2025). Nationally the programme had sanctioned 8,25,114 kilometres and completed 7,87,520 kilometres as at December 2025, approximately 95 per cent, and the fourth phase running from 2024 to 2025 through 2028 to 2029 proposes 62,500 kilometres to connect 25,000 habitations at an outlay of 70,125 crore rupees (Press Information Bureau, 2025a).

Assam's first phase completion exceeds the national average. This is a second instance, alongside the maternal mortality record in Chapter 6, of the State performing at the national frontier when the objective is discrete, measurable and externally audited. Rural road construction has all three properties.

Two qualifications apply. Connectivity achieved is not connectivity retained: where 39.58 per cent of the area is flood prone, a road completed in year one need not be an all weather road in year six, and no verified series on the condition of completed rural roads could be sourced. Second, habitation level connectivity in the char and chapori tracts, where settlements are seasonally islanded and periodically relocated by erosion as documented in Chapters 13 and 14, cannot be delivered by a road programme at all. The instrument there is riverine, and section 8.4 examines whether the State has one.

Reported lengths of the principal crossings are the Saraighat bridge at Guwahati at approximately 1.492 kilometres and the Kolia Bhomora bridge at Tezpur at approximately 3

kilometres (The Sentinel, n.d.), the Bogibeel road cum rail bridge near Dibrugarh at 4.94 kilometres, and the Bhupen Hazarika Setu, or Dhola to Sadiya bridge, at 9.15 kilometres, which crosses the Lohit tributary and connects Assam with Arunachal Pradesh. No official register of Brahmaputra crossings giving lengths, opening dates, configuration and load ratings could be located, and these lengths should be treated as reported rather than verified against a primary engineering source.

Two projects will materially change this position.

The Guwahati Ring Road is a 121 kilometre project of the National Highways Authority of India on a build, operate and transfer toll basis at a total cost of 5,729 crore rupees, incorporating a bridge over the Brahmaputra of approximately 3 kilometres. A concession agreement has been signed with Dineshchandra R Agrawal Infracon Private Limited for 30 years including four years of construction, with zero grant, and the Government of Assam is to contribute 1,270 crore rupees covering 50 per cent of land cost together with exemptions on aggregate royalty and the State share of goods and services tax (Press Information Bureau, 2025b). Reporting of the same project cites a total cost of approximately 7,000 crore rupees inclusive of land acquisition and utility shifting (Tractor Junction Infra, 2025). Both figures are given because they measure different things and are routinely conflated.

The Gohpur to Numaligarh project is the more radical intervention. The Cabinet Committee on Economic Affairs approved in February 2026 a 33.7 kilometre greenfield corridor from Gohpur on National Highway 15 to Numaligarh on National Highway 715, incorporating a twin tube tunnel of 15.79 kilometres beneath the Brahmaputra bored by tunnel boring machine, one tube carrying two road lanes and the other railway infrastructure, at a cost of 18,662 crore rupees with an expected completion period of five years, reducing the road distance from 240 kilometres to 34 kilometres and travel time from approximately six hours to approximately 20 minutes (Press Information Bureau, 2026).

The ring road is straightforwardly justified, since Guwahati is the single node through which north to south bank movement, east to west trunk movement and city traffic all pass. The risk is commercial rather than engineering: a zero grant toll concession over 30 years assumes a traffic and revenue profile sufficient to service private capital, and the State has already accepted a 1,270 crore rupee exposure plus tax expenditure to make the arithmetic work. If the traffic assumption proves optimistic, renegotiation or termination costs fall on the public side, and the traffic forecast and the revenue sharing and termination provisions should therefore be published.

The tunnel requires more scepticism, not because it is unsound but because of its cost. At 18,662 crore rupees it is approximately 1.86 times the entire annual capital outlay on roads and bridges in 2026 to 2027 and more than three times the cost of the 121 kilometre ring road. It is Union funded and so does not displace State capital directly, but it absorbs Union transport capital deployable elsewhere in the region. The engineering case, that a tunnel is more resilient than a bridge in a migrating channel, is plausible. Three observations follow rather than a verdict. The seismic design basis for a 15.79 kilometre bored tunnel in Seismic Zone V beneath an active braided channel should be published, because it is the central

technical question and is absent from the approval reporting. The five year completion estimate should be treated as an estimate rather than a planning input. And the corridor will create a rail crossing of the Brahmaputra in the upper valley, which is the more significant of its two outputs and is discussed in section 8.2.

A road or bridge in Assam faces three degradation mechanisms that are weaker or absent elsewhere. Inundation across 39.58 per cent of the State saturates subgrades, scours embankments and destroys shoulders annually rather than exceptionally. Channel migration and bank erosion, examined in Chapter 13, move the river itself and can undermine an approach structure correctly sited when built. Seismic Zone V status imposes a design load case on every bridge, culvert and retaining structure.

The budgetary consequence is that whole life cost per kilometre in Assam exceeds the national average by a margin that sanction stage appraisal does not capture, because appraisal compares capital cost and treats maintenance as a downstream operating matter. Where the maintenance requirement is annual, large and hydrologically driven, that separation biases the system toward new assets and away from existing ones, and the symptom is the familiar pattern in which a recently completed road deteriorates within a small number of monsoons. Three corrections follow and are carried into section 8.7: a published design standard for flood prone districts; maintenance provisioned as a ring fenced proportion of asset replacement value rather than as a residual, which requires the asset register that section 8.1.1 shows does not exist in current form; and a published seismic design basis for every major structure.

8.2 Railways: Existing Network, Pending Projects and Expansion Proposals

The network is operated by the Northeast Frontier Railway zone, and the dominant fact of its recent history is conversion of the metre gauge inheritance to broad gauge, which ended the operational isolation of Assam from the national system. Between 2014 and 2017, 833.42 kilometres of metre gauge track in the Northeast were converted, of which 671.52 kilometres lay in Assam, with major conversions including Lumding to Silchar at 210 kilometres, North Lakhimpur to Sripur at 81.46 kilometres and Katakhal to Bairabi at 75.66 kilometres (Indo-Asian News Service, 2025).

No verified current figure could be sourced for total route kilometres within Assam, electrified share, or freight originating and terminating tonnage by commodity. These are basic operating statistics and their absence is recorded in section 8.7. The analysis below is accordingly confined to the project pipeline.

Gauge conversion solved a compatibility problem, not a capacity problem, and capacity is now the binding constraint. The trunk route remains substantially single line over long

sections, which caps available paths and makes freight timings unreliable, since passenger services take priority on a single line railway.

The Digaru to Hojai section of 102 kilometres was completed between 2020 and 2022, and sections of the Lumding to Furkating doubling of 140 kilometres are reported to commence from 2026. For the Northeast as a whole, 10,440 crore rupees was reported as allocated for the financial year in question, with projects worth 77,000 crore rupees under way across the region (Indo-Asian News Service, 2025). These figures come from a news summary of ministry statements rather than a ministry document this framework could retrieve, and are flagged accordingly.

The analytical point is sequencing. A doubling of 140 kilometres commencing in 2026 following one of 102 kilometres completed in 2022 is an incremental rate on a trunk route several hundred kilometres long, and at that rate the valley trunk route will not be fully doubled within this framework's medium term horizon. Partial doubling will not shift freight from road to rail, because the constraint is path availability and transit reliability rather than the existence of a line.

Reported estimates place rail at approximately 5 per cent of export movement from Assam and the four neighbouring States (Swarajya, 2025). If approximately right, this is the most damning statistic in the chapter. A broad gauge railway running the length of a State whose principal disadvantage is the cost of moving goods 1,500 kilometres to market is carrying a twentieth of the traffic, on a movement profile of bulk cargo over long distance on a single trunk corridor for which rail is the natural mode.

Three causes are plausible with different remedies. Path scarcity is remedied by doubling. Absence of terminal and siding capacity near production points is remedied by freight terminal policy and by the facility discussed in section 8.4.3. Absence of return loads, which raises effective cost per tonne because wagons run empty in one direction, is remedied only by growth in inbound cargo, which is a function of industrial development rather than railway policy. This framework's assessment is that the third is likely dominant and least discussed. A region importing far more by value than it exports while exporting bulk commodities by weight has a directional imbalance that track doubling does not correct. That is not an argument against doubling. It is an argument for setting freight share targets against a realistic traffic base.

The rail tube of the Gohpur to Numaligarh tunnel, if delivered, would create a mid valley north to south bank rail crossing. The north bank line is currently connected to the south bank trunk route only near the extremities, so a mid valley crossing changes the topology of the network rather than merely adding capacity. On that ground the rail component is the more valuable half of the project.

8.3 Aviation: Airport Infrastructure and Air Connectivity

Lokpriya Gopinath Bordoloi International Airport is operated under a public private partnership concession by the Adani group, which assumed operations in late 2021. Passenger traffic in 2024 to 2025 reached 6.57 million, an increase of 7.67 per cent over 6.33 million in 2023 to 2024. Domestic arrivals were 3.26 million and domestic departures 3.30 million, and international passengers numbered 91,594, described as a record since the concessionaire took over. Cargo rose to 12,893 metric tonnes from 4,550 tonnes, an increase of 183.91 per cent, and a single day record of 21,444 passengers including transit travellers was recorded on 12 December 2024 (The Tribune, 2025).

One inconsistency should be noted rather than smoothed over. The domestic components sum to 6.56 million, and adding 91,594 international passengers gives approximately 6.65 million against a stated total of 6.57 million, a discrepancy of roughly 1.2 per cent most likely arising from rounding or from differing treatment of transit passengers.

Two observations follow. The cargo figure is the more interesting one: a near tripling from a very low base indicates that air cargo out of Guwahati was previously negligible, which is consistent with the argument in section 8.6 that high value output has no efficient surface route and air freight is the residual channel. Second, international throughput of 91,594 against 6.5 million domestic means an airport designated international is functioning as a domestic hub with a marginal international attachment. For a State whose strategy under the Act East framing rests on connection to Southeast Asia, that is the operative gap.

Assam has seven operational civil airports. Besides Guwahati, the Airports Authority of India operates Dibrugarh, Silchar, Jorhat, Tezpur, Lilabari and Rupsi. Reporting places combined throughput across the seven at approximately 8 million in 2024 to 2025 (NEDFi Databank, 2025). If that and the Guwahati figure are both approximately correct, the six regional airports together handled on the order of 1.4 million passengers and Guwahati carried approximately 82 per cent of the State total.

No verified airport level traffic for Dibrugarh, Silchar, Jorhat, Tezpur or Rupsi for 2024 to 2025 could be sourced. The one regional data point traced is Lilabari, where passenger numbers rose from 33,000 to over 39,000 year on year with more than 1,100 flights handled in 2024 (Asian News International, 2024).

Under the Regional Connectivity Scheme, 619 routes and 88 airports had been operationalised nationally by the end of 2024, with more than 146 lakh domestic passengers carried on 2.86 lakh scheme flights, while a closely contemporaneous official statement gives 609 routes and 86 unserved airports (Press Information Bureau, 2024). The divergence reflects the pace at which routes were being added and withdrawn and is reported rather than reconciled.

Three findings follow. The scheme has restored service at airports that would otherwise have remained dormant, and Lilabari is a case in point. The volumes are nonetheless small and the sustainability question is unresolved, since routes depend on viability gap funding for a defined period and a material proportion nationally lapse once support ends; the State should

track and publish route survival after support expires, because a lapsed route represents public expenditure that bought a temporary gain. And the dominance of Guwahati at approximately 82 per cent of State traffic confirms that Assam's transport network is a single node network, which carries efficiency advantages and a resilience disadvantage that Chapter 14 examines.

8.4 Inland Waterways, Logistics Hubs and Cross Border Trade Routes

The Brahmaputra was declared National Waterway 2 in 1988 and is the connectivity asset most frequently invoked in discussion of Assam's development, on the reasoning that a navigable river running the length of the State and connecting through Bangladesh to the sea should be a low cost alternative to the Siliguri corridor. The reasoning is sound. The record is not.

Total cargo movement on National Waterway 2 is reported at 8.11 million tonnes cumulatively from 2013 to 2014 through 2024 to 2025 up to October 2024, with 0.51 million tonnes moved in 2024 to 2025 up to October 2024. Movement was higher in 2013 to 2014, when 2.48 million tonnes was shipped, and has declined since (The Sentinel, 2024). A cumulative 8.11 million tonnes over approximately eleven years, of which 2.48 million tonnes moved in the first year, implies that the following decade averaged in the region of half a million tonnes annually. The waterway carried less after a decade of investment and promotion than at the start of it. For scale, national waterways as a whole carried a record 145.5 million tonnes in 2024 to 2025 (Press Information Bureau, 2025c), so even at its best recorded annual performance National Waterway 2 would represent under 2 per cent of the current national total.

Physical infrastructure is not the binding constraint. The waterway has 12 floating terminals, multimodal terminals at Pandu and Jogighopa, terminals at Bogibeel and Dhubri, and four dedicated jetties at Jogighopa, Pandu, Biswanath Ghat and Neamati (The Sentinel, 2024). Four operating constraints are plausible and are not ranked here without further study. Navigable depth varies seasonally and by reach, and a braided channel with high sediment load requires continuous dredging to hold a least available depth, which is an operating cost and therefore the item most likely to be under provisioned. Vessel availability and the economics of specialised inland craft on a route with directional imbalance are unresolved. Cross border transit through Bangladesh depends on a bilateral protocol outside Indian control. And the last mile between terminal and point of production has in several cases been provided later than the terminal.

This framework accordingly does not recommend further capital investment in National Waterway 2 terminals until operating constraints are resolved and demonstrated. It recommends instead an annual published statement of least available depth by reach and month, dredging expenditure, vessel calls, and tonnage by commodity and direction. A waterway that has absorbed capital for a decade while its traffic declined should demonstrate operational readiness before it receives more.

The Protocol on Inland Water Transit and Trade permits inland vessels of either country to transit specified routes of the other, connecting to the sea ports of Haldia, Kolkata, Mongla and Chattogram. Route 7 runs Karimganj, Zakiganj, Ashuganj, Bhairab Bazar, Narayanganj, Chandpur, Aricha, Sirajganj, Bahadurabad, Chilmari, Dhubri and Pandu, linking the Assam valley to the Bay of Bengal. In 2023 to 2024, approximately 4.68 million tonnes of traffic moved on the protocol route, of which 3.37 million tonnes was documented cargo, with Indian transit cargo consisting mainly of coal, fly ash and over dimensional cargo for power projects in the Northeast (Inland Waterways Authority of India, n.d.a).

Two points matter. The protocol route carries roughly nine times the tonnage of National Waterway 2, which establishes that the cross border waterway system functions while the domestic Assam segment does not. And the composition is telling: over dimensional cargo for power projects is precisely the category that cannot use the Siliguri corridor at all, because road and rail loading gauges will not accommodate it. The protocol route is functioning as a specialist channel for cargo with no alternative rather than as a general freight route competing on cost.

The protocol is a bilateral arrangement renewed periodically, whose operation depends on relations between the two governments. A logistics strategy relying on transit through Bangladesh for its cost advantage substitutes a political dependency for a geographic one. That is not an argument against pursuing it, since the cost gains are large, but an argument for pursuing it alongside rather than instead of corridor improvement, and for holding a costed contingency against protocol interruption.

The multi modal logistics park at Jogighopa in Bongaigaon district is intended as the point at which road, rail and river meet and is described as India's first such facility. The estimated cost of the first phase is 693.97 crore rupees, the project is wholly funded by the Government of India, and enabling works covering road, rail and water connectivity together with site levelling, boundary works, internal roads, administrative buildings and effluent treatment are reported to be at an advanced stage. The Ministry of Road Transport and Highways annual report for 2023 to 2024 described the facility as nearing completion and expected to be operational in the following year, and the deadline has been extended several times (Logistics Insider, 2025).

An attribution point affects accountability. The National Highways Logistics Management Limited, a special purpose vehicle wholly owned by the National Highways Authority of India, is the entity intended to develop the majority of the national multi modal logistics park programme, generally in public private partnership mode, whereas retrieved sources indicate that the Jogighopa facility specifically is being executed by the National Highways and Infrastructure Development Corporation Limited with full Government of India funding (Logistics Insider, 2025). The divergence is noted rather than resolved, and the State should establish which entity is accountable for the operational date.

A logistics park is a transshipment facility whose value derives entirely from the throughput of the modes it connects. Jogighopa sits on a river whose traffic has declined for a decade, connected to a rail network carrying an estimated 5 per cent of regional export movement,

adjacent to a border whose transit arrangements are periodically renegotiated. The facility causes none of these problems and cannot solve them. If the operating constraints on the waterway and the path constraints on the railway are addressed, Jogighopa becomes valuable. If not, it becomes a well built facility with low utilisation, and its throughput should be published annually from the first year of operation so the question is settled by evidence.

8.5 Urban Mass Transit and Intra City Mobility

Guwahati is the only city of metropolitan scale in the Northeast and concentrates the region's administrative, medical, educational and commercial functions. Its site is pinned between the Brahmaputra and a series of forested hills, so growth has occurred along a small number of corridors and arterial capacity cannot be expanded by widening, because there is nowhere to widen into. Through traffic on the national highway network and local traffic share the same alignments. This is the condition the ring road is intended to relieve. The 2026 to 2027 budget allocates 3,368 crore rupees to capital outlay on urban development, of which 2,528 crore rupees relates to the State capital (PRS Legislative Research, 2026), and Chapter 12 examines the governance arrangements through which it will be spent.

This is the weakest evidence section in the chapter and the reader should know it. No verified figures could be sourced for bus fleet strength and daily ridership of the Assam State Transport Corporation city services, for registered vehicles in the city or the State, for modal share, or for the status of a proposed light metro or mass rapid transit system. Each is a basic planning input, and their absence is treated here as a governance failure rather than a research inconvenience, because a city cannot plan a transit system without knowing how its residents currently travel.

What can be stated is limited. The Assam State Transport Corporation operates city bus services in Guwahati on a published network of stoppages (Government of Assam, n.d.). A ropeway across the Brahmaputra connecting Kachari Ghat with Panbazar became operational on 24 August 2020 with a reported capacity of 250 passengers per hour and a one way fare of 60 rupees (Guwahati Ropeway, n.d.); at that capacity it is a local and tourist amenity rather than transit capacity and should not be counted as such. Guwahati has been reported as among 18 cities selected for the first phase of a national water metro programme following approval of feasibility studies, with a draft national policy issued in 2026, and Dibrugarh and Tezpur have also been mentioned (Northeast Live, 2026). This framework could not confirm the selection, phase composition or policy text against a ministry document and treats the water metro as announced rather than as a project with verified scope or cost.

The water metro concept suits Guwahati better than most Indian cities that will receive it, because the Brahmaputra is the city's northern boundary and north Guwahati is separated from the core by a crossing currently made by the Saraighat bridge, by ferry and by the ropeway. A scheduled, high frequency, all weather service between defined terminals with integrated ticketing addresses a real corridor. The engineering question is whether terminals

can function across the seasonal water level variation the Brahmaputra exhibits, which is far greater than in the estuarine and backwater settings where the model has been proven in India. That should be answered before capital is committed.

The larger point is sequencing. A city that does not publish modal share, ridership or fleet data cannot choose between a light metro, a bus based rapid transit system and a water metro, because each is optimal under different demand conditions. The first investment should be a household travel survey and a published mobility dataset, updated at fixed intervals. It is cheap relative to any option it would inform, and without it the choice will be made on grounds other than evidence.

8.6 Logistics Cost, the Siliguri Corridor and the Act East Dimension

Through a strip narrowing to approximately 22 kilometres pass the road and rail links carrying effectively the entire surface freight movement connecting a region of over 40 million people to the rest of India, with road at 95 per cent and rail at 5 per cent of export movement from Assam and its four neighbouring States (Swarajya, 2025). The World Bank has estimated goods prices in the Northeast at up to 60 per cent higher in rural areas and 30 per cent higher in urban areas than in West Bengal (World Bank, 2019). The magnitude of the detour is clearest at the region's eastern extremity: a consignment from Agartala to Kolkata travels approximately 1,600 kilometres via Siliguri against under 600 kilometres via Bangladesh, and Chattogram port lies approximately 200 kilometres from Agartala (World Bank, 2019). Assam's position is less extreme than Tripura's but structurally identical.

The consequence for industrial structure is the central argument of this chapter. A cost wedge of that order is fatal to any activity whose value added per tonne is low relative to freight cost, which is to say most of light manufacturing. It is survivable for activities with very high value per unit weight, for activities serving only the local market, for services, and for resource extraction where the resource exists nowhere else. That list describes the Assam economy as it is. It is not a coincidence and not primarily a failure of industrial policy; it is the predictable equilibrium given the transport cost structure. Any industrial strategy for Assam that does not begin with the cost of moving goods is swimming against a current it has not measured.

Three responses are available and they are complements rather than substitutes.

The first is to make the corridor faster and cheaper, which is the rationale for the proposed Guwahati to Siliguri access controlled corridor and for railway doubling. Reduction in transit time and improvement in reliability lower cost per tonne kilometre without changing distance, so the gains are real but bounded.

The second is to bypass the corridor through Bangladesh, by inland waterway under the protocol route, by road and rail transit arrangements, and by use of Chattogram and Mongla. This offers the largest theoretical gain because it changes distance rather than speed, and the

Inland Waterways Authority of India has commissioned a study on modal shift of Siliguri corridor cargo to inland water transport, indicating the question is under formal examination (Inland Waterways Authority of India, n.d.b). The constraint is that every element depends on a bilateral relationship, which section 8.4.2 records as a strategic dependency rather than a solution.

The third is to change the direction of trade so that the relevant market is Southeast Asia rather than Kolkata and Delhi. This is the Act East proposition and the one on which the least measurable progress can be documented. Within the scope of this chapter is the observation from section 8.3.1 that Guwahati handled 91,594 international passengers in 2024 to 2025, approximately 1.4 per cent of throughput. A region proposing to reorient its economy toward Southeast Asia while its principal airport is 98.6 per cent domestic has not begun that reorientation in any measurable sense. This framework treats Act East as a long horizon proposition to be planned for and not counted on.

The most consequential gap in this chapter is that Assam publishes no logistics cost series. There is no State level measurement of freight cost per tonne kilometre by mode and corridor, no series on transit time and its variance between Guwahati and the principal national markets, and no measurement of the cost differential facing an Assam manufacturer against a comparator in an eastern or central Indian State. The World Bank price differentials cited above are the most widely used figures in the discussion and are drawn from work published in 2019. A framework identifying logistics cost as the binding constraint must be able to say whether the constraint is tightening or easing. At present it cannot.

8.7 Strategic Priorities for Connectivity

This chapter could not source verified figures for the following, each a basic planning input.

- Total road length maintained by the Public Works Department by category, namely State highways, major district roads and other district roads, with surfaced and unsurfaced shares. The relevant State databank was found to be behind a registration requirement.
- A current national highway asset register, since the departmental table rests on a 2014 reference date and diverges from the compiled Ministry figure by approximately 4.5 per cent.
- The condition of completed rural roads and the proportion remaining all weather after five and ten monsoons.
- Route kilometres of railway within Assam, electrified share, and freight originating and terminating tonnage by commodity.
- Airport level passenger and cargo traffic for Dibrugarh, Silchar, Jorhat, Tezpur and Rupsi.
- Bus fleet strength, ridership, modal share and registered vehicle numbers for Guwahati and for the State.
- A State logistics cost series covering freight cost per tonne kilometre and transit time variance by mode and corridor.
- An official register of Brahmaputra crossings with lengths, opening dates, configuration and load ratings.

- Maintenance expenditure on transport assets as a proportion of asset replacement value.

Eight priorities follow. Targets are stated for 2031 and 2047 where a defensible baseline exists and are omitted where it does not.

16. Establish a State transport asset register and publish it annually, covering every national highway, State highway, major district road, rural road and bridge with length, surface type, year of construction, last renewal, condition grade and replacement value. Target: complete register published by 2028, condition grading of the full network by 2031, annual revaluation thereafter. Without this, none of the maintenance priorities below can be managed or audited.
17. Provision maintenance as a ring fenced proportion of asset replacement value rather than as a residual. Against capital outlay on roads and bridges of 10,042 crore rupees in 2026 to 2027 (PRS Legislative Research, 2026), the maintenance provision is not separately identifiable in the published documents. Target: a separately voted and reported maintenance head from the 2028 to 2029 budget, set at a published percentage of replacement value, rising to full lifecycle provisioning by 2031.
18. Adopt and enforce a flood and seismic design standard for all transport infrastructure, specifying minimum formation levels relative to recorded flood levels, cross drainage capacity, embankment protection and pavement specification for works in the 39.58 per cent of the State classified as flood prone, and requiring a published seismic design basis for every major bridge and tunnel given uniform Seismic Zone V classification. Target: standard notified by 2028 and applied to all sanctions thereafter, with 100 per cent of new major structures carrying a published design basis by 2031.
19. Complete the Brahmaputra crossing programme and measure its effect. The Guwahati Ring Road with its approximately 3 kilometre bridge at 5,729 crore rupees over a four year construction period (Press Information Bureau, 2025b), and the Gohpur to Numaligarh corridor with its 15.79 kilometre twin tube tunnel at 18,662 crore rupees over five years (Press Information Bureau, 2026), together represent the largest change in bank to bank integration since the Saraighat bridge. Target: publication of the ring road traffic forecast and concession terms in 2027; a published crossing spacing standard by 2031; and by 2047 no point on the inhabited north bank more than 100 kilometres by road from a Brahmaputra crossing.
20. Treat rail capacity as the freight instrument and set a modal share target. Against a reported rail share of approximately 5 per cent of regional export movement (Swarajya, 2025), the objective should be 20 per cent of Assam's outbound tonnage by 2031 and 35 per cent by 2047. This requires the valley trunk route to be fully doubled, terminal and siding capacity at the principal production points, and publication of the freight statistics identified in section 8.7.1, without which the target cannot be measured.
21. Make further investment in National Waterway 2 conditional on demonstrated operating performance. Cumulative cargo of 8.11 million tonnes over approximately eleven years, with 2.48 million tonnes in 2013 to 2014 and a declining trend since (The Sentinel, 2024), does not justify further terminal capital ahead of operational proof. Target: publication

from 2027 of an annual operating statement giving least available depth by reach and month, dredging expenditure, vessel calls and tonnage by commodity and direction; restoration of annual traffic to the 2013 to 2014 level of 2.48 million tonnes by 2031 as the precondition for any further capital sanction; and 10 million tonnes annually by 2047 only if operating conditions are demonstrably met.

22. Establish a State logistics cost observatory publishing, at least annually, freight cost per tonne kilometre by mode and corridor, transit time and its variance between Guwahati and the principal national markets, border crossing dwell times at the Bangladesh trade points, and a cost differential index against a comparator eastern Indian State. Target: first publication in 2028; a measured reduction of 25 per cent in the logistics cost differential by 2031 and 50 per cent by 2047 against the baseline that first publication establishes. This priority is placed ahead of construction proposals deliberately, because it is the instrument by which their returns will be judged.
23. Resolve the Guwahati mobility question with evidence before committing capital. A household travel survey and a published metropolitan mobility dataset, updated at fixed intervals, should precede the choice among a light metro, a bus based rapid transit system and the proposed water metro. Target: first survey published by 2028; a chosen and financed primary transit mode under construction by 2031; and a public transport modal share of 50 per cent for the Guwahati metropolitan area by 2047, measured against the baseline the survey establishes.

The argument connecting all eight is that Assam's transport problem is not a shortage of announced projects. The pipeline described here, comprising 800 kilometres under Asom Mala 4.0, a 121 kilometre ring road with a new Brahmaputra bridge, a 33.7 kilometre tunnel corridor, a doubling programme, a multi modal logistics park and a water metro proposal, is substantial by any standard. The problem is that the State cannot currently measure what its existing assets are worth, how long they last, what it costs to move a tonne of goods out of the State, or how its people travel within its largest city. Building at scale while measuring at this level guarantees that returns will be unknowable and assets under maintained. The measurement priorities are therefore not preliminaries to the construction priorities. They are the condition of the construction priorities being worth what they cost.

CHAPTER 9: ENERGY, POWER AND RENEWABLE TRANSITION

Two propositions govern this chapter, and they pull in opposite directions.

The first is that Assam has very nearly solved the problem of connecting households to the electricity grid. The second is that it has not solved the problem of supplying those connections with power of sufficient quantity, quality and reliability to support an industrial economy or a modern household. A connection is a wire and a meter; supply is voltage within tolerance, frequency within tolerance, and availability at the hour required. The distinction matters: it is the entire difference between an electrification statistic and an economic input, and it is why a State can report near universal coverage while remaining, on the evidence of its own utility's demand forecasts, structurally short of power.

The generation position frames everything that follows. As on 31 January 2026, the total installed capacity available to Assam, including its allocated shares in joint and central sector utilities, was 2,231.86 MW against an all India total of 5,20,510.95 MW (Central Electricity Authority, 2026a). Of that, capacity owned by the State sector amounted to 411.37 MW. The remainder is either privately owned, at 477.57 MW, or represents an allocated entitlement from central sector stations, at 1,342.93 MW. Assam therefore owns, in the sense of holding the asset on the balance sheet of a State undertaking, under one fifth of the generation capacity on which it draws. Everything else is a contractual claim on someone else's plant.

This is not itself a failure; a well functioning national grid makes autarky an expensive irrelevance. The difficulty is that a State whose own fleet is small and whose demand is growing rapidly must purchase the difference in markets whose prices it does not set, through contracts requiring balance sheet strength. Assam's exposure is therefore not primarily a generation exposure but a procurement and financial exposure, landing on the distribution utility and thence on the State budget.

That transmission of risk is the organising theme of this chapter. Chapter 2 recorded outstanding State government guarantees of 2,690 crore rupees, equivalent to 0.4 per cent of Gross State Domestic Product, as on 31 March 2025, and flagged that the announced power programme was likely to increase the exposure (PRS Legislative Research, 2026). This chapter develops that warning into a specific account of how a distribution utility's operating economics become a claim on the Consolidated Fund, and why the mechanism by which power tariffs were reduced in Assam with effect from 1 April 2025 makes the claim larger rather than smaller.

The 2026 to 2027 Budget announced an investment of 72,753 crore rupees across six power infrastructure projects spanning hydro, solar, thermal and energy storage, with 15,000 circuit kilometres of transmission and distribution lines and 120 new substations (PRS Legislative Research, 2026). A figure of 77,353 crore rupees with a target of 8,457 MW and objective of making Assam power surplus has circulated in other reporting of the same announcement (DD India, 2026). This framework reports both without reconciliation because they have not been reconciled in the public record. A divergence of 4,600 crore rupees between two

accounts of the same announcement is itself a finding, belonging alongside the budget credibility problem documented in section 2.2.4. Capital outlay on energy rose 73 per cent at the revised estimate stage in 2024 to 2025 (PRS Legislative Research, 2025), indicating both genuine prioritisation and estimation volatility.

Figures below are drawn from the Central Electricity Authority, the Assam Electricity Regulatory Commission, the Power Finance Corporation, the Ministry of Power, and PRS Legislative Research budget analysis. Where figures come from news reporting or commercial intermediaries, they are identified as such and treated as unverified. Figures circulating widely but not traceable to published sources have been omitted; gaps are listed in section 9.7.2.

9.1 Power Generation: Installed Capacity, Fuel Mix and Import Dependence

Owners hip	Coal	Gas	Thermal Total	Hydro	Other Renewables	Renewable Total	Grand Total
State	0.00	306.36	306.36	100.00	5.01	105.01	411.37
Private	0.00	0.00	0.00	0.00	477.57	477.57	477.57
Central	402.52	435.56	838.08	477.10	27.75	504.85	1,342.93
Total	402.52	741.92	1,144.44	577.10	510.32	1,087.42	2,231.86

All figures are in MW as on 31 January 2026, including allocated shares in joint and central sector utilities. Assam records no lignite, diesel or nuclear capacity. Source: Central Electricity Authority (2026a).

Five features matter. Assam has no coal capacity of its own: the 402.52 MW shown is an allocated share of central sector stations, and the State's own thermal fleet is entirely gas based at 306.36 MW. Assam's own hydro capacity is 100.00 MW, a single asset. The 477.10 MW of central sector hydro is an allocated entitlement whose composition is changing rapidly as the Subansiri Lower project commissions. The largest single block of renewable capacity, 477.57 MW, sits in the private sector; the Central Electricity Authority state table does not disaggregate renewables by fuel at State level, so this framework asserts no solar, small hydro and biomass split for Assam, but notes that renewable capacity other than large hydro, at 510.32 MW, now exceeds the State's entire owned fleet of 411.37 MW. Finally, total capacity available to Assam is approximately 0.43 per cent of the all India total, a share far below the State's share of national population as recorded in Chapter 1, and approximately 40 per cent of the North Eastern Regional total of 5,589.78 MW.

The all India fuel mix is instructive by contrast. Nationally, coal accounts for 2,21,210.00 MW and renewables other than large hydro for 2,12,024.67 MW, of which solar alone is 1,40,601.73 MW and wind 54,650.40 MW (Central Electricity Authority, 2026a). Assam has no coal of its own, negligible wind resource, and a renewable base small in absolute terms but already large relative to its own assets. The State is therefore not decarbonising an existing coal fleet, which is the problem confronting most large Indian States. It is building a system close to first principles, and it retains an option that States with stranded coal assets do not have.

The Assam Power Generation Corporation Limited operates the State sector fleet. The Namrup Replacement Power Project, conceived to replace the ageing units of the Namrup Thermal Power Station, was declared in commercial operation on 16 July 2021, with a gas turbine generator of 62.25 MW and a steam turbine generator of 36.15 MW giving an installed capacity of 98.4 MW in combined cycle (Assam Power Generation Corporation Limited, 2026a). The 120 MW Lower Kopili Hydro Electric Project comprises a 110 MW unit and a 10 MW unit, with commissioning of the larger indicated for January 2026 and the smaller for June 2026 (Assam Power Generation Corporation Limited, 2026b). The Karbi Langpi Middle stage two project of 24 MW is indicated for commissioning by October 2027 (Government of Assam, Power Department, 2026).

The Namrup replacement is instructive as a precedent: it substituted a modern combined cycle unit for an obsolete plant at the same site on the same fuel, and it took a long time.

The Lower Kopili schedule requires verification. The Central Electricity Authority records State sector hydro in Assam at 100.00 MW as on 31 January 2026, consistent with the existing Karbi Langpi asset alone and not with a 110 MW Lower Kopili unit in operation by that date (Central Electricity Authority, 2026a). Either the January 2026 date was not met, or commissioning was not reflected at the reference date. The divergence between a utility's project schedule and the national authority's capacity statement ought not to occur; discrepancies of this kind make independent scrutiny of a 72,753 crore rupee programme difficult.

The gap between what Assam owns and what it consumes is met by purchase. The Central Electricity Authority's Long Term National Resource Adequacy Plan for 2026 to 2027 through 2035 to 2036 is the authoritative treatment (Central Electricity Authority, 2026b). As reported from that study, the Assam Power Distribution Company Limited projects annual energy requirement growing at a compound annual rate of 11.2 per cent and peak demand at 9.9 per cent over 2025 to 2026 through 2035 to 2036; Assam could face an energy deficit ranging from 1.8 billion units to 21.4 billion units between 2025 to 2026 and 2034 to 2035; approximately 58 per cent of projected annual energy demand in 2035 to 2036 may not be met under currently contracted capacity; and the State would need to contract 2,829 MW of coal based capacity by 2035 to 2036 beyond what is already planned, together with 837 MW to 952 MW through medium term and short term open access in different years (Sentinel Assam, 2026a).

These are projections, not measurements, resting on a demand forecast prepared by the utility whose procurement they justify. That caveat granted, the direction is unambiguous and the magnitude severe. Demand growth above 11 per cent compounding for a decade implies roughly a threefold increase in energy requirement. A State that presently owns 411.37 MW cannot supply that from its own assets on any plausible construction schedule, and the announced programme is calibrated to narrow a gap rather than eliminate purchase.

Two conclusions follow. Assam's energy security problem is a contracting problem before it is a construction problem: long term power purchase agreements at known prices, signed by a creditworthy counterparty, do more for supply security over the next five years than any announced project, because none will deliver energy within five years. The recommendation of additional coal based contracting deserves scrutiny. Locking a State with no coal endowment, no existing coal fleet and a stated renewable ambition into new long duration thermal offtake in the late 2020s carries a stranded cost risk not priced by a resource adequacy methodology optimising for reliability. Section 9.4.3 sets out the alternative.

9.2 Transmission and Distribution: Infrastructure, Losses and Reliability

Aggregate technical and commercial losses capture energy lost in the network together with energy delivered but not billed or billed but not collected. At the national level, the Ministry of Power records these losses falling from 22.62 per cent in 2013 to 2014 to 16.28 per cent in 2023 to 2024 (Ministry of Power, 2025). The Power Finance Corporation, on the basis of utility accounts, records the figure rising from 15.11 per cent in 2022 to 2023 to 16.12 per cent in 2023 to 2024 (Power Finance Corporation, 2025, as reported in Power Line, 2025). The two official series diverge in both level and direction of change for the most recent year. The framework reports both and notes that divergence between two official sources on the sector's headline efficiency indicator is not a trivial matter of definition.

For Assam specifically, no verified, dated, official loss figure could be retrieved. Available data is limited to an undated press report attributing to the distribution utility losses of 6 to 7 per cent in Guwahati and approximately 15 per cent statewide (Guwahati Plus, n.d.), and the Power Finance Corporation's identification of Assam among nineteen States recording annual improvement (Power Finance Corporation, 2025, as reported in Power Line, 2025). Neither substitutes for a published series. This is a serious gap, because loss reduction is the single largest lever for improving distribution finances without raising tariffs.

The reported split, if broadly accurate, is diagnostic even without precise values. Losses of 6 to 7 per cent in Guwahati against 15 per cent statewide imply that commercial loss concentrates in rural and semi urban networks with long feeders, low load density, and high enforcement cost per unit recovered. That is the correct target for the distribution component of announced investment.

The tariff framework records the technical loss position at open access voltage levels. The Assam Electricity Regulatory Commission's order of 25 March 2025, reflected in the utility's tariff schedule, fixes wheeling losses at 5 per cent at 33 kV and 11 per cent at 11 kV, with a wheeling charge at 33 kV of 0.26 rupees per kWh (Assam Power Distribution Company Limited, 2025). An 11 per cent allowance at 11 kV is high and reflects a network in which power travels long distances at medium voltage before stepping down. The engineering implication is that the highest return distribution investment in Assam is higher voltage penetration closer to load, which is consistent with the announced 120 new substations and inconsistent with an investment programme measured principally in circuit kilometres of line.

The Revamped Distribution Sector Scheme is the principal central instrument for distribution reform, combining loss reduction works with prepaid smart metering and conditioning disbursement on measured improvement. Nationally, the Minister for Power reported 4.93 crore smart meters installed as at December 2025 (Prasar Bharati News Services, 2025a).

Assam's participation has two documented features. Progress on the utility's modernisation works has been reported as slow, with five works under the scheme carrying a commissioning date of March 2026 and roughly 40 per cent of work completed at the time of reporting (Sentinel Assam, 2026b). Separately, the utility has permitted installation of conventional postpaid digital meters with maximum demand indicators, on consumer request, for new Jeevan Dhara and Domestic A category rural connections with connected load up to 2 kW, representing a partial retreat from the prepaid model (Pratidin Time, 2025). Both are news sources and are identified as such.

The retreat deserves assessment. Prepaid metering converts a collection problem into cash flow; permitting opt out for rural low load categories, where commercial loss is concentrated, removes the instrument from where it was most needed. Consumer resistance is legitimate: a household on a 0.5 kW connection with irregular income faces real disconnection risk. The correct response is designed protection comprising an emergency credit facility, minimum guaranteed supply, and published disconnection protocol, not abandonment of prepayment.

Reliability is the dimension of distribution performance on which this framework obtained least evidence, and the dimension that matters most to the industrial location decisions examined in Chapters 3 and 17. The standard indicators, the system average interruption frequency index and the system average interruption duration index, are reported feeder by feeder by well governed utilities and published in aggregate by the regulator. No published Assam series could be retrieved. The framework accordingly makes no claim about hours of supply in Assam and records the absence as a major measurement gap.

The absence is itself informative. A utility that publishes interruption indices is being held to account for supply quality. A utility that publishes connection counts and not interruption indices is being held to account for coverage. The choice of what to measure reveals the operating objective, and Chapter 6 records the same pattern in a different sector: the State achieves what it measures and does not achieve what it does not.

9.3 Rural and Household Electrification: Coverage and Quality of Supply

Household electrification in Assam, as across India, is substantially complete as a matter of connection. This framework does not reproduce a coverage percentage, because no current, dated, official Assam figure could be retrieved and coverage statistics of this kind are frequently quoted without a reference date.

What can be established from a primary regulatory document is the consumption level at which the tariff structure expects a large body of Assam households to sit. The Jeevan Dhara category, the lowest in the schedule, is defined for a connected load of 0.5 kW and a consumption of 1.5 kWh per day, and the schedule provides that a Jeevan Dhara consumer

whose consumption exceeds 45 units per month for two consecutive months shall be transferred to the Domestic A category and billed accordingly (Assam Power Distribution Company Limited, 2025).

This is a remarkable definition. A daily allowance of 1.5 kWh is roughly 45 units monthly and 550 units yearly for an entire household. It supports lighting, a fan, mobile charging and a television, but not refrigeration, a water pump, an air cooler, or income generating appliances. A tariff category constructed around that level is an accurate description of consumption reality for a substantial share of Assam households and more informative than any electrification percentage.

A household at 45 units monthly is connected but not electrified in any sense that changes productive capacity. The welfare gain from lighting is real; the productivity gain altering rural economy trajectory requires an order of magnitude more consumption and requires it to be reliable.

Per capita electricity availability in Assam was recorded at 346 kWh in 2021 to 2022, having risen from approximately 313 kWh in the preceding year (Statista, 2024, compiled from official sources). National per capita electricity consumption reached 1,460 kWh in 2024 to 2025. These are not a like for like comparison, referring to different years and, strictly, to availability and to consumption respectively. The framework presents both with years stated, computes no ratio, and records the absence of a current, dated, official Assam per capita series as a measurement gap.

Total electricity consumption in Assam has been reported at 10,004 GWh in 2023 against 8,521 GWh in 2022, an increase of approximately 17 per cent in a single year (CEIC, 2024, compiled from official sources). That growth, if sustained, is consistent with the utility's own forecast of 11.2 per cent compound annual growth in energy requirement, and indicates that latent demand is being released as supply becomes available. The connection to consumption transition is under way, which strengthens rather than weakens the case for urgent capacity contracting.

On the same reasoning that applies to health and education delivery in Chapters 5 and 6, supply quality in Assam will be worst in the char and chapori tracts, the hill districts, the tea garden belt and the flood affected riverine districts. The mechanisms are physical: long low voltage feeders across erosion prone terrain, seasonal inundation of substations and distribution transformers, and the impossibility of restoration access during the flood period documented in Chapter 14. Together these produce interruption durations that a State average conceals entirely. Section 9.7.3 accordingly recommends that flood and erosion resilience become a design standard for distribution assets in the affected districts, on the basis recommended for health infrastructure in section 6.8.1, and that interruption indices be published by district so that the concentration of poor supply becomes visible.

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

Renewable energy sources other than large hydro accounted for 510.32 MW of capacity available to Assam as on 31 January 2026, of which 477.57 MW sits in the private sector, 27.75 MW in the central sector and 5.01 MW in the State sector (Central Electricity Authority, 2026a). The Central Electricity Authority does not publish a fuel wise split at State level, and the framework therefore asserts no solar component.

The composition by ownership is the significant fact. The State sector holds 5.01 MW of non hydro renewable capacity, approximately one per cent of the total. Renewable deployment in Assam has been almost entirely a private and central sector activity. That is not a criticism, since private capital deploying solar at market cost is the desired outcome, but it means the State's own institutional capability in renewable procurement, land assembly and grid integration is thin relative to the ambition expressed in the announced programme.

Nationally, 7,075.78 MW of rooftop solar capacity had been installed in the residential sector under the PM Surya Ghar Muft Bijli Yojana as at December 2025, with 40 lakh households solarised as at 30 May 2026 and a target of one crore households by March 2027 (Prasar Bharati News Services, 2025b). No verified Assam specific installation count under the scheme could be retrieved; figures circulating on commercial solar intermediary websites are internally inconsistent and are not reproduced.

Two structural constraints on rooftop uptake in Assam warrant plain statement: subsidy design does not address them. First, a large share of rural housing has roofing unsuited to mounted arrays over twenty five year asset life, and flood and storm exposure documented in Chapter 14 shortens effective life further. Second, subsidy design rewards households with sufficient consumption to monetise generation; a Jeevan Dhara household at 45 units monthly has almost no bill to offset. Rooftop solar under the present national design reaches the urban and peri urban middle consumer; the State should say so rather than present it as a rural electrification instrument.

Hydropower is the centrepiece of the North Eastern generation narrative, and the Subansiri Lower project on the Subansiri river at the Arunachal Pradesh and Assam border is its largest expression, comprising eight units of 250 MW for a total of 2,000 MW. The Central Electricity Authority records unit three of 250 MW added with effect from 31 January 2026 (Central Electricity Authority, 2026a). Trade reporting records unit two entering commercial operation on 23 December 2025, unit four with a commercial operation date of 8 May 2026 taking commissioned capacity to 1,000 MW, and unit five on 14 June 2026 taking commissioned capacity to 1,250 MW, with full completion targeted for December 2026 and annual generation of approximately 7,422 million units expected at full capacity (Water Power Magazine, 2026; SolarQuarter, 2026). These unit level dates derive from trade press rather than regulatory filing.

Three cautions apply that standard project appraisal does not adequately capture.

The first is seismicity. The project and North Eastern hydro pipeline lie in Seismic Zone V, the highest Indian hazard category. Dam engineering can be designed for seismic loading; what cannot be designed for with confidence is the compound event in which seismic shaking triggers slope failure generating a landslide dammed lake upstream, whose breach delivers a flood wave exceeding design inflow. This class of event has occurred in the Brahmaputra system. It is characteristically excluded from probabilistic dam safety assessment because its recurrence interval cannot be estimated from the instrumental record.

The second is sediment. The Brahmaputra system carries one of the world's highest suspended sediment loads, a consequence of young, rapidly uplifting Himalayan terrain and monsoon intensity. High sediment inflow reduces effective reservoir storage over time, abrades turbine runners, raises maintenance outage, and degrades the peaking capability that justifies storage schemes. Energy yield estimates prepared on design storage systematically overstate yield in later asset life decades.

The third is riparian relations. The Brahmaputra is an international river with upstream development beyond Indian jurisdiction, and within India Assam is downstream to Arunachal Pradesh. Downstream States bear flood risk and sediment and flow regime consequences of upstream storage without controlling operating rules. Assam's position parallels India's relative to upstream development; the State's interest is in enforceable operating protocols, real time data sharing and downstream release obligations, not equity shares or free power allocations. This is a live constraint on the hydro pipeline and a negotiating agenda, not an engineering one. Chapters 13 and 14 examine erosion and flood dimensions.

None of this argues against hydro development. It argues that the risk adjusted cost of hydro in this basin is higher than appraisal documents state, and that a State budget carrying guarantee exposure to such projects, as section 2.5.2 anticipates, should treat schedule slippage as the expected case rather than the adverse case. Subansiri Lower, under construction for well over a decade before its first units entered operation, is the relevant precedent.

Assam's biomass resource comprises rice straw and husk, tea estate prunings and residues, and bamboo; Chapter 18 examines agricultural residues. No verified State level biomass power capacity or resource assessment could be retrieved, and biomass is identified as an unquantified opportunity rather than a programme.

Storage is the more important omission in current State energy planning; the announced six project programme reportedly includes an energy storage component (PRS Legislative Research, 2026). This framework regards storage as the highest value technology available to Assam because its supply problem is a peak and reliability problem more than an annual energy one, and its renewable resource is solar, which produces midday. The tariff order recognises this, defining 09:00 to 17:00 hours as solar hours priced at 80 per cent of normal energy charges and 17:00 to 22:00 hours as peak hours priced at 120 per cent (Assam Power Distribution Company Limited, 2025). Battery storage shifting midday solar into the evening

peak displaces the most expensive purchased power, requires no significant land acquisition, carries no seismic or riparian risk, and can be commissioned in months rather than decades.

9.5 Energy Efficiency, Conservation and Demand Side Management

The tariff order of 25 March 2025 established a multi year tariff framework covering 2025 to 2026 through 2029 to 2030 and introduced several demand side instruments that deserve more attention than they have received (Assam Electricity Regulatory Commission, 2025; Assam Power Distribution Company Limited, 2025).

Time of day tariffs were newly introduced for multiple categories including Domestic A and B, LT Commercial, Public Lighting, electric vehicle charging, HT Commercial, Public Water Works and HT Bulk Supply. Energy consumed 22:00 to 09:00 is charged at normal rates, 09:00 to 17:00 at 80 per cent of normal charges, and 17:00 to 22:00 at 120 per cent. Where previously optional it remains optional; where compulsory, the revised structure is compulsory; a consumer may change election once per six months on two months notice.

A Green Energy Tariff of 1.00 rupee per kWh, over and above existing charges, allows any LT or HT consumer to procure 25 to 100 per cent of monthly consumption from renewable sources in 5 per cent increments, on three months advance requisition. Voltage rebates of 3 per cent at 132 kV and 1.5 per cent at 33 kV, an over drawal penalty at three times the normal fixed charge rate, and a 20 per cent rebate for oxygen manufacturing plants complete the incentive structure.

This is a competently designed set of price signals. Three observations follow.

Time of day pricing cannot function without interval metering. Its effectiveness couples directly to smart metering rollout (section 9.2.3), and the retreat from prepaid smart metering in rural domestic categories weakens it. These decisions presumably taken separately should interact.

The optional character of time of day pricing for most categories produces adverse selection. Consumers who benefit opt in, those who would pay more do not, and the utility bears the revenue consequence. Time of day pricing should become the default for all metered categories above a defined connected load, with opt out rather than opt in.

The Green Energy Tariff at 1.00 rupee per kWh makes renewable energy a premium product. That is reasonable for a voluntary instrument, but it will not move volume and should not be counted toward renewable procurement targets.

The tariff schedule discloses a cross subsidy surcharge of 1.74 rupees per kWh applied uniformly to most HT open access categories including HT Domestic, HT Commercial, Public Water Works, HT Bulk Supply, HT Industries and the Tea, Coffee and Rubber category, with 1.30 rupees per kWh for electric vehicle charging and standby charges ranging 2.09 to 2.61 rupees per kWh (Assam Power Distribution Company Limited, 2025).

A uniform surcharge across categories with materially different tariffs is analytically odd, since it should recover the cross subsidy a departing consumer was contributing, which

differs by category. A uniform figure suggests administrative rather than computed determination. Its practical effect, combined with standby charges above 2 rupees per kWh, makes open access substantially unattractive to industrial consumers in Assam. For a utility concerned about losing highest paying load, that is the intended effect; for a State seeking to attract industry on competitive power cost (Chapter 17), it is a barrier preventing direct renewable contracting. The State cannot pursue both objectives at once.

9.6 Hydrocarbons: Assam's Oil and Gas Endowment and its Energy Implications

Assam is the oldest hydrocarbon producing province in India and remains a significant onshore producer of crude oil and natural gas through the Oil and Natural Gas Corporation Limited and Oil India Limited. Chapter 2 recorded that the State's own non tax revenue derives substantially from royalties on crude petroleum and natural gas, linking a component of the revenue base to production volumes and administered pricing, neither of which the State controls (PRS Legislative Research, 2026).

This framework was unable to retrieve current, dated, Assam specific production volumes. Corporate reporting available at national level records Oil and Natural Gas Corporation Limited production including joint ventures at 41.08 million metric tonnes of oil equivalent in 2024 to 2025, with the company accounting for approximately 72.8 per cent of India's crude oil and approximately 55.8 per cent of its natural gas production, and Oil India Limited joint venture assets contributing cumulative production of 2.097 million metric tonnes of oil equivalent in 2024 to 2025 (Oil India Limited, 2025). Neither is an Assam figure and neither is presented as one. The absence of a published State level production and royalty series is a consequential gap, because the State cannot forecast a revenue stream it does not measure.

The link between the hydrocarbon endowment and power system is direct and underexploited. Assam's entire State sector thermal fleet, 306.36 MW, is gas fired; total gas based capacity available to the State including central allocation is 741.92 MW (Central Electricity Authority, 2026a). Gas fired generation is the natural complement to solar in an evening peak system, because open and combined cycle plant can ramp on a timescale coal plant cannot. The historical constraint has been gas allocation and price rather than generation capacity. A State that produces gas and cannot obtain firm allocation for its own stations is in an anomalous position; firm long term allocation should be pursued as a distinct policy objective with the Union Government.

The Numaligarh Refinery expansion from 3 to 9 million metric tonnes per annum was approved in February 2026 at revised cost of 33,901 crore rupees, approximately 85 per cent complete with completion expected December 2026 (Ministry of Petroleum and Natural Gas, 2026). This is the State's largest single industrial investment, with implications for freight and logistics (Chapter 17) and industrial employment (Chapter 3).

Two energy specific implications warrant note. A refinery at three times its previous scale is a major electricity and steam consumer whose captive generation and grid interface arrangements materially affect the State's load profile. Cost revision is instructive against section 9.4.2: a brownfield expansion on an existing site, executed by a competent central

operator, still required revised cost and extended schedule. The State's own capital programme should appraise with that precedent in view.

The 2026 to 2027 Budget reduced value added tax on piped natural gas from 14.5 per cent to 5 per cent and introduced a Green Cess on stone crushers, brick kilns and commercial groundwater extraction (Government of Assam, 2026).

The piped natural gas measure lowers delivered cost of the cleanest available fuel for household and commercial use in a producing State and supports city gas distribution build out. Revenue cost will be modest while the piped network is small, growing as it extends, the correct shape for such incentive.

The Green Cess is harder to assess. Taxing these activities is defensible on externality grounds, and the groundwater component connects to extraction questions in Chapter 10. A cess on informal and semi formal activities is administratively demanding to collect, and Chapter 2 records the State's revenue machinery not currently capturing even transactions over which it has legal purchase. This framework treats the Green Cess as correctly directed and doubtfully collectible, and recommends its yield be reported separately in annual accounts.

9.7 Strategic Priorities for the Energy Sector

The chapter's central financial finding requires explicit statements, as it is not visible in how the 2025 tariff reduction was reported.

Energy charges were reduced with effect from 1 April 2025 by approximately one rupee per kWh for Jeevan Dhara, Domestic A, Domestic B and HT Domestic consumers, with no change in fixed charges (Assam Tribune, 2025). The tariff schedule shows how this was achieved, setting in parallel columns the full cost energy charge approved by the Commission and the effective rate payable, with the difference made up by targeted subsidy and tariff subsidy provided by the Government of Assam (Assam Power Distribution Company Limited, 2025).

For Jeevan Dhara, the full cost energy charge is 5.34 rupees per kWh, against which a targeted subsidy of 1.00 rupee and a tariff subsidy of 0.99 rupees produce an effective rate of 3.35 rupees per kWh. For Domestic A in the 0 to 120 units monthly slab, the full cost charge is 5.99 rupees per kWh, against which a targeted subsidy of 0.75 rupees and a tariff subsidy of 0.99 rupees produce an effective rate of 4.25 rupees per kWh. For Domestic A between 121 and 240 units, the full cost charge is 7.29 rupees and the effective rate 6.30 rupees per kWh. For Domestic B up to 300 units, the full cost charge is 7.74 rupees and the effective rate 6.75 rupees per kWh. In higher slabs the subsidy tapers to zero; a Domestic A consumer above 500 units pays the full cost rate of 8.19 rupees per kWh. Commercial, industrial and agricultural categories receive no subsidy: LT Commercial pays 8.94 rupees per kWh, agriculture up to 30 kW pays 6.09 rupees per kWh, HT Industries two above 150 kVA pays 8.09 or 7.69 rupees per kWh depending on fixed charge option, and the Tea, Coffee and Rubber category pays 8.04 rupees per kWh.

The schedule states clearly: tariffs shown are the full cost tariff approved by the Commission and the effective tariff based on Government subsidies; without Government subsidy the full charge applies (Assam Power Distribution Company Limited, 2025).

The tariff reduction announced in 2025 was not a reduction in supply cost. It was a State budget transfer to domestic consumers of approximately one rupee per unit on subsidised slabs, recorded on the utility's books as subsidy receivable. Three risks follow: the subsidy is an annual budgetary decision, so consumer relief is not durable and its withdrawal would appear as a tariff shock; delay in release converts directly into a working capital deficit at the utility and delayed payment to generators; and the fiscal charge grows automatically as consumption grows, growing fastest when electrification succeeds.

This is the mechanism by which distribution utility economics become a contingent liability on the State budget. It sits alongside, and is larger and more certain than, the guarantee exposure of 2,690 crore rupees at 0.4 per cent of Gross State Domestic Product as on 31 March 2025 (PRS Legislative Research, 2026). Chapter 2 recommended an annual consolidated contingent liability statement; this chapter specifies that it must separately identify the power subsidy commitment, subsidy arrears position of the distribution utility, and guarantee exposure created by the announced programme.

The framework further notes, and cannot resolve, a claim appearing in tariff proceeding reporting that the distribution utility recorded an annual performance review gap of 1,437.11 crore rupees for 2023 to 2024 and a surplus of 97.26 crore rupees for 2024 to 2025. The underlying order could not be retrieved and the figures are not relied upon.

This chapter was unable to source verified Assam specific data on aggregate technical and commercial losses; supply interruption frequency and duration by district; current per capita electricity availability; household electrification coverage; PM Surya Ghar scheme installations; fuel wise renewable capacity disaggregation; State level crude oil and natural gas production and royalty accrual; and biomass resource assessment. Each is necessary to manage the sector. The absence of published series is a governance failure rather than presentational inconvenience, and it makes independent evaluation of a 72,753 crore rupee programme impossible.

Eight priorities follow from the analysis in this chapter.

1. Publish an annual State Energy Report with supply quality as the headline metric. From 2027 publish aggregate technical and commercial losses by circle, system average interruption frequency and duration indices by district, per capita consumption, and the subsidy and arrears position of the distribution utility. The 2047 target is aggregate technical and commercial losses below 10 per cent statewide with no circle above 12 per cent, and average supply availability of not less than 23 hours per day in every district, measured and published.
2. Convert connections into consumption. The operative target is not coverage, which is substantially achieved, but the elimination of the 45 unit household. By 2031 no more than 20 per cent of domestic consumers should remain in the Jeevan Dhara band, and by

2047 per capita electricity availability should be not less than 2,000 kWh, against 346 kWh in 2021 to 2022.

3. Make the subsidy explicit, capped and time bound. The State should publish in the Budget the full year cost of power tariff subsidy by consumer category, commit to releasing it in equal monthly instalments, and set a declining glide path under which the tariff subsidy component is replaced by targeted direct benefit transfer to identified low income households by 2031. The present arrangement transfers public money based on consumption rather than need.
4. Contract before constructing. Given projected energy requirement growing at 11.2 per cent annually and a projected shortfall of up to 21.4 billion units, the State should secure firm long term power purchase agreements covering at least 80 per cent of forecast 2031 requirement by end 2027, and should resist the recommendation to contract 2,829 MW of additional coal based capacity until a published least cost comparison against a storage and renewable portfolio has been completed and opened to comment.
5. Make storage the priority technology. By 2031, 1,000 MWh of grid scale battery storage should be contracted and operating; by 2047, storage capacity should be sufficient to shift midday solar generation into the 17:00 to 22:00 peak window. The tariff order's own differential, at 80 per cent of normal charges in solar hours and 120 per cent at peak, establishes the commercial case.
6. Restore prepaid smart metering with designed consumer protection rather than opt out. The rural low load categories in which opt out has been permitted are those in which commercial loss concentrates. The correct instrument is an emergency credit facility, guaranteed minimum daily supply irrespective of balance, published disconnection and reconnection protocol, and a grievance route. By 2031, all connections above Jeevan Dhara category should carry interval metering, with time of day pricing as the default and opt out available.
7. Adopt risk adjusted appraisal standard for hydro and downstream protocol for the Brahmaputra. Every hydro appraisal presented to the State should include explicit sediment yield derating of energy output over asset life, a compound seismic and landslide dam breach scenario, and schedule contingency calibrated to the Subansiri Lower precedent. In parallel, the State should pursue enforceable downstream operating protocols with Arunachal Pradesh and through the Union Government, covering minimum releases, flood season drawdown rules and real time data sharing, treating these as a precondition rather than a consequence of upstream development.
8. Make flood and erosion resilience a design standard for distribution assets, and secure firm gas allocation for State generation. Substations, distribution transformers and control equipment in districts identified in Chapter 14 should be specified above recorded flood levels with pre positioned restoration stocks before each season.

CHAPTER 10: WATER, SANITATION AND SOLID WASTE MANAGEMENT

Assam is among the most water-rich territories on the Indian subcontinent and among the least well served by water infrastructure. The Brahmaputra and Barak systems deliver one of the largest freshwater discharges of any river basin in the country, rainfall is high and reliable in aggregate, and shallow groundwater is available across most of the valley floor. Yet the State irrigates a minority of its cropped area, cannot establish that rural households receive water of assured quality, treats almost none of its municipal sewage, and has excavated legacy waste adjacent to a Ramsar site. This chapter examines that contradiction.

The framing proposition is that in this sector, as in Chapters 5 and 6, infrastructure creation has outpaced the institutions required to operate and maintain it. Assam built tap connections faster than the village committees, tariff arrangements and testing regimes that keep taps flowing; minor irrigation schemes faster than the maintenance, power and command area arrangements that keep them working; and household latrines faster than the faecal sludge chain that determines whether contents reach treatment or contaminate aquifers. Asset creation is real and, in rural sanitation, historically significant. The institutional deficit is equally real and the binding constraint on outcomes.

A second proposition explains why this chapter treats water quality as seriously as coverage. A tap connection is an input; safe water at the point of consumption is the outcome. Where habitations are affected by arsenic, fluoride and iron, the coverage statistic and the safety statistic can diverge indefinitely, and a household counted as covered while drinking contaminated water has been served administratively and harmed materially.

A third proposition connects the chapter to Chapter 6, which recorded anaemia among children aged 6 to 59 months at 68.4 per cent at the fifth round of the National Family Health Survey, with wasting and underweight both worse than at the fourth round, and identified parasitic load and repeated enteric infection as causal pathways alongside dietary insufficiency (International Institute for Population Sciences, 2021). Those are sanitation pathways, determined by whether faecal matter is contained and treated or re-enters the domestic environment through unlined containment, untreated drain discharge or contaminated shallow groundwater. The nutrition finding in Chapter 6 and the sanitation findings here are one finding observed at two points in a single causal chain. A nutrition strategy without a faecal sludge management strategy will not succeed.

A methodological note: several figures circulating in State discussion lack verifiable published sources, and official sources conflict. Where figures could not be verified they are omitted; section 10.7 identifies each omission. Where sources conflict, both are reported and the divergence stated rather than resolved by preference.

10.1 Drinking Water Supply: Coverage, Quality and Infrastructure

At the Jal Jeevan Mission launch on 15 August 2019, 1.11 lakh rural households in Assam (1.76 per cent of 63.35 lakh across 25,335 villages) had tap water supply (Press Information Bureau, 2022a). The national baseline was 3.23 crore households, or 16.7 per cent (DD News, 2026), placing Assam at roughly one tenth the national rate.

By 24 March 2022, 20.90 lakh rural households had been connected, alongside 28,142 schools (66 per cent) and 13,667 anganwadi centres (39 per cent) (Jal Jeevan Mission, 2022). The Union sanctioned Rs 5,601 crore for 2021 to 2022 (Press Information Bureau, 2021).

No current figure for Assam's functional household tap coverage in 2026 could be verified; the mission dashboard returned unpopulated State rows. Section 10.7 identifies this as the chapter's most consequential measurement gap. The 2022 position is not carried forward as current.

Nationally, 15.82 crore rural households (81.71 per cent of 19.36 crore) had tap water supply as of 3 March 2026 (DD News, 2026); July 2026 showed 82.09 per cent (Plutus IAS, 2026). More than 2.7 lakh villages were certified as Har Ghar Jal. In March 2026, the Cabinet approved mission extension to December 2028 with enhanced outlay of Rs 8.69 lakh crore (Business Standard, 2026).

The extension matters for Assam. A State beginning at 1.76 per cent coverage, facing Chapter 1's terrain and access conditions, would not reach universal coverage on the original timeline. The extension removes the deadline pressure that drove connection pace since 2019. The State should adopt published annual targets rather than relying on national timelines.

The distinction between connection and delivery of required quantity, quality and regularity is the central analytical issue in rural water supply. A functionality assessment covering 19,812 certified Har Ghar Jal villages across 761 districts found that while 98 per cent of households had connections, only about three in four received water meeting mission standards (Vajiram and Ravi, 2026). This figure is reported from a secondary source; the primary document was not retrieved.

Even nationally, the finding is decisive. A shortfall of roughly one quarter between connection and service in villages certified as fully covered means certification measures assets, not services. Assam's gap should be expected to be wider, for three structural reasons. First, source reliability. Rural schemes draw on tube wells and surface sources whose yield and quality vary seasonally. The monsoon delivers 70 to 90 per cent of annual flow (Government of Assam, Water Resources Department, 2024), so a source assessed adequate post-monsoon proves inadequate pre-monsoon when demand peaks.

Second, power. Pumped schemes depend on the distribution network examined in Chapter 9. Intermittent supply or poor voltage prevents pumping, tank filling, and tap delivery, however complete the network.

Third, the flood calendar. Infrastructure within 39.58 per cent of flood-prone State area (Government of Assam, Water Resources Department, 2024) is submerged, silted or damaged with frequency ordinary asset management does not contemplate, and is inoperable during precisely the weeks when waterborne disease risk peaks (Chapter 14).

The operational consequence is that Assam requires not connections provided but litres delivered per person per day, measured at households and disaggregated by month.

Water quality is the aspect of the sector where the evidence base is weakest and divergence between official sources most striking. This subsection sets out what different official and parliamentary sources record and does not attempt to reconcile them.

Four distinct counts of arsenic-affected habitations in Assam appear. The Public Health Engineering Department records 2,358 arsenic-affected and 639 fluoride-affected habitations

on its water quality portal, without stated reference date (Public Health Engineering Department, Government of Assam, n.d.a). A parliamentary reply reported in the trade press recorded 6,061 arsenic-affected habitations in India, of which 2,291 were in Assam, placing the State second after West Bengal with 3,115, and 4,592 fluoride-affected nationally, with largest concentrations being Rajasthan 2,820, Bihar 844 and West Bengal 276 (Morung Express, n.d.). A separate reported reply recorded 1,247 arsenic-affected habitations across 12 Assam districts, highest concentrations being Nalbari 454, Baksa 343 and Barpeta 171, and 12 fluoride-affected across four districts (Water Today, n.d.). In a Rajya Sabha reply of 10 December 2024, the Minister of Jal Shakti stated that 21 Assam districts are partly affected by arsenic in groundwater, Central Ground Water Board data record 19 Assam districts with arsenic above 0.01 milligrams per litre, and Assam ranks third in India after Uttar Pradesh and Bihar by number of affected districts; ministry data in the same report recorded approximately 1,800 arsenic-affected rural habitations across India with 23.98 lakh people at risk, of which Assam accounts for 290, second to West Bengal at 1,218 (Assam Tribune, 2024). The same reply reported arsenic beyond permissible limits in isolated pockets of 230 districts across 25 States.

The range of Assam-specific arsenic counts runs from 290 to 2,358, a factor exceeding eight. This is not a presentational inconsistency but a governance failure. Divergence reflects different reference dates, some counts counting habitations where any source exceeds limits while others count those remaining affected after remediation, and national totals compiled from State reporting with unharmonised definitions. But the explanation is itself the finding. A State cannot target remediation investment, sequence alternative source schemes, or assure households whether their water is safe, when affected habitations are unknown to within an order of magnitude. On fluoride, the position is comparably unclear and proportionally worse, the State's own portal recording 639 affected habitations against a reported parliamentary figure of 12.

On iron, this framework was unable to source any verified figure for habitations or population affected by concentrations above the permissible limit. Iron is understood in State documentation to be the most widespread groundwater quality problem in the Brahmaputra valley, and its consequences range from consumer rejection of treated supplies (driving households to untreated alternatives) to fouling of distribution infrastructure. The absence of a verified count for the State's most pervasive contaminant is remarkable, and section 10.7 identifies it as a measurement gap of the first order. Iron figures circulating in State discussion are not reproduced here, none having been traceable to published sources.

The State's stated mitigation approach is to shift affected areas onto piped schemes drawing on arsenic-free and fluoride-free surface sources (Public Health Engineering Department, Government of Assam, n.d.a). This is technically correct and also expensive, since surface source schemes require intake works, conveyance, treatment and a far more demanding operation and maintenance regime than a hand pump. It is precisely the category of asset that the institutional deficit identified at the outset of this chapter puts at risk.

Water and sanitation received Rs 3,121 crore in 2026-27 budget estimates, against revised estimate of Rs 5,423 crore for 2025-26 and actuals of Rs 1,015 crore in 2024-25, an

annualised increase of 75 per cent measured from actuals. Within 2026-27, Rs 1,704 crore goes to rural water programmes (PRS Legislative Research, 2026).

These figures exemplify the budget credibility problem documented in section 2.2.4. The revised estimate for 2025-26 is more than five times actual expenditure of the preceding year, while the budget estimate for the following year falls 42 per cent below that revised estimate. Chapter 2 established the general pattern: revised estimates run far above budget estimates while actuals fall far below revised estimates, with this sector most pronounced.

Three consequences follow. The 75 per cent annualised increase, while arithmetically correct, is an artefact of an unusually low base year as much as evidence of prioritisation. Allocations swinging between roughly Rs 1,000 and Rs 5,400 crore within two years cannot support multi-year planning, reliable contracting, or workforce stability; volatility of this magnitude causes the execution shortfall it appears to measure.

Capital allocation is not operation and maintenance provision. Recurrent costs of running piped surface schemes typically exceed capital costs over design life. A budget line swinging fivefold cannot assure village committees of maintenance transfers in scheme year eight. Section 2.5.3 shows Panchayati Raj internal revenue declined from Rs 56 crore (2019-20) to Rs 45 crore (2024-25), tax revenue from Rs 18 crore to Rs 5 crore, with Finance Commission releases below 20 per cent. The devolved tier has neither own revenue nor reliable transfers.

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

The central puzzle is that Assam, water-abundant, irrigates a minority of cropped area. The puzzle is genuine but explainable. Five factors operate together, none sufficient alone.

First, extreme seasonality. The monsoon delivers 70 to 90 per cent of annual flow (Government of Assam, Water Resources Department, 2024). Water is superabundant in the months when crops do not need supplementary irrigation and scarce in the months when they do. Irrigation is a dry season problem; the endowment is a wet season endowment. Converting one into the other requires storage, constrained by topography, sediment load, and the displacement and seismic considerations examined in Chapter 9.

Second, drainage congestion rather than water shortage. Across much of the valley, the binding constraint on cropping is that fields do not drain, not that they lack water. Waterlogging in the kharif season, prolonged submergence during flood events, and slow recession of floodwater compress the effective cropping window and depress yields. An irrigation department in a drainage-constrained landscape is solving the wrong half of the problem.

Third, gradient. The valley floor is very flat. Flat gradients reduce the head available for gravity distribution, so canal commands are shallow and require extensive channel lengths per hectare served, raising capital cost and conveyance loss. They also slow drainage, compounding the second factor.

Fourth, holding structure. Chapter 18 documents the small and fragmented character of holdings in Assam. Fragmentation raises distribution cost per hectare, complicates the collective action needed to operate a shared channel or pump, and reduces the individual holding's ability to finance on-farm works. A scheme serving fragmented plots requires a

functioning water users association, and the third-tier strength documented in section 2.5.3 determines whether such associations exist.

Fifth, power. Lift irrigation from surface sources or shallow tube wells requires reliable electricity or diesel. Where supply is intermittent, as Chapter 9 examines, the farmer cannot schedule irrigation, cannot rely on completing a rotation, and will not invest in on-farm works that make the scheme productive. Diesel substitutes at a cost that eliminates the margin on a paddy crop.

The paradox therefore resolves as follows. Assam does not lack water. It lacks water at the time of year when crops need it, at a head that permits low-cost distribution, in fields that drain, on holdings large enough to justify distribution investment, with power reliable enough to lift it. Each is an infrastructure and institutional problem rather than a hydrological one.

The State Irrigation Plan for 2022-27 estimates ultimate irrigation potential at 27 lakh hectare, of which 17 lakh is planned through minor irrigation and 10 lakh through major and medium projects. Against that, irrigation potential created up to March 2022 was 10.59 lakh hectare, while annual irrigated area was 8.27 lakh hectare (Government of Assam, Water Resources Department, 2024).

The gap between potential created and area actually irrigated is 2.32 lakh hectare, or approximately 22 per cent of potential created. This utilisation gap is the single most important number in this section, measuring assets on books and in field but not delivering water to crops.

An older position complicates the picture. As of 31 March 2015, the State recorded irrigation potential of 11.27 lakh hectare, equivalent to 40 per cent of net cropped area, of which 7.33 lakh hectare (26 per cent) was under assured irrigation (Directorate of Agriculture, Government of Assam, n.d.). The 2015 potential exceeds the 2022 potential created—either the earlier figure was subsequently corrected, or potential has been written down as schemes became defunct. The second reading is consistent with section 10.2.3's functionality evidence, but the point cannot be settled from published sources.

Net sown area is also reported inconsistently, at 28.62 lakh hectare in the State Irrigation Plan and 27.49 lakh hectare for 2023-24 in Directorate reporting (Government of Assam, Water Resources Department, 2024; Directorate of Agriculture, Government of Assam, n.d.). The 1.13 lakh hectare difference is not trivial in a State losing agricultural land to erosion and conversion.

Taking the State Irrigation Plan set, annual irrigated area of 8.27 lakh hectare against net sown area of 28.62 lakh hectare represents approximately 29 per cent, while created potential of 10.59 lakh hectare represents 39 per cent of ultimate potential. No other figures for command area, treatment capacity or irrigation intensity could be verified.

Of 3,753 minor irrigation schemes in Assam, 1,920 were functional and 342 under construction, leaving approximately 1,491 defunct or non-functional, according to State Irrigation Department records reported in January 2023 (The Sentinel, 2023). Roughly two in five schemes were not working. Recorded causes were deterioration of infrastructure, delayed repair funding, inconsistent electricity supply, equipment theft, flood damage, riverbed shifting affecting surface schemes, breached and poorly maintained canals, and inadequate

coordination between the Agriculture, Panchayat, Rural Development, and Soil Conservation departments. Even functional schemes underperformed against their intended command.

This list is a near-complete inventory of the institutional deficit identified as the central problem in this sector. Only flood damage is a hydrological cause. Every other reflects failures of maintenance financing, power supply, asset security, channel upkeep, or inter-departmental coordination, and none is remedied by constructing additional schemes. The conclusion is straightforward: in current institutional configuration, capital on new minor schemes has a substantial probability of producing non-functional assets within a decade, and the marginal rupee is better spent rehabilitating the 1,491 existing schemes than adding to their number. The dispersal of responsibility across at least four departments is the same accountability problem section 6.6.3 identified in nutrition, and the remedy is the same: a single named authority accountable for measurable published outcomes.

Water use productivity, meaning output per unit of water applied, cannot be computed for Assam from any verified source and is not estimated here. What follows from the cropping pattern documented in Chapter 18 is that a paddy-dominated system irrigated by flooding sits at the low productivity end of Indian irrigation practice, and that returns to shifting part of the dry season command onto pressurised systems serving higher value horticulture are likely to be substantial.

Area under micro irrigation in Assam could not be verified and is identified as a measurement gap. The structural reasons for low adoption follow from section 10.2.1. Micro irrigation is capital intensive per hectare, which does not suit fragmented holdings; it requires reliable pressurised water, which requires reliable power; and it is most attractive where water is scarce and expensive at the point of use, which in a high rainfall State it is not perceived to be. Promotion should therefore be targeted at horticulture on consolidated holdings and in higher gradient areas rather than pursued as a general programme.

10.3 Sanitation and Open Defecation Free Status: Post ODF Sustainability

Assam was declared an open defecation free State on 2 October 2019. Under the second phase of the Swachh Bharat Mission Grameen, the State has declared all 25,437 villages as ODF Plus Aspiring, of which 4,479 are ODF Plus Rising and 999 are ODF Plus Model. Arrangements for solid waste management are recorded in 7,967 villages, for liquid waste management in 23,466 villages, and for both in 5,996 villages. As of 2 January 2024, 1,96,003 individual household latrines had been constructed for newly emerging households (Public Health Engineering Department, Government of Assam, n.d.b).

The construction achievement should be stated plainly before it is qualified. Assam moved from widespread open defecation to universal household latrine coverage, on the programme's own definition, within five years. That is a genuine delivery achievement, of the discrete, deliverable, countable kind section 6.3.2 identified as the intervention type at which the State succeeds.

ODF declaration and sustained behaviour are not the same, and reporting measures the former.

Three distinctions operate at different levels. A latrine constructed is not used; usage depends on structure, privacy, water availability, pit capacity, and preference. Usage is not safely managed sanitation; unlined, poorly-sited containment allows faecal re-entry and epidemiological loss despite coverage reporting. ODF status must be maintained against household formation, deterioration, pit filling and floods; 1,96,003 newly-constructed latrines themselves prove the denominator moves continuously.

ODF Plus classification recognizes this. Read as distribution, Assam's figures are instructive. All villages enter aspiring status; 18 per cent reach Rising (4,479), 4 per cent reach Model (999). Fewer than one village in five has advanced beyond aspiring and one in twenty-five has reached model—the gap between declaration and sustained practice, visible in official data.

The solid waste figure is weakest in the dataset: arrangements recorded in 7,967 of 25,437 villages (31 per cent) against liquid waste in 23,466 villages (92 per cent). Rural liquid waste management comprises soak pits and drainage, low cost and rapid, whereas solid waste requires segregation at source, collection round, processing, and disposal—all requiring recurrent cost and staffing. The disparity exemplifies this chapter's general finding: Assam completes what can be built and lags what must be operated.

Chapter 6 recorded anaemia among children aged 6 to 59 months at 68.4 per cent, wasting rising from 17.0 to 21.7 per cent, severe wasting from 6.2 to 9.1 per cent, and underweight from 29.8 to 32.8 per cent between the fourth and fifth rounds of the National Family Health Survey, leaving Assam worse than the national average on each (International Institute for Population Sciences, 2021). Section 6.6.2 identified parasitic and infectious load as one of four causal pathways for anaemia, specifically hookworm infestation causing chronic intestinal blood loss and repeated enteric infection impairing iron absorption independently of intake.

This chapter supplies the environmental determinants of that pathway. Hookworm transmission occurs through contact with soil contaminated by human faeces; enteric infection through ingestion of faecally contaminated water and food. Both depend on whether excreta are contained and treated. The relevant sanitation variable is therefore not latrine coverage, which is complete on the programme's definition, but safe management of what the latrines contain, which section 10.6 shows to be almost entirely absent in urban Assam and undocumented in rural Assam.

Three implications follow. The deterioration in wasting and underweight occurred during the very period in which latrine construction was being completed, which is evidence that construction alone does not deliver the nutritional benefit. The pathway is strongest for children in the first two years of life, whose exposure is environmental rather than behavioural. And the interventions that would interrupt it, namely faecal sludge management, safe water at the point of consumption, and deworming, sit across the Public Health Engineering Department, the urban local bodies and the health department respectively. Section 6.8.3 recommended a single named authority accountable for nutrition outcomes across departmental boundaries; this chapter insists that its mandate extend to sanitation and water quality rather than being confined to food and supplementation.

10.4 Comparative State Performance and Lessons

Comparative benchmarking in this sector is harder than in health or education, because physical conditions determining cost and feasibility differ sharply between States. Coverage comparison between Assam and a State with consolidated settlement, stable land, no annual inundation and year-round road access measures geography as much as administration. Comparative figures are therefore treated here as diagnostic rather than performance verdicts. Two are instructive.

The first concerns coverage. Eleven States and Union Territories, including Goa, Haryana, Gujarat and Arunachal Pradesh, had achieved 100 per cent rural tap water connectivity as at 22 October 2025, against a national figure of more than 81 per cent (Jal Jeevan Mission, 2025). Arunachal Pradesh is analytically significant: it has terrain more difficult than Assam's, a more dispersed settlement pattern and a smaller administrative establishment. Its achievement of full coverage establishes that physical difficulty is not by itself sufficient explanation for slower progress, and removes the strongest available excuse.

The second concerns groundwater quality. On every count reported in section 10.1.3, Assam and West Bengal together account for the overwhelming majority of arsenic-affected habitations in India (Morung Express, n.d.; Assam Tribune, 2024). West Bengal has managed arsenic in the Bengal basin for three decades. The transferable lesson is not technological. It is that arsenic removal units installed without funded maintenance and monitoring regimes fail within a few years, are not detected as failed, and continue to be counted as functioning. Assam's approach of shifting to arsenic-free surface sources avoids that failure mode and is the correct strategic choice.

The lesson is about what is measured rather than what is spent, consistent with Chapters 5 and 6. States that have achieved and sustained water and sanitation outcomes have generally done three things Assam has not. They have published disaggregated service level data at frequency permitting management, rather than reporting programme completion in aggregate. They have assigned operation and maintenance to bodies with defined revenue streams—user charges, dedicated transfers or ring-fenced budget lines—rather than general local government budgets that section 2.5.3 shows to be empty. And they have separated building assets from certifying they work, so the entity reporting coverage is not the entity whose performance that coverage evaluates.

Assam's maternal mortality experience, documented in section 6.3.2, demonstrates that the State can sustain two-decade efforts on single measurable objectives with external accountability. Water quality and service functionality are measurable in exactly the same way. The absence of measurement is a choice, not a constraint.

10.5 Solid Waste Management: Municipal, Biomedical and Hazardous Waste

Two sets of figures for municipal solid waste in Assam were retrieved and differ substantially in level and vintage. A national action plan records collection of 650 tonnes per day and treatment of 350 tonnes per day (Central Pollution Control Board, n.d.b). A progress report submitted by the Government of Assam in 2024 before the National Green Tribunal assessed generation at 1,338 tonnes per day, collection at 1,231.8 tonnes per day and waste processed

at 791.5 tonnes per day (Government of Assam, 2024). Both are reported here and the divergence noted.

Taking the more recent State submission, collection efficiency is approximately 92 per cent of generation and processing approximately 59 per cent, leaving roughly 40 per cent unprocessed or unaccounted.

Three observations follow. Collection efficiency of approximately 92 per cent against processing of approximately 59 per cent is the characteristic signature of a system that has solved transport and not treatment, the same pattern identified throughout this chapter. Total generation of 1,338 tonnes per day for urban Assam appears low relative to the State's urban population, suggesting either conservative assessment or that a share of waste never enters municipal systems. Processing is dominated by ongoing remediation at a single site, meaning sustainable capacity for freshly generated waste is likely materially lower once legacy remediation ends.

The Paschim Boragaon site in Guwahati is the most consequential single solid waste facility in the State and the clearest illustration of deferred institutional development costs. Covering approximately 108 bigha, it has served as the principal disposal ground for Guwahati's municipal waste. It lies adjacent to Deepor Beel, a wetland of international importance and critical habitat for migratory and aquatic birds, and has been assessed as causing ecosystem harm (Sentinel Assam, 2025).

An administrative approval of Rs 172.5 crore has been sanctioned for biomining of accumulated waste, work assigned to a private contractor. Legacy waste is reported at approximately 15 to 17 lakh tonnes. As at 25 November 2025, more than 8.32 lakh tonnes had been treated in the current phase, taking total processed waste to 11.93 lakh tonnes, with land recovery to be completed within 36 months and the reclaimed site intended for conversion into a park (Sentinel Assam, 2025).

Four observations follow. The remediation is the correct response and progress substantial, with roughly two-thirds to three-quarters of the estimated legacy volume processed depending on which end of the range is used. The cost, at Rs 172.5 crore for a single site, measures the price of decades of unscientific disposal, and is instructive against the Rs 1,704 crore allocated to rural water supply programmes for the entire State in 2026-27 (PRS Legislative Research, 2026): remediating one dumpsite costs roughly one tenth of the annual rural water supply programme. Siting a municipal dumpsite adjacent to a Ramsar wetland is a planning failure whose consequences extend into the biodiversity questions examined in Chapter 13, and reclamation does not reverse the leachate loading Deepor Beel has already received. And, critically, biomining removes the accumulated stock and does nothing about the flow. Unless segregation at source, decentralised processing and scientific landfill capacity are established for current generation, the reclaimed site will be replaced by another accumulation elsewhere within a decade.

In the Swachh Survekshan 2024-25 assessment, whose awards were conferred in July 2025, Guwahati secured 44th position overall and was recognised as the cleanest capital city in the northeast (Press Information Bureau, 2025; ANI, 2025). North Lakhimpur secured 155th rank among 820 cities in the 50,000 to 3 lakh population category, and Nagaon a national rank of 274, the third best in Assam. Both were recognised under the Promising Swachh Shehar

category. Separately, Guwahati rose to 21st rank in the Swachh Vayu Survekshan 2025 air quality assessment (Assam Today, 2025).

The improvement is real. Two cautions are necessary. Swachh Survekshan is substantially a process and citizen feedback assessment as well as outcome assessment, and a city can improve its rank through documentation, public engagement and visible street cleaning without proportionate improvement in treatment and disposal chains; the Boragaon position and sewerage position in section 10.6 indicate that underlying infrastructure has not improved at the pace ranking movement suggests. Second, 44th position nationally is a middling absolute performance, and cleanest capital within a region whose other capitals are considerably smaller cities is a comparison against a narrow field. The State should adopt absolute service level benchmarks, specifically source segregation rate, processing rate and treated sewage share, as published objectives.

This framework was unable to source verified, current, Assam-specific figures for biomedical waste generation, the number and capacity of common biomedical waste treatment facilities, hazardous waste generation, or capacity for treatment, storage and disposal of hazardous waste. Section 10.7 identifies these absences as measurement gaps.

These quantities are not estimated here. What follows from Chapter 6 is that the 2026-27 Budget provides for four new medical colleges and the upgrading of 354 tea garden hospitals alongside approximately 33,000 new health posts. A material expansion of health facilities generates a proportionate expansion of biomedical waste, and if treatment capacity is not planned in step, the additional waste will be managed through the same informal channels the expansion is intended to displace. Biomedical waste treatment capacity should be planned as a component of the health infrastructure programme rather than as a separate regulatory matter.

10.6 Liquid Waste and Sewerage: Urban and Peri Urban Treatment Infrastructure

This is the most serious infrastructure deficit documented in this chapter and one of the most serious documented anywhere in this framework.

Assam generates approximately 809 million litres per day of sewage (Central Pollution Control Board, n.d.a). Against that, the State has effectively no operational treatment capacity. Central Pollution Control Board inventorisation records Assam as having no operational sewage treatment plant, with older data recording a single plant of 0.21 million litres per day, and the State's submission before the National Green Tribunal for December 2022 recorded existing capacity as nil (Central Pollution Control Board, n.d.a; National Mission for Clean Ganga, 2022). Septic tanks are the prevailing containment method, and construction of 18 plants has been reported as in process.

The national context makes the position starker. Urban India generates more than 70,000 million litres per day of sewage (Down To Earth, 2025), and India's treatment plants handle only approximately one third of what is generated (Central Pollution Control Board, n.d.a). India's performance is poor; Assam's is, on these figures, at or near zero. Essentially the

entire liquid waste output of urban Assam enters drainage systems, wetlands, and the Brahmaputra and Barak systems without treatment.

The consequences run through several chapters. They include contamination of shallow groundwater from which much of the population draws drinking water, meaning arsenic and fluoride problems in section 10.1.3 coexist with unmeasured microbiological contamination. They include enteric infection load identified in sections 10.3.3 and 6.6.2 as a causal pathway for anaemia and undernutrition. They include ecological loading on wetlands including Deepor Beel, examined in Chapter 13. And they compound with the flood cycle documented in Chapter 14, since inundation mobilises septic tank and drain contents across residential areas, converting chronic exposure into acute exposure every monsoon.

Because Assam relies almost entirely on on-site containment, the operative question is not sewerage network coverage but faecal sludge and septage management. A septic tank is an interim containment device: it requires periodic emptying, the sludge requires conveyance, and the conveyed sludge requires treatment. If any link is missing, the septic tank is a delayed discharge mechanism rather than a treatment device.

This framework was unable to source verified data for Assam on the number of towns with faecal sludge and septage management plans, the number of operational treatment plants, desludging frequency achieved, or the proportion of septage reaching treatment (section 10.7 identifies this gap). In the absence of such data, the State cannot know or demonstrate whether the septage its urban population generates is treated or discharged.

Faecal sludge treatment is also cheap relative to conventional sewerage. Networked sewerage requires trunk mains, pumping stations and large centralised plants, and in the flat, flood-prone, low-density urban form characterising most Assam towns, the capital cost per connection is high and hydraulic performance poor. Treatment plants serving a fleet of desludging vehicles are an order of magnitude cheaper, can be built in months rather than years, and are far better matched to the settlement pattern. The strategic error available to the State is to wait for networked sewerage in towns that will not receive it within the planning horizon while doing nothing about the septage those towns generate in the interim.

The Atal Mission for Rejuvenation and Urban Transformation 2.0 was approved with total indicative outlay of Rs 2,99,000 crore, including central outlay of Rs 76,760 crore for five years from 2021-22 to 2025-26, with objectives of universal water supply through functional taps in all statutory towns and coverage of sewerage and septage management in 500 first-phase cities (Prime Minister of India, 2021; Press Information Bureau, 2022b). Nationally, 8,998 projects worth Rs 1,89,458.55 crore have been approved, and approvals for sewerage and septage projects amount to Rs 62,935.90 crore, providing for 29,105 kilometres of sewerage network and additional treatment capacity of 5,791.94 million litres per day (News On Project, n.d.).

In Assam, 58 projects are being implemented at an investment of more than Rs 861 crore, covering water supply systems, sewerage networks and restoration of water bodies, with the State rolling out the programme in May 2026 (India Today North East, 2026).

Three observations follow. The scale is modest relative to the deficit: Rs 861 crore across 58 projects covering water supply, sewerage and water body restoration will not create treatment

capacity approaching 809 million litres per day, and the programme should not be presented as closing the sewerage gap. The timing is late, since the mission period runs to 2025-26 and a State rolling out its programme in May 2026 is beginning implementation at or after the close of that period, raising questions about sanctioning, tendering and utilisation that the State should address in published statements. And, consistent with section 10.6.2, the Assam allocation should be weighted toward septage management and decentralised treatment rather than networked sewerage, because the former can be delivered within the programme period at the scale of the problem and the latter cannot.

10.7 Strategic Priorities for Water and Sanitation

Unverified quantities necessary for management are listed below as explicit omissions and governance failures (section 6.8.2).

- Current functional household tap coverage at stated date in 2026.
- Assam functionality assessment (proportion meeting quantity/quality/regularity standards).
- Reconciled arsenic-affected habitations (290-2,358 range across sources).
- Reconciled fluoride-affected habitations (12-639 range).
- Any verified count of iron-affected habitations/population (most widespread groundwater problem).
- Reconciled net sown area series (State Plan and Directorate differ by ~1.13 lakh hectare).
- Explanation of 2015 potential exceeding 2022 created potential.
- Irrigation intensity, area under micro irrigation, and water use productivity.
- Minor irrigation scheme functionality (most recent: January 2023).
- Biomedical waste generation/treatment capacity, hazardous waste generation/disposal capacity.
- Towns with septage management plans, operational treatment plants, proportion reaching treatment.
- Scheme functionality and operation/maintenance expenditure.

Eight priorities follow, each with measurable targets for 2031 and 2047.

1. Publish annual Water and Sanitation Report containing section 10.7.1 series by district and geography (char, tea, hill). Targets: first report within 12 months, complete coverage by 2031, continuous publication to 2047. This is foundational—no subsequent priorities can be verified without it.
2. Shift objective from connection to delivered service (litres per person per day, disaggregated monthly). Targets: 100 per cent connected by 2031, 90 per cent meeting quantity/quality/regularity standards by 2031, 99 per cent by 2047.
3. Establish habitation-level water quality register (arsenic, fluoride, iron concentrations and test dates). Targets: reconciled register covering all by 2028, eliminate arsenic/fluoride exposure by 2031, eliminate iron by 2035, 5 per cent annual verification to 2047.
4. Ring-fence operation/maintenance provision as defined percentage of asset base, released to operating tier on schedule (section 2.5.3). Targets: funded line by 2028, 95 per cent scheme functionality sustained 2031-2047.

5. Suspend net scheme additions until defunctional schemes rehabilitated or written off. Targets: 95 per cent functional by 2031; utilisation gap from 22 per cent (March 2022) to below 10 per cent (2031), below 5 per cent (2047); annual irrigated area 15 lakh hectare (2031), 24 lakh hectare (2047) against 27 lakh hectare ultimate.
6. Merge drainage and irrigation under single named authority (section 10.2.1 binding constraint, section 10.2.3 coordination failures). Targets: authority established by 2028, coordination failures eliminated by 2031.
7. Prioritize septage (809 million litres/day vs. nil treatment) over networked sewerage. Establish management plans and facilities in every statutory town before trunk sewerage investment. Targets: plan and facility per town by 2031, 80 per cent treatment by 2031, 90 per cent total sewage by 2047.
8. Close waste loop for current generation. Establish segregation, processing, and landfill in every local body. Targets: 80 per cent source segregation and 90 per cent processing by 2031, 100 per cent processing by 2047, no new sites in wetland catchments.

The chapter closes with the observation that unites it with Chapters 5, 6 and 9. Assam has demonstrated, in maternal mortality and in latrine construction, that it can deliver at scale when the objective is single, measurable and externally accountable. It has not yet applied that model to a service that must be operated rather than built. Water supply, irrigation, septage and solid waste are all services of that kind. The determining question for 2047 is not whether the State can construct the assets, which it has shown it can, but whether it can build the institutions that keep them working.

CHAPTER 11: URBAN DEVELOPMENT, HOUSING AND SMART CITIES

At the 2011 enumeration, 14.08 per cent of the population of Assam lived in urban settlements, up from 12.9 per cent in 2001, against a national figure of 31.16 per cent (Registrar General of India, 2011). Low urbanisation is often presented as evidence of retained rural continuity, but this framework rejects that reading.

Urbanisation expresses structural transformation. Labour leaves low productivity agriculture for higher productivity manufacturing and services, activities requiring the density, market thickness and labour pooling that towns provide. Chapter 3 records low value added per worker and workforce concentration in agriculture; Chapter 20 records sustained out-migration of working age adults. A State that has not built towns capable of absorbing labour productively exports that labour to other States' towns, bearing the demographic cost of migration without capturing the productivity gain. Assam's low urbanisation ratio is not a preserved condition but a measure of the destinations the State failed to create.

Assam has combined the disadvantages of under-urbanisation with urban primacy. Urban growth concentrated on one site: capital outlay on urban development for 2026 to 2027 is budgeted at 3,368 crore rupees, of which 2,528 crore rupees (75 per cent) relates to the State capital (PRS Legislative Research, 2026). The result is a settlement system with no functioning middle. Guwahati is congested, hydrologically compromised and expanding onto unbuildable terrain, while secondary towns of the Brahmaputra and Barak valleys lack the drainage, water, waste and transport infrastructure that would make them credible alternatives. A household leaving agriculture faces a choice between remaining, going to Guwahati, or leaving the State.

Guwahati floods every monsoon, attributed to exceptional rainfall and its basin position between hills and the Brahmaputra. These descriptions are true but not explanatory: rainfall and topography are constant. What has changed is the proportion of impervious basin surface, the number of hill slopes converted to building plots, wetland storage available, and drain carrying capacity. Each change followed decisions taken or not taken by identifiable public authorities. Guwahati's flooding is a governance outcome presented as meteorological.

As in Chapters 2, 5 and 6, urban data in Assam is unusually poor: municipal accounts are published late and inconsistently, and ward level service coverage is not published. Unverifiable figures are omitted; gaps are consolidated in section 11.7. Where sources conflict, both are reported with the divergence noted.

11.1 Urbanisation Trends and Urban Governance Architecture

The urban share stood at 14.08 per cent at the 2011 enumeration, up from 12.9 per cent in 2001, against a national 31.16 per cent (Registrar General of India, 2011); the decadal increment was approximately 1.2 percentage points. No more recent enumeration exists: the 2021 census was deferred, so quantitative foundations of urban policy in Assam—ward delimitation, service norms, scheme entitlement and infrastructure sizing—rest on a

measurement fifteen years old. This absence is the largest single data constraint in the chapter.

The low ratio conceals a substantial absolute increment whose distribution matters more than its level. An urban share of 14 per cent across eighty towns differs from the same share concentrated in one metropolitan region with administrative townships of limited economic function.

The Directorate of Municipal Administration records one municipal corporation (Guwahati), thirty three municipal boards and forty seven town committees (Directorate of Municipal Administration, Assam, n.d.), totalling eighty one. Other compilations record 103 urban local bodies comprising 1,190 wards (Urban Development Department, Assam, n.d.). The divergence probably reflects progressive conversion of town committees to municipal boards, but that the count cannot be stated with confidence from published sources is significant.

Development authorities sit above urban local bodies. The Guwahati Metropolitan Development Authority, most consequential, exercises planning and land development powers beyond municipal boundaries. Special purpose vehicles (principally Guwahati Smart City Limited) and departmental structures of the Guwahati Development Department, Housing and Urban Affairs Department and Urban Development Department oversee implementation. The State has additionally approved a Guwahati Satellite Cities Development Authority to plan and develop satellite settlements within and around the metropolitan area (Asian News International, 2026), adding another body to this territory.

This architecture fragments accountability where integration is essential. Drainage exemplifies the problem: a single hydraulic network has water from hilltops outside municipal boundaries flowing through channels maintained by one agency, into wetlands regulated by another, thence to pumping stations operated by a third. When the system fails, no authority is answerable. The same applies to solid waste (collection by municipal body, disposal at a site affecting a wetland managed under different statute) and land use (permission to build on hillsides sits with one office, management of resulting runoff with another).

Chapter 15 examines coordination generally. The urban case differs because physical systems are indivisible unlike health or education delivery. A drainage basin cannot function well in one district and poorly in another. The remedy proposed in section 11.7 is not a further authority but unitary published accountability for each physical network.

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

Chapter 2 established local government's fiscal condition in Assam. The Seventh State Finance Commission found internal revenue generation of Panchayati Raj Institutions declined from 56 crore rupees in 2019 to 2020 to 45 crore rupees in 2024 to 2025; releases against previous Commission recommendations remained below 20 per cent (except the

Fourth Commission at 34 per cent); and against general purpose grants of 2,106 crore rupees recommended by the Sixth Commission for 2020 to 2025, only 292 crore rupees (14 per cent) had been released by the fourth year (PRS Legislative Research, 2026).

This demonstrates a settled preference for retaining resources at State level and executing local works through State agencies. This preference is visible in routing the Smart Cities Mission through a State controlled company rather than the municipal corporation, and in locating urban capital outlay in State budget heads rather than municipal budgets.

The Finances of the Guwahati Municipal Corporation

Item	2022 to 2023 (audited)	2023 to 2024 (audited)
Total tax revenue	116	103
Total own revenue	170	191
Total grant	Not retrieved	165
Total revenue	Not retrieved	369
Total expenditure	Not retrieved	283

All figures in crore rupees. Source: City Finance portal, Ministry of Housing and Urban Affairs, drawing on audited municipal financial statements, last updated 30 March 2026 (Ministry of Housing and Urban Affairs, 2026). The 2022 to 2023 entries derive from a search summary of the same portal; the corresponding grant, revenue and expenditure figures for that year were not retrieved.

Four findings follow.

First, scale. Total revenue in 2023 to 2024 was 369 crore rupees; budgeted capital outlay on the State capital in 2026 to 2027 is 2,528 crore rupees (PRS Legislative Research, 2026). State agencies spend roughly seven times the entire annual revenue of the city's elected government. This does not build municipal capacity and locates asset creation decisions away from the maintenance-bearing body.

Second, composition. Own revenue of 191 crore rupees against grants of 165 crore rupees gives a 52 per cent own revenue share. By Indian standards this ratio is acceptable; the State Finance Commission observes that Assam's urban local bodies generate own resources more robustly than the rural tier, with access to holdings tax, water tax, building plan sanction fees, rents, tolls and user charges (State Finance Commission, Assam, n.d.). But 191 crore rupees for a city of this scale is very small in absolute terms.

Third, direction. Tax revenue fell from 116 crore rupees in 2022 to 2023 to 103 crore rupees in 2023 to 2024 (approximately 11 per cent decline), while own revenue rose from 170 crore rupees to 191 crore rupees (Ministry of Housing and Urban Affairs, 2026). The increase came from non-tax sources. A shrinking tax base during rapid property development fails to capture city-created value, mirroring Chapter 2's finding on State stamp duty and land revenue.

Fourth, expenditure of 283 crore rupees against revenue of 369 crore rupees shows a revenue surplus. In a city with documented deficits (section 11.5), an underspending corporation

indicates execution or staffing constraint, or grants received without works completed. Published data does not permit determination; section 11.7 recommends required disclosure.

The portal's population figure of 9,57,352 over 329 square kilometres (2,909.88 persons per square kilometre) approximates the 2011 enumeration and does not reflect subsequent growth (Ministry of Housing and Urban Affairs, 2026), so per capita ratios computed on it should not be used.

The Assam State Finance Commission has recorded that property tax collections suffer from delays in reassessment of property values and has recommended expeditious engagement of assessors (State Finance Commission, Assam, n.d.).

A claim circulates that property tax reforms raised collections by 56 per cent and brought more than two lakh twenty thousand additional properties into the tax net, attributed to an Asian Development Bank study (Asian Development Bank, n.d.). This framework could not retrieve the underlying publication or establish the years covered, urban local bodies included, or baseline. The claim is recorded but flagged as unverified, as the framework will not reproduce percentages whose base year cannot be stated.

Property tax performance has three components: coverage (share of properties on register), valuation (relationship between assessed and market value), and collection efficiency (share of demand realised). Assam publishes none of these ratios. Without them, it cannot be determined whether a municipal body is poor because its base is small or administration weak—conditions requiring different remedies.

The Sixteenth Finance Commission award period commenced on 1 April 2026. The Commission recommends approximately 294 per cent increase in urban local body allocations compared with the Fifteenth Finance Commission (approximately 230 per cent including the interim year). Urban local bodies receive a 45 per cent share comprising a 40 per cent grant together with special grants of 66,100 crore rupees: a State Performance Grant of 29,016 crore rupees, a Special Infrastructure Grant of 56,100 crore rupees and a Rural to Urban Transition Grant of 10,000 crore rupees. The Commission eased the own source revenue condition to a uniform 5 per cent annual growth requirement, replacing earlier conditions linking property tax growth to nominal State product growth (Joshi, 2026).

Two implications follow. Available resources are substantially larger, shifting the binding constraint from allocation to absorption: bodies unable to prepare, procure and account for projects will not receive resources regardless of pool size. The conditionality has weakened as a reform lever: a uniform 5 per cent growth requirement approximates nominal inflation and can be satisfied without improving coverage, valuation or collection efficiency. The State should impose its own, more demanding conditions through the State Finance Commission.

Verified current data on municipal staffing, qualified planners, engineers and revenue officers in position, or vacancy against sanctioned strength is unavailable. Chapter 15 records the general State services vacancy problem; municipal cadres should be no better staffed. A corporation with own revenue of 191 crore rupees cannot maintain a deep planning establishment; smaller boards and town committees will have none. Plan preparation, design and supervision are outsourced to consultants engaged by State agencies, reproducing the accountability displacement in section 11.1.3 and leaving urban local bodies holding assets they did not specify and cannot maintain.

11.3 Housing: Demand Assessment, Affordability and Flagship Schemes

Assam reported 22 lakh houses completed under Pradhan Mantri Awas Yojana Gramin as at July 2026, with a further target of approximately two lakh within a hundred days (Doordarshan India, 2026a). As of December 2024, a target of 20 lakh had 19.52 lakh constructed with 1.72 lakh subsequently allotted (Business Standard, 2024). Nationally, more than 3.87 crore houses have been sanctioned (News on AIR, 2026a). This scale represents among the largest physical delivery programmes the State has executed.

Location presents the first concern. The programme builds where beneficiaries hold land—frequently flood plains, char and chapori formations, and erosion corridors documented in Chapters 13 and 14. A pucca house on land under water for six weeks annually, or removed by erosion within a decade, converts capital grants into recurring losses. No published data exists on the proportion of programme houses in notified flood or erosion zones, or on houses subsequently damaged or lost. This distinction between asset creation and asset destruction programmes cannot presently be evaluated.

Services present the second concern. A dwelling without water connections, functioning sanitary systems and electricity is shelter, not a house (Chapter 10). Housing completion counts and service connection counts are reported by different departments against different denominators and are not reconciled.

Third, the programme does not address urbanisation deficit. Rural housing at this scale reduces shelter deficit but anchors households in place, operating against labour mobility structural transformation requires.

Item	Assam, as at February 2026
Houses sanctioned under Pradhan Mantri Awas Yojana Urban	1,69,626
Houses sanctioned under Pradhan Mantri Awas Yojana Urban 2.0	17,406
Houses grounded	1,77,887
Houses completed and handed over	1,44,666

Source: reporting of programme data for Assam (Sentinel Assam, 2026a).

The completion ratio against the 1,69,626 sanctioned under the original programme is approximately 85 per cent. Against total sanctions of 1,87,032 including the second phase it is approximately 77 per cent. The framework reports both, since the appropriate denominator depends on whether second phase sanctions are treated as due for completion, and they are not.

District performance varies. Dhubri completed 19,617 houses against more than 21,526 sanctioned, Cachar 12,320 against 13,705, Sonitpur 12,856 against 16,396, and Karbi Anglong 13,254 against 20,364 (Sentinel Assam, 2026a). The scheme period has been extended to 30 September 2026 for completion of houses under construction.

The national position is itself reported inconsistently. One account records 1.25 crore houses sanctioned with one crore delivered (Doordarshan India, 2026b); another records more than 1.64 crore sanctioned since launch (News on AIR, 2026b). The divergence probably reflects different treatment of the original and second phase programmes, and both are reported here.

Approximately 1.45 lakh completed urban dwellings is substantial delivery; adequacy cannot be determined because no denominator exists. Assam has no current published demand assessment. The last authoritative national estimate used the 2011 enumeration, since unrepeated. No published figures exist for current urban housing shortage in Assam, disaggregation by income category, slum and informal settlement population, or affordability gap between formal dwelling costs and household payment capacity. These absences are this section's central finding.

Three consequences follow. Without demand assessment, targets reflect supply capacity rather than need, and completion measures administrative throughput rather than deficit reduction. Without income disaggregation, whether programmes reach the lowest income households—least able to complete beneficiary-led construction—cannot be established. Without location assessment, whether dwellings reach employment cannot be determined. Commentary on the draft metropolitan master plan for Guwahati raised location of affordable housing and displacement risk as specific concerns (Assam Tribune, 2024).

Serviced land price is affordability's binding constraint. Chapter 16 examines the land records system; incomplete and contested records have direct urban consequences. Uncertain title prevents formal finance, deters formal construction and yields informal settlement. Undigitised, under-declared records mean the State captures little value appreciation created through infrastructure investment (Chapter 2 finding on stamp duty).

The State's principal instrument for expanding serviced land is the announced urban growth centre around Guwahati, with 2,100 crore rupees allocated for initial acquisition in the 2026 to 2027 Budget (Government of Assam, 2026). Section 11.6 examines it. Public acquisition produces affordable housing only if the land is disposed under a policy reserving a defined lower-income share at payment-capacity-related prices; no such policy has been published.

11.4 Smart Cities Mission and AMRUT: State Level Implementation Review

Guwahati completed all twenty one sanctioned projects valued at 755 crore rupees and fully utilised its central allocation of 490 crore rupees, achieving 100 per cent completion (ETV Bharat, 2026). Nationally, 97 per cent completion was achieved on projects valued at 1.56 lakh crore rupees across hundred cities. A further 145 crore rupees is allocated to Guwahati Smart City Limited for solid waste management (Sentinel Assam, n.d.).

These figures derive from news reporting rather than the Mission's dashboard (not retrieved within research budget). Completion counts represent implementing agencies' own performance accounts.

Full financial and physical completion is a real achievement. Chapter 2 documents persistent patterns of revised estimates exceeding budgets and actuals falling below revised estimates; a programme spending its full allocation and completing its full project list runs against that pattern.

Completion remains an input measure. Twenty one projects valued at 755 crore rupees indicate what was built but not whether journey times fell, waterlogging duration shortened, waste collection coverage rose, or assets are maintained post-mission period. No published outcome evaluation against baseline indicators was retrieved.

Scale is most important. The entire decade-long Mission investment was 755 crore rupees. Budgeted single-year capital outlay on the State capital in 2026 to 2027 is 2,528 crore rupees (PRS Legislative Research, 2026); the Guwahati Ring Road awarded in 2026 is reported at 5,729 crore rupees for 121 kilometres (Assam Tribune, 2026a). The Mission was small relative to infrastructure deficit and contemporaneous investment, overstating what that programme size could accomplish.

Implementation through a special purpose vehicle rather than the municipal corporation delivers projects faster but builds no durable capacity. When the vehicle winds down, assets revert to a corporation with own revenue of 191 crore rupees in 2023 to 2024. The maintenance obligation from 755 crore rupees of new assets is material against this base, and no published provision was identified.

Against a total second-phase allocation of 244.30 crore rupees for Assam, 207.49 crore rupees (84.93 per cent) had been drawn. Nine water supply projects are implemented across nine urban local bodies (first tranche), and seven water supply projects with one sewage and faecal sludge treatment plant project across eight urban local bodies (third tranche). Six water body rejuvenation works are under way at Tezpur, Tinsukia, Karimganj, Biswanath Chariali, Kokrajhar and Dhekiajuli (Urban Development Department, Assam, n.d.).

Three findings follow.

The allocation is very small. A 244.30 crore rupees allocation for the entire urban water supply and sewerage programme across, on the expansive count, 103 urban local bodies

cannot address the sector deficit; it is roughly one tenth of single-year capital outlay on the State capital. The figure appears to represent central share rather than total project cost including State and municipal shares; that reconciliation should be published.

Coverage is thin. Sixteen water supply projects across a maximum of seventeen urban local bodies and one sewage project state-wide leaves the majority of Assam's towns outside the Mission. Faecal sludge management is appropriate technology at Assam's densities—conventional sewerage is prohibitively expensive at low density—yet a single such project is not a programme.

The six water body rejuvenation works in secondary towns rather than the metropolitan area indicate the correct direction. Their significance lies in implication: if water bodies in Tezpur, Tinsukia, Karimganj, Biswanath Chariali, Kokrajhar and Dhekiajuli require rejuvenation, the degradation documented for Guwahati (section 11.5) is not capital-confined but occurring in secondary towns at earlier, reversible, lower-cost stages.

Assam-specific outcome data under either phase is not retrieved, including tap connections, sewerage connections, treatment capacity commissioned, or non-revenue water reduction. National second phase targets include 1.57 crore new tap connections and 9,106 million litres per day of treatment capacity against 95,590 kilometres of distribution network (Ministry of Housing and Urban Affairs, n.d.), but national targets do not establish State performance.

Both Missions are project financing instruments, not institutional reform instruments. Neither conditioned disbursement on recipient urban local bodies improving property tax coverage, publishing service level benchmarks, achieving defined cost recovery on water supply, or maintaining qualified technical establishments. In Assam, assets have been created while institutions operating them remain unstrengthened and revenue bases weakened on the tax side. The next generation of urban investment—whether through Sixteenth Finance Commission grants (section 11.2.4) or State capital programme—will produce the same result unless conditionality changes.

11.5 Guwahati: Primate City Risk, Urban Flooding and Hill Slope Development

Guwahati is the administrative, commercial, educational, medical and transport hub of Assam and substantially the wider north eastern region. Its municipal area is 329 square kilometres (Ministry of Housing and Urban Affairs, 2026).

Capital outlay on the State capital is budgeted at 2,528 crore rupees in 2026 to 2027 out of total urban development capital outlay of 3,368 crore rupees (PRS Legislative Research, 2026). Adding the Ring Road at 5,729 crore rupees for 121 kilometres (Assam Tribune, 2026a), the completed Smart Cities Mission portfolio of 755 crore rupees (ETV Bharat, 2026), and 2,100 crore rupees for initial land acquisition for the urban growth centre (Government of Assam, 2026) illustrates primate city dynamics.

Investment concentrates where activity has concentrated, raising returns to further concentration, attracting migration and generating demand for more investment. The dynamic

is self-reinforcing and stops only when physical capacity is exceeded—drainage fails, water supply fails, or roads saturate. Section 11.5.2 suggests this has occurred.

In May 2025, more than 720 hectares were submerged. Rainfall of 111 millimetres in twenty four hours on 31 May 2025 paralysed the city and caused deaths including three members of one family in the Bonda wall collapse (Mahabahu, 2025). The framework declines to endorse the reported near-seventy-year return period, which is not corroborated by retrieved meteorological series, but treats the rainfall total and inundated area as reported.

A city that floods severely under 111 millimetres in twenty four hours has exceeded drainage capacity under an event not extraordinary in Guwahati's rainfall regime. The deficiency lies in the drainage system rather than weather.

Available assessments consistently identify causes: flash flooding arises from internal drainage failures rather than the Brahmaputra. Contributing factors are wetland loss and encroachment, natural channel reduction and covering, siltation and solid waste accumulation, increased impervious surface, and drainage infrastructure designed for a smaller city (Assam Tribune, 2026a; Mahabahu, 2025).

Each element reflects governance decisions. Wetland loss follows permissions granted or enforcement withheld. Channels are covered for buildable frontage. Siltation and waste accumulate from solid waste systems not intercepting waste before channels and desilting programmes not matching sediment loads increased by hill cutting upstream. Impervious expansion follows building permissions without stormwater retention requirements. Undersized drainage follows unimplemented master plans.

Master plans for Guwahati were drafted in 1971, 1992 and 2009, each promising scientific drainage, ecological preservation, zoning and managed growth, each followed by underfunded drainage, encroached wetlands, cut hills, and low-lying flood-prone land settled with official permission (Mahabahu, 2025). A draft 2045 master plan released in early 2024 had not received final approval (Guwahati Metropolitan Development Authority, n.d.; Assam Tribune, 2024).

Guwahati has had a master plan for more than fifty years and has been developed in contradiction to each. A fifth plan will not alter outcomes unless the enforcement deficit that defeated the first four is addressed directly. That is not a planning question but one of who grants permissions, on what record, subject to what appeal, and with what consequences for officers granting plan-prohibited permissions.

Hill slope development produces three distinct hazards, of which public discussion generally recognises only the third. Hydrologically, vegetated slopes intercept rainfall and release it gradually; slopes stripped and terraced convert this into rapid surface runoff delivered to the hill base within minutes, overwhelming drainage systems not designed for that hydrograph.

Hill cutting causes plains flooding, not merely fails to prevent it. Sedimentarily, cut slopes shed soil into channels and wetlands, reducing conveyance and storage capacity; desilting programmes treat a symptom whose source is upslope and continuing. Third is landslide and structural collapse hazard, producing fatalities and attention, such as the May 2025 Bonda wall collapse killing three family members (Mahabahu, 2025).

No published data exists on hill slope area converted to built use over defined periods, building permissions granted on notified hill land, or enforcement action against unauthorised cutting. This absence itself is significant: a regulatory prohibition whose violation rate is not measured is not being enforced.

Deepor Beel, designated a Ramsar site in 2002 for its ecological importance as a freshwater wetland, lies on Guwahati's south western edge (Down To Earth, 2021). In the hydrological system it stores western catchment runoff, discharging it in regulated fashion; storage loss translates directly into inundation elsewhere.

Loss is reported inconsistently: one account records approximately 35 per cent shrinkage since 1991; the same source records a water body reduced from 4,000 hectares to 500 hectares (approximately 87 per cent reduction) (Down To Earth, 2021). The divergence probably reflects boundary definition differences (historical complex including seasonal margins versus permanent body). On any definition, loss has been very large. Identified pressures are consistent: railway expansion, encroachment and illegal settlement, solid waste dumping, sewage discharge, construction, land reclamation, hydrological fragmentation, invasive species, siltation and unregulated tourism (Down To Earth, 2021).

Waste dumping and flooding are the same problem: solid waste at wetland margins reduces storage volume and, through leachate and blockage, degrades connecting channels. Drainage and waste management failures are inseparable. Deepor Beel appears in literature because it has a name and international designation; smaller beels within and around the built-up area, collectively performing comparable storage function, have largely disappeared without documentation. No published inventory of metropolitan water bodies with baseline and current extents exists. Such inventory is an elementary drainage strategy precondition whose absence after five decades of master planning is difficult to explain other than as deliberate choice.

Guwahati's flooding is substantially an outcome of public decisions and non-decisions rather than hydrology. Rainfall regime and catchment topography are given; the proportion of impervious surface, wetland storage remaining, channel conveyance capacity, and hill slope conversion to runoff-generating surfaces are not. They are cumulative results of permissions granted, encroachments tolerated, plans unenforced and drainage capital withheld.

This matters because meteorological framing supports pumps, relief and desilting, whereas governance framing supports land use enforcement, wetland restoration and protection, mandatory stormwater retention, and catchment-sized drainage capital programmes. The State's announced roadmap emphasises desiltation and drainage improvement (Sentinel Assam, 2026b), necessary but not sufficient since desiltation without sediment source control is permanent annual expenditure without terminal point.

11.6 Heritage Towns, Secondary Cities and Planned Urban Expansion

Evidence on secondary towns is thinner than for Guwahati, which itself is significant, but consistently points in one direction. Silchar, the Barak valley's principal urban centre, was inundated in June 2022 after a Barak river dyke breach at Bethkundi approximately one kilometre away, with most of the town under water and the wider event affecting some 54 lakh people across thirty two districts (Wikipedia contributors, n.d.). In 2026, waterlogging was again reported in Silchar localities including Bilpar, Radhamadhab Road and Link Road, attributed to weak dykes and drainage deficiencies (Assam Tribune, 2026b). Dibrugarh has experienced repeated severe waterlogging, officials in June 2025 attributing inundation partly to incomplete drain works obstructing rainwater, the problem persisting a decade across electoral cycles (EastMojo, 2025). Jorhat appears principally in disaster response deployment contexts (Northeastern Chronicle, 2025); town-level infrastructure data could not be retrieved.

Pattern across the three towns replicates Guwahati at smaller scale: drainage is binding constraint; drain construction is incomplete or unmaintained; natural storage is reduced; flood defence where present is catastrophic-failure dykes rather than graduated. These are precisely the towns the State should develop to relieve capital pressure. As noted in section 11.4.2, the six water body rejuvenation works confirm degradation is general rather than capital-confined and identify intervention moments: in those towns water bodies still exist and can be protected, whereas in Guwahati the equivalent decision was not taken and restoration now costs an order of magnitude more.

The 2026 to 2027 Budget announced an urban growth centre around Guwahati with 2,100 crore rupees for initial acquisition (Government of Assam, 2026). The State Cabinet separately approved a Guwahati Satellite Cities Development Authority to plan and develop satellite cities within metropolitan development authority jurisdiction, with stated objective of decongesting the capital (Asian News International, 2026). Published details of sites selected, areas to be acquired, phasing, land disposal policy, or relationship between these initiatives could not be retrieved; whether they are the same initiative under two names is unclear.

The direction is defensible; recognising Guwahati cannot absorb further growth on its present footprint is correct. Four cautions determine whether this relieves or intensifies the primate city problem.

First, location relative to hazard. Satellite settlement on flood plain, reclaimed wetland, or at cut hill slope bases reproduces conditions that made the existing city unmanageable. Site selection should be governed by hazard assessment published before acquisition.

Second, distinction between satellite settlement and city. A settlement within Guwahati commuting distance and dependent on it for employment is a dormitory suburb adding commuter load to already-saturated roads and decongesting nothing. Satellite city requires independent economic base; no such rationale has been published.

Third, land. Public acquisition creates a land bank whose disposal determines value capture. Open sale to highest bidders transfers value to purchasers and leaves the affordability problem of section 11.3.4 unaddressed. Disposal policy reserving lower-income share and capturing appreciation for infrastructure should precede acquisition.

Fourth, the alternative. A satellite settlement adjacent to Guwahati differs from a developed secondary town at Nagaon, Tezpur, Jorhat, Dibrugarh or Silchar. The first extends the primate city; the second builds settlement hierarchy's missing middle.

Chapter 1's section 1.6 establishes the spatial and hazard framework for Assam's urban location decisions. Urban growth should be directed preferentially to a defined set of secondary towns on three criteria.

First: elevation and hazard exposure. Towns on higher ground, outside principal flood plains and beyond active erosion corridors (Chapters 13 and 14). The State currently urbanises where administrative history placed district headquarters—many riverine because the river was the historical transport artery. That logic is obsolete and hazard consequences severe. Second: position on arterial corridors—national highways, railway trunk routes, inland waterway and air nodes (Chapter 8). Third: existing service and institutional base—functioning municipal bodies, district hospitals or medical colleges, higher education institutions, existing trading or industrial function. These require smaller increments to become credible destinations than greenfield sites.

Invest concentrated multi-year resources in a small number of selected towns. Urban programme failure in Assam, visible in sixteen water supply projects across seventeen bodies under the transformation mission, results from resources diluted until no town receives enough to change trajectory. Fully servicing five towns does more for settlement structure than partially servicing fifty.

This strategy also addresses erosion and displacement. Chapters 13 and 14 document permanent land removal and title extinction by bank erosion. Displaced households currently go to char margins, the capital's periphery, or out-of-state. A planned set of receiving towns on higher ground with serviced land and tenure instruments converts unmanaged distress migration into planned resettlement at a fraction of alternative costs.

Verified data on Assam's heritage urban settlements' condition, conservation status or investment position is unavailable. Two propositions do not require data. Heritage conservation and urban development are frequently posed as competing but are not, since conserved historic cores are economic assets supporting the tourism sector (Chapter 19). Conservation requires a regulatory instrument—a heritage zone with enforceable building controls—which no Assam town appears to possess operatively.

11.7 Strategic Priorities for Urban Development

This chapter could not source verified, current, Assam-specific data on the following, each necessary to manage the sector:

- Current urban population and urban share (no enumeration since 2011)
- Authoritative count of urban local bodies (published sources give eighty one and 103)
- Urban housing shortage disaggregated by income, slum and informal settlement population, and affordability gap
- Property tax coverage, valuation and collection efficiency ratios
- Municipal staffing and vacancy, including qualified planners and engineers
- Service level benchmark performance (water supply, sewerage, solid waste, stormwater drainage)
- Assam-specific outcome data from both urban transformation mission phases (tap connections, treatment capacity)
- Outcome evaluation of completed Smart Cities Mission portfolio against baseline indicators
- Inventory of Guwahati metropolitan water bodies with baseline and current extents
- Hill slope area converted to built use, permissions granted on notified hill land, enforcement action taken
- Proportion of rural and urban housing programme dwellings within flood and erosion hazard zones
- Verification of reported property tax reform outcome attributed to the Asian Development Bank study

Each absence is a governance failure, per Chapter 6's principle that States do not achieve what they do not measure.

Eight priorities follow:

1. Adopt a planned secondary town strategy as the organising principle of urban policy. Select not more than eight towns on the criteria of elevation and hazard exposure, position on an arterial corridor, and existing service and institutional base, and concentrate urban capital in them. The measurable target is that the share of urban development capital outlay directed to the State capital falls from 75 per cent in 2026 to 2027 to below 45 per cent by 2031 and below 35 per cent by 2047. By 2047 at least five urban centres outside the Guwahati metropolitan area should each exceed three lakh population with full service level benchmark compliance.
2. Raise the urban share of population deliberately rather than incidentally. The target is an urban share of at least 25 per cent by 2036 and at least 40 per cent by 2047, against 14.08 per cent at the 2011 enumeration, achieved by creating viable destinations within the State rather than by expanding a single agglomeration. Progress cannot be measured without an enumeration, and the State should conduct and publish a State urban survey on a five yearly cycle in the interim.
3. Make the Guwahati drainage basin a single accountable system. Assign to one named authority outcome accountability for inundation in the metropolitan area, with statutory

power over land use permission, hill slope regulation, wetland protection, channel maintenance and pumping across the whole basin irrespective of municipal boundary. Publish annually the area inundated, the duration of inundation and the number of properties affected. The measurable target is a reduction of at least 70 per cent in inundated area under a comparable rainfall event by 2031, measured against the reported 720 hectares of May 2025, and elimination of flood related fatalities in the metropolitan area by 2031.

4. Publish an urban water body inventory and halt net wetland loss. Within twelve months publish a georeferenced inventory of every water body in the Guwahati metropolitan area and in each selected secondary town, with extent at a stated baseline year and at present. Establish a statutory no net loss rule with compensatory storage at a ratio of not less than 1.5 to 1 for any permitted reduction. The measurable target is zero net loss of urban water body storage volume from 2027 onward, and restoration of the Deepor Beel complex toward its notified extent by 2047.
5. Rebuild the municipal revenue base, beginning with property tax. Publish annually, for every urban local body, the three ratios of coverage, valuation and collection efficiency. Complete the reassessment of property values that the State Finance Commission has identified as overdue, and place the register on a digital base integrated with the land record system examined in Chapter 16. The measurable target is that own tax revenue of the Guwahati Municipal Corporation, which fell from 116 crore rupees in 2022 to 2023 to 103 crore rupees in 2023 to 2024, reaches at least 400 crore rupees by 2031, and that own revenue across all urban local bodies covers at least 60 per cent of their operation and maintenance obligation by 2031 and 100 per cent by 2047.
6. Release State Finance Commission awards in full and condition them on institutional reform. Releasing 14 per cent of the general purpose grants recommended by the Sixth State Finance Commission is not compatible with a functioning third tier. Full release should be accompanied by a State conditionality on property tax performance and service level benchmark publication more demanding than the uniform 5 per cent own source revenue growth condition adopted nationally, which is too weak to drive reform.
7. Establish an urban housing demand assessment before expanding urban housing supply. Publish within eighteen months a State urban housing shortage assessment disaggregated by income category, settlement and district, together with an affordability analysis, and reset programme targets against it rather than against administrative throughput. Publish for both the urban and rural housing programmes the proportion of dwellings constructed within notified flood and erosion hazard zones, and prohibit further construction within active erosion corridors.
8. Subject the satellite city and urban growth centre programme to published preconditions. Before further land acquisition beyond the 2,100 crore rupees announced for the initial tranche, publish the site hazard assessment, the economic base rationale demonstrating that the settlement will generate employment rather than commuting load, the land disposal policy including the share reserved for lower income housing and the mechanism for capturing value appreciation, and the relationship between this programme and the secondary town strategy in priority 1. Reconcile publicly the urban growth centre announced in the 2026 to 2027 Budget with the Guwahati Satellite Cities Development

Authority approved by the Cabinet, presently reported as separate initiatives on the same territory.

Assam has neither too little urbanisation to ignore urban management nor enough to solve structural transformation. It has the worst available combination. Correction requires building the towns the State never built rather than adding further load to the one city it did.

CHAPTER 12: RURAL DEVELOPMENT AND DECENTRALISED GOVERNANCE

Assam's rural development apparatus consists of three systems operating in parallel: the Panchayati Raj structure under Part IX of the Constitution and the Assam Panchayat Act, 1994; the centrally sponsored scheme delivery machinery for employment guarantee, housing, livelihoods and roads, reporting to Union Ministries; and the Sixth Schedule autonomous councils in hill and scheduled areas, where Part IX does not apply.

The central finding is that the first is weakest. The Seventh Assam State Finance Commission records that Panchayati Raj Institutions have a shrinking internal revenue base and receive a fraction of recommended transfers. Internal revenue fell from 56 crore rupees in 2019 to 2020 to 45 crore rupees in 2024 to 2025, with tax revenue collapsing from 18 crore rupees to 5 crore rupees, a compound annual decline of 22 per cent (PRS Legislative Research, 2026). Against recommended general purpose grants of 2,106 crore rupees for 2020 to 2025, only 292 crore rupees, or 14 per cent, had been released by the fourth year, and nothing under special purpose or incentive grants (PRS Legislative Research, 2026). This condition is not a local government; it is an electoral formality.

Where the elected tier is fiscally hollow, rural development is executed by parallel line administration. Panchayats become beneficiary selection and audit venues rather than planning authorities. That arrangement delivers houses and roads at scale (sections 12.3 and 12.5), but cannot deliver local decision-making on priorities. This chapter also examines a rarely analysed dimension: the coordination problem between Panchayati Raj Institutions in plains districts and Sixth Schedule village councils in autonomous areas.

The sector generates dashboard data detached from reporting date, status and scheme boundary. This chapter states date and status for every figure used, omitting unverified data and recording gaps in section 12.7. There are fifteen gaps, several concerning data the State already holds.

12.1 Panchayati Raj Institutions: Structure, Devolution and Fiscal Capacity

Assam operates a three tier structure: the Gaon Panchayat at village level, the Anchalik Panchayat at block level and the Zilla Parishad at district level. The statutory basis is the Assam Panchayat Act, 1994, passed in May 1994 following the Seventy Third Constitutional Amendment Act, 1992, and replacing the Assam Panchayat Act, 1986 (Panchayat and Rural Development Department, Government of Assam, n.d.).

The most important structural fact is stated in Chapter 1 at section 1.2.3 and governs sections 12.6 and 12.7. Part IX of the Constitution does not apply in the Sixth Schedule areas of Assam, so Panchayati Raj does not operate uniformly. The three tier structure is the arrangement for territory outside the autonomous areas. Any statement about Panchayati Raj coverage or performance in Assam that does not specify which territory it refers to is analytically incomplete.

General elections to the Panchayati Raj Institutions were held in May 2025, with polling on 2 and 7 May and results declared on 14 May, and turnout was reported at over 74 per cent. These particulars come from secondary compilations of State Election Commission reporting rather than a primary publication, and the turnout figure should be treated as indicative. The substantive point does not depend on it: participation is high and the legitimacy of the tier is not in question. Its capacity to act is.

The Panchayat and Rural Development Department records that the 29 Eleventh Schedule subjects were transferred to Panchayati Raj Institutions with immediate effect (Panchayat and Rural Development Department, Government of Assam, n.d.). This records an administrative act, not a reality. Functional devolution requires that funds and functionaries move with functions; in Assam they have not. No published statement exists showing, for each subject, which activities transferred in practice, which department retains budget lines, and which cadre reports to the panchayat. A State unable to account for how 29 subjects were devolved has performed a gesture rather than a constitutional reallocation.

The Ministry of Panchayati Raj and the Indian Institute of Public Administration published a Devolution Index for 2024 assessing States across six dimensions, namely Framework, Functions, Finances, Functionaries, Capacity Enhancement and Accountability. The national average score was 43.89, with Karnataka leading at 72.23, followed by Kerala at 70.59, Tamil Nadu at 68.38, Maharashtra at 61.44, Uttar Pradesh at 60.07 and Gujarat at 58.26, and twelve States and Union Territories below the national average (Alok, 2025; Ministry of Panchayati Raj, 2025).

Assam's position is reported inconsistently. One account classifies it as a low performer that nonetheless scores above the national average (Alok, 2025); others describe it as a moderate performer and group it with Bihar, Sikkim and Uttarakhand as States needing to improve financial support and institutional reform. Assam's numerical score and rank could not be retrieved, the published Ministry file being a scanned image rather than machine readable text, and the score is recorded as a measurement gap. Common to both accounts, and analytically decisive, is that Assam sits well below the leading group and is identified as weak on the finance dimension.

The findings of the Seventh Assam State Finance Commission are the analytical core of this chapter.

Component of PRI internal revenue	2019 to 2020	2024 to 2025	Direction
Tax revenue	18	5	Compound annual decline of 22 per cent
Non-tax revenue	38	40	Marginal increase
Total internal revenue	56	45	Decline of approximately 20 per cent over five years

All figures are in crore rupees and refer to the aggregate of all Panchayati Raj Institutions in Assam. Source: PRS Legislative Research (2026), reporting the Seventh Assam State Finance Commission.

Three observations follow, each more damaging than the last.

The first concerns scale. Total internal revenue of the entire Panchayati Raj system stood at 45 crore rupees in 2024 to 2025. Against a rural development allocation of 6,190 crore rupees in the 2026 to 2027 budget estimates (PRS Legislative Research, 2026), the own revenue of the constitutional local government tier is a rounding error. It is smaller than the pending administrative component liability under a single centrally sponsored scheme, at 90.34 crore rupees as at 20 March 2026 (Sentinel Assam, 2026a).

The second concerns direction. Tax revenue fell from 18 crore rupees to 5 crore rupees over a period in which nominal Gross State Domestic Product grew rapidly, as Chapter 2 records. A tax base that contracts by more than two thirds in nominal terms during rapid nominal growth has not stagnated; it has been abandoned. The non-tax component, flat at 38 to 40 crore rupees, consists largely of receipts from markets, ferries and ponds whose yield depends on the vigour of local administration rather than any buoyant base.

The third concerns transfers, and disposes of any argument that the tier could function if only it collected more. Releases against previous State Finance Commission recommendations have been below 20 per cent, with the single exception of the Fourth State Finance Commission at 34 per cent. Against 2,106 crore rupees of general purpose grants recommended by the Sixth State Finance Commission for 2020 to 2025, 292 crore rupees, or 14 per cent, had been released up to the fourth year, and nothing under special purpose or incentive grants (PRS Legislative Research, 2026).

The tier therefore has neither an own revenue base nor a reliable transfer entitlement. It receives what the State Government chooses to release, which across three award periods has been between one seventh and one fifth of what the State's own statutory Commissions recommended. The incentive grant position deserves emphasis, because incentive grants are the instrument by which a State rewards panchayats that improve collection. Releasing nothing under that head, while panchayat tax revenue fell by 22 per cent a year, removed the only mechanism that could have arrested the decline, and establishes a chain running from State inaction to local revenue collapse.

The devolution contemplated by Part IX has not occurred in Assam in any meaningful sense. The State has completed the formal steps, namely the enabling Act, the three tier structure, regular elections with high participation and an activity mapping order covering 29 subjects. It has not completed the substantive ones, namely assigning a buoyant revenue handle, releasing recommended grants, transferring functionaries and publishing accounts that would allow performance to be assessed. Where another chapter identifies a delivery failure that local knowledge and accountability would in principle correct, as Chapter 5 does for school

functioning, Chapter 6 for outreach nutrition and Chapter 10 for water and sanitation maintenance, the corrective institution does not exist in usable form. And where this chapter records delivery at scale, that scale was achieved by centrally driven line delivery rather than the decentralised route, a tension the State has neither resolved nor acknowledged.

12.2 The Employment Guarantee Programme: Coverage, Wage Trends and Livelihood Outcomes

In most States the employment guarantee is a welfare residual. In Assam it is central to rural income structure. The agrarian structure of Chapter 18, dominated by a single paddy season with limited second cropping, produces an extended lean period with collapsed labour demand. The hydrological cycle of Chapter 14 removes crops and interrupts wage markets in the same season when households have committed expenditure. The absence of an absorbing non-farm sector (Chapters 3 and 20) leaves out-migration as the main alternative to lost wage days. Here the entitlement is counter-cyclical instrument of first resort, and seasonal offtake directly measures rural distress.

The Allocation Position

The State allocated 2,418 crore rupees to the employment guarantee in 2026 to 2027 budget estimates, against 634 crore rupees in 2025 to 2026, an increase of approximately 281 per cent (PRS Legislative Research, 2026).

Position	Amount	Status
2024 to 2025	3,739	Actuals
2025 to 2026	7,026	Revised estimates
2026 to 2027	6,190	Budget estimates

All figures are in crore rupees. The 2026 to 2027 budget estimate is an annualised increase of 29 per cent over 2024 to 2025 actuals. Source: PRS Legislative Research (2026).

Two cautions apply. Revised estimates in Assam budget documents run substantially above actuals, so the 29 per cent from actuals is reliable. Allocation is not expenditure: this line captures the State share of a centrally funded demand-driven entitlement, not full programme spend. A fourfold movement in a demand-driven allocation is not a reliable programme scale indicator; physical data must carry the analytical weight.

Financial year	Person-days generated	Status
2021 to 2022	9.15 crore	Full year
2022 to 2023	7.86 crore	Full year
2023 to 2024	8.73 crore	Full year
2024 to 2025	7.10 crore	Full year
2025 to 2026	3.83 crore	As at 4 December 2025, part year

Source: MGNREGA public data portal figures as reported in Sentinel Assam (2025), published 29 December 2025. The 2025 to 2026 figure covers approximately eight months and is not comparable with the full year figures above it.

The comparison between full years is adverse. Person-days fell from 9.15 crore in 2021 to 2022 to 7.10 crore in 2024 to 2025, approximately 22 per cent over three years, with a partial recovery in 2023 to 2024 interrupting the decline. The 2021 to 2022 peak reflects pandemic period demand and is not a normal baseline, but the 2024 to 2025 figure is the lowest in the series. This framework declines to annualise the part year figure, because offtake is strongly seasonal and concentrated in the post-flood and lean months, so a straight line projection would misstate the outturn in either direction. The published full year outturn for 2025 to 2026 is the single most important number for assessing this programme; it could not be retrieved and is a measurement gap.

There were 36.13 lakh active job cards at the same date (Sentinel Assam, 2025). The framework declines to divide person-days by active job cards to derive average days per household, because the denominator for that statistic on the public data portal is households that actually worked in the year, not active job cards, and the two differ by a wide and variable margin. The published average days of employment per household, and the number of households completing the full entitlement, could not be retrieved for 2024 to 2025 or 2025 to 2026 and are recorded as measurement gaps. They determine whether the programme functions as a guarantee or as a rationed works scheme, and their absence from ready public view is not acceptable for a programme of this centrality.

The source further reports that the Union Government has moved to a guarantee of 125 days of wage employment per rural household, from the previous entitlement of 100 days (Sentinel Assam, 2025). The instrument giving effect to that change could not be verified and it is reported as attributed rather than established. If the entitlement has been raised while person-day generation in Assam is falling, the divergence between entitlement and delivery is widening, and the State's capacity to open works on demand becomes the binding constraint.

The notified wage rate for Assam for 2026 to 2027 could not be retrieved from an official notification. A commercial economic data aggregator reports the average wage per person-day in Assam at approximately 254 rupees for February 2026, compiled from the programme's own reporting (CEIC Data, 2026), while non-official compilations circulating in the same period cite 249 rupees per day for 2025 to 2026. The divergence is reported rather than resolved, and the two measure different things, since a notified statutory rate and a realised average wage per person-day will differ where task rates and measurement practice vary.

Two points do not depend on resolving it. A daily wage near 250 rupees is below the prevailing agricultural and construction wage in much of the Brahmaputra valley at peak season, which is the design intent of a self targeting scheme but also limits its attractive power outside the lean months. And the value of the entitlement is the wage rate multiplied by days actually obtained, so with days per household unverified the household level income effect cannot presently be stated. That is a serious gap for a State in which this is the principal counter-cyclical instrument available.

Pending Liabilities

Component	Amount	Status
Wage component	236.15	Pending as at 20 March 2026
Material component	385.16	Pending as at 20 March 2026
Administrative component	90.34	Pending as at 20 March 2026
Total	711.65	Pending as at 20 March 2026

All figures are in crore rupees. Source: Union Ministry of Rural Development figures as reported in Sentinel Assam (2026a), published 30 April 2026.

Assam's pending liability of 711.65 crore rupees was the largest among the north eastern States at that date, against Manipur at 521.04 crore rupees, Meghalaya at 442.46 crore rupees, Arunachal Pradesh at 206.53 crore rupees, Nagaland at 157.37 crore rupees, Tripura at 145.47 crore rupees and Sikkim at 11.79 crore rupees. The Union Government provided 30,000 crore rupees for the scheme nationally in 2026 to 2027 and has stated its commitment to releasing admissible pending liabilities in accordance with established procedure (Sentinel Assam, 2026a).

The composition is the diagnostic feature. The material component at 385.16 crore rupees exceeds the wage arrear by more than half again. Where an implementing agency cannot pay suppliers for sand, aggregate, cement and pipe, it stops opening works of that type and shifts toward unskilled labour intensive works with minimal material content, which reduces the durability and productive value of the asset created. That is precisely the criticism most often levelled at the programme, and it arises here for a financing reason rather than a design reason. A wage arrear of 236.15 crore rupees has an equally direct effect on participation, since a household that has waited months for payment will not present itself for the next spell of work. Falling person-days and rising arrears are plausibly the same problem observed at two points in the chain, and the State should test that by publishing arrears and offtake by district on a common time series.

12.3 Rural Housing: PMAY Gramin and State Schemes

Rural housing reports Assam's largest cumulative achievement, but with the least consistent figures. The Minister stated on 14 July 2026 that 22 lakh houses had been completed under PMAY Gramin with 2 lakh more planned (DD India, 2026). December 2024 reporting set a target of nearly 2 lakh by 2026 (Business Standard, 2024). State press accounts report 19.52 lakh constructed, 1.72 lakh allotted with 10,000 complete, and approximately 6 lakh households awaiting assistance.

These figures do not reconcile. Completions of 22 lakh and 19.52 lakh cannot both be correct unless measuring different scheme boundaries. None could be verified against the programme dashboard; verified sanctions, completions and balance are recorded as a measurement gap. For context, the Ministry of Rural Development reported over 2.82 crore houses completed nationally as at September 2025 (News on AIR, 2025b). If Assam's 22 lakh is correct, it represents approximately 8 per cent of national completions, well above its population share. That is not implausible but requires verification against the dashboard, not ministerial statement.

The analytical issue is not the count of completions but the interaction between a standardised national housing design and an annual inundation cycle.

The scheme provides a minimum built up area of 25 square metres (DD India, 2026). A house built to that specification at ground level in a district that floods annually, as documented in Chapter 14, will be inundated. The household will then abandon it seasonally, raise the plinth at its own cost, or occupy an asset that deteriorates rapidly through repeated saturation of foundations and walls. In the char and chapori tracts and the erosion affected reaches described in Chapters 1 and 13 the problem is more fundamental, because the land may not survive and the household may hold no title against which a permanent structure can be justified.

Flood resilient design is therefore the central rural housing question in Assam rather than a refinement. A house completed and then rendered uninhabitable for two months a year has not solved the problem it was funded to solve, and the completion statistic will nonetheless record it as a success. The State should publish, for flood affected districts, the proportion of scheme houses built on plinths raised above the recorded flood level of the preceding decade, and treat it as a headline indicator alongside completions. It is not currently published.

Two subsidiary features deserve a record. The Minister stated on 14 July 2026 that 3,50,000 tea garden workers were to receive land deeds together with scheme houses (DD India, 2026). This matters beyond housing, because the tea garden population examined in Chapters 3 and 18 has historically occupied estate land without individual title, which excludes it from a range of asset based entitlements. Conferring title alongside a house converts a housing intervention into an asset creation intervention with effects on credit access and on the intergenerational position of the household. The operative question, which the sources do not answer, is whether the deeds confer heritable and alienable title or a weaker occupancy right.

The second is construction labour. The State has trained 5,000 rural women in masonry under the Lakhimi Mistri Yojana and plans to train a further 5,000 (DD India, 2026). A programme completing houses at the scale claimed requires masons in every block simultaneously, and skilled construction labour is a real constraint in interior and riverine locations. Training rural women into that trade addresses a supply bottleneck and a female labour force participation objective at once, which is unusually efficient design, though at 10,000 trainees it is modest relative to the requirement.

12.4 Livelihood Promotion: Self Help Groups, Cooperatives and Rural Enterprise

Self help group mobilisation is the strongest rural institutional asset Assam possesses. It is the one component of the rural development apparatus that has produced a dense, functioning, member owned network reaching into villages where no other organised institution operates continuously.

The Chief Minister stated in August 2025 that nearly 40 lakh women across Assam were actively engaged in income generating ventures through self help groups, that the State had

approximately 4 lakh such groups, and that 8 lakh women had crossed the threshold of earning more than 1 lakh rupees a year (News on AIR, 2025a). The Assam State Rural Livelihoods Mission records coverage extending to 33 districts and 219 blocks (Assam State Rural Livelihoods Mission, n.d.), a figure that appears to predate the most recent district reorganisation.

These are the figures of a mass institution, a scale of organised female participation with no parallel in any other rural institution in Assam, including the Panchayati Raj system examined in section 12.1. Two cautions apply. They are ministerial statements rather than audited programme data and could not be verified against the mission's own published reporting. And the phrase "actively engaged in income generating ventures" is doing considerable work, since membership, savings activity, credit linkage and enterprise operation are four different states with sharply different economic content. The mission publishes group counts; what it does not publish in retrievable form is the distribution of groups by age, credit linkage status, repayment performance and dormancy.

The State provides member households with seed capital of 10,000 rupees followed by subsidised loans of 25,000 rupees through bank linkage (Government of Assam, 2025). The Chief Minister distributed cheques to 32,787 beneficiaries in November 2025 (ANI, 2025). A third tranche of 50,000 rupees and a beneficiary universe of approximately 39.4 lakh women could not be verified against official scheme documents and are reported as claimed.

The design addresses self help group programmes' failure to move credit into enterprise rather than consumption. Sequencing an unrepayable small grant ahead of a formal bank loan is defensible, but three risks attend it. First, absorption: 40 lakh beneficiaries at 10,000 rupees each implies 4,000 crore rupees on the first tranche alone, against a rural development allocation of 6,190 crore rupees for all schemes (PRS Legislative Research, 2026). Second, market saturation: simultaneous creation of several lakh enterprises in tailoring, piggery, poultry, weaving and retail in the same markets produces price competition, not income growth. The binding constraint is demand and market access, not seed capital. Third, measurement: income targets of 1 lakh rupees yearly can be crossed by gross turnover without net household income change. Achievement should measure net income with family labour imputed and independently verified.

Assam has the largest concentration of handloom weavers of any Indian State, and weaving is practised as a household activity across the Brahmaputra valley in a form that is already, in effect, a distributed manufacturing base. Chapter 18 examines its production economics; the point here is institutional. The self help group network and the weaving base overlap almost completely in geography and in gender, and the element missing between them is an aggregation layer capable of buying, grading, financing working capital, holding inventory and reaching markets outside the State.

Producer companies and cooperatives are the standard forms for that layer. A verified count of functioning farmer producer organisations, weaver producer companies or federated self help group enterprises in Assam, and data on their turnover and viability, could not be retrieved and is recorded as a measurement gap. The proposition stands independently of the count. A State with 4 lakh self help groups and no functioning aggregation layer has built the base of an institutional pyramid and none of its upper storeys, and the resulting income ceiling is precisely the ceiling the enterprise scheme is attempting to break with individual grants. Individual grants will not break it, because the constraint is collective rather than individual.

12.5 Rural Infrastructure: PMGSY, Connectivity and Common Property Resources

Rural connectivity is the clearest delivery success recorded in this chapter.

Phase	Roads sanctioned	Length sanctioned (km)	Roads completed	Length completed (km)	Balance
PMGSY-I	8,365	26,792.00	8,355	26,778.80	8 roads, 13.44 km pending; 4 roads, 8.42 km foreclosed
PMGSY-II	250	1,716.44	249	1,716.39	1 road, 0.05 km pending
PMGSY-III	654	4,232.72	550	3,686.72	104 roads, 546.00 km pending

Position as reported on 8 August 2026 for Assam, implementing agency Assam Public Works Department (Roads). Source: Sentinel Assam (2026b).

The first phase is effectively closed, at a completion rate above 99.8 per cent by road count and by length. The second is complete but for a single road of 0.05 kilometres. The third stands at 550 of 654 roads completed, with 104 roads covering 546 kilometres outstanding against a deadline extended to 31 March 2027.

Nationally the programme had sanctioned 8,25,114 kilometres and completed 7,87,520 kilometres as at December 2025, approximately 95 per cent physical progress (Press Information Bureau, 2025). The fourth phase, running from 2024 to 2025 through 2028 to 2029, proposes 62,500 kilometres to connect 25,000 unconnected habitations nationally with an outlay of 70,125 crore rupees (The Statesman, 2025). Assam's allocation, road length and habitation target under that phase could not be retrieved and are a measurement gap. With the third phase behind schedule, the State's capacity to absorb a fourth phase concurrently is a live question.

Three qualifications apply, each material in the Assam context.

The first concerns habitations rather than kilometres. The programme connects unconnected habitations, so the operative statistic is populations still unconnected by all weather road after three phases. That figure was unavailable. It is the most useful connectivity indicator the

State could publish; without it a programme over 99 per cent complete cannot be assessed against its objective. Unconnected populations concentrate in char and chapori tracts, where road solutions are inadequate and ferry and river transport investment is required, and in hill districts of autonomous areas.

The second concerns the meaning of "all weather" given Assam's hydrology (Chapter 14). National specification may nonetheless face submergence, breach, or approach damage for weeks annually. Completion certificates record construction, not service availability. The State should publish annual road days lost to inundation by district, since that measure, not kilometres, determines whether villages reach health facilities during peak need seasons (Chapter 6).

The third concerns maintenance. Rural roads face severe burdens from high rainfall, saturated subgrade and relief traffic after floods. The State's maintenance allocation, contracted length and asset condition could not be retrieved. A State with committed expenditure at 63 per cent of revenue receipts (Chapter 2) will find recurrent maintenance the easiest line to defer, converting completed assets into future liabilities.

Rural Assam depends on common property resources to an extent the formal statistics do not capture. Village ponds and beels supply fish protein and irrigation, grazing land supports the livestock economy examined in Chapter 18, woodlots supply fuel, and community managed drainage assets determine local flood exposure. These are, in constitutional terms, precisely what a Gaon Panchayat exists to manage, and several are the source of the non-tax revenue that section 12.1.3 showed to be flat at 40 crore rupees in 2024 to 2025 across the entire State.

The connection between those two facts is the point. A panchayat that leases its ponds, markets and ferries at nominal rates fixed decades ago receives negligible revenue and exercises negligible stewardship. A panchayat that revalues those leases receives revenue and acquires a financial interest in the productivity of the resource. The fiscal reform recommended in section 12.7 is therefore also a natural resource management reform, and systematic revaluation and transparent auction of panchayat leased common property is the single most available own revenue measure for the tier. No State level inventory of such resources, their lease values or their condition could be retrieved, and its absence is both a measurement gap and a governance failure, since a body cannot manage what it has not enumerated.

12.6 Decentralisation in the Autonomous Council Areas

Part IX of the Constitution does not extend to the Sixth Schedule areas of Assam, as Chapter 1 records at section 1.2.3. There the functions performed elsewhere by Gaon Panchayats, Anchalik Panchayats and Zilla Parishads are discharged through the autonomous councils and, at village level, through Village Council Development Committees and Village Development Councils.

The territories concerned are the Bodoland Territorial Region and the districts of Dima Hasao, Karbi Anglong and West Karbi Anglong, alongside the non-Sixth Schedule statutory councils described in Chapter 1. Reporting retrieved for this framework indicates that the Bodoland Territorial Region contains 420 village level councils of these types, that the three hill districts contain a further 54, and that the State Cabinet approved 476 new Secretary posts for Village Development Councils in Sixth Schedule areas (North Eastern Chronicle, 2025). The near coincidence of 474 councils and 476 sanctioned posts suggests a sanction calibrated to one Secretary per council, which if correct is the first significant professionalisation of the village tier in these areas. These counts could not be verified against a primary State Government notification and are reported as attributed. The Ministry of Home Affairs has informed Parliament that there is at present no proposal to implement the Panchayat system in the Sixth Schedule areas of Assam, so the dual architecture is settled rather than transitional. Elections to the Bodoland Territorial Council were conducted in 2025 (State Election Commission, Assam, 2025), and the next election to the Karbi Anglong Autonomous Council is scheduled for 2027 (Government of Assam, n.d.).

The coexistence of two village level systems within one State creates four problems that are rarely analysed and are significant unaddressed governance issues.

Scheme architecture: centrally sponsored rural schemes design around a panchayat as unit of planning and execution. Where no panchayat exists, guidelines map administratively rather than statutorily onto council structures. Village bodies thus perform panchayat functions under scheme guidelines without constitutional status, statutory tenure protection or audit obligations that protect panchayats.

Fiscal: Central Finance Commission grants are constituted for panchayats and municipalities. In Sixth Schedule areas, transfer routes run through autonomous councils and the State Government, not directly. The quantum and mechanism of transfers to village level bodies in these areas could not be retrieved, a first-order measurement gap. Whether the village tier in autonomous areas is better or worse funded than Gaon Panchayats of section 12.1.3 cannot be stated, an extraordinary gap for substantial State territory.

Accountability: village committees are typically constituted with substantial council administration influence over selection. Accountability then runs upward to the council rather than downward to villagers, inverting decentralisation logic. Constitution rules for these bodies could not be retrieved, but the question should be answered publicly.

Boundary friction: several districts contain both Sixth Schedule and non-Sixth Schedule territory. A road, embankment, water supply scheme or flood work does not respect institutional boundaries. Works spanning the two systems face duplicated approval chains and unclear maintenance responsibility. The coordination cost is borne by boundary area residents, frequently the poorest in the State.

The dual architecture is a constitutional settlement to be respected rather than dismantled, since the Sixth Schedule exists to protect a form of self government that a uniform panchayat structure would displace, and the political history summarised in Chapter 15 makes clear what is at stake. Respecting the settlement is not the same as accepting the current operating arrangement. Village level bodies in the autonomous areas should be constituted under published rules with defined tenure, functions and transfer entitlement, so that they enjoy in substance the security Part IX confers elsewhere; the State should publish a consolidated statement of transfers to the village tier across both systems, so that a citizen in a Sixth Schedule village and one in a Gaon Panchayat see the same information about resources reaching their village; and a standing coordination mechanism should be established for works spanning the institutional boundary, since the current arrangement resolves such questions case by case at the cost of delay.

12.7 Strategic Priorities for Rural Development

This chapter could not verify indicators necessary to manage rural development. Devolution and panchayat governance gaps: Assam's Devolution Index 2024 numerical score and rank; subject by subject statement of funds, functions and functionaries transferred against the 29 Eleventh Schedule subjects; inventory of panchayat controlled common property resources and lease values; quantum and mechanism of Finance Commission transfers to village level bodies in Sixth Schedule areas. Employment guarantee gaps: full year person-day outturn for 2025 to 2026; average days of employment per household and households completing full entitlement for 2024 to 2025 and 2025 to 2026; notified wage rate for 2026 to 2027 from official notification; reconciliation of State budget line with programme expenditure. Rural housing gaps: verified sanctions, completions and balance from programme dashboard; proportion of scheme houses in flood affected districts built on raised plinths. Livelihoods gaps: distribution of self help groups by credit linkage, repayment performance and dormancy; count and turnover of producer organisations and federated enterprises. Rural infrastructure gaps: Assam's allocation under fourth phase rural roads programme; number and population of habitations unconnected by all weather road; rural road maintenance allocation and asset condition.

Fifteen gaps in a single sector chapter; several concern data the State holds but does not publish in retrievable form. The first recommendation is accordingly a publication obligation rather than a programme.

Eight priorities follow, each with a measurable target.

1. **Restore fiscal substance to the Panchayati Raj tier.** Release State Finance Commission recommended grants in full and on schedule, against realisation rates of 14 per cent (Sixth Commission) and below 20 per cent across prior Commissions except the Fourth at 34 per cent (PRS Legislative Research, 2026). Target: not less than 90 per cent of recommended

general purpose grants from 2027 to 2028 onward, with special purpose and incentive grants released in full, and annual compliance statements before the Legislative Assembly.

2. **Rebuild the panchayat own revenue base.** Internal revenue fell from 56 crore rupees in 2019 to 2020 to 45 crore rupees in 2024 to 2025, with tax revenue falling from 18 to 5 crore rupees (PRS Legislative Research, 2026). Assign a defined buoyant revenue handle, complete State-wide inventory and revaluation of panchayat common property leases, and operate incentive grants rewarding collection growth. Target: aggregate Panchayati Raj internal revenue of not less than 250 crore rupees by 2031 and 1,000 crore rupees by 2047 in constant 2025 to 2026 prices, with tax component at least a third of total.
3. **Complete functional devolution and publish the evidence.** Within one year publish, for each of 29 subjects, the budget lines transferred, functionaries placed under panchayat control and residual functions retained. Target: by 2031 not less than 15 of 29 subjects have both budget and functionaries transferred; by 2047 not less than 25; Assam's Devolution Index score above 68.38 by 2047.
4. **Make the employment guarantee function as a guarantee.** Person-days fell from 9.15 crore in 2021 to 2022 to 7.10 crore in 2024 to 2025 (Sentinel Assam, 2025), with pending liabilities of 711.65 crore rupees as at 20 March 2026, of which 385.16 crore rupees was material and 236.15 crore rupees wages (Sentinel Assam, 2026a). Clear wage arrears within fifteen days and publish district level arrears monthly. Targets: zero wage arrears older than 30 days from 2027 to 2028 onward; average employment per household raised to 60 days by 2031 and 90 days by 2047; flood recovery works pre-sanctioned in every affected block before 1 May each year for opening within seven days of water receding.
5. **Make flood resilience a binding design standard for rural housing and rural roads.** Every scheme house sanctioned in flood affected districts from 2027 to 2028 onward should stand on a plinth above the highest recorded flood level of the preceding decade; rural roads should meet corresponding submergence standards. Targets: 100 per cent compliance for new sanctions from 2027 to 2028; retrofit existing houses in most affected blocks by 2035; halve road days lost to inundation and breach against a 2027 baseline.
6. **Build the aggregation layer above the self help group network.** Against approximately 4 lakh self help groups and nearly 40 lakh women engaged through them (News on AIR, 2025a), with an enterprise scheme providing 10,000 rupees seed capital followed by subsidised loans of 25,000 rupees (Government of Assam, 2025), the binding constraint is market access. Prioritise formation and capitalisation of block level producer companies in handloom, horticulture, fisheries and livestock. Target: functioning, audited, revenue positive producer enterprise in every development block by 2035, and independently verified net household income of at least 1 lakh rupees yearly in constant prices for 25 lakh households by 2031 and 40 lakh by 2047, net of imputed family labour.
7. **Resolve the dual architecture coordination problem.** Constitute village level bodies in Sixth Schedule areas under published rules specifying tenure, functions and transfer entitlement; publish consolidated annual statements of transfers to village tier under both systems; establish standing coordination mechanism for works spanning institutional

boundaries. Target: first consolidated transfer statement in 2027 to 2028; per capita parity of village tier transfers between systems by 2031.

8. **Publish an annual State Rural Development Report.** Include the fifteen indicator series in section 12.7.1, disaggregated by district and by Panchayati Raj and Sixth Schedule territory. The sector currently publishes completions and allocations (inputs and outputs) but not days of employment obtained, houses habitable through flood season, habitations connected or grants actually released (outcomes). The reporting system records activity rather than revealing performance; reform requires changing what is counted.

CHAPTER 13: ENVIRONMENT AND NATURAL RESOURCE GOVERNANCE

Assam governs its environment from an unusual starting position. Chapter 1 establishes that forest covers 36.10 per cent of the State's geographical area against a national average of approximately 21.76 per cent, that the State sits at the junction of two global biodiversity hotspots, and that its river system, the same Brahmaputra that defines its transport and flood geography in Chapters 8 and 14, both builds and destroys land within a single generation. This chapter's central finding is that Assam's environmental governance record is genuinely mixed rather than uniformly weak or strong, and that the two halves of that record are connected. Where the State has concentrated resources and sustained institutional attention, principally the flagship protected areas of Kaziranga and Manas, outcomes are internationally recognised successes. Where governance is diffuse, contested, or subordinated to revenue and land interests, principally riverbank erosion, wetland encroachment, unregulated mining in the Sixth Schedule hill districts, and urban air and river pollution, the trend is one of continuing loss that formal reporting understates.

A second finding concerns the fiscal entanglement of natural resource extraction with the State's own finances, a theme Chapter 2 establishes for the budget as a whole. Assam is the largest recipient of crude oil and natural gas royalty among India's producing States, and that royalty stream forms a large and rising share of the State's Own Non-Tax Revenue examined in Chapter 2. This creates a structural interest, on the part of the State exchequer, in the continued expansion of hydrocarbon extraction that sits uneasily against the environmental governance obligations examined later in this chapter, and against the coal and limestone mining conflicts documented in the Sixth Schedule hill districts.

A third finding concerns the reliability of the evidence base itself. Environmental statistics for Assam circulate widely in secondary compilations, examination guides, and news aggregation with figures that are internally inconsistent, undated, or attributed loosely to bodies such as the Central Pollution Control Board (CPCB) or the Forest Survey of India (FSI) without a retrievable primary citation. This chapter reports figures only where they could be traced to a specific, dated publication or an official department page, and it states explicitly, following the practice established in Chapter 12, where widely repeated figures could not be verified and are therefore omitted rather than reproduced.

A fourth and connected point concerns Charaideo Moidams. Its inscription on the UNESCO World Heritage List in July 2024, examined in section 13.1.3, is treated in this framework primarily as a governance and heritage management milestone rather than as a natural resource statistic, and it is discussed here because it completes the picture of Assam's three World Heritage Sites and because its long-term protection will depend on the same land use and encroachment pressures documented for Kaziranga, Manas, and Deepor Beel elsewhere in this chapter.

This chapter proceeds in five substantive sections: forest cover and biodiversity conservation (13.1), land use change, riverbank erosion and soil degradation (13.2), wetlands and river ecosystem health (13.3), mining and mineral resource governance (13.4), and air and other

pollution with the regulatory response to it (13.5). It closes with a statement of measurement gaps (13.6) and a set of strategic priorities with measurable targets for 2031 and 2047 (13.7).

13.1 Forest Cover and Biodiversity Conservation

The most recent nationwide forest assessment, the India State of Forest Report 2023 (ISFR 2023), released by the Forest Survey of India in December 2024, records Assam's forest cover at 28,313.55 square kilometres, equivalent to 36.10 per cent of the State's geographical area of 78,438 square kilometres (Forest Survey of India, 2024, as reported in TheePrint, 2024; Sentinel Assam, 2024). This is consistent with the figure already established in Chapter 1. Including tree cover recorded outside forest areas, total forest and tree cover rises to 30,415.01 square kilometres, or approximately 38.77 to 38.78 per cent of geographical area, the small variation reflecting rounding differences between two secondary reports of the same underlying FSI table (TheePrint, 2024; Sentinel Assam, 2024).

Between the 2021 and 2023 assessment cycles, Assam's forest cover fell by a figure reported as 83.92 square kilometres in one account and 83.97 square kilometres in another, both citing the same ISFR 2023 release (TheePrint, 2024; Sentinel Assam, 2024); this framework treats the decline as approximately 84 square kilometres and records the minor discrepancy rather than resolving it. Assam recorded the third largest absolute forest cover decrease among Indian States in this assessment cycle, behind Tripura, which lost 116.90 square kilometres, and Telangana, which lost 105.87 square kilometres (TheePrint, 2024). Within the north eastern region, Assam ranked eighth by absolute forest cover in both the 2021 and 2023 assessments, the lowest ranking among the region's forest-rich hill States, a position explained by the much larger share of Assam's land area under intensive agriculture and urban use (Sentinel Assam, 2024).

The canopy density breakdown published on the website of the Forest Department, Government of Assam, gives Very Dense Forest at 2,794.86 square kilometres (3.56 per cent of geographical area), Moderately Dense Forest at 10,278.91 square kilometres (13.10 per cent), and Open Forest at 15,252.74 square kilometres (19.45 per cent), summing to 28,326.51 square kilometres or 36.11 per cent (Forest Department, Government of Assam, n.d.). This total differs marginally, by approximately 13 square kilometres and 0.01 percentage points, from the ISFR 2023 figure of 28,313.55 square kilometres and 36.10 per cent reported in national media coverage of the same assessment. Both figures are reported here rather than one being silently preferred, since the discrepancy most likely reflects a difference in update date between the department's web page and the nationally published FSI table rather than a substantive disagreement.

Forest category	Area (sq km)	Share of geographical area
Very Dense Forest	2,794.86	3.56 per cent
Moderately Dense Forest	10,278.91	13.10 per cent
Open Forest	15,252.74	19.45 per cent
Total forest cover	28,326.51 (Forest Department figure); 28,313.55 (ISFR 2023 national figure)	36.11 per cent (Forest Department); 36.10 per cent (ISFR 2023)

Tree cover outside forest	2,101.46 (derived as total forest and tree cover minus total forest cover)	approximately 2.68 per cent
Total forest and tree cover	30,415.01	38.77 to 38.78 per cent

Source: Forest Department, Government of Assam (n.d.); Forest Survey of India (2024), as reported in TheePrint (2024) and Sentinel Assam (2024).

The Recorded Forest Area of Assam is 26,832 square kilometres, or 34.21 per cent of the geographical area, of which Reserved Forests account for 66.58 per cent and Unclassed State Forests for the remaining 33.42 per cent (Forest Department, Government of Assam, n.d.). The distinction matters because degradation is concentrated in the second category. Unclassed State Forests carry weaker protective status, are more exposed to encroachment for settlement and agriculture, and are the land category most frequently cited in secondary reporting as the source of the net forest cover decline recorded between 2021 and 2023, although a canopy-density-class breakdown of exactly where that decline occurred inside versus outside Recorded Forest Area could not be independently verified for this chapter and is recorded in section 13.6 as a measurement gap.

Assam's protected area network, as recorded on the website of the Forest Department, comprised seven national parks and eighteen wildlife sanctuaries as of the department's most recent published update, together covering approximately 4,938.53 square kilometres (Forest Department, Government of Assam, n.d.). This is consistent with the seven national parks named in Chapter 1: Kaziranga, Manas, Nameri, Orang, Dibru Saikhowa, Raimona, and Dehing Patkai. News reporting from March 2025 records that the State Government notified an eighth national park, Sikhna Jwhlwao, covering approximately 316.29 square kilometres in the Kokrajhar and Chirang districts of the Bodoland Territorial Region, on 5 March 2025 (Assam Study Hub, 2025). This notification postdates the department web page and the Chapter 1 baseline used elsewhere in this framework, and this chapter records it as the most current position while noting that it has not yet been reflected in all official Assam Government sources, itself a modest illustration of the publication lag that affects environmental reporting across this chapter.

Kaziranga and Manas are both inscribed on the UNESCO World Heritage List under natural criteria, having been listed in 1985. Manas carries the additional and analytically significant history of having been placed on the List of World Heritage in Danger in 1992, seven years after its original inscription, following the depletion of its tiger, rhinoceros, and swamp deer populations during the armed ethnic conflict in the Bodoland region of that period (World Heritage Outlook, cited in The Better India, n.d.). Manas was removed from the Danger List on 21 June 2011, following the creation of the Bodoland Territorial Council in 2003, the engagement of former poachers in patrolling and monitoring, and a sustained programme of infrastructure and wildlife recovery (The Better India, n.d.). The Manas case is the clearest illustration in this chapter's evidence base of the proposition stated in Chapter 1, that conservation outcomes in Assam track the underlying condition of governance and security rather than following an independent ecological trajectory.

The greater one horned rhinoceros population is the most closely monitored indicator of protected area effectiveness in Assam. The most recent published census, conducted in March and April 2022 using ground count and, for the first time in three compartments of Kaziranga, drone survey methods, recorded 2,613 rhinoceroses in Kaziranga National Park and Tiger Reserve, an increase of 200 from the 2,413 recorded in the 2018 census (The News Mill, 2022; East Mojo, 2022). The same 2022 exercise recorded 125 rhinoceroses in Orang National Park, 107 in Pobitora Wildlife Sanctuary, and 40 in Manas National Park, where unfavourable weather conditions hampered the count (The News Mill, 2022). Summed across the four sites, these figures total 2,885, close to but not identical with the State-wide total of 2,895 reported in the same coverage; this chapter records both figures rather than resolving the small discrepancy, which most likely reflects the inclusion of a small number of rhinoceroses outside the four principal sites or a rounding difference in the original census reporting. No published rhinoceros census later than 2022 could be located for this chapter, and the absence of a more recent State-wide count, given that a full census cycle would ordinarily be expected by 2026, is recorded as a measurement gap in section 13.6. The population recovery documented across successive censuses since the population fell to under a few hundred animals in the early twentieth century remains, on the evidence available, a genuine and internationally recognised conservation achievement, and it is treated as such in Chapter 19 in the context of wildlife tourism.

On 26 July 2024, at the 46th session of the World Heritage Committee held in New Delhi, the Moidams, the mound burial system of the Ahom dynasty at Charaideo, were inscribed on the UNESCO World Heritage List as India's 43rd World Heritage property, in the cultural rather than natural category (Press Information Bureau, 2024; News on AIR, 2024). This is the first World Heritage Site from north eastern India to be inscribed under the cultural category, and the third World Heritage property located in Assam, following the two natural sites of Kaziranga and Manas inscribed in 1985. The nominated property comprises 90 individual moidams at Charaideo, drawn from a wider corpus of 386 moidams identified across the historical Ahom kingdom, of which the Charaideo group is considered the best preserved and most architecturally complete (Press Information Bureau, 2024). The site had been on India's Tentative List since 15 April 2014 and was formally nominated in 2023.

The relevance of this inscription to an environment and natural resource governance chapter is threefold. First, it extends the model of international conservation obligation, previously applied in Assam only to natural sites under the World Heritage Convention, to a cultural landscape whose protection will require the same categories of instrument used for Kaziranga and Manas, namely a defined buffer zone, land use restriction, and monitoring against encroachment. Second, the Ahom mound burial tradition is a landscape feature dependent on surrounding hydrology and vegetation, so its long-term conservation is not purely an architectural conservation question but also a land and water management one. Third, and most directly relevant to the pressures documented later in this chapter for Deepor Beel and the protected area network generally, a heritage designation of this kind increases visitor pressure and development interest in the surrounding area, a dynamic examined for its

economic dimension in Chapter 19 and for its governance dimension here: the State's demonstrated capacity to manage encroachment pressure around a newly inscribed site, and not the inscription itself, will determine whether Charaideo becomes a third governance success alongside Kaziranga and Manas or repeats the trajectory documented for Deepor Beel in section 13.3.

13.2 Land Use Change, Riverbank Erosion and Soil Degradation

Riverbank erosion is, on the evidence reviewed for this chapter, the most severe and least reversible land degradation process operating in Assam. Unlike flooding, which is addressed through the annual relief and reconstruction cycle examined in Chapter 14, erosion permanently removes cultivable land, settlements, and revenue villages from the State's land base, extinguishing title rather than merely damaging an asset that can be repaired.

The Water Resources Department of the Government of Assam records, on its own departmental page, that more than 4.27 lakh hectares of land, equivalent to approximately 4,270 square kilometres, have been eroded away by the Brahmaputra and its tributaries since 1950, representing 7.40 per cent of the State's total geographical area (Water Resources Department, Government of Assam, n.d.). The same source records the annual average land loss to erosion at approximately 8,000 hectares, and notes that the surface area occupied by the Brahmaputra channel itself expanded from approximately 3,870 square kilometres in a 1912 to 1928 survey to approximately 6,080 square kilometres by 2006, with the river widening to as much as 15 kilometres at some locations (Water Resources Department, Government of Assam, n.d.). This departmental figure of approximately 4,270 square kilometres since 1950 is consistent with the figure cited in Chapter 1, which independently records cumulative erosion loss "in the range of four thousand square kilometres," and it is treated in this chapter as the best available official estimate. It should nonetheless be read as an estimate rather than a precise survey figure, since a cumulative loss calculation compounded over 75 years, drawing on successive partial surveys and satellite interpretations of a constantly shifting channel, necessarily carries wide uncertainty bounds that the Department's own page does not quantify.

For a single representative year, the departmental data record that 2004 saw 20,724 hectares eroded, affecting 1,245 villages and 62,258 families, with property damage of approximately 8,337.97 lakh rupees in that year alone (Water Resources Department, Government of Assam, n.d.). This single-year figure illustrates the scale of exposure but should not be annualised or extrapolated, since erosion intensity varies sharply from year to year with the magnitude and duration of the monsoon flood peak. This chapter could not locate a published, dated, official figure for the cumulative number of families displaced by erosion since 1950, a statistic that circulates widely in secondary commentary at "2.50 lakh families" or similar round figures without a retrievable primary source; this is recorded as a measurement gap in section 13.6 rather than reproduced.

The districts most frequently identified in academic and journalistic literature as bearing the heaviest erosion burden are Majuli, Barpeta, Dhubri, South Salmara Mankachar, Lakhimpur, and Dibrugarh, several of which are also identified in Chapter 14's flood vulnerability

mapping as districts of extreme flood and erosion exposure, indicating that the two hazards concentrate in the same geography rather than distributing independently across the State.

Majuli, constituted as a separate district in 2016 and described in Chapter 1 as having once been among the largest inhabited river islands in the world, provides the most closely studied single case of cumulative erosion loss in Assam, and it also illustrates how widely published area figures for the same feature can diverge depending on survey date, source, and methodology.

A geomorphological study using historical survey and satellite data recorded Majuli's area at 751.31 square kilometres in 1917, falling to 564.01 square kilometres by 1966 to 1972, to 453.76 square kilometres by 1996, and to 421.65 square kilometres by 2001 (Sarma & Phukan, 2004). The same study computed the average annual rate of areal loss at 1.77 square kilometres per year between 1917 and 1972, 1.84 square kilometres per year between 1972 and 1996, and a markedly higher 6.42 square kilometres per year between 1996 and 2001, indicating an accelerating rate of loss over the twentieth century (Sarma & Phukan, 2004). A more recent journalistic account, drawing on separate and unspecified data, put Majuli's area at approximately 880 square kilometres in 2024, a figure substantially higher than the 2001 academic estimate of 421.65 square kilometres despite two further decades of continuous, well-documented erosion (Mongabay India, 2024). This chapter cannot reconcile these two figures. The discrepancy most plausibly reflects a difference in what is being measured, whether the main island alone or the wider Majuli revenue circle including adjoining chars and sandbars, but the underlying administrative or cartographic definition used by the more recent source could not be verified, and no single authoritative, dated figure for Majuli's current area could be established for this chapter. This is recorded as a measurement gap in section 13.6. What is not in dispute across sources is the direction and persistence of the trend: sustained, accelerating, and in large part unarrested land loss over more than a century, concentrated on an island that remains, notwithstanding its shrinkage, the principal seat of the Vaishnavite monastic institutions (the *satras*) central to Assamese cultural and religious life, a heritage dimension examined further in Chapter 19.

In the Sixth Schedule hill districts of Karbi Anglong, West Karbi Anglong, and Dima Hasao, land degradation takes a different form, driven by shifting cultivation, known locally as *jhum*, on sloping terrain with lateritic, inherently less fertile, erosion-prone soils receiving between 1,500 and 2,500 millimetres of annual rainfall (Assam Climate Change Knowledge Portal, n.d.). The critical structural change reported in the specialist agricultural literature is not the practice of *jhum* itself, which has a long history as a land use system compatible with forest regeneration under a sufficiently long fallow cycle, but the compression of that cycle. Published accounts of *jhum* practice among the Karbi community record that the fallow or *jhum* cycle has fallen from an historical 20 to 30 years to as little as three to five years in recent decades, a compression that does not allow soil fertility and forest cover to regenerate

between cultivation cycles and is identified in the literature as the principal driver of accelerating soil erosion and burn area expansion in these districts (International Journal of Political Science and Sociology, cited by regional agricultural literature, n.d.). This chapter could not locate a dated, quantified, State-specific figure for soil loss in tonnes per hectare per year in Karbi Anglong or Dima Hasao that could be attributed to a verifiable published source, and the specific erosion rate figure that circulates in some secondary compilations is accordingly omitted and recorded as a measurement gap rather than reproduced.

13.3 Wetlands and River Ecosystem Health

Assam's wetland endowment, comprising beels, oxbow lakes, waterlogged areas, and swamp or marsh land, is unusually large relative to the State's area, but this chapter found no single, current, authoritative count that could be treated as definitive. The Assam Remote Sensing Application Centre is commonly cited as the source for a figure of "over 3,500 wetlands" in Assam, though a specific dated publication carrying this exact figure could not be retrieved. A separate compilation drawing on the National Wetland Atlas methodology records approximately 5,097 larger wetlands and a further 6,081 smaller wetlands, together covering approximately 9.74 per cent of total land area, while a third compiled estimate, using a minimum mapping unit of 2.25 hectares, records approximately 5,902 wetlands covering approximately 8,490 square kilometres, or 10.82 per cent of geographical area. These figures are not reconcilable from the sources available, most likely because they draw on inventories of different vintage and different minimum size thresholds, and this chapter reports the range rather than selecting one as authoritative. What can be stated with confidence is that wetlands occupy a share of Assam's surface, on the higher estimates approaching one tenth of the State, that is exceptional among Indian States, consistent with Chapter 1's statement that the proportion of Assam's surface under rivers, beels, and wetlands is higher than in any comparable State.

Deepor Beel, on the south western edge of Guwahati, is Assam's only Wetland of International Importance under the Ramsar Convention, designated in 2002. Sources differ on the precise area under different definitions: the core protected Deepor Beel Wildlife Sanctuary covers approximately 4.1 square kilometres, while the wider beel and its associated wetland catchment is reported at approximately 40.14 square kilometres, and this chapter reports both figures rather than treating either alone as the site's area, since they describe different, nested boundaries rather than competing measurements of the same feature.

The wetland's ecological condition has deteriorated under a well-documented combination of pressures. Expanding commercial and industrial development has blocked more than a dozen streams and rivulets that historically fed the beel from the Rani and Garbhanga hills to its south, a disruption described in reporting as functionally severing the wetland's principal water source (Assam Tribune, cited in this chapter's research, n.d.). Untreated or partially treated municipal sewage discharge and construction effluent have contributed to declining water quality and to harmful algal blooms with documented biodiversity and livelihood

impacts (Scroll.in, 2026). Encroachment is reported to threaten the livelihoods of at least 1,200 families living around the wetland (Land Conflict Watch, n.d.). The Gauhati High Court intervened twice in close succession: on 5 April 2024 the Court halted an Assam Cabinet decision that would have denotified Deepor Beel as a wildlife sanctuary, ruling that the decision was premature, and ordered that no construction or development activity take place in or around the wetland pending formal demarcation of its boundaries; on 6 February 2025 the Court directed the State Government to remove earth filling and halt construction activity in the wetland area (reported in coverage summarised from spmiasacademy.com and The Diplomat, 2026). This sequence, a proposed administrative downgrading of protective status followed by repeated judicial intervention to prevent construction, is the clearest evidence in this chapter that formal Ramsar and wildlife sanctuary designation in Assam does not by itself secure a site against development pressure, and that the operative constraint on encroachment at Deepor Beel has been the judiciary rather than the executive.

The Central Pollution Control Board's most recent Assam-specific finding traced to a dated primary release identified eleven stretches across ten rivers in Assam as polluted, based on Biochemical Oxygen Demand (BOD) exceeding prescribed water quality criteria, in a report published on 5 February 2023 (Sentinel Assam, 2023). The rivers named were the Bharalu at Guwahati, the Bega from Mangaldoi, the Burhidihing at Margherita, the Dhansiri between Bokajan and Numaligarh, the Digboi from the IOCL oil town to the Lakhpathar Reserve Forest, the Kharsang, the Kulsi at Chaygaon, the Mora Bharali at Tezpur, the Pagladia at Nalbari, and the Tocklai at Kumar Kaibarta Gaon (Sentinel Assam, 2023). At the time of that report, Assam's eleven stretches represented approximately 3.5 per cent of the 311 polluted stretches identified across 279 rivers nationally.

CPCB subsequently published a national update, "Polluted River Stretches for Restoration of Water Quality 2025," based on monitoring data from 2022 to 2023, which recorded a national decline in polluted stretches from 351 in 2018 to 296 in 2025, and in critically polluted stretches (Priority I, with BOD above 30 milligrams per litre) from 45 to 37 over the same period, with 149 stretches nationally delisted altogether, including stretches in Assam, Goa, Gujarat, Kerala, Odisha, and West Bengal (policyedge.in, 2025; thenewsmill, 2025). This chapter could not obtain a reliable, current, Assam-specific stretch count from the 2025 report itself; secondary compilations reviewed for this chapter either repeat the 2023 list of ten named rivers without confirming which, if any, have been delisted, or assert without a retrievable primary citation that only a single Assam stretch remains classified as polluted. Given this inconsistency, this chapter records the Assam-specific outcome of the 2025 CPCB assessment as a measurement gap rather than adopting either claim, while noting that the Bharalu at Guwahati and the Kolong at Nagaon continue to appear in more recent press reporting among the country's most polluted urban river stretches (Sentinel Assam, n.d.). The Bharalu in particular functions as Guwahati's principal urban drain, and its condition is directly connected to the municipal sewage and solid waste management deficits examined in Chapter 10; a river water quality classification that improves only through channel engineering without addressing the sewage load feeding it would not represent a genuine

improvement in ecological condition, a distinction the delisting methodology does not appear to make explicit in the secondary reporting available to this chapter.

13.4 Mining and Mineral Resource Governance

Assam is India's largest recipient State of royalty on crude petroleum and natural gas production. Union Government figures reported in the press record Assam's royalty receipts at Rs 1,432.08 crore in 2020 to 2021, Rs 2,475.63 crore in 2021 to 2022, Rs 3,977.2 crore in 2022 to 2023, Rs 3,672.33 crore in 2023 to 2024, and Rs 3,766.01 crore, provisional, in 2024 to 2025, with Assam receiving more royalty than any of the other nine crude oil and gas producing States in the country in that final year, ahead of Rajasthan at Rs 3,470.33 crore and Gujarat at Rs 3,330.15 crore (Sentinel Assam, 2026, reporting Union Ministry of Petroleum and Natural Gas figures). Chapter 2 separately establishes, from PRS Legislative Research's analysis of the State budget, that Assam's State's Own Non-Tax Revenue stood at Rs 5,352 crore in 2024 to 2025 actuals. Read together, these two independently sourced figures imply that hydrocarbon royalty alone accounted for approximately 70 per cent of the State's non-tax revenue in that year, a computed ratio rather than a directly published percentage, and one that differs substantially from an unsourced figure of 62 per cent that has circulated in earlier drafts of this framework and could not be independently verified. Chapter 2 also records that State's Own Non-Tax Revenue is budgeted to fall to Rs 6,449 crore in 2026 to 2027, down 23 per cent from the Rs 8,361 crore revised estimate for 2025 to 2026, a decline that, if hydrocarbon royalty continues to represent the large majority of the non-tax head, would track movements in crude oil and gas prices and production volumes that lie outside the State's control, exactly the vulnerability Chapter 2 identifies for the non-tax revenue account generally. Chapter 9 examines the production profile of Oil India Limited and the Oil and Natural Gas Corporation in Assam in detail; the point for this chapter is that the State's fiscal position and its regulatory posture toward hydrocarbon extraction are not independent of one another.

The Ministry of Coal's national coal reserve inventory, as of 1 April 2025, records Assam's total coal reserves at 525.01 million tonnes, comprising 464.78 million tonnes measured, 57.21 million tonnes indicated, and 3.02 million tonnes inferred (Ministry of Coal, Government of India, 2026). The State's coal deposits are concentrated in the Makum coalfield of Tinsukia district, the largest in the State, and the Dilli-Jaipore coalfield, with smaller deposits in Karbi Anglong, Dima Hasao, and Dhubri district. This chapter could not verify a reliable, separately sourced reserve figure specific to the Makum coalfield alone to the standard of confidence required for inclusion, and does not report one.

The regulatory and human cost of unregulated coal extraction in Assam's hill districts is, however, well documented through a specific and recent event. On 6 January 2025, nine miners became trapped in an illegal rat-hole coal mine near Umrangso in Dima Hasao district when water from an adjacent, abandoned mine flooded the shaft, which was reported to be approximately 300 feet deep (Mongabay India, 2025). A multi-agency rescue operation

involving the National Disaster Response Force, the State Disaster Response Force, the Indian Army, and Indian Navy divers recovered the bodies of the trapped miners over the following days, with two arrests made in connection with the illegal operation (News on AIR, 2025). The National Green Tribunal had banned rat-hole mining as a method, on grounds of its hazardous and environmentally destructive nature, in 2014, a ban the Supreme Court of India upheld in July 2019 in the neighbouring context of Meghalaya (Drishti IAS, n.d.). The persistence of fatal rat-hole mining incidents in Assam's Dima Hasao district more than a decade after that ban demonstrates that the prohibition has not translated into effective enforcement on the ground in the Sixth Schedule hill districts, where jurisdiction is shared in practice between the district administration, the autonomous council structures examined in Chapter 12, and State mining authorities.

Acid mine drainage from rat-hole coal mining, concentrated across the border in Meghalaya's Jaintia Hills but affecting the shared river system, has left the Kopili River and its tributaries, including the Kharkor, Myntriang, Dinar, Longsom, Amring, Umrang, Longku, and Langkri, contaminated with sulphuric runoff and heavy metals to a degree reported as no longer able to sustain aquatic life in the most affected reaches (Dialogue Earth, cited in this chapter's research, n.d.). This is a genuinely trans-boundary environmental governance failure: the mining activity generating the contamination is substantially in Meghalaya, but the Kopili flows through and affects Assam, including the Dima Hasao district in which the January 2025 fatal incident occurred, and no single State pollution control board has full jurisdiction over the pollution source and its downstream consequences.

Limestone extraction for cement manufacture is the third major mineral governance issue documented in this chapter, and it illustrates a distinct set of institutional tensions specific to the Sixth Schedule autonomous council areas examined in Chapter 12. Karbi Anglong and Dima Hasao hold substantial limestone reserves, with one compiled estimate placing Dima Hasao's reserves at 1,490 million tonnes, and the Bokajan Cement Factory in Karbi Anglong, established in 1977, remains the State's principal large-scale cement producer using limestone from the Koilajan deposit.

More recent development has concentrated around Umrangso in Dima Hasao. The State auctioned seven limestone blocks in the Umrangso area, with five auctioned and Letters of Intent issued and the remaining two expected to follow, as the State's mineral auction regime, coordinated with the national Mineral (Auction) framework, was extended to Assam (Hubnetwork.in, 2025). Separately and controversially, the North Cachar Hills Autonomous Council allotted 3,000 bighas of land near Umrangso to Mahabal Cement Private Limited on a 30-year lease, a decision challenged in the Gauhati High Court by 22 villagers of Nobdi Longku Kro and Chotolarpheng who assert ancestral cultivation rights dating to 1975 under tribal customary tenure (The News Minute, 2025). The National Commission for Scheduled Tribes issued a formal notice to the Dima Hasao District Commissioner over the allotment, and the Gauhati High Court, across nine hearings since February 2025, has expressed concern over both the scale of the allotment and the process by which it was approved (The News Minute, 2025). A separate limestone mining allotment of more than 1,200 bighas in the same district, associated with the Ambuja Cement group, has met comparable local resistance (The

News Minute, 2025). The Adani Group, whose name became attached to the controversy through social media misattribution, formally denied involvement in the Mahabal Cement allotment on 18 August 2025 (The News Minute, 2025).

This case is significant to this chapter for reasons beyond the immediate land dispute. Dima Hasao and Karbi Anglong lie within the Indo-Burma biodiversity hotspot referenced in section 13.1, and reporting on the allotments alleges that they overlap with reserve forest and a recognised Key Biodiversity Area, that environmental clearance processes were conducted with public hearings held in languages not understood by affected communities, and that consent requirements under the Forest Rights Act were not obtained (this chapter's research, drawing on land conflict documentation, n.d.). Whether these specific allegations are ultimately upheld is a matter for the ongoing court proceedings rather than for this chapter to adjudicate, but the pattern, of Sixth Schedule autonomous councils allotting large tracts of tribal land to cement and mining interests through a process now under active judicial and National Commission for Scheduled Tribes scrutiny, is precisely the coordination and accountability gap Chapter 12 identifies between the Panchayati Raj system and the autonomous council architecture, extended here into the domain of environmental and mineral governance. The Assam Mineral Policy was reported, at the time of the research underlying this chapter, to be in its final stage of formulation, alongside State Cabinet approval for an Assam State Mineral Trust intended to support sustainable exploration of minor minerals; neither instrument had been formally notified as of the most recent reporting available, and their eventual content and effect on Sixth Schedule land allotment procedure could not be assessed and is recorded as a measurement gap.

13.5 Air and Other Pollution: Status and Regulatory Response

Guwahati's air quality persistently exceeds India's National Ambient Air Quality Standards (NAAQS), which set an annual average limit of 60 microgrammes per cubic metre for PM₁₀ and 40 microgrammes per cubic metre for PM_{2.5} (Central Pollution Control Board, 2009 standards, as summarised in regulatory guidance materials). The Centre for Research on Energy and Clean Air's 2025 progress report on the National Clean Air Programme records that Guwahati exceeded NAAQS standards in every year from 2023 through the first seven months of 2026 for which data were assessed, and that of six Assam cities with adequate PM_{2.5} monitoring coverage in 2024, four exceeded the annual PM_{2.5} standard (Centre for Research on Energy and Clean Air, 2025). The same report records Byrnihat, an industrial town on the Assam-Meghalaya border whose monitoring station is generally attributed to Assam in national air quality rankings, among the three most polluted cities in India by annual PM_{2.5} concentration, at 126 microgrammes per cubic metre, alongside Delhi and Gurugram (Centre for Research on Energy and Clean Air, 2025).

Separately, the 2023 World Air Quality Report, an annual compilation published by IQAir and widely cited in Indian environmental journalism, recorded Guwahati's annual average PM_{2.5} concentration at 105.4 microgrammes per cubic metre, more than twenty times the World Health Organization's guideline level of 5 microgrammes per cubic metre for annual PM_{2.5} exposure (Assam Tribune, cited in this chapter's research, n.d.). A live air quality

dashboard recorded a single-day reading for Guwahati on 1 April 2025 of 72 microgrammes per cubic metre for PM_{2.5} and 133 microgrammes per cubic metre for PM₁₀ (aqi.in, 2025); this single-day figure is reported here as illustrative of continuing exceedance rather than as an annual average, since daily readings of this kind fluctuate substantially with season and cannot be treated as equivalent to the annual average figures used elsewhere in this section. This chapter could not verify a specific, dated, official Assam Pollution Control Board annual average figure for Guwahati PM₁₀ to the standard of confidence this framework requires, and the precise current annual average, as distinct from the illustrative single-day and multi-year compiled figures reported above, is recorded as a measurement gap in section 13.6.

Under the National Clean Air Programme, Guwahati is one of the non-attainment cities identified for targeted intervention, with the national programme's original ambition of a 20 to 40 per cent reduction in particulate concentration by 2024, later revised to a 40 per cent reduction target by 2026 against a 2017 baseline (Centre for Research on Energy and Clean Air, 2025). This chapter could not verify Guwahati's specific fund utilisation rate or its measured percentage reduction in PM concentration against that baseline from a retrievable source, and both figures are recorded as measurement gaps rather than the estimated figures that circulate in some secondary compilations.

River water quality is examined in section 13.3.3 in connection with the Bharalu and the CPCB polluted stretches classification. This chapter could not locate current, dated, State-wide data on ambient noise levels in Guwahati or other Assam urban centres, nor a current inventory of industrial or municipal solid waste generation and treatment capacity specific enough to support a statistical statement in this chapter; solid waste management as a municipal service function is examined in Chapter 10, and this chapter defers to that treatment rather than duplicating it with unverified figures. The absence of a retrievable, Assam-specific noise pollution monitoring dataset is itself a finding: unlike air and water quality, for which the CPCB and State Pollution Control Board maintain published, if incomplete, monitoring networks, noise appears not to be routinely reported for Assam in a form accessible to this research, and this is recorded as a measurement gap.

13.6 Measurement Gaps

This chapter has stated, at each point where a widely repeated figure could not be verified, that the figure is omitted rather than reproduced. Collected together, the principal gaps are as follows. The exact canopy-density-class location of forest cover loss between the 2021 and 2023 assessment cycles, specifically the split between Recorded Forest Area and Unclassed State Forest, could not be verified from a retrievable source. A rhinoceros census more recent than the March to April 2022 count could not be located, an important gap given that a subsequent census cycle would ordinarily be expected by 2026. The cumulative number of families displaced by riverbank erosion in Assam since 1950 could not be verified against an official, dated source, notwithstanding its wide circulation in round figures in secondary commentary. A single, authoritative, current figure for the area of Majuli island could not be

established, with academic and journalistic sources diverging by a factor of two and the underlying difference in definition unresolved. A single authoritative count of Assam's total wetlands and their combined area could not be established, with three plausible compiled estimates ranging from roughly 3,500 to roughly 12,000 individual water bodies and from under 10 per cent to just over 10 per cent of geographical area. A dated, State-specific figure for soil erosion in tonnes per hectare per year under compressed jhum cycles in Karbi Anglong and Dima Hasao could not be verified. The Assam-specific outcome of CPCB's 2025 national polluted river stretches assessment, as distinct from the 2023 assessment reported in detail in section 13.3.3, could not be reliably established. A verified, separately sourced coal reserve figure specific to the Makum coalfield alone could not be established, distinct from the verified State-wide Ministry of Coal figure of 525.01 million tonnes. The current status and content of the Assam Mineral Policy and the Assam State Mineral Trust, both reported as pending at the time of this research, could not be confirmed as formally notified. A current, official Assam Pollution Control Board annual average PM10 figure for Guwahati, Guwahati's measured percentage reduction in particulate concentration under the National Clean Air Programme, and the city's NCAP fund utilisation rate could not be verified. Finally, State-wide noise pollution monitoring data and a current municipal and industrial solid waste inventory specific to environmental regulation, as distinct from the municipal service delivery treatment in Chapter 10, could not be located in a form suitable for citation in this chapter.

Several of these gaps concern data that the relevant department in principle already holds, in particular the canopy density breakdown of forest loss, the current wetland inventory, and Guwahati's own air quality monitoring record, and their absence from readily retrievable public reporting is, consistent with the finding recorded for rural development data in Chapter 12, a publication and transparency failure rather than solely a data collection failure.

13.7 Strategic Priorities

Seven priorities follow from the evidence assembled in this chapter, each stated with a measurable target grounded in a baseline figure established above and with target years of 2031 for the medium term and 2047 for the long term, consistent with the horizon used throughout this framework.

1. **Halt and reverse the decline in forest cover recorded between the 2021 and 2023 assessment cycles.** Against a verified baseline of 28,313.55 square kilometres of forest cover, or 36.10 per cent of geographical area, and a documented decline of approximately 84 square kilometres over the two years to 2023 (Forest Survey of India, 2024), the State should target zero net forest cover loss in the ISFR 2025 assessment cycle relative to ISFR 2023, and an increase to at least 37.5 per cent of geographical area by 2031 through consolidation of Unclassed State Forests and community social forestry, rising to at least 40 per cent by 2047, with the underlying canopy density breakdown of any future change published in full rather than only as an aggregate figure.
2. **Establish a statutory entitlement to replacement land for erosion-displaced families.** Against a Water Resources Department baseline of 4.27 lakh hectares eroded since 1950

and an annual average loss of approximately 8,000 hectares, the State should enact, by 2031, a statutory framework granting revenue land title to erosion-displaced families comparable to the entitlement extended to other categories of land loss, and should publish an annual, district-wise, audited count of families newly displaced by erosion each year, a series that does not currently exist in retrievable form. By 2047 the target should be a fully functioning land bank and resettlement entitlement system covering all six of the districts identified in this chapter as most erosion-affected.

3. **Commission an authoritative, remote-sensing-based resurvey of Majuli island and of Assam's total wetland inventory.** Given that this chapter could not reconcile Majuli area estimates differing by a factor of two, or wetland count estimates differing by a factor of three, the State should commission, by 2028, a single authoritative survey using consistent methodology and boundary definitions for both Majuli and the State's wetland inventory, to be repeated on a five-year cycle thereafter, so that future editions of this framework and other planning documents can cite a single reconciled figure rather than a range.
4. **Secure Deepor Beel against further encroachment through enforceable boundary demarcation.** Against the Gauhati High Court's interventions of 5 April 2024 and 6 February 2025, both directed at halting construction pending formal boundary demarcation, the State should complete and gazette the eco-sensitive zone boundary for Deepor Beel by 2027, restore the blocked feeder streams from the Rani and Garbhanga hills by 2031, and eliminate untreated sewage discharge into the wetland by 2031, coordinating with the municipal sanitation investment examined in Chapter 10. By 2047 Deepor Beel should register measurable recovery in the extent of open water and reduction in algal bloom incidence relative to a 2026 baseline established through the resurvey recommended above.
5. **Bring Sixth Schedule mineral land allotment under a published, consistent policy before further allotments proceed.** Against the Umrangso limestone allotments currently under Gauhati High Court and National Commission for Scheduled Tribes scrutiny, the State should ensure that the Assam Mineral Policy, reported as pending at the time of this research, is formally notified, publicly available, and applied prospectively to all Sixth Schedule autonomous council mineral land allotments by 2028, with mandatory, translated, and independently verified public hearings and Forest Rights Act consent processes as a precondition for any allotment exceeding 500 bighas. By 2031 the State should publish a consolidated, State-wide register of all mineral land allotments in Sixth Schedule areas, coordinated with the transparency measures recommended for the autonomous council architecture in Chapter 12.
6. **End rat-hole coal mining in practice, not only in regulation, in the Dima Hasao coalfields.** Against the National Green Tribunal's 2014 ban, upheld by the Supreme Court in 2019, and the fatal Umrangso incident of January 2025 in which nine miners died in an illegal rat-hole mine, the State should conduct and publish a district-wise survey of active and abandoned illegal coal workings in Dima Hasao and Karbi Anglong by 2028, close and rehabilitate abandoned mine shafts identified as flood risks, and pursue coordinated

action with Meghalaya on Kopili river basin acid mine drainage remediation, targeting measurable pH recovery in the most affected tributaries by 2035.

7. **Bring Guwahati's air quality monitoring and reporting to the standard the National Clean Air Programme requires.** Against a documented pattern of NAAQS exceedance in every assessed year from 2023 through 2026 and the absence of a verifiable, published, current annual average PM10 figure specific to Guwahati, the Assam Pollution Control Board should publish real-time and annual average PM10 and PM2.5 data for all monitored Assam cities in a single, consistently updated public dashboard by 2028, and should publish its NCAP fund utilisation and measured particulate reduction against the 2017 baseline annually rather than allowing these figures to circulate only in national compilations. The medium-term target, aligned with the national NCAP ambition, is a measured reduction in Guwahati's annual average PM10 and PM2.5 concentrations of at least 40 per cent against a formally published 2026 baseline by 2031, with sustained compliance with NAAQS annual standards, 60 microgrammes per cubic metre for PM10 and 40 microgrammes per cubic metre for PM2.5, achieved by 2047.

CHAPTER 14: CLIMATE CHANGE AND ECOLOGICAL SECURITY

Assam occupies a position that few other Indian States share: nearly forty per cent of its land surface lies in a zone the Rashtriya Barh Ayog classifies as flood prone, and the entirety of its territory sits in Seismic Zone V, the highest hazard category under the national seismic code (Government of Assam, Water Resources Department, n.d.; Bureau of Indian Standards, 2016). These are not projections or scenarios. They are the recorded condition of the State today, and they recur every year in the form of a monsoon flood cycle that this chapter documents in some detail because the documentation itself turns out to be one of the central findings.

The first finding is that Assam's own disaster reporting system does not produce a single, reconciled account of what the flood season costs the State in human and physical terms. Situation reports are published as rolling bulletins tied to a date and a wave of inundation, not as a season end tally reconciled to a stated methodology. A figure widely repeated across secondary compilations, that the 2024 floods and landslides affected 42.95 lakh persons across 7,794 villages in 35 districts, could not be traced during this research to a retrievable primary document from the Assam State Disaster Management Authority (ASDMA), whose website could not be reached during the research for this chapter. What could be verified against an ASDMA attributed bulletin was a mid season snapshot dated 3 July 2024, recording 16.25 lakh persons affected across 2,800 villages in 29 of 35 districts, with 39,452 hectares of crop area damaged (Down To Earth, 2024b). Both figures are reported below, with the gap between them flagged rather than resolved. A State whose principal disaster risk cannot be measured in a single authoritative number cannot reliably price that risk into its budget, and Chapter 2's finding that a 3,191 crore rupee natural calamity relief line sits inside a revenue account already near balance depends on the assumption that the underlying loss estimate is credible.

The second finding is that the institutional architecture for climate adaptation exists on paper well ahead of where it exists in practice. The State's second generation Action Plan on Climate Change, covering 2021 to 2030, missed its original 2020 completion deadline by four years, receiving Union Ministry approval only in February 2024 after State Cabinet clearance late in 2023 (Assam Tribune, 2024a). A plan whose stated purpose is to align departmental capital budgets with climate risk could not have shaped a single year of budgeting during the four years it was pending. The same pattern, of instruments that exist in design but lag in scale, recurs in the disaster risk reduction mechanisms examined in section 14.4: a flood early warning system with a genuine multi decade operating history but an unverified upgrade path, a community first responder scheme trained to a fraction of even its own modest target, and a flood shelter programme financed at a scale that reaches roughly 100,000 people against a flood prone population regularly running into the tens of lakhs.

The third finding concerns the green economy transition examined in section 14.6, which is real but running behind its own published timetable. The Numaligarh Refinery bamboo based bio ethanol plant, the first of its kind commercially anywhere, was inaugurated in September

2025 and was still in a feedstock constrained start up phase as of February 2026 (Northeast Today, 2026). The State's Electric Vehicle Policy of 2021 set a target of 25 per cent of new vehicle registrations being electric by September 2026; Assam is reported to have the second highest share of electric vehicle registrations among Indian States, but the precise share against the 25 per cent target could not be verified from any source retrieved for this chapter (Down To Earth, 2026b).

This chapter proceeds in six substantive parts, covering the climate vulnerability profile, the State Action Plan on Climate Change, the flood and seismic hazard profile including the flood season now in progress at the time of writing, institutional disaster risk reduction and early warning, post disaster relief and reconstruction financing, and the green economy transition, before recording measurement gaps and setting out strategic priorities.

14.1 State Climate Vulnerability Profile

The most widely cited State level climate vulnerability assessment for India was produced by the Indian Institute of Technology Mandi, the Indian Institute of Technology Guwahati and the Indian Institute of Science Bengaluru, working under a common vulnerability framework based on the definition of vulnerability in the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, and released by the Department of Science and Technology (Department of Science and Technology, 2021). The assessment identified eight eastern and north eastern States as highly climate vulnerable: Jharkhand, Mizoram, Odisha, Chhattisgarh, Assam, Bihar, Arunachal Pradesh and West Bengal. Among these, Assam was grouped with Bihar and Jharkhand as States in which more than 60 per cent of districts fall into the highly vulnerable category (Department of Science and Technology, 2021).

This assessment dates to 2021. A more recent, State specific or district ranked vulnerability index for Assam, updated with post 2021 data, could not be located during this research despite the fact that the Assam Climate Change Management Society maintains a climate knowledge portal referencing district vulnerability profiles; that portal returned an access error when fetched directly for this chapter and its underlying data could not be independently verified. This framework therefore uses the 2021 national assessment as the most recent verifiable source, and records the absence of an updated State specific index as a measurement gap in section 14.7.

A separate, complementary body of district level work on flood and drought risk identifies specific Assam districts facing simultaneous "very high" risk on both hazards, including Charaideo, Dibrugarh, Sibsagar, South Salmara Mankachar and Golaghat (Department of Science and Technology, n.d.b). Three of these five districts, Charaideo, Sibsagar (commonly rendered Sivasagar in Assam government usage) and Golaghat, also appear among the worst affected districts in the flood season underway at the time of writing, discussed in section 14.3.3, which is at minimum consistent with the district risk classification even though the two exercises use different methods and different years.

The Assam State Action Plan on Climate Change, version 2.0, projects a temperature increase in the range of 1.7 to 2.2 degrees Celsius and a 75 per cent rise in the prospect of drought conditions by the middle of the twenty first century (Assam Tribune, 2024a, reporting on the approved plan). This framework treats this projection as the plan's own stated basis for action rather than as an independently verified climate model output, since the underlying technical annexures of SAPCC 2.0 were not accessible for direct verification during this research. No separate, independently sourced figure for extreme precipitation change specific to Assam could be retrieved and none is reported here.

Three structural conditions compound Assam's exposure to climate hazards beyond the meteorological trend itself. The first is the extent of flood prone land, examined in detail in section 14.3.1. The second is the concentration of the rural workforce in rainfed, single season paddy cultivation, examined in Chapter 18, which leaves household income exposed to the timing as much as the volume of the monsoon. The third is riverbank erosion, a chronic rather than episodic process: the Water Resources Department of Assam records that the Brahmaputra and its tributaries have eroded approximately 4.27 lakh hectares of land since 1950, equivalent to about 7.4 per cent of the State's geographical area, at an average rate of roughly 8,000 hectares a year (Government of Assam, Water Resources Department, n.d.). Erosion of this kind destroys agricultural and residential land permanently rather than temporarily, which is analytically distinct from flood inundation, and it is the reason Chapter 12 records that char and chapori households frequently hold no secure land title against which a permanent housing asset can be justified.

14.2 The State Action Plan on Climate Change: Content, Approval History and Institutional Reach

The Assam State Action Plan on Climate Change, version 2.0 (ASAPCC 2.0), covers the period 2021 to 2030 and was developed in line with guidelines from the Union Ministry of Environment, Forest and Climate Change, aligned with India's Nationally Determined Contributions under the Paris Agreement and with the Sustainable Development Goals (Assam Tribune, 2024a; National Centre for Disease Control, 2024). The plan organises adaptation and mitigation action across nine thematic sectors: agriculture and allied sectors, water resource management, environment, forests and biodiversity, energy, human habitat, transport, human health, disaster management, and strategic knowledge management (National Centre for Disease Control, 2024, citing the State Action Plan on Climate Change and Human Health for Assam, which nests within the wider ASAPCC 2.0 framework). The Assam Climate Change Management Society has served as the nodal institutional body for climate action planning since 2018.

The substantive point about SAPCC 2.0 is not its content, which follows the standard national template, but its approval history. The plan was originally due for completion in 2020. Reporting from October 2024 records that the State Cabinet approved the plan before the end of 2023 and that the Union Ministry of Environment, Forest and Climate Change

approved it on 16 February 2024, a delay of approximately four years against the original schedule (Assam Tribune, 2024a). The same report quotes a member of the All India People's Science Network coordination committee, which had been requesting the finalised plan since 2022, describing the delay as indicative of "the level of sincerity of the state as well as the central governments" on climate planning (Assam Tribune, 2024a). A Forest Department official is reported to have confirmed the February 2024 Union approval only in August 2024, months after the fact, suggesting that even the approval itself was not promptly communicated to State stakeholders (Assam Tribune, 2024a).

This delay matters beyond its symbolism. SAPCC documents are the instrument through which a State is meant to translate national climate policy into departmental sector plans and, per the stub version of this chapter's now discarded claim, into capital budget screening criteria. Whatever the precise budget screening mechanism eventually adopted, it could not have applied to any public works project approved between 2020 and early 2024, which is the same period in which Chapter 2 records that Assam's capital outlay grew only modestly in real terms and its committed expenditure share of revenue receipts rose. A climate adaptation instrument that arrives four years late is not a minor administrative delay; it is four missed budget cycles.

This framework is unable to verify, from documents accessible during this research, the extent to which SAPCC 2.0's sectoral missions have since been operationalised into departmental budget lines, monitorable targets or a public progress reporting mechanism. That absence of a public monitoring framework for SAPCC 2.0 implementation is recorded as a measurement gap in section 14.7.

14.3 Flood Risk: Structural Exposure and the Recurring Annual Cycle

According to the Rashtriya Barh Ayog, as reported on the website of the Water Resources Department, Government of Assam, the flood prone area of the State is 31.05 lakh hectares out of a total State area of 78.523 lakh hectares, or 39.58 per cent of the land surface (Government of Assam, Water Resources Department, n.d.). The same source states that this represents approximately 9.40 per cent of the country's total flood prone area concentrated within a State that holds a much smaller share of India's land area, and describes Assam's flood prone share as roughly four times the national average. The precise value of that national average is reported inconsistently across sources retrieved for this chapter: the Water Resources Department page implies a figure in the region of ten per cent, while other secondary compilations cite a national average nearer twelve per cent (Ajmal IAS Academy, n.d.). This framework reports both figures rather than resolving the discrepancy, since neither could be traced to a dated, citable national assessment document during this research, and records the precise current national comparator as a measurement gap.

Two features of this baseline deserve emphasis for a development framework. First, the 39.58 per cent figure is a structural, essentially static description of terrain, not a forecast; it does not vary from year to year and it is not expected to fall materially without large scale embankment or basin management investment. Second, it is far larger than the erosion figure discussed in section 14.1.3: flood inundation is recurrent and largely reversible at the level of

the individual parcel of land, whereas erosion is cumulative and irreversible. The two hazards compound each other in the same riverine tracts, principally the char and chapori areas of the Brahmaputra valley and the districts bordering Arunachal Pradesh and Bhutan through which the major tributaries descend.

The 2024 monsoon season is the most recently completed full flood year for which retrospective figures exist, and it illustrates the data reconciliation problem described in this chapter's opening section. An ASDMA attributed situation report as reported by Down To Earth and dated 3 July 2024 recorded 16.25 lakh persons impacted across 2,800 villages in 29 of Assam's 35 districts, with 25,744 people in relief camps, 3.61 lakh receiving relief distribution, and 39,452 hectares of crop area damaged (Down To Earth, 2024b). At an earlier point in the same season, dated 20 June 2024, 1,311 villages across 22 districts were reported inundated (Deccan Herald reporting compiled via secondary search, cited in this chapter as an indicative rather than primary figure). A separate secondary compilation states a season total of 42.95 lakh persons affected across 7,794 villages in 35 districts for 2024 (Ajmal IAS Academy, n.d.), a figure that also appears, evidently drawing on the same underlying claim, in this framework's own Chapter 1. This chapter was unable to locate a primary ASDMA document stating that season total during the research conducted for this chapter, because the ASDMA website could not be reached from the research environment used. The figure is reported here because it is widely and consistently repeated, but it should be treated as attributed rather than independently confirmed, and the material discrepancy between a verified mid season snapshot of 16.25 lakh and a widely cited season total of 42.95 lakh is recorded explicitly rather than silently resolved.

Two further 2024 figures rest on firmer ground because they derive from a specific, dated Government statement to Parliament. In reply to the Rajya Sabha, the Union Government stated that 117 people died in Assam floods in 2024, part of a cumulative 880 deaths over the five years from 2019 to 2024, comprising 157 deaths in 2019, 190 in 2020, 73 in 2021, 278 in 2022, 65 in 2023 and 117 in 2024 (Deccan Herald, 2024, reporting the Rajya Sabha reply). The year 2022 stands out as by far the deadliest of the five year run, more than double any other year in the series, though this chapter did not independently verify the causes of that concentration. Separately, a State Minister is reported to have put the value of crop damage in the 2024 season at approximately Rs 1,000 crore, affecting around 2.8 lakh hectares of farmland, a materially larger area than the 39,452 hectares recorded in the ASDMA snapshot of 3 July, consistent with the crop damage figure representing a season cumulative rather than a single date snapshot (Deccan Herald, 2024, reporting the Minister's statement). Wildlife impact figures for Kaziranga National Park during the 2024 floods are also reported inconsistently, with one account citing over 200 wild animals dead including about ten rhinoceroses and another citing 174 animal deaths; both figures are reported here as unreconciled (Wikipedia, 2024, citing wire service reporting; Deccan Herald, 2024).

Early in the 2025 monsoon season, official bulletins reported over 6.3 lakh people affected with 12 deaths at one point in early June, improving to 5.6 lakh affected with 41,000 people in relief camps within days (News on Air, 2025c, 2025d). A comprehensive season end figure for 2025 comparable to the 2024 figures discussed above could not be retrieved and is recorded as a measurement gap.

At the time this chapter was researched, in early to mid August 2026, Assam was in the midst of an active flood season whose figures were still moving and had not yet been consolidated into a season total. Successive ASDMA bulletins reported a death toll of 78 with over 3 lakh people affected on 30 July 2026; 80 deaths with 2.12 lakh people affected across eight districts around 2 to 3 August; 87 deaths with 1.28 lakh people affected across seven districts on 3 August; 95 deaths with 1.6 lakh affected across 14 districts by 5 August; and 100 deaths with 1,37,500 people affected across seven districts, namely Charaideo, Darrang, Golaghat, Jorhat, Karbi Anglong, Nagaon and Sivasagar, by 9 August, with Golaghat the worst hit at close to 70,000 people affected, followed by Sivasagar at around 40,000 and Jorhat at more than 16,000 (The Statesman, 2026; The Week, 2026; The Hindu, 2026, cited via official ASDMA bulletin reporting). The 9 August bulletin also recorded 456 villages inundated, 11,933.46 hectares of cropland damaged, and 125 relief camps and distribution centres operating across the affected districts, sheltering 49,061 people (ASDMA bulletin reporting via News on Air and The Hindu, 2026). That the affected population fell between successive bulletins even as the death toll rose illustrates again that these are point in time snapshots of a moving hazard rather than a stable season total, and the season was not concluded as of the date this chapter was written; the final 2026 season tally is accordingly unavailable and is recorded as a measurement gap.

Two structural observations follow from the reporting available on the causes of the 2026 season's severity. First, secondary reporting on the 2026 floods attributes their severity to a combination of factors: the Brahmaputra's heavy sediment load progressively weakening embankments, cloudburst intensity in upstream tributary catchments such as the Dikhow and Dhansiri, and human pressures including deforestation, mining, wetland loss and unplanned development compounding the natural hazard (Down To Earth, 2026a). Second, no source retrieved for this chapter provided a current, dated count of embankment length or embankment breaches for the 2024, 2025 or 2026 seasons; this is recorded as a measurement gap, and it matters because embankment condition is the single physical asset over which the State Water Resources Department has direct engineering control, as distinct from rainfall and upstream discharge, which it does not.

Assam's entire territory lies within Seismic Zone V, the highest hazard classification under the Indian seismic zoning map maintained by the Bureau of Indian Standards under code IS 1893 (Bureau of Indian Standards, 2016). This is not a theoretical classification. The region has experienced two of the largest earthquakes ever recorded onshore anywhere in the world. The 1897 Shillong earthquake, on 12 June of that year, is estimated to have had a moment magnitude between 8.2 and 8.3, though earlier scholarship sometimes cites a lower estimate of around 8.1; it caused approximately 1,542 recorded casualties and thrust the Shillong

Plateau upward by roughly 11 metres along a fault estimated at about 110 kilometres in length, with a fault slip of approximately 18 metres (Wikipedia, n.d.a, citing England, 2015, and related seismological literature). The 1950 Assam-Tibet earthquake, on 15 August 1950, is estimated at a moment magnitude between 8.6 and 8.8, commonly cited at 8.7, and is described in the seismological literature as among the largest earthquakes ever instrumentally recorded on land and the largest not associated with a subduction zone (Wikipedia, n.d.b). Both events are reported to have altered river courses and drainage patterns across the upper Brahmaputra valley, materially affecting the flood regime that followed, though this chapter could not independently verify the specific claim, repeated in some secondary sources, that the 1950 earthquake raised the Brahmaputra's bed level by as much as three metres; that figure is not used in this chapter and is recorded as unverified.

Structural regulations require public buildings, bridges and significant commercial structures in Assam to comply with IS 1893 seismic design provisions (Bureau of Indian Standards, 2016). This chapter was unable to locate any published, dated audit of compliance rates for existing public building stock against this standard, nor any inventory of retrofitting completed to date; both are recorded as measurement gaps in section 14.7. Given that the State's most recent great earthquakes occurred well before the modern building code existed in its current form, and that a large share of Assam's urban building stock, particularly in Guwahati, has been constructed in the decades since, the absence of a public compliance audit is a significant gap in a State classified at the highest seismic hazard level in the country.

14.4 Institutional Disaster Risk Reduction and Early Warning

Disaster management in Assam is coordinated by ASDMA, working with District Disaster Management Authorities across all 35 districts, a structure already established in Chapter 1's institutional account of the State's administrative geography.

The Flood Early Warning System, developed by the North Eastern Space Applications Centre (NESAC) beginning as a pilot in 2009 and progressively extended, combines numerical rainfall prediction with a physics based distributed hydrological model in a geographic information system to generate flood forecasts and alerts (North Eastern Region Node for Disaster Risk Reduction, n.d.; NESAC, n.d.). It is an integrated effort among the India Meteorological Department, the Central Water Commission, the North Eastern Electric Power Corporation, the State Water Resources Department, NESAC and ASDMA, and by the time of the most recent published description covered all flood prone districts of Assam, issuing actionable alerts at the revenue circle level with a lead time of 24 to 36 hours (North Eastern Region Node for Disaster Risk Reduction, n.d.). This lead time is shorter than the 24 to 48 hour figure that appears in some secondary and earlier framework material; this chapter uses the 24 to 36 hour figure because it is the one attached to a specific institutional source describing the system's current operational design. Whether the system has since been integrated with cell broadcast alerting, as has been piloted elsewhere in India, could not be

verified from sources retrieved for this chapter and is recorded as a measurement gap. Separately, the National Remote Sensing Centre, working with the Indian Space Research Organisation, has prepared a satellite based flood atlas for Assam using imagery from 1998 to 2023 (Assam Tribune, n.d., reporting on flood mitigation atlases and warning systems), which is a mapping and planning tool distinct from the real time FLEWS alerting system.

The Aapda Mitra scheme trains community members in basic search, rescue and relief skills so that a local disaster response capacity exists ahead of the arrival of State or national response forces. In Assam, the scheme began with a pilot that trained 400 community volunteers, with a subsequent plan to scale training to 3,900 volunteers across 16 districts by March 2024 (Sentinel Assam, n.d., reporting on an ASDMA workshop on Aapda Mitra best practices). The most recent verifiable figure retrieved for this chapter records 2,367 volunteers trained across those 16 districts, short of even the scheme's own 3,900 target (Sentinel Assam, n.d.). This is a materially smaller base than the figure of over 6,500 volunteers that appeared in the discarded earlier draft of this chapter and that could not be verified against any source retrieved in this research; this chapter uses the verified figure of 2,367 instead. It is also worth noting explicitly that the scheme's own coverage, 16 of Assam's 35 districts, falls well short of the number of districts regularly affected by flooding in a given season, discussed in section 14.3.

The clearest recent investment in physical flood shelter infrastructure comes not from a standalone State shelter construction programme but from the World Bank supported Assam Integrated River Basin Management Programme (AIRBMP). Under this programme, ASDMA has undertaken to retrofit 30 schools into multi hazard resilient flood shelters and to construct 10 new multipurpose shelters, across nine districts, namely Baksa, Barpeta, Sonitpur, Biswanath, Lakhimpur, Golaghat, Dibrugarh, Sivasagar and Majuli (Northeast Today, 2024). The stated purpose is to safeguard approximately 100,000 people in the Beki and Buridehing river basins, with a Phase I budget of approximately 135 million United States dollars for the wider river basin management programme, of which shelter construction is one component (Northeast Today, 2024). This is a considerably smaller and more geographically targeted programme than the figure of 185 elevated community shelters that appeared in the discarded earlier draft of this chapter; that figure could not be verified against any source retrieved for this research and has been dropped. No comprehensive, statewide inventory of all flood shelters in Assam, whether built under AIRBMP, under earlier programmes, or under district level initiatives, could be retrieved, and this absence of a consolidated shelter inventory is recorded as a measurement gap.

Set against the exposure documented in section 14.3, namely a flood prone share of land approaching 40 per cent and a population regularly running into six figures or more affected

in a single flood wave, the verified scale of Assam's community level and physical disaster risk reduction infrastructure, a few thousand trained volunteers across less than half the State's districts and shelter capacity for roughly 100,000 people concentrated in two river basins, is modest. This is not necessarily evidence of institutional neglect; FLEWS in particular has a genuine multi decade operating history and real interagency integration. But a development framework should record plainly that the scale of preparedness infrastructure verified in this research is well short of the scale of the hazard documented in section 14.3, and that the gap between the two is the central planning problem this chapter identifies for the disaster risk reduction function.

14.5 Post-Disaster Relief, Recovery and Reconstruction Financing

The State Disaster Response Fund (SDRF) is the primary instrument for immediate relief, funded on a 90:10 Centre to State basis for north eastern and Himalayan States, including Assam, with the National Disaster Response Fund (NDRF) providing additional Central assistance funded entirely by the Centre for disasters of a severity beyond what the SDRF corpus can absorb (Free Press Journal, 2026; PRS Legislative Research summarising the Sixteenth Finance Commission, cited in section 14.5.3 below).

Disclosed to the Assam Legislative Assembly during its winter session by the Revenue and Disaster Management Minister, cumulative releases to Assam under SDRF and NDRF between financial year 2021 to 2022 and financial year 2025 to 2026 totalled Rs 3,362.18 crore (Sentinel Assam, 2025, reporting the Minister's Assembly statement dated 29 November 2025). The year wise breakdown for SDRF was Rs 617.60 crore in 2021 to 2022, Rs 648.80 crore in 2022 to 2023, Rs 680.80 crore in 2023 to 2024, Rs 716 crore in 2024 to 2025, and Rs 375.60 crore in 2025 to 2026, a series that shows a broadly rising trend before an apparent partial year figure in the final year of the series. The year wise breakdown for NDRF, as disclosed in the same statement, was Rs 44.37 crore in 2021 to 2022, Rs 250 crore in 2022 to 2023, and Rs 29.01 crore in 2024 to 2025; figures for NDRF in 2023 to 2024 and 2025 to 2026 were not given in the reporting retrieved and are recorded as a measurement gap.

Financial Year	SDRF Released (Rs crore)	NDRF Released (Rs crore)
2021 to 2022	617.60	44.37
2022 to 2023	648.80	250.00
2023 to 2024	680.80	Not available
2024 to 2025	716.00	29.01
2025 to 2026	375.60 (part year at time of disclosure)	Not available

Source: Sentinel Assam (2025), reporting a statement by the Revenue and Disaster Management Minister to the Assam Legislative Assembly, 29 November 2025. Cumulative SDRF plus NDRF releases across the period were reported as Rs 3,362.18 crore.

For the following year, the Centre approved an advance release of Rs 379.35 crore as the first instalment of the Central share of SDRF for Assam for financial year 2026 to 2027, part of a wider Rs 2,117.85 crore package released to seven flood affected States (Free Press Journal,

2026). Separately, in October 2025, the Union Government's High Level Committee, chaired by the Union Home Minister, approved an additional Rs 313.69 crore in NDRF assistance to Assam specifically for recovery from the 2024 floods and landslides, as part of a wider Rs 707.97 crore package that also covered Gujarat (Assam Tribune, 2025). This NDRF release, arriving more than a year after the flood season it addresses, illustrates the lag between disaster occurrence and the arrival of supplementary Central reconstruction assistance beyond the standing SDRF allocation.

Chapter 2 records that the 2026 to 2027 State Budget allocates Rs 3,191 crore to relief on account of natural calamities (PRS Legislative Research, 2026). This figure is substantially larger than the State's 10 per cent matching share of the Centre-State SDRF corpus implied by the release figures in section 14.5.1 would suggest, which indicates that the State Budget's relief line captures a broader category of expenditure than the SDRF matching contribution alone, potentially including State funded restoration works, input subsidies to farmers, and other relief measures outside the formal SDRF and NDRF architecture. No published document reconciling the State Budget's natural calamity relief line with the Centre-State SDRF and NDRF flows described in section 14.5.1 could be retrieved for this chapter, and this reconciliation gap is recorded as a measurement gap. It matters because a reader comparing Chapter 2's fiscal figures with this chapter's disaster financing figures should not assume the two accounts are measuring the same thing without that reconciliation being made explicit by the State Government.

The Sixteenth Finance Commission, whose award period runs from 2026 to 2031, recommended a national disaster management corpus of Rs 2,04,401 crore across the State Disaster Response Fund, State Disaster Mitigation Fund, and their national counterparts, with a Centre to State cost sharing ratio of 90:10 for north eastern and Himalayan States, including Assam, and 75:25 for other States (PRS Legislative Research, summarising the Sixteenth Finance Commission report, 2026, as also referenced in Chapter 2). Assam's specific share of this national corpus for the 2026 to 2031 period could not be retrieved from the Commission's published volumes accessed for this chapter and is recorded as a measurement gap; only the national aggregate and the applicable cost sharing ratio for north eastern States could be confirmed. Separately, the Union Ministry of Home Affairs' year end review for 2024 recorded that Rs 1,610.454 crore was released nationally from the State Disaster Mitigation Fund to 12 States and Rs 646.546 crore from the National Disaster Mitigation Fund to seven States (Press Information Bureau, 2024). Assam's specific share of these national mitigation fund releases could not be confirmed and is recorded as a further measurement gap; this framework declines to attribute any portion of the national mitigation fund totals to Assam without a State specific figure.

The financing architecture reviewed in this section is built overwhelmingly around relief, meaning the immediate post disaster response, rather than around a standing reconstruction reserve that would allow the State to rebuild damaged infrastructure to a higher, more resilient standard without waiting on a fresh Central sanction each time. The October 2025 NDRF release for 2024 flood recovery, arriving more than a year after the flood season concerned, illustrates the lag inherent in a system where reconstruction assistance beyond routine relief depends on a fresh, discretionary High Level Committee approval. Chapter 2 records that Assam's revenue account was close to balance in the 2026 to 2027 Budget Estimates and recorded an actual deficit of 13,218 crore rupees, or 1.8 per cent of Gross State Domestic Product, in the 2025 to 2026 revised estimate; a State in that fiscal position has limited capacity to self-finance a jump from relief to build-back-better reconstruction without either a dedicated reserve accumulated during non-disaster years or a more predictable, formula-based Central reconstruction financing instrument than the present High Level Committee sanction process provides.

14.6 The Green Economy Transition

Numaligarh Refinery Limited has commissioned what is described as the world's first commercial second generation bio ethanol plant using bamboo as feedstock, a joint venture between NRL, Fortum 3 BV and the Finnish technology company Chempolis Oy, at a project cost of approximately Rs 4,930 crore (Northeast Today, 2026; Engineers India Limited, n.d.). The plant was inaugurated by the Prime Minister in September 2025. Its designed capacity is approximately 49,000 tonnes per annum of bio-ethanol, alongside approximately 11,000 tonnes per annum of acetic acid and 19,000 tonnes per annum of furfural as co-products from the same bamboo feedstock stream, and the plant is designed as a zero waste facility using bamboo rather than food crops such as sugarcane or maize, distinguishing it from most of India's existing first generation ethanol capacity (Northeast Today, 2026; Sikkim Express, n.d.). As of February 2026, the plant was reported to be in a start up phase constrained by limited availability of raw material feedstock, with operations expected to stabilise and ramp toward full production shortly thereafter (Northeast Today, 2026). No more recent, verified figure for the plant's actual operating capacity utilisation could be retrieved for this chapter, and its current production run rate against the designed 49,000 tonne annual capacity is recorded as a measurement gap.

The Electric Vehicle Policy of Assam, 2021, in force from 4 September 2021 for a five year period, set a target of 25 per cent of all new vehicle registrations in the State being electric vehicles by 2026, alongside a physical deployment target of 200,000 electric vehicles over the policy period, comprising 100,000 electric two wheelers, 75,000 electric three wheelers and 25,000 electric four wheelers (Mercom India, n.d.; EVreporter, n.d.). The policy also envisages conversion of the public bus fleet and government vehicle fleet to electric power by 2030, and offers purchase subsidies of up to Rs 20,000 for two wheelers, Rs 50,000 for three wheelers and Rs 1.5 lakh for four wheelers (Mercom India, n.d.).

As of a report published in late July 2026, close to the policy's own five year horizon, Assam was reported to have the second highest share of electric vehicle registrations among Indian States in the preceding financial year, with e-rickshaws, a category of electric three wheeler, accounting for more than half of the State's total registered electric vehicles (Down To Earth, 2026b). The same reporting identifies charging infrastructure as the binding constraint on further growth, noting that the north eastern region as a whole accounts for only about one per cent of India's charging infrastructure, and that private charging network operators run only 63 to 64 stations across the three States of Assam, Meghalaya and Tripura combined, with a charging corridor along the Siliguri to Tinsukia highway still under development at intervals of 60 to 70 kilometres (Down To Earth, 2026b). The reporting also notes complaints from vehicle owners about delayed or unclear subsidy disbursement under the policy. This framework could not retrieve a precise, current percentage figure for electric vehicles as a share of new vehicle registrations in Assam to compare directly against the policy's 25 per cent target, and that comparison is recorded as a measurement gap; the "second highest share" ranking is a relative statement, not an absolute figure against the target.

Both flagship green economy initiatives reviewed here demonstrate genuine State and Central commitment of capital and policy design, and both are also, as of the most recent verifiable reporting, running behind the timetable each set for itself: the bio-refinery in ramp-up more than four months after inauguration, and the electric vehicle policy approaching its five year target date with its central percentage target unverifiable and its charging infrastructure acknowledged as inadequate by the same reporting that records the State's relatively strong registration performance. Chapter 13's findings on forest cover loss are relevant context here: the India State of Forest Report 2023 recorded a decline in Assam's forest cover within recorded forest area of approximately 86.66 square kilometres over the preceding two year assessment period, the third largest such decline among Indian States after Tripura and Telangana (Assam Tribune, 2024b; Syllad, 2024), and Deepor Beel near Guwahati remains the only Ramsar-designated wetland in north east India, having faced and survived an attempted de-notification that was halted by the Gauhati High Court (Sentinel Assam, n.d., reporting on north eastern forest cover trends). A green economy transition proceeding alongside continued net forest and wetland loss is not yet a green economy in the full sense the term implies; it is a set of promising individual projects operating inside a wider land use trend still moving in the opposite direction.

14.7 Measurement Gaps

This chapter could not verify a number of figures material to assessing Assam's climate and disaster risk position, and each is recorded here rather than estimated or reproduced from unverified sources. The primary, ASDMA-published, season-end consolidated flood report for 2024, giving a reconciled total for persons, villages and districts affected using a stated methodology, could not be retrieved because the ASDMA website could not be reached during this research; the widely repeated figure of 42.95 lakh persons across 7,794 villages in 35 districts rests on secondary compilations without a traceable primary citation and is reported with that caveat. The precise, currently applicable national average share of flood prone land, against which Assam's 39.58 per cent figure is conventionally compared, is

reported inconsistently across sources (approximately 10 per cent in one reading, approximately 12 per cent in another) and could not be resolved to a single dated national assessment. Current, dated figures on the total length of embankments in Assam and the number and location of embankment breaches in the 2024, 2025 and 2026 seasons could not be retrieved. The specific claim, found in some secondary sources but not verified here, that the 1950 Assam-Tibet earthquake raised the bed level of the Brahmaputra by up to three metres, could not be confirmed against a primary geological source and has been omitted from the body of the chapter. A statewide, dated audit of public building compliance with IS 1893 seismic design standards, and any inventory of seismic retrofitting completed to date, could not be retrieved. Confirmation of whether the FLEWS flood early warning system has integrated cell broadcast alerting, and any current lead time beyond the 24 to 36 hour figure attached to its most recently dated institutional description, could not be retrieved. A comprehensive, statewide inventory of flood shelters, beyond the 10 new and 30 retrofitted shelters financed under the AIRBMP programme in nine districts, could not be retrieved. Full year wise NDRF release figures for Assam for financial years 2023 to 2024 and 2025 to 2026 could not be retrieved, only the SDRF series and partial NDRF years. Assam's specific quantum of the Sixteenth Finance Commission's 2026 to 2031 disaster management corpus, and Assam's specific share of the Union Ministry of Home Affairs' 2024 State and National Disaster Mitigation Fund releases, could not be retrieved; only national aggregates and the applicable cost sharing ratio could be confirmed. No document reconciling the State Budget's Rs 3,191 crore natural calamity relief line with the Centre-State SDRF and NDRF flows described in section 14.5 could be retrieved. A season end, reconciled tally for the 2026 flood season, which was still in progress at the time this chapter was researched, is necessarily unavailable and will need to be added once the season concludes and ASDMA or the Union Government publishes a consolidated account. Finally, an updated, district level climate vulnerability index for Assam more recent than the 2021 Department of Science and Technology assessment could not be located, despite indications that Assam's own climate knowledge institutions maintain more current district profiles that were not independently accessible during this research.

14.8 Strategic Priorities

1. **Publish a single, reconciled, methodology-stated season-end flood report for every monsoon season, replacing the current practice of rolling situation bulletins as the only public record.** Against the unresolved gap identified in this chapter between a verified mid season snapshot of 16.25 lakh persons affected on 3 July 2024 and a widely cited but unsourced season total of 42.95 lakh, ASDMA should publish, within 60 days of the formal close of each monsoon season, a consolidated report stating persons, villages and districts affected, crop area and infrastructure damage, and the methodology used to move from rolling bulletins to a season total. Target: first such report published for the 2027 season, with the 2024, 2025 and 2026 seasons reconstructed and published retrospectively using the same methodology by 2031.
2. **Establish a dedicated Disaster Reconstruction Reserve funded from non-disaster year revenue, to close the gap between routine relief and build-back-better**

reconstruction identified in section 14.5.4. Against a State Budget natural calamity relief line of Rs 3,191 crore in 2026 to 2027 (Chapter 2) that functions as recurring current expenditure rather than a counter cyclical buffer, and an NDRF reconstruction release for the 2024 floods that arrived more than a year after the season it addressed, the State should earmark a fixed, published share of its own tax revenue in years without a declared major disaster, building a reserve usable without a fresh Central sanction cycle. Target: reserve corpus equivalent to one full year of average annual SDRF and NDRF releases (on the order of the roughly Rs 670 crore average annual releases recorded for 2021 to 2022 through 2024 to 2025 in section 14.5.1) accumulated by 2031, and equivalent to three years of average releases by 2047.

3. **Scale the Aapda Mitra community first responder programme to cover all flood prone districts, not the 16 districts currently covered, and meet the scheme's own unmet 2024 target before setting a new one.** Against a verified base of 2,367 volunteers trained across 16 districts, short of the scheme's own prior target of 3,900, the State should first close that gap and then extend coverage to all districts with material flood exposure under the Rashtriya Barh Ayog's 39.58 per cent flood prone area classification. Target: 3,900 volunteers trained across the original 16 districts by 2028; coverage extended to all 35 districts with a minimum of 150 trained volunteers per flood prone district by 2031; a ratio of at least one trained volunteer per 2,000 flood prone population statewide by 2047.
4. **Expand flood shelter and school retrofit capacity beyond the AIRBMP programme's nine districts, using the same multi-hazard retrofit design standard.** Against a verified base of 10 new multipurpose shelters and 30 retrofitted schools protecting approximately 100,000 people across nine districts under AIRBMP Phase I, and a flood affected population that in a single wave of the season in progress at the time of writing reached at least 1,37,500 people across seven districts, shelter capacity should be extended on the same design standard to the remaining flood prone districts. Target: multi-hazard shelter or retrofit capacity extended to all districts recording more than 50,000 persons affected in any of the three most recent flood seasons by 2031; statewide capacity sufficient for at least 10 per cent of the peak seasonal affected population in flood prone districts by 2047.
5. **Publish, and hold to a fixed statutory timetable, the next revision of the State Action Plan on Climate Change, with a public dashboard tracking departmental implementation.** SAPCC 2.0 was approved four years behind its original schedule, with the Union Ministry's own approval in February 2024 reportedly not promptly communicated to State stakeholders. The State should legislate a fixed revision cycle tied to the plan's own 2030 expiry and publish an annual, department wise implementation dashboard rather than relying on the plan document alone. Target: SAPCC 3.0 approved and published on schedule ahead of the 2030 expiry of SAPCC 2.0, with a public implementation dashboard operating from 2028; full alignment of departmental capital budget appraisal with climate risk screening, on a documented methodology, by 2031.
6. **Commission and publish a statewide seismic compliance audit of public buildings against IS 1893, given Assam's uniform Seismic Zone V classification and its history**

of two of the largest onshore earthquakes ever recorded. No such audit could be located during this research despite the scale of urban construction undertaken in Guwahati and other towns since the 1950 earthquake. Target: audit of all government-owned public buildings, schools and hospitals completed and published by 2031, with a costed, prioritised retrofit programme for non-compliant critical facilities, principally hospitals and schools, completed by 2047.

7. **Set a verifiable, published electric vehicle registration tracking mechanism and a realistic revised target, given that the current 25 per cent by 2026 target cannot be verified against actual registration data and the charging infrastructure acknowledged as inadequate by the State's own reporting.** Target: a public, quarterly-updated electric vehicle registration dashboard, disaggregated by two, three and four wheeler categories, operating from 2027; charging infrastructure expanded so that the north eastern region's current one per cent share of national charging capacity rises in step with Assam's own registration growth, reaching a State network sufficient to support the original 200,000-vehicle deployment target by 2031; full conversion of the ASTC public bus fleet and government vehicle fleet to electric power, as already envisaged in the 2021 policy, by 2030 to 2032.
8. **Bring the bamboo bio-refinery to full designed capacity and use its feedstock model as a template for a wider bamboo value chain, rather than treating it as a single flagship asset.** Against a designed capacity of approximately 49,000 tonnes per annum of bio-ethanol and a start-up phase still constrained by feedstock availability as of February 2026, the State should invest in the upstream bamboo cultivation and aggregation base needed to secure that feedstock reliably, given Assam's substantial existing bamboo resource base. Target: plant operating at not less than 80 per cent of designed capacity by 2028; a documented, farmer-linked bamboo feedstock supply chain covering the plant's full annual requirement without supply interruption by 2031.

CHAPTER 15: ADMINISTRATIVE GOVERNANCE REFORM

Administrative governance determines whether the policy commitments examined in the preceding chapters are actually delivered, and at what cost in delay, leakage and discretion. Assam's administrative machine operates a State Secretariat of several dozen departments, a five division and thirty five district field structure, and a constitutionally distinct layer of Sixth Schedule autonomous councils in Bodoland, Karbi Anglong and Dima Hasao, as Chapter 1 records. It must also coordinate anti-corruption enforcement, a subordinate judiciary and a High Court shared with three neighbouring States, a police force recovering from three decades of insurgency, and a citizen service delivery architecture that the State has invested in digitising over the past decade.

The most consistent finding of this chapter is that the State publishes activity data readily but consolidated, auditable capacity data poorly. The Assam State Portal names 56 departments with individual web presences, while the Sewa Setu e-governance platform reports integrating 47 departments and the three Sixth Schedule councils, a discrepancy this chapter could not reconcile from public sources (Assam State Portal, n.d.a; National Informatics Centre, 2025). No consolidated, dated statement of total sanctioned civil service posts and vacancy across all cadres and departments could be located, a gap that recurs independently in Chapter 5 on teacher vacancy and Chapter 6 on health specialist vacancy, both of which defer the question to this chapter and both of which record the same absence. A State that cannot state its own establishment strength in one place cannot manage it, and this is the central administrative governance problem this chapter documents rather than a peripheral data quality complaint.

Where verifiable data does exist, three patterns stand out. First, anti-corruption enforcement is real but modest in scale, with the Directorate of Vigilance and Anti-Corruption reporting 29 trap operations and 32 public servants arrested in the whole of 2025, a figure that should be read against the scale of the administration rather than treated as either a success or a failure in isolation (The Print, 2026). Second, judicial pendency in the subordinate courts has risen over the past year even as annual case disposal fell, and judicial and police vacancies are concentrated disproportionately in supervisory and specialist ranks. Third, the most informative single source on the quality of financial and administrative discipline in this chapter is not any governance specific report but the Comptroller and Auditor General's most recent State Finances Audit Report, which found thousands of crores of rupees in unverified grant utilisation and hundreds of unaudited accounts of autonomous councils and public bodies, a finding with direct bearing on the Sixth Schedule coordination problem examined in section 15.1 and in Chapter 12.

This chapter accordingly covers seven areas: the structure of State administration and its coordination with the Sixth Schedule autonomous councils; the anti-corruption framework; judicial administration and case pendency; police modernisation and the post-conflict security environment; the quality of regulatory and financial accountability as revealed by recent audit; red-tape reduction and citizen service delivery; and civil service strength, closing with the measurement gaps that a future edition of this framework should prioritise for resolution.

15.1 State Administrative Structure and Coordination with Sixth Schedule Autonomous Councils

Assam's executive administration operates from the Secretariat at Dispur, Guwahati, under the Chief Secretary. The State Government's own department directory names 56 departments with individual web presences, spanning general administration, revenue and disaster management, finance, home, the line departments responsible for the sectors examined in Chapters 3 through 14, and departments specific to Assam's institutional architecture such as Hill Areas, Welfare of Bodoland, Implementation of Assam Accord, and Tribal Affairs Plain (Assam State Portal, n.d.a). This figure should be treated as indicative rather than definitive, since a separate and more operationally grounded count, drawn from the State's Sewa Setu digital service platform, records 47 departments as integrated for citizen service delivery, alongside the three Sixth Schedule councils (National Informatics Centre, 2025). Neither figure was independently reconciled against a single authoritative organogram in this research pass, and the discrepancy between a departmental list of 56 and an operational integration count of 47 is itself a useful indicator of how administrative structure is recorded in Assam: consistently in outline, inconsistently in the operational detail that would allow external verification.

Field administration is organised across five revenue and administrative divisions, namely Lower Assam at Guwahati, Upper Assam at Jorhat, North Assam at Tezpur, Central Assam at Nagaon, and the Barak Valley division at Silchar, each headed by a Divisional Commissioner, and thirty five districts as of 2026, each headed by a Deputy Commissioner, as Chapter 1 establishes at section 1.2.1. Below the district, the hierarchy comprises sub divisions, revenue circles and approximately 219 development blocks headed by Block Development Officers, the unit through which most rural scheme delivery examined in Chapter 12 is executed.

The distinguishing feature of Assam's administrative architecture, as Chapter 1 establishes, is that the State does not exercise uniform jurisdiction across its territory. Three autonomous councils operate under the Sixth Schedule to the Constitution: the Bodoland Territorial Council, administering the Bodoland Territorial Region across the districts of Kokrajhar, Chirang, Baksa, Udalguri and Tamulpur; the Karbi Anglong Autonomous Council, administering Karbi Anglong and West Karbi Anglong; and the Dima Hasao Autonomous Council, known administratively as the North Cachar Hills Autonomous Council, administering Dima Hasao. The Bodoland Territorial Council is headquartered at Kokrajhar and its Secretariat is headed by a Principal Secretary of the Indian Administrative Service cadre, assisted by six Secretaries, two Joint Secretaries, two Deputy Secretaries and ten Superintendents, with a Legislative Assembly of 40 elected members and provision for 6 nominated members exercising authority over 40 policy areas (Assam State Portal, n.d.b). Beyond the three Sixth Schedule councils, the State has constituted a further six statutory autonomous councils under State legislation, namely the Rabha Hasong, Mising, Tiwa, Deori, Sonowal Kachari and Thengal Kachari councils, exercising executive powers over a narrower set of subjects, together with 33 smaller development councils created between 2010 and 2016 for specific communities (Assam State Portal, n.d.b).

Coordination between the State line departments and the councils operates through the notified authorisation of council Principal Secretaries and through the extension of State schemes and Acts to council territory, a pattern illustrated concretely by the Assam Right to Public Services Act, which was extended in this manner to the Bodoland Territorial Council, the Dima Hasao Autonomous Territorial Council and the Karbi Anglong Autonomous Council after having initially applied only outside Sixth Schedule districts (Administrative Reforms and Training Department, Government of Assam, n.d.). Below the council level, the village tier in Sixth Schedule areas is discharged by Village Council Development Committees and Village Development Committees rather than by Gaon Panchayats, since Part IX of the Constitution does not extend to these areas, a point Chapter 12 examines in detail at section 12.6. Until 2024 this village tier operated without a dedicated administrative cadre. The State Cabinet approved the creation of Secretary posts for these committees on 31 July 2024, with the Panchayat and Rural Development Department subsequently notifying 474 posts, distributed as 420 in the Bodoland Territorial Region, 28 in Dima Hasao and 26 in Karbi Anglong and West Karbi Anglong (Sentinel Assam, 2024). This is the first dedicated professionalisation of the village level administrative tier in the autonomous areas and directly addresses one of the coordination gaps Chapter 12 identifies, though whether the posts have since been filled, and with what recruitment and reporting standard, could not be verified in this research pass and is recorded as a gap in section 15.8.

The coexistence of line department administration, three Sixth Schedule councils and six further statutory councils creates an accountability question that this chapter is better placed than most to answer with recent evidence, because the Comptroller and Auditor General's compliance audit programme for Assam in 2025 included a dedicated Subject Specific Compliance Audit on the functioning of selected autonomous councils, alongside audits of public health infrastructure and the State Disaster Response Fund (Comptroller and Auditor General of India, 2025). The specific findings of that autonomous council audit could not be retrieved in the portion of the report accessed for this framework and are recorded as a measurement gap. What could be verified, from the State Finances Audit Report tabled in the Legislative Assembly on 25 May 2026, is more troubling at a structural level: as of 31 March 2025, 494 annual accounts belonging to 75 autonomous councils, development councils and other government bodies remained unsubmitted for audit, alongside 240 annual accounts of 44 State Public Sector Enterprises (Comptroller and Auditor General of India, 2026; Assam Tribune, 2026). A body whose accounts are not submitted for audit cannot be assessed for the quality of its administration, and this backlog covers the great majority of Assam's autonomous and quasi-autonomous institutions, including, on the balance of evidence, several of the councils examined in this section. Section 15.5 returns to this finding in its fuller fiscal context.

15.2 Anti-Corruption Framework: Lokayukta and Vigilance

Assam's Lokayukta institution was established under the Assam Lokayukta and Upa-Lokayuktas Act, 1985, which received the assent of the President of India on 12 December 1986, with the Lokayukta Organisation itself set up on 20 January 1989 to investigate allegations and grievances against public functionaries, including Ministers and other elected authorities (Home and Political Department, Government of Assam, n.d.). This is a long standing institution with a clear statutory mandate. What this chapter could not establish, despite search, is any recent published statement of the number of complaints received, inquiries opened, or cases disposed by the Lokayukta in the past several years. The absence of a retrievable annual report or dashboard, in contrast to counterpart institutions in some other States, is recorded as a measurement gap in section 15.8, and this framework declines to reproduce the specific complaint and enforcement figures that appeared in an earlier fabricated draft of this chapter, none of which could be traced to any published source.

Operational anti-corruption enforcement in Assam is carried out principally by the Directorate of Vigilance and Anti-Corruption. The Chief Minister stated on 10 January 2026 that in the course of 2025 the Directorate conducted 29 trap operations, arrested 32 public servants on corruption charges, and secured a chargesheet in 100 per cent of cases (The Print, 2026). This is a verified, dated and specific figure, and it should be read plainly: a State administration of several dozen departments and tens of thousands of employees recorded 32 anti-corruption arrests through trap operations in a full year. That is neither a negligible enforcement effort nor a figure supporting a claim of comprehensive deterrence, and it stands in sharp contrast to a figure of over 240 arrests that appeared in an earlier fabricated draft of this chapter and that could not be traced to any published source in this research pass. This framework treats the verified 2025 figure as the correct baseline and records the vigilance enforcement record as an area requiring independent published reporting rather than reliance on annual ministerial statements alone, a point developed further in section 15.9.

Procurement is a specific corruption risk the CAG's audit programme has separately begun to examine, with a performance audit on e-Procurement in Assam forming part of the Comptroller and Auditor General's 2025 compliance audit cycle (Comptroller and Auditor General of India, 2025). As with the autonomous councils audit noted in section 15.1.3, the specific findings of that performance audit could not be retrieved in this research pass, and this framework records its existence as evidence that the institution most likely to detect systemic procurement irregularity has begun to look, while noting that its conclusions are not yet available for citation.

15.3 Judicial Administration: Pendency and Access to Justice

Judicial administration in Assam's subordinate courts shows a pendency position that has worsened over the period for which this chapter could obtain dated figures. Reporting attributed to the State's judicial data placed subordinate court pendency at 5.34 lakh cases in mid-2025, with 65,197 cases pending for more than five years (Sentinel Assam, 2025a). Assam's Law and Justice Minister, Sushanta Borgohain, informed the Legislative Assembly during the Monsoon session on 22 July 2026 that, as of 31 May 2026, pending cases stood at

5,75,541, comprising 4,61,245 criminal cases and 1,14,296 civil cases, and that 40 of 486 sanctioned subordinate judicial posts, or approximately 8 per cent, remained vacant (New Kerala, 2026b, reporting the Assembly statement). The two figures are not drawn from an identical measurement date and should not be treated as a precise time series, but the direction is unambiguous: pendency rose over roughly a year by approximately 40,000 cases, from 5.34 lakh to 5.75 lakh.

This is the more concerning because annual disposal fell over the same period rather than rising to meet it. The same Assembly statement recorded that subordinate courts disposed of 50,483 civil cases and 2,33,399 criminal cases in 2024, a total of approximately 2.84 lakh, against 53,348 civil cases and 1,95,636 criminal cases in 2025, a total of approximately 2.49 lakh (New Kerala, 2026b). Civil disposal rose modestly while criminal disposal fell by more than 37,000 cases. A judicial system whose annual disposal is falling while its vacancy rate stands at 8 per cent cannot be expected to reduce pendency through existing capacity alone, and the 40 vacant posts, though a modest absolute number, represent capacity that if filled would directly increase disposal.

The State operates 40 fast track courts and six Special Courts, and reported no functioning commercial courts as of the same Assembly statement (New Kerala, 2026b). Lok Adalats disposed of 5,71,226 cases over the preceding five years, a volume comparable in scale to the entire current subordinate court pendency, illustrating both the value of alternative dispute resolution as a release valve and the scale of the underlying caseload it is being used to manage (New Kerala, 2026b). As of July 2026, 7,904 undertrial prisoners were held in Assam, of whom 1,049 were reported to be in prolonged detention, though the precise threshold used for that classification was not stated in the source and could not be independently verified (New Kerala, 2026b).

The stub draft this chapter replaces cited a figure of 4.85 lakh pending cases attributed to the National Judicial Data Grid for 2025. That figure could not be traced to any retrievable NJDG publication or news report in this research pass and has been dropped; the verified range for the period covered by this chapter is 5.34 lakh to 5.75 lakh cases, drawn from Assembly statements rather than a directly retrieved NJDG dashboard extract, a distinction recorded as a gap in section 15.8.

The Gauhati High Court is the common High Court for Assam, Nagaland, Mizoram and Arunachal Pradesh. As of 1 May 2026, its sanctioned judge strength stood at 30, comprising 22 permanent and 8 additional judges, against a working strength of 24, comprising 17 permanent and 7 additional judges, a vacancy of 6 judges (Department of Justice, Government of India, 2026). This is the standard monthly vacancy statement the Union Law Ministry publishes for all High Courts and should be read as a snapshot rather than a trend, but a vacancy of one fifth of sanctioned judge strength at the apex court serving four States is a material constraint on second instance disposal capacity, with direct consequences for the subordinate court pendency described above, since delay in appellate clearance affects the incentive structure for trial court disposal.

The Court has itself taken administrative steps to address backlog. In an order effective from December 2025, the Gauhati High Court directed that a list of the 30 oldest pending cases be compiled and placed at the top of the daily cause list, to be refreshed every three months and shared with the Bench Section and the Joint Registrar (Judicial) by 20 December 2025 for the first cycle (Sentinel Assam, 2025b). This is a modest administrative intervention rather than a structural reform, but it is a verifiable, dated measure that this framework can credit without inflation.

15.4 Police Modernisation and Internal Security

Assam Police's sanctioned strength stood at 79,852, including 4,835 personnel of the Assam Police Radio Organisation, against a working strength of 67,367, leaving 12,485 posts vacant, a vacancy rate of 15.64 per cent, according to figures reported in August 2024 drawing on Assam Home Department and Bureau of Police Research and Development data (Assam Tribune, 2024). Vacancy is markedly concentrated in supervisory ranks: of 6 sanctioned Additional Director General of Police posts, 3 were vacant; of 14 Inspector General posts, 3; of 15 Deputy Inspector General posts, 9, or 60 per cent; of 168 Additional Superintendent of Police posts, 68, or approximately 40 per cent; and of 483 Deputy Superintendent of Police posts, 146, or approximately 30 per cent (Assam Tribune, 2024). A force whose base strength carries a vacancy of roughly 16 per cent but whose supervisory tiers carry vacancies of 30 to 60 per cent has a command and control problem that raw personnel numbers understate, since supervisory vacancy affects investigation quality, disciplinary oversight and operational planning disproportionately to its share of total posts.

The same reporting recorded an equipment shortfall consistent with the personnel picture: against a requirement of 7,800 vehicles computed under Bureau of Police Research and Development norms, 5,543 vehicles, owned and rented combined, were available, a deficit of 2,257 vehicles, or an operational capacity of approximately 71 per cent of requirement (Assam Tribune, 2024). This figure is dated to August 2024 and this framework could not locate an updated equivalent figure for 2025 or 2026, which is itself recorded as a gap. Against this position, the State Level Police Recruitment Board notified a combined recruitment of 5,734 vacancies spanning Assam Police, the Forest Department, Fire and Emergency Services, the Prison Department, the Assam Police Radio Organisation and the Commando Battalions, with the online application window running from 16 December 2025 to 28 February 2026 (India Fast Alert, 2025). Because this figure spans several uniformed cadres beyond Assam Police proper, it cannot be read as fully closing the police-specific vacancy documented above, and the proportion of the 5,734 posts allocated to Assam Police itself could not be verified and is recorded as a gap.

The State budget allocation to the Police sector was Rs 7,140 crore in the 2026 to 2027 budget estimate, against Rs 7,236 crore at the revised estimate stage for 2025 to 2026 and Rs 5,951 crore in 2024 to 2025 actuals, of which Rs 2,985 crore in 2026 to 2027 is allocated specifically to district police (PRS Legislative Research, 2026), figures already established in Chapter 2 at section 2.2.3. A budget allocation rising in nominal terms while sanctioned posts remain 15.64 per cent vacant indicates that the binding constraint on force strength is

recruitment and retention capacity rather than budgetary provision, a distinction with direct implications for the strategic priorities in section 15.9.

Women constitute 7.59 per cent of Assam Police strength according to recent reporting, a figure this chapter could not attach to a precise measurement date but which is corroborated by the broader pattern in comparable reporting on women's representation in State police forces nationally (Guwahati Plus, n.d.). This stands well below the 30 per cent reservation policy Assam itself has adopted for women in police recruitment, and further below the 33 per cent representation benchmark the Union Ministry of Home Affairs has repeatedly advised State Governments to work toward (Commonwealth Human Rights Initiative, 2017). A State that has adopted a 30 per cent reservation policy on paper while operating at under 8 per cent representation in practice illustrates a pattern this framework observes elsewhere in this chapter: the gap between announced policy and delivered outcome is frequently the more informative statistic.

Assam's internal security environment has been transformed by a sequence of peace accords over the past six years. A Memorandum of Settlement with Bodo groups was signed on 27 January 2020, followed by the surrender of 1,615 cadres of National Democratic Front of Bodoland factions on 30 January 2020. A Memorandum of Settlement with Karbi armed groups was signed on 4 September 2021, after which more than 1,000 armed cadres renounced violence and joined the political mainstream. A Memorandum of Settlement was signed with representatives of eight Adivasi organisations on 15 September 2022, following which 1,182 cadres surrendered arms (Ministry of Home Affairs, 2025; Press Information Bureau, 2022). These accords, together with the earlier Assam Accord of 1985 that Chapter 1 discusses, form the political foundation for the reduction in insurgency related violence that Chapter 1 identifies as a development achievement of the first order, and the restored security conditions in Bodoland were formally recognised when Manas National Park was removed from the List of World Heritage in Danger, a case Chapter 1 records at section 1.1.5.

Police modernisation priorities that follow from this changed environment are less about counter-insurgency capacity and more about the ordinary policing functions examined above: filling supervisory vacancy, equipping district forces adequately, extending women's representation, and building the investigative and forensic capacity that ordinary criminal justice, rather than internal security operations, now principally requires.

15.5 Regulatory and Financial Accountability Quality

The single most informative body of recent evidence on the quality of administrative and financial discipline in Assam is the Comptroller and Auditor General's State Finances Audit Report for 2024 to 2025, submitted to the Governor on 6 March 2026 and tabled before the Legislative Assembly on 25 May 2026, now referred to the Public Accounts Committee (Comptroller and Auditor General of India, 2026; Assam Tribune, 2026).

Finding	Figure	Position as at
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Utilisation certificates pending	6,929 certificates, Rs 23,240.56 crore	31 March 2025
Of which, Finance Department alone	Rs 4,067.06 crore	31 March 2025
Detailed Countersigned Contingent bills pending	1,222 bills, Rs 753.61 crore	31 March 2025
Annual accounts of autonomous councils, development councils and government bodies pending audit submission	494 accounts, 75 bodies	31 March 2025
Annual accounts of State Public Sector Enterprises pending audit	240 accounts, 44 enterprises	31 March 2025
Expenditure incurred without budget provision or re-appropriation (Public Debt and Servicing of Debt head, 13 cases)	Rs 509.59 crore	2024 to 2025
Excess expenditure requiring Article 205 regularisation	Rs 604.40 crore	2024 to 2025
Excess disbursements pending regularisation	Rs 11,995.69 crore	2006 to 2007 through 2023 to 2024, cumulative

Source: Comptroller and Auditor General of India (2026), as reported in Assam Tribune (2026) and India Today North East (2026).

These findings should be read together rather than as isolated compliance lapses. A grant is not verified as having been used for its sanctioned purpose until the receiving authority files a utilisation certificate; Rs 23,240.56 crore in unverified utilisation, spread across 6,929 certificates, means the State cannot itself confirm the end use of a sum larger than the entire capital outlay budgeted for 2026 to 2027 in Chapter 2. The 494 unsubmitted annual accounts of autonomous councils, development councils and government bodies directly extend the accountability gap identified in section 15.1.3: these are, on the evidence available, substantially the same institutional universe as the councils and boards through which Sixth Schedule and statutory autonomous administration operates, and an audit cannot assess institutions whose accounts it has not received. The unbudgeted expenditure of Rs 509.59 crore, in violation of Article 204 of the Constitution, and the unregularised excess disbursements of Rs 11,995.69 crore accumulated since 2006 to 2007, indicate that legislative control over spending, the constitutional purpose the budget process exists to serve, has been compromised over an extended period rather than in a single lapse.

The same audit noted that Assam's Gross State Domestic Product nearly doubled in nominal terms, from Rs 3.39 lakh crore in 2020 to 2021 to Rs 6.43 lakh crore in 2024 to 2025, an average annual growth rate of approximately 18 per cent (Assam Tribune, 2026; Comptroller and Auditor General of India, 2026), a figure consistent with the growth trajectory Chapter 2 records. The juxtaposition is instructive: an economy expanding rapidly in nominal terms has not been accompanied by a proportionate strengthening of the financial control and

accountability apparatus that should govern the resources that growth generates and that the State disburses.

Beyond the CAG's fiscal audit, sector specific regulatory bodies, including the Assam Electricity Regulatory Commission, the Assam Real Estate Regulatory Authority and the Assam Pollution Control Board, exercise statutory oversight in their respective domains, and their tariff, licensing and clearance functions are examined in the sectoral treatment of power in Chapter 9, housing and urban development in Chapter 11, and environment in the relevant sectoral chapters. This framework did not locate a consolidated, comparative assessment of the independence or performance of these bodies and records that as a further gap in section 15.8, distinct from but related to the financial accountability findings above.

15.6 Red-Tape Reduction and Citizen Service Delivery

The Assam Right to Public Services Act, 2012 came into force on 19 April 2012 in all districts except the Sixth Schedule districts, with an initial tranche of 47 services proposed for notification from April 2013 (Business Standard, 2012; Administrative Reforms and Training Department, Government of Assam, n.d.). The Act has since been extended to the Bodoland Territorial Council, the Dima Hasao Autonomous Territorial Council and the Karbi Anglong Autonomous Council, closing the initial Sixth Schedule exclusion, and as presently constituted covers 55 notified services across 14 departments (Administrative Reforms and Training Department, Government of Assam, n.d.). The Act was amended by the Assam Right to Public Services (Amendment) Act, 2024, though this framework was unable to establish the specific substantive changes made and records that as a gap (Legislative Department, Government of Assam, 2024).

A recent and verifiable instance of the accountability mechanism the Act is intended to embody concerns pension disbursement rather than a notified front line service, but illustrates the model. On 19 May 2026 the Chief Minister announced a financial penalty of Rs 250 per day, up to a ceiling of Rs 5,000, on Heads of Offices responsible for delay in pension processing for retired government employees, monitored through a Kritagyata portal that generates monthly lists of delayed cases circulated to departments, District Commissioners and senior Secretaries, with deductions effected through the FinAssam financial management portal (New Kerala, 2026a). This is a specific, dated, verifiable accountability mechanism, and it is also evidence, by the fact of its necessity, that pension delay had become common enough to require a dedicated financial penalty framework, with one case cited publicly of an 18 month delay in Dibrugarh (New Kerala, 2026a).

The State's principal citizen service delivery platform, Sewa Setu, reported integrating 815 services by drawing on more than 20 State portals and 10 national platforms, including UMANG, Aadhaar, ePramaan and DigiLocker, according to an account published in the National Informatics Centre's Informatics magazine in October 2025, which recorded 1.94 crore applications received and 1.75 crore disposed, a disposal share of approximately 90 per

cent (National Informatics Centre, 2025). A separate secondary compilation, drawing on the platform's own promotional material, describes 640 services onboarded across 47 departments and the three Sixth Schedule councils, more than 1.5 crore applications processed with a disposal rate above 90 per cent, over 94,000 grievances processed with an 86 per cent resolution rate, and more than 10,000 appeals with a 55 per cent disposal rate (Sarkaritel, n.d.). The two accounts do not agree on the number of services integrated, 815 against 640, and this framework was unable to establish which figure is current or whether the two measure different scope. Both agree on the broad order of magnitude of applications processed, in the range of 1.5 to 1.9 crore, and on a headline disposal rate above 90 per cent for applications, against a markedly lower resolution rate for grievances and a still lower disposal rate for appeals. That gradient, high disposal for routine applications, lower resolution for grievances, lowest disposal for appeals, is itself the more analytically useful finding than either topline service count, since it indicates that the platform functions well as a transaction processing system and less well as an accountability mechanism for citizens whose initial application was refused or delayed.

Under the Department for Promotion of Industry and Internal Trade's Business Reforms Action Plan 2024, which assessed States and Union Territories across 25 reform areas and 434 reform points informed by feedback from more than 5.8 lakh businesses, secondary compilations place Assam in the "Fast Movers" category, though this framework was unable to verify that categorisation against the primary Department for Promotion of Industry and Internal Trade publication in this research pass and records it as attributed rather than established (India Data Map, 2025). Separately, and on firmer ground, Assam has been recorded as having completed a specific set of Ease of Doing Business reforms tied to a Union Government incentive scheme administered by the Department of Expenditure, which made the State eligible for additional open market borrowing of Rs 934 crore (North East Live, n.d.), a fiscal reward mechanism that links administrative reform directly to the borrowing capacity Chapter 2 examines.

15.7 Civil Service Strength and Vacancy: A Cross-Cutting Data Gap

This section is deliberately shorter than its counterparts above, because the central finding is an absence rather than a body of data. No consolidated statement of total sanctioned civil service posts and total vacancy across the Assam Civil Service, Assam Police Service and allied departmental cadres could be located in this research pass, despite searches directed at the General Administration Department, the Comptroller and Auditor General's Assam audit reports, and general news reporting. This is a striking absence for a State whose budget documents show, as Chapter 2 records at section 2.2.2, that committed expenditure, comprising salaries, pensions and interest payments, absorbed 63 per cent of revenue receipts in the 2026 to 2027 budget estimate, of which salaries alone constitute 32 per cent. Chapter 2 further notes that the 2026 to 2027 budget projects salary expenditure falling in absolute terms, from Rs 40,177 crore budgeted for 2025 to 2026 to Rs 38,166 crore budgeted for 2026

to 2027, a projection Chapter 2 describes as difficult to reconcile with the same Budget's announcement of approximately 33,000 new posts for health professionals, and treats as optimistic (PRS Legislative Research, 2026; Government of Assam, 2026). This chapter can add only that the difficulty Chapter 2 identifies is compounded by the absence of any published vacancy series against which the plausibility of either the new post announcement or the falling salary projection could be tested.

What could be verified is recruitment activity at specific moments rather than a stock position. Results for 7,650 Grade III posts were declared in October 2025, with successful candidates joining 50 departments and the Agriculture, Panchayat and Rural Development, and School Education departments identified as having the largest number of vacancies within that recruitment round; the Chief Minister was reported as stating that close to two lakh appointments had been made under his administration to that point, a figure attributed to a ministerial statement rather than to an audited establishment record (Careers360, 2025). This framework records the recruitment activity as verified and the cumulative appointment claim as attributed rather than established, consistent with the treatment of similar ministerial claims elsewhere in this chapter.

The Assam Administrative Staff College at Khanapara, Guwahati, functions as the State's principal civil service training institution, delivering induction training and Group A and Group B training programmes for Junior and Senior Administrative Assistants through its Secretariat Training School, alongside programmes for Indian Administrative Service and Indian Police Service officers (Assam Administrative Staff College, n.d.). No verified figure for the number of officers trained annually could be located, and the specific annual trainee figure that appeared in the earlier fabricated draft of this chapter has accordingly been dropped rather than reproduced.

15.8 Measurement Gaps

This chapter identifies a substantial set of gaps that a future data collection effort should prioritise, several of which the State itself is best placed to close because the underlying records exist within government systems even where they are not published in retrievable form. The most consequential is the absence of any consolidated, dated statement of total sanctioned civil service posts and vacancy across all cadres, departments and the three Sixth Schedule councils, a gap that recurs independently across this chapter, Chapter 5's treatment of teacher vacancy, and Chapter 6's treatment of health specialist vacancy, and that this framework regards as the single highest priority administrative data gap in the entire report. Related to it is the absence of any recent published statement of Lokayukta complaint, inquiry and disposal statistics, despite the institution's operation since 1989, and the absence of the specific findings of the Comptroller and Auditor General's 2025 compliance audits on the functioning of selected autonomous councils and on e-Procurement in Assam, both of which were identified by subject matter but not retrieved in substantive form in this research pass. Whether the 474 Secretary posts sanctioned for Village Council Development Committees and Village Development Committees in July 2024 have since been filled could not be established. The reconciliation between the State Portal's count of 56 departments and

Sewa Setu's integration count of 47 departments could not be achieved from public sources, nor could a single authoritative, current organogram of the Secretariat be located. Police vehicle and equipment adequacy data was available only for August 2024 and no more recent figure could be found. The number of Assam Police stations is reported inconsistently across sources by an order of magnitude and could not be reliably stated. Finally, a consolidated, comparative assessment of the independence and performance of Assam's sector regulators, namely the Electricity Regulatory Commission, the Real Estate Regulatory Authority and the Pollution Control Board, was not available in retrievable form. Each of these gaps concerns data that either already exists within a government system or could be published at negligible marginal cost, and their absence from public view is a governance failing in its own right rather than a mere inconvenience to external researchers.

15.9 Strategic Priorities

1. **Publish a single, consolidated, annually updated statement of civil service establishment strength.** Covering every cadre, department and the three Sixth Schedule councils, disaggregated by district and by post category, so that the salary and pension trajectory Chapter 2 records can be tested against an actual establishment position rather than budget line projections alone. Target: first consolidated publication alongside the 2027 to 2028 Budget; full district level disaggregation by 2031.
2. **Close the police vacancy gap, with priority on supervisory ranks, and raise women's representation toward the State's own reservation policy.** Against a verified vacancy of 12,485 posts, or 15.64 per cent of sanctioned strength, as of August 2024, with supervisory vacancy running as high as 60 per cent at the Deputy Inspector General level, reduce overall vacancy below 5 per cent by 2031 and effectively eliminate it by 2035, with supervisory rank vacancy prioritised for closure by 2029. Raise women's representation from a recently reported 7.59 per cent toward the State's own declared 30 per cent reservation policy by 2031, and toward the 33 per cent national advisory benchmark by 2047.
3. **Reverse the recent rise in subordinate court pendency by filling judicial vacancies and restoring positive net disposal.** Pendency rose from 5.34 lakh cases in mid-2025 to 5.75 lakh cases by 31 May 2026, even as annual case disposal fell from approximately 2.84 lakh in 2024 to approximately 2.49 lakh in 2025. Fill the 40 vacant subordinate judicial posts, of 486 sanctioned, within 18 months; restore annual disposal above 2.84 lakh cases by 2028; and reduce total subordinate court pendency below 4 lakh cases by 2031.
4. **Clear the Comptroller and Auditor General's flagged accountability backlog on a fixed published timetable.** Against 6,929 pending utilisation certificates worth Rs 23,240.56 crore and 494 unsubmitted annual accounts of 75 autonomous councils, development councils and government bodies, both as at 31 March 2025, reduce pending utilisation certificate value below Rs 5,000 crore and submit all pending autonomous body accounts for audit by 2029, with an annual public statement of progress laid before the Public Accounts Committee.

5. **Extend the Assam Right to Public Services Act to full departmental coverage and publish service level compliance data.** From 55 notified services across 14 departments at present, extend statutory service delivery timelines to every citizen facing department by 2031, and publish service by service, department by department compliance and penalty data annually from 2027 onward, rather than aggregate application counts alone, so that the gradient this chapter identifies between high application disposal and low grievance and appeal resolution on the Sewa Setu platform can be tracked and closed.
6. **Publish an annual Lokayukta report and sustain vigilance enforcement at or above the verified 2025 level.** Given that this framework could not locate published Lokayukta complaint or disposal statistics for recent years, require an annual public report from 2027 onward covering complaints received, inquiries opened and cases disposed. Maintain vigilance trap operations at or above the 2025 level of 29 operations and 32 arrests while extending enforcement focus to the procurement irregularities the Comptroller and Auditor General's e-Procurement audit has begun to examine.
7. **Formalise and resource the village tier in Sixth Schedule areas, and publish consolidated village level transfer data,** as Chapter 12 also recommends. Confirm the filling of the 474 Secretary posts sanctioned for Village Council Development Committees and Village Development Committees by 2028, and publish, from that year, a consolidated annual statement of resources reaching the village tier in both Panchayati Raj and autonomous council territory on a comparable basis.

CHAPTER 16: TECHNOLOGY-ENABLED SERVICE DELIVERY

Technology-enabled service delivery in Assam rests on four distinct layers that are frequently conflated in official communication but need to be examined separately: physical connectivity infrastructure, the legal and institutional architecture of e-governance, the citizen-facing portals and centres through which services actually reach people, and a set of emerging applications, chiefly in flood forecasting and land administration, where the state has genuine multi-decade experience. This chapter finds that the layers are unevenly developed. Optical fibre connectivity, the precondition for everything above it, is materially incomplete. Official Rajya Sabha data place only 1,507 of Assam's approximately 2,192 to 2,197 Gram Panchayats as connected under BharatNet as on 31 December 2025, a coverage ratio of roughly 69 per cent (Ministry of Communications, 2026; State Election Commission, Assam, 2025, as reported in secondary sources). This is a far more modest position than the near-universal coverage figures that circulate in departmental communication, and it matters directly for the char and hill connectivity constraints this framework identifies in Chapter 1.

Above that uneven foundation, the citizen-facing layer is substantial and real. The Sewa Setu portal, built on the statutory footing of the Assam Right to Public Services (ARTPS) Act, 2012 as amended in 2019 and 2024, has processed well over a crore of citizen applications across several hundred services and forty-seven government departments (Government of Assam, n.d.-a; NeGD, n.d.). This is a genuine achievement of scale. But the portal's own reporting channels do not fully agree with one another on service counts, application volumes or disposal rates, and this chapter reports both sets of figures rather than adopting either as definitive, consistent with the requirement that conflicting sources be disclosed rather than reconciled by assumption.

A third finding concerns land records, where the State's own flagship programme and a parallel central scheme covering similar ground have produced sharply divergent outcomes. Mission Basundhara, the State's own land-titling and record-correction programme, has distributed pattas to more than 30 lakh people since 2021 across three phases (IMPRI, n.d.; Sentinel Assam, 2026). Over the same broad period, the centrally administered SVAMITVA scheme, which surveys village habitation land using drone technology to issue property cards, had drone-surveyed 946 of Assam's 1,074 notified villages but had issued not a single property card in the State as of August 2025, placing Assam among ten States and Union Territories with zero property cards against a national total exceeding 2.56 crore (Sentinel Assam, 2025). Two land-record digitisation efforts running in the same State, under different institutional lines of authority, at nearly opposite ends of the delivery spectrum, is itself a governance finding, and it connects to the coordination and devolution weaknesses this framework documents in Chapter 12.

A fourth finding concerns the institutional scaffolding for data governance and cybersecurity, which is real but older and thinner than departmental messaging suggests. The operative Assam Cyber Security Policy dates to 2020, was notified in the Assam Gazette on 31 July 2021, and rests on department-level steering committees and district-level apex committees rather than any verified continuously staffed security operations centre (Government of Assam, Information Technology Department, 2021). Finally, artificial intelligence in Assam's

governance is, as of this writing, substantially a policy-formation exercise, most concretely a November 2025 memorandum of understanding with Google Cloud and a still-unfinalised Assam AI-IT Policy 2025, layered on top of one long-standing and genuinely operational technology programme, the NESAC flood early warning system, which is physics-based hydrological modelling rather than the machine-learning system that departmental communication sometimes implies (Elets News Network, 2026; NESAC, n.d.).

This chapter proceeds through digital infrastructure, e-governance architecture, citizen service delivery, land records digitisation, data governance, cybersecurity and emerging technology, before recording measurement gaps and strategic priorities. Every figure below was retrieved from a named source in the course of preparing this chapter and carries the year in which it was reported; where sources disagree, both figures are given.

16.1 Digital and Broadband Infrastructure

BharatNet is the Union Government's programme, executed nationally by Bharat Broadband Network Limited and BSNL, to extend optical fibre connectivity to every Gram Panchayat in the country. Progress is reported periodically to Parliament. The most recent state-wise reply available at the time of writing was given in the Rajya Sabha on 5 February 2026, in answer to Unstarred Question No. 656, with the underlying data current as on 31 December 2025 (Ministry of Communications, 2026).

State	Gram Panchayats connected (as on 31 December 2025)
Assam	1,507
Bihar	8,340
Tripura	740
Meghalaya	698
Manipur	1,475
Arunachal Pradesh	1,124
Nagaland	236
Mizoram	540
West Bengal	2,677
Odisha	6,785
National total	2,14,904

Source: Ministry of Communications (2026), Annexure to Rajya Sabha Unstarred Question No. 656, answered 5 February 2026.

Assam's total number of Gram Panchayats is reported at approximately 2,192 in coverage of the 2025 panchayat general elections and at 2,197 in an independent departmental list of Gaon Panchayat Building and Maintenance Committees; the two figures are close enough that either yields a similar result (northeastlivetv.com, 2025; Assam State Bank of Beneficiaries, n.d.). Against either base, 1,507 connected Gram Panchayats represents approximately 69 per cent coverage as on 31 December 2025, not the near-total coverage sometimes claimed in departmental communication. This is a materially different picture from an oft-repeated figure of connectivity above 96 per cent; this framework could not

locate a primary source supporting that higher figure and treats it as unverified. Assam's absolute count is nonetheless higher than every other north-eastern State except none, since Assam has by far the largest number of Gram Panchayats in the region; the relevant comparison is proportional, not absolute, and on that basis Assam trails several larger and more resourced States by a wide margin, while the parliamentary reply does not specify whether "connected" means optical fibre laid, network equipment commissioned, or service actually delivered to the Gram Panchayat building, a definitional gap that itself limits what can be concluded about last-mile service availability.

The geographic pattern of the shortfall is consequential given Chapter 1's account of Assam's terrain. Optical fibre is a terrestrial technology poorly suited to riverine char and chapori habitations that shift or disappear with erosion, and difficult and costly to extend across the landslide-prone terrain of the Barak valley and the Sixth Schedule hill districts. No district-wise or char-specific breakdown of BharatNet connectivity in Assam could be retrieved this session, and the proportion of the unconnected 31 per cent of Gram Panchayats that lies in these categories of difficult terrain is recorded here as a measurement gap, though the geographic logic makes it a reasonable inference that char and hill habitations are disproportionately represented among the unconnected.

Below the BharatNet backbone, the Assam State Wide Area Network (ASWAN) provides government-to-government connectivity linking district, sub-divisional, circle and block offices. As most recently documented on the Information Technology Department's own site, ASWAN comprises 304 planned points of presence of which 288 have been commissioned, connecting more than 1,000 state government offices at a minimum bandwidth of 2 megabits per second, with 114 points of presence supporting the National Register of Citizens updation exercise and 160 supporting the e-District project (Government of Assam, Information Technology Department, n.d.). The same page notes that "ASWAN 2.0" is under development, but the page itself carries a last-updated date of 20 February 2023, meaning that even the State's own published infrastructure statistics are, at the time of this chapter's preparation, more than three years stale. Whether the remaining sixteen points of presence have since been commissioned, and what ASWAN 2.0 has changed in practice, could not be verified and is recorded as a measurement gap. A minimum bandwidth of 2 megabits per second, whatever figure it described in 2023, is in any case a modest specification against the video-based service delivery, cloud application hosting and data-intensive land record systems examined later in this chapter.

16.2 e-Governance Architecture: Institutional Layers

Assam's digital governance apparatus is organised around a small number of institutions rather than a single unified agency. The Information Technology Department, and its executive arm the Directorate of Information Technology, Electronics and Communication (DITEC), set policy. The Assam Electronics Development Corporation Limited (AMTRON), a State public sector undertaking, is designated the State Designated Agency responsible for

implementing most e-governance projects, including the Common Service Centre scheme, the e-District programme and the State Data Centre (Government of Assam, Information Technology Department, n.d.; aedcl.in, n.d.). This concentration of implementation responsibility in a single corporation is structurally similar to the arrangement AMTRON also holds for BharatNet coordination in the State, discussed above, and means that AMTRON's institutional capacity is a binding constraint across nearly every initiative described in this chapter.

The Assam State Data Centre, a joint Government of India and Government of Assam initiative under the Digital India programme, was inaugurated and made operational on 13 February 2021 and is implemented by AMTRON as system implementation agency. It holds ISO/IEC 27001 (information security) and ISO/IEC 20000 (IT service management) certification, and AMTRON's own data centre facility is described as a Tier 2 facility with an expected availability of 99.7 per cent, equipped with 105 physical servers and standard perimeter security devices including a next-generation firewall, intrusion prevention system and spam filter (Government of Assam, Information Technology Department, n.d.-b; aedcl.in, n.d.). These are real, verifiable technical specifications, considerably more modest in scale than the volume of citizen and land data increasingly routed through State systems, a tension this chapter returns to in section 16.6.

The e-District programme, a Mission Mode Project under the earlier National e-Governance Plan, digitises district-level, sub-divisional and circle-office service delivery. As documented by AMTRON, 53 citizen-centric services have been identified for delivery through e-District, of which 46 electronic forms are currently live. The programme is governed locally through 27 District e-Governance Societies, one per district as constituted at the time of documentation, each chaired by the Deputy Commissioner, with AMTRON serving as the State Designated Agency responsible for overall management (Government of Assam, Information Technology Department, n.d.-c). Delivery to citizens occurs through the internet, through Common Service Centres locally branded Arunodoy Kendras, and through Public Facilitation Centres located at Deputy Commissioner, Sub-Divisional Officer and Circle offices, an architecture explicitly designed to route both digital and in-person applicants through the same backend processing system.

Chapter 2 examines Assam's fiscal architecture in detail; this chapter records only the digital infrastructure supporting it. Public financial management in Assam is administered through the Assam Society for Comprehensive Financial Management System (AS-CFMS), a special purpose vehicle set up to implement public financial management reforms including the department's information technology projects, in conjunction with a Computerised Treasury Management Information System operated by the Directorate of Accounts and Treasuries and a citizen and official-facing mobile application, FinAssam (Government of Assam, Finance Department, n.d.; Directorate of Accounts and Treasuries, Assam, n.d.). These are the verified names of Assam's public financial management digitisation architecture. Commonly circulated departmental shorthand referring to a system called "FinMan" together with a companion platform "e-Prastuti" could not be verified against any primary Finance

Department or Directorate of Accounts and Treasuries source and is treated in this chapter as unconfirmed branding rather than as an additional verified system.

16.3 Citizen Service Delivery: Sewa Setu and Common Service Centres

Citizen service delivery in Assam operates within the statutory framework of the Assam Right to Public Services Act, 2012, which guarantees the delivery of notified public services within stipulated time limits, requires acknowledgment of applications, designates named officers responsible for each notified service, and provides a right of appeal to citizens whose applications are not processed on time. The Act was amended in 2019 and again in 2024; the 2024 amendment is associated with the renaming of what had been the Right to Public Services portal to "Sewa Setu" (Government of Assam, Administrative Reforms and Training Department, n.d.; kanakkupillai.com, n.d.). The portal is styled "Sewa Setu" on its own domain, though "Seva Setu" appears interchangeably in secondary reporting and departmental references; this chapter uses "Sewa Setu" as the form used on the official site.

The portal itself, fetched directly, describes 616 citizen services, 280 business services, 13 utility services and 5 scheme-related services, a total in excess of 900 discrete listed services, alongside a widely used headline figure of "800-plus services" (Government of Assam, n.d.-a). Services span revenue, education, labour, housing, power and health departments, and the portal offers automated document verification, real-time notifications and a formal grievance redressal mechanism, with delivery through both the online channel and Public Facilitation Centres.

Two independent official or quasi-official reporting channels give figures for the platform's overall performance that are close but not identical, and this chapter records both rather than selecting one.

Metric	Figure A	Figure B
Services onboarded	Over 800 (portal headline figure)	Over 640, from 47 departments and 3 Sixth Schedule Autonomous Councils
Applications processed	Over 1.5 crore, over 90 per cent disposal	1,70,52,911 total applications; 1,49,47,530 total disposals since inception (approximately 87.6 per cent)
Grievances resolved	Over 94,000 grievances, 86 per cent resolution rate	Same figure reported
Appeals	Not separately stated	Over 10,000 appeals, 55 per cent disposal rate

Source: Government of Assam, Sewa Setu portal (n.d.-a); National e-Governance Division state directory entry for Sewa Setu Assam (NeGD, n.d.); figures as retrieved August 2026, without a published as-on date on either source.

Neither source dates its figures precisely, which is itself worth recording: a portal processing an application volume in the tens of millions ought to publish a dashboard with a clear as-on date and should not require external retrieval and reconciliation to establish even approximate current performance. The two sets of figures on applications and services are close enough to indicate the general order of magnitude reliably, a citizen service platform genuinely processing well over a crore of applications across several hundred services, but not close enough to support any figure quoted to a precision better than the nearest lakh or the nearest whole percentage point. The appeals figure, over 10,000 appeals with only 55 per cent disposal, deserves particular note: an appeal under the ARTPS Act is filed specifically because a citizen's underlying application was not resolved within the statutory time limit, and a 55 per cent disposal rate on that second-tier remedy means that close to half of citizens who invoked the Act's escalation mechanism had, at the point these figures were retrieved, still not obtained resolution through it either.

Common Service Centres, branded locally as Arunoday Kendras and operated by Village Level Entrepreneurs under the national Common Service Centres scheme, are the principal channel through which digitally unconnected or digitally unfamiliar citizens access Sewa Setu and e-District services. Multiple Assam district government web pages, using what appears to be identical, undated boilerplate text, state that approximately 2,500 Common Service Centres are operating across the State with 2,206 Gram Panchayats covered (Government of Assam, Golaghat District, n.d.; and materially identical text on the Jorhat, Bongaigaon, Sribhumi and Cachar district portals). This figure recurs so consistently and without a date across independently maintained district sites that it should be treated as a template inherited from an earlier statement rather than as a live, current count; this chapter reports it as the best available figure while flagging it explicitly as unverified for the current year. An authoritative, dated, current count of operational Common Service Centres in Assam, ideally disaggregated between plains, hill and char locations, could not be retrieved from CSC e-Governance Services India Limited's own reporting in the course of this research and is recorded as a measurement gap of some consequence, since the Common Service Centre network is precisely the mechanism meant to compensate for the BharatNet shortfall documented in section 16.1.

16.4 Land Records Digitisation: Mission Basundhara and the SVAMITVA Contrast

Mission Basundhara, launched by the Revenue and Disaster Management Department on 2 October 2021, is Assam's own land-titling, mutation and record-correction programme, delivered digitally and, since the 2024 amendment referenced above, integrated with the Sewa Setu portal for application tracking. It has run in three phases.

Phase	Launch	Reported outcome
Mission Basundhara 1.0	2021	Approximately 5.82 lakh families benefited from record correction and patta-related services

Mission Basundhara 2.0	14 November 2022	Over 2.29 lakh indigenous families received ownership pattas; approximately 85 per cent from Scheduled Caste, Scheduled Tribe and Other Backward Class communities
Mission Basundhara 3.0	20 October 2024	1,06,905 additional beneficiaries received pattas in a distribution round reported on 27 February 2026, including 44,700 in Dhemaji district alone

Source: IMPRI (n.d.); Sentinel Assam (2026); DD News (2026). Figures as reported in the sources cited; a single authoritative programme dashboard consolidating all three phases could not be located.

Cumulatively, the programme is reported to have issued land pattas to more than 30 lakh people since 2021 and to have resolved close to 10 lakh long-pending land-related grievances (Sentinel Assam, 2026). Sources differ on the number of non-cadastral village digitisation targets associated with the programme, one reporting drone mapping completed in 769 of 903 non-cadastral villages under Mission Basundhara's own survey component, a figure distinct from, and not to be confused with, the separate SVAMITVA scheme's coverage discussed immediately below (IMPRI, n.d.). Sources also differ on the number of discrete services offered under Phase 3.0, with figures of nine core services and seventeen total services both appearing in retrieved sources; this chapter reports the discrepancy rather than adopting either figure. Taken as a whole, however, the pattern across three phases and roughly 30 lakh beneficiaries is one of genuine, large-scale, digitally enabled land administration delivery, corroborated across multiple independent reports of individual distribution events, and it is one of the more substantively verified achievements in this chapter.

The Ministry of Panchayati Raj's SVAMITVA scheme pursues a related but institutionally distinct objective: drone-based mapping of inhabited rural land parcels to issue legal property cards, implemented jointly by State Revenue Departments, State Panchayati Raj Departments and the Survey of India. In Assam, drone surveys had been completed in 946 of 1,074 notified villages as of an August 2025 report, but the State had prepared not a single property card under the scheme, placing it among ten States and Union Territories nationally with zero property cards issued, against a national total exceeding 2.56 crore property cards covering 1.69 lakh villages as of July 2025 (Sentinel Assam, 2025). District-level survey completion was reported as uneven even within Assam, with Dhemaji recording the highest completion at 265 villages, followed by Lakhimpur at 155, Tinsukia at 98 and single-digit-to-double-digit counts elsewhere (Sentinel Assam, 2025).

The contrast between Mission Basundhara's roughly 30 lakh beneficiaries and SVAMITVA's zero completed property cards, both concerning land documentation, both technologically enabled, both operating in the same State over overlapping periods, is a genuine institutional finding rather than an artefact of measurement. It suggests that where the State Government owns both the political mandate and the implementing bureaucracy end to end, as with Mission Basundhara, digitised land delivery proceeds at scale; where delivery depends on

coordination between a Union ministry scheme, State Revenue and Panchayati Raj departments and the Survey of India, as with SVAMITVA, it has stalled completely on the specific step of card issuance despite substantial survey completion. This is consistent with, and reinforces, the devolution and inter-agency coordination weaknesses this framework documents in Chapter 12, and it should be treated by the State Government as a priority coordination failure rather than a peripheral scheme underperformance, given that the underlying survey work, the most technically demanding component, is already largely complete.

16.5 Data Governance and Privacy Framework

Assam adopted a State Data Policy in 2022, with operational guidelines published by the Information Technology Department (Government of Assam, Information Technology Department, 2023). As of reporting from March 2026, this policy is under revision as the Assam State Data Policy 2026, explicitly framed as being brought into alignment with the Digital Personal Data Protection Act, 2023 discussed below, and associated with the operationalisation of a Centre for Data Management intended to provide data governance stewardship and a State Data Catalogue mapping data assets across departments (Elets News Network, 2026). At the time of this chapter's preparation, the revised policy had not been confirmed as formally notified, and this chapter records its finalisation status as unresolved rather than complete.

The Digital Personal Data Protection Act, 2023 is a Union law, not an Assam-specific enactment, and should not be described as a State compliance programme. It was passed by the Lok Sabha on 7 August 2023 and the Rajya Sabha on 9 August 2023, received presidential assent on 11 August 2023, and its provisions began commencing in phases from 13 November 2025 under the Digital Personal Data Protection Rules, 2025, with the remaining provisions scheduled to take effect from 13 May 2027 (Ministry of Electronics and Information Technology, 2023; Digital Personal Data Protection Rules, 2025, as summarised in secondary legal reference sources). The Act applies to processing of digital personal data by both private and state entities, though certain provisions concerning consent and the manner of decision-making are modified in their application to processing by the State or its instrumentalities. For Assam, the operative implication is that the State's data-intensive systems described in this chapter, the Sewa Setu portal, Mission Basundhara's land records, the State Data Centre's health and other citizen datasets, will need to operate within this national framework as it commences, and the Assam State Data Policy revision described above is explicitly positioned as the State-level instrument for that alignment. No Assam-specific data protection legislation exists or is required, since the subject falls within the Union's exclusive legislative domain under this Act.

This chapter could not verify the existence of a dedicated, actively maintained Assam open data portal comparable to those some other States operate. Assam's open datasets, where published, appear principally through the national Open Government Data platform, data.gov.in, which lists Assam-specific catalogues including public procurement and tender data sourced from the Finance Department's e-tendering portal (Open Government Data

Platform India, n.d.). A frequently cited claim of a dedicated portal at "data.assam.gov.in" publishing health, education and spatial datasets in machine-readable form could not be substantiated against any source retrieved this session and should not be repeated as established fact; the State's open data footprint, on the evidence available, is narrower than that claim implies.

16.6 Cybersecurity: Institutional Mechanisms

The State's cybersecurity framework rests on the Assam Cyber Security Policy 2020, notified by the Governor of Assam and published in the Assam Gazette, Extraordinary, on 31 July 2021 under Notification No. IT.51/2009/386 dated 8 July 2021 (Government of Assam, Information Technology Department, 2021). The policy's stated purpose is to protect the digital information and information and communication technology assets of all State departments and their constituent organisations, meeting minimum cybersecurity requirements for confidentiality, integrity and availability of state-owned electronic information.

The policy's implementing architecture, documented in accompanying departmental circulars, operates at two levels. At department level, a Cyber Security Steering Committee is to be constituted under the chairpersonship of the department's senior-most Secretary, and each department is required to nominate a Departmental Chief Information Security Officer, per a circular issued by the Information Technology Department on 2 September 2021 (Government of Assam, Information Technology Department, 2021). At district level, an Apex Committee for District Cyber Security is to be constituted, chaired by the Deputy Commissioner, with the Additional Deputy Commissioner for e-Governance as member convener and the Superintendent of Police, the District Informatics Officer of the National Informatics Centre, the District Manager of DITEC and a representative of AMTRON as members, meeting at least every six months; this structure is documented in, for example, a Karimganj district notification dated 13 December 2021 constituting that district's committee following a General Administration Department circular of 26 October 2021 (Government of Assam, Karimganj District, 2021).

This is a real, dated, verifiable institutional architecture, and it is a materially different picture from the fabricated notion of a single named operations centre with continuous automated threat monitoring. This chapter could not locate any primary source, from AMTRON, the Information Technology Department, or elsewhere, verifying the existence of a dedicated, continuously staffed state-level security operations centre, whether under the name "Assam-CSOC" or any other, nor any published description of a formal, ongoing coordination protocol between such a body and the Indian Computer Emergency Response Team (CERT-In), the national nodal cybersecurity incident response agency. The committee-based architecture described above, meeting on a periodic rather than continuous basis, is what this chapter can verify as currently operative.

Separately from the policy-and-committee architecture above, Assam Police maintains cybercrime investigation capacity through a Cyber Crime Cell functioning at Criminal Investigation Department headquarters, with cybercrime police stations at CID headquarters

and Guwahati City, and cybercrime outposts at Dibrugarh and Silchar, investigating offences including financial fraud, social media fraud, and unauthorised account access (Government of Assam, Assam Police, n.d.). A National Cyber Forensic (Investigation) Laboratory was reported operational in Assam from 29 August 2025, intended to strengthen the digital forensic capacity available to law enforcement (Press Information Bureau, 2025). The Director General of Police was separately reported as having finalised plans for a Regional Cyber Crime Coordination Centre for the State, though this chapter could not confirm from available sources whether that centre had become operational at the time of writing, and records its operational status as a measurement gap (Assam Tribune, n.d.).

16.7 Emerging Technology Applications

The strongest and longest-established technology application examined in this chapter is the Flood Early Warning System, known as FLEWS, developed and operated by the North Eastern Space Applications Centre (NESAC), an autonomous body under the Department of Space functioning in the north-eastern region. FLEWS was piloted for Lakhimpur district in 2009 to 2010 following a severe flood event in June 2008, and has since been extended to cover all flood-prone districts of Assam, issuing actionable alerts at the revenue circle level (NESAC, n.d.). Critically for accurate description, FLEWS is not, on the evidence available, an artificial intelligence or machine-learning system: it combines a Weather Research and Forecasting numerical rainfall prediction model, run at resolutions between 27 and 5 kilometres with three-hourly updates for twenty-four-hour forecasts, with a physics-based distributed hydrological model, the Hydrologic Engineering Centre's Hydrologic Modeling System, operating within a geographic information systems framework (NESAC, n.d.). The system has been described as the first operational GIS-based hydro-meteorological warning system in the country, and reported performance figures include an average year-on-year alert success score of approximately 75 per cent and an average lead time of 12 to 36 hours, with one specific reported monsoon season, 2017, achieving an 86 per cent combined absolute and partial success rate (NESAC, n.d.). A separate, more recent secondary account cites a shorter lead time range of 7 to 18 hours for village-level alerts; this chapter records both figures rather than resolving the discrepancy, since the two may reflect different points of measurement within the alert chain.

In September 2025, the system's institutional base was extended when the Assam State Disaster Management Authority signed a tripartite memorandum of understanding with the Indian Institute of Tropical Meteorology, Pune, and NESAC, on 25 September 2025, to integrate space technology-based approaches for lightning risk reduction, an important addition given that lightning is reported to claim more than 35 lives annually in Assam, a hazard scale comparable in human cost to many aspects of the annual flood cycle examined in Chapter 14 (Sentinel Assam, 2025; The Shillong Times, 2025). FLEWS and its lightning-risk extension are the clearest example in this chapter of a technology application that is operational, dated, independently documented and directly consequential for the hydrological hazard profile this framework establishes in Chapters 1 and 14, and it should be distinguished sharply from the policy-stage artificial intelligence initiatives discussed next.

Artificial intelligence in Assam's public administration is, as of the time of this chapter's preparation, principally at the stage of policy formulation and early pilot partnership rather than deployed operational systems. The Government of Assam signed a memorandum of understanding with Google on 12 November 2025 to develop artificial intelligence capabilities in government departments, with an associated Artificial Intelligence Centre of Excellence intended to support pilot applications including multilingual chatbots and analytics in health, education and agriculture, framed by the State's Science and Technology Minister as part of an ambition to position Assam as an AI hub for north-east India (Assam Tribune, n.d.; nenow.in, n.d.). A companion Assam AI-IT Policy 2025 was reported to be under finalisation at the time of the most recent retrieved reporting, but this chapter could not confirm that it had been formally notified (Elets News Network, 2026). Reported components of the broader digital transformation programme associated with these initiatives include a land-governance voice assistant named Bhu-Sakhi, a computer-vision-based water-supply monitoring application named Jal Soochak relevant to the rural water supply findings examined in Chapter 10, and a phased expansion of the eOffice paperless-file system to block and local government tiers, alongside a reported five-year World Bank engagement supporting digital transformation and a partnership with the Bhashini national language-technology mission for local-language interfaces (Elets News Network, 2026). Each of these was reported in a single retrieved source at the time of this chapter's preparation and none carries independent corroboration or a documented current operational scale; they are recorded here as reported initiatives in early or pilot stages rather than as verified, functioning, State-wide systems, and their eventual scale, cost and measured impact are recorded as measurement gaps.

Beyond flood forecasting, the clearest verified geospatial and drone applications in Assam are the land-survey uses already described in section 16.4, together with AMTRON's own drone training capacity: a Directorate General of Civil Aviation-approved Remote Pilot Training School operating since July 2022, which has trained 600 students across 80 batches, including personnel from the Indian Air Force and the Border Security Force and women trained under the national Namo Drone Didi scheme (Elets News Network, 2025). AMTRON separately operates a 5G Experience Centre at Tech City, Guwahati, funded by the North Eastern Council, and a 3D printing Centre of Excellence established under the PM-DevINE scheme, indicating a broader, if still small-scale, emerging-technology capacity-building function alongside its core e-governance implementation role (Elets News Network, 2025).

16.8 Measurement Gaps

This chapter was able to verify the broad order of magnitude for most of the initiatives it examines, but a substantial number of specific figures that a properly functioning technology-governance apparatus should be able to publish on demand could not be retrieved this session and are recorded here rather than estimated. The precise, currently dated count of operational Common Service Centres in Assam, ideally disaggregated by plains, hill and char location, could not be obtained; the recurring figure of 2,500 centres and 2,206 Gram

Panchayats covered appears to be undated boilerplate repeated across district government websites rather than a current dashboard figure. The proportion of unconnected BharatNet Gram Panchayats that fall within char, chapori or Sixth Schedule hill terrain could not be established, though the geographic logic makes such concentration likely. The current status of ASWAN 2.0 and the number of the remaining sixteen unconfirmed points of presence could not be verified, since the Information Technology Department's own published page on the subject was last updated in February 2023. A single, dated, reconciled dashboard figure for Sewa Setu applications, disposals and services, rather than the two partially conflicting figures reported in section 16.3.2, could not be located. The reasons for the complete non-issuance of SVAMITVA property cards in Assam despite substantial completed drone survey work were not published in any source retrieved this session and would require direct engagement with the Revenue Department, the State Panchayati Raj Department and the Survey of India to establish. The existence, staffing level and operating hours of any dedicated state-level cybersecurity operations centre could not be confirmed, nor could any published protocol governing coordination between Assam's institutions and the Indian Computer Emergency Response Team. The operational status of the Regional Cyber Crime Coordination Centre reported as "finalised" by the Director General of Police could not be confirmed. Finally, the scale, budget and measured outcomes of the several artificial intelligence pilot initiatives associated with the November 2025 Google Cloud partnership, including Bhu-Sakhi and Jal Sookhak, and of the reported World Bank digital transformation engagement, could not be independently verified beyond single-source reporting, and their current operational status as of 2026 should be treated as unconfirmed pending direct departmental disclosure.

16.9 Strategic Priorities

1. **Close the BharatNet connectivity gap with terrain-appropriate technology rather than repeating flat completion claims.** Against a verified connected base of 1,507 of approximately 2,192 to 2,197 Gram Panchayats as on 31 December 2025 (Ministry of Communications, 2026), the State should commission and publish a district-wise, terrain-disaggregated connectivity audit distinguishing plains, char and chapori, and Sixth Schedule hill Gram Panchayats, deploying satellite or hybrid connectivity where optical fibre is technically or economically unsuited. Target: 90 per cent of Gram Panchayats connected by any technology, with published as-on dates, by 2031, and 100 per cent, including all char and hill habitations, by 2047.
2. **Publish a single, dated, reconciled Sewa Setu performance dashboard.** Against two partially conflicting sets of figures for services, applications and disposals reported in section 16.3.2, neither carrying a clear as-on date, the Information Technology Department should publish a monthly public dashboard reconciling service counts, application volumes, disposal rates and appeal outcomes under the ARTPS Act. Target: monthly published dashboard from 2027 onward; appeal disposal rate raised from the reported 55 per cent to at least 90 per cent by 2031, reflecting genuine second-tier resolution rather than an unresolved backlog.

3. **Resolve the SVAMITVA property card bottleneck as a named coordination priority.** With drone survey work completed in 946 of 1,074 notified villages but zero property cards issued as of August 2025 (Sentinel Assam, 2025), while Mission Basundhara, run wholly within State institutions, has delivered pattas to more than 30 lakh people over the same period, the Revenue Department should publish the specific procedural or legal obstacle preventing card issuance and establish a joint task force with the Panchayati Raj Department and the Survey of India. Target: property cards issued for all villages with completed drone surveys by 2028, and full State coverage under both Mission Basundhara and SVAMITVA reconciled into a single land record by 2031.
4. **Establish and publicly document a genuine continuous cybersecurity monitoring capability.** Against a verified institutional architecture of periodic, committee-based governance under the 2020 policy, meeting at minimum every six months at district level (Government of Assam, Karimganj District, 2021), with no verified continuously staffed operations centre, the State should either establish a dedicated, transparently resourced security operations function or formally document its reliance on existing CERT-In and National Informatics Centre mechanisms, rather than allow ambiguity to persist. Target: published cybersecurity capability statement, including staffing and monitoring hours, by 2028; formal, published coordination protocol with CERT-In by 2031.
5. **Bring the Assam State Data Policy 2026 to formal notification with a published open data commitment.** With the 2026 revision reported as nearing finalisation in alignment with the Digital Personal Data Protection Act, 2023 (Elets News Network, 2026), but not confirmed notified at the time of this chapter, the State should notify the policy, operationalise the Centre for Data Management with a public charter, and establish a genuine Assam-specific open data portal rather than relying solely on the national data.gov.in listing. Target: policy notified and Centre for Data Management operational with published terms of reference by 2028; a functioning State open data portal covering health, education, land and fiscal datasets, updated at least quarterly, by 2031.
6. **Convert AI pilot partnerships into audited, budgeted, measured programmes before scaling claims.** Against a November 2025 memorandum of understanding with Google Cloud and a still-unfinalised Assam AI-IT Policy 2025, with individual pilots such as Bhu-Sakhi and Jal Soochak each reported in only a single source and without published budgets or user numbers, the State should require that any AI application reaching production status publish its scope, cost, department ownership and a measured user or transaction volume. Target: independently auditable performance data published for every AI pilot claimed operational, from 2027 onward; a named, budgeted State AI programme, distinct from memoranda of understanding, in place by 2031.
7. **Extend physics-based, GIS-founded hazard forecasting on the FLEWS model to additional hazards and to real-time public alerting.** FLEWS, operational since 2009 to 2010 and covering all flood-prone districts with a reported average alert success score near 75 per cent (NESAC, n.d.), is the State's most substantively verified technology application; the September 2025 lightning-risk memorandum of understanding with the Indian Institute of Tropical Meteorology (The Shillong Times, 2025) should be treated as a template for further hazard-specific extensions rather than a standalone initiative.

Target: lightning early-warning system operational in all high-incidence districts by 2029; direct mobile alert delivery to registered citizens in flood and lightning-prone revenue circles, rather than delivery through intermediary officials only, by 2031, and integration of both systems into a single multi-hazard alerting platform referenced in Chapter 14 by 2047.

8. **Publish an annual State Technology and Digital Governance Report consolidating the indicators this chapter could not verify.** The gaps recorded in section 16.8, spanning Common Service Centre counts, char and hill connectivity, ASWAN infrastructure status, Sewa Setu reconciliation, SVAMITVA issuance, cybersecurity staffing and AI pilot budgets, are largely data the State already holds internally but does not publish in a single, dated, citable form. Target: first consolidated annual report published by 2028, with all indicators in this chapter's measurement gaps section reported with explicit as-on dates from that edition onward.

CHAPTER 17: INNOVATION, RESEARCH AND KNOWLEDGE ECONOMY

Assam's knowledge economy sits at an unusual inflection point. For most of the post-liberalisation period the State's innovation infrastructure consisted of a handful of nationally significant institutions, the Indian Institute of Technology (IIT) Guwahati foremost among them, operating largely in isolation from the State's own industrial base. That condition is changing, driven less by a deliberate research policy than by a single anchor investment: the Tata Electronics semiconductor assembly and test facility at Jagiroad in Morigaon district. The plant has pulled national skilling missions, a central deemed university, and IIT Guwahati's own outreach programmes into a common effort that did not exist five years ago. This chapter's central finding is that Assam's innovation ecosystem is being built around one large, still-unfinished industrial project, with the startup, research and skilling components each still small relative to the scale that project implies.

A second finding concerns evidence quality. Public reporting on nearly every major metric in this sector is inconsistent. The number of jobs the Jagiroad plant will create has been reported at 1,500, at 15,000 plus 12,000 indirect, and at figures in between, across statements made at different stages of the project by different spokespeople. The number of Geographical Indication (GI) tags Assam holds is reported anywhere from the low thirties to over forty, depending on the source and its publication date. Even the State's own startup incubation figures are known only through a Chief Minister's public address rather than an audited programme report. This chapter treats such inconsistency as a finding in itself, not a nuisance to be smoothed over, and reports the range of figures with their sources rather than selecting one.

The third finding is that Assam's research institutions, taken individually, are genuinely capable. IIT Guwahati hosts a functioning Centre for Nanotechnology and has begun convening national semiconductor skilling partners. CSIR-North East Institute of Science and Technology (NEIST) at Jorhat has a sixty-year record of applied research in agrotechnology and petroleum chemistry. Assam Agricultural University (AAU) has bred submergence-tolerant rice varieties now demonstrated across flood-prone districts, and continues to publish original genomic screening work. Tezpur University runs active programmes in bioenergy and food processing. What is largely absent is the connective tissue between these institutions, the State's small but growing pool of technology startups, and the arriving high-tech manufacturing sector, together with the public data that would let a planner verify whether that connective tissue is forming.

The fourth finding concerns the State's most defensible innovation asset, its Geographical Indication portfolio, which protects agricultural and craft products such as Muga silk, Assam tea, Joha rice and, following a large 2024 registration batch, an extensive set of Bodo textile, instrument and craft designations. This is real and growing intellectual property, verifiable against the GI Registry's own publication record even where its exact current total is contested. Commercialisation of that portfolio, however, remains embryonic, a gap this chapter returns to in section 17.4.

This chapter examines six areas in turn: the startup and incubation ecosystem (17.1); research and development capacity at the State's principal academic and public institutions (17.2); the Jagiroad semiconductor plant as the organising event for high-tech skills and industry linkage (17.3); the GI portfolio and its commercial potential (17.4); the smaller specialised knowledge institutions established in Assam over the past two decades (17.5); and youth science outreach and workforce skilling (17.6 and 17.7). Measurement gaps are recorded in section 17.8, and strategic priorities follow in section 17.9.

17.1 The Startup and Innovation Ecosystem

The State's flagship startup support programme operates through "The Nest", the incubation hub run under the Assam Startup initiative in Guwahati. Speaking on National Startup Day, 16 January 2026, Chief Minister Himanta Biswa Sarma stated that 615 startups had been incubated through the programme since 2021, and that the State had established a 200 crore rupee Assam Venture Capital Fund to provide financial backing to startups at early and growth stages (Newkerala, 2026; Business News This Week, 2026; The Shillong Times, 2026). These figures come from a ministerial address rather than an audited programme report, and no independently published incubation register was located during this research; they are reported here as the Chief Minister's stated figures, not as verified programme outcomes. The address also referenced the Chief Minister's Aatmanirbhar Assam Abhijan as a parallel channel of support to young entrepreneurs, without further quantification.

The State substantially reorganised its startup governance in 2025. On 31 January 2025 the State Cabinet approved creation of a new Department of Innovation, Incubation and Startup, with the Finance Department directed to set aside 100 crore rupees for the department in the following budget (Assam Tribune, 2025a; Guwahati Plus, 2025). The Cabinet is separately reported to have approved an Assam Startup and Innovation Policy 2025 to 2030 with a five-tier funding architecture: an Ideation Grant of up to 10 lakh rupees, a Prototype Development grant of up to 25 lakh rupees, a Technology Startup Grant of up to 40 lakh rupees, Seed Funding of up to 50 lakh rupees, and a Capital Venture Fund of up to 310 crore rupees for high-growth startups, with total policy-period investment reported at 397 crore rupees (Scoop Earth, 2025). Reporting on the approval date of this detailed policy is inconsistent: Assam Tribune's coverage of the Cabinet meeting dates the startup policy decision to early February 2025, while the Scoop Earth account describing the five-tier structure is dated to later in 2025. Both accounts are recorded here, and the discrepancy is noted rather than resolved. It is similarly unclear whether the 310 crore rupee Capital Venture Fund referenced in the policy document is the same instrument as the 200 crore rupee Assam Venture Capital Fund the Chief Minister described in January 2026, a larger sum, or a successor fund; the two figures do not reconcile and neither source clarifies the relationship.

The Department for Promotion of Industry and Internal Trade (DPIIT) released the fifth edition of its States' Startup Ecosystem Ranking on 16 January 2026, covering the evaluation period from 1 January 2023 to 30 November 2024. States were placed into five tiers, from Best Performer down to Emerging Startup Ecosystem, within two population-based categories. Assam was placed in the "Aspiring Leader" tier (Chronicle India, 2026). This represents an apparent decline from the fourth edition, released in January 2024 and covering 2022 data, in which Assam had been placed in the higher "Leaders" tier (ForumIAS, 2024; Startup India, 2024). Because the two editions use different evaluation windows and, in later editions, a revised category structure, the comparison should be treated as indicative of relative national standing rather than as a precise year-on-year trend, but the direction is consistent with a State whose reported activity level (615 cumulative incubations since 2021) remains modest relative to leading startup states.

Outside the core Assam Startup programme, the National Institute of Pharmaceutical Education and Research (NIPER) Guwahati, established in 2008, operates Bio-NEST, a bioincubator supported under the national Biotechnology Industry Research Assistance Council framework, described by the institute as a hub strengthening the Northeast's biotechnology and life sciences startup ecosystem (Elets eGov, 2025). This is a specialised, sector-specific complement to the general-purpose Nest incubator, and the two appear to operate largely independently of each other in available reporting.

17.2 Research and Development: The Principal Academic and Public Institutions

IIT Guwahati is Assam's premier research and engineering institution and maintains an active Centre for Nanotechnology (IIT Guwahati, n.d.). Its most concretely documented recent role in the State's high-tech ecosystem is convening, rather than directly executing, semiconductor skill development. On 1 May 2024 the institute hosted a "Semiconductor Horizons Workshop", whose chief guest was Dr Charan Gurumurthy, chief executive of Tata Semiconductor Assembly and Test Private Limited, the entity operating the Jagiroad plant. The event, attended by IIT Guwahati Director Prof Rajeev Ahuja, a Joint Secretary from the Union Ministry of Education, the Secretary of Assam's Industries and Commerce Department, and more than 1,000 students from institutions across the Northeast, formalised a Memorandum of Understanding between IIT Guwahati and IIT Ropar, together with the Electronics Sector Skills Council of India, targeting semiconductor skill development and startups (IIT Guwahati, 2024). This is a documented, dated institutional commitment, but it stops short of the "primary academic technology partner" role for the Jagiroad plant that earlier, unverified drafting of this chapter had claimed; the institute's own account describes it as one of several academic and government partners convened around the shared objective of establishing Assam as a semiconductor skilling hub, alongside the National Institute of Electronics and Information Technology (NIELIT), discussed in section 17.3.

CSIR-NEIST traces its origin to 1961, when it was established as the Regional Research Laboratory, Jorhat, before its later renaming. It operates as a multidisciplinary CSIR laboratory organised into six divisions: Biological Sciences and Technology, Chemical Sciences and Technology, Coal and Energy, Engineering Sciences and Technology, Geo Sciences and Technology, and Material Sciences and Technology. Over its history the institute states it has generated more than 100 technologies concentrated in agrotechnology and in biological and oil field chemicals, of which approximately 40 per cent reached commercial application (CSIR-NEIST, n.d.). No project-level or recent-year output figures specific to 2024 to 2026 could be verified from institutional sources accessed during this research; the institute's current active research portfolio for the period covered by this report is accordingly a measurement gap, recorded in section 17.8.

AAU, headquartered at Jorhat, is the State's principal centre for agricultural research and its most demonstrable point of connection between a university laboratory and Assam's flood-exposed farming population, a linkage Chapter 18 examines from the production economics side. The university's Assam Rice Research Institute at Titabar has developed submergence-tolerant rice varieties, including Ranjit Sub1, which was carried to farmers through Krishi Vigyan Kendra frontline demonstrations in flood-prone districts across the 2018 to 2019 through 2022 to 2023 seasons under the supervision of the Indian Council of Agricultural Research's Agricultural Technology Application Research Institute, Guwahati. More recent research, published in 2025, screened 6,274 elite rice genotypes drawn from the International Rice Research Institute's germplasm collection for submergence and stagnant flooding tolerance, with field trials conducted at Titabar. The study identified 89 outstanding genotypes, of which 37 showed high submergence tolerance, 35 showed tolerance to stagnant flooding, and 17 showed both, against an average genotype survival rate of 50 per cent and survival above 80 per cent in the most tolerant lines (Anumalla et al., 2025). This is a live, internationally collaborative research pipeline addressing precisely the flood exposure problem Chapter 14 documents, and represents one of the clearer examples in this chapter of research output connected to a documented State problem.

Tezpur University, a central university, maintains active research programmes in its Department of Energy, including work on biofuel synthesis from waste feedstocks such as used cooking oil and on nanostructured catalyst materials for hydrogen energy applications, and in its Department of Food Engineering and Technology, including processing research on coconut milk, curcumin-enriched nanoemulsions and resistant starch products derived from culinary banana. No verifiable current source confirmed the university's involvement in computational linguistics for regional languages, a claim present in earlier unverified drafting of this chapter, and that claim has accordingly been dropped rather than repeated.

None of the four institutions above publishes, in a form located during this research, a technology transfer or patent commercialisation register specific to Assam-based licensees or spinout companies. Given that IIT Guwahati is a Institution of National Importance with substantial national patent output, and that a functioning university-industry technology transfer office is the standard mechanism through which academic research becomes local enterprise, the absence of such a published register for Assam is a first-order measurement gap for this chapter, addressed further in section 17.8.

17.3 The Jagiroad Semiconductor Plant and High-Tech Workforce Formation

Tata Electronics' Outsourced Semiconductor Assembly and Test (OSAT) facility at Jagiroad, Morigaon district, built on the site of the former Hindustan Paper Corporation Nagaon Paper Mill, is the largest private investment project undertaken in North East India, with a stated capital outlay of 27,000 crore rupees under the Union Government's Modified Scheme for Semiconductor Assembly, Testing, Marking and Packaging. Prime Minister Narendra Modi virtually laid the foundation stone on 13 March 2024, alongside two semiconductor facilities in Gujarat, in a combined announcement valued at approximately 1.25 lakh crore rupees. Tata Electronics held the ground-breaking ceremony at the Jagiroad site on 3 August 2024, attended by Chief Minister Himanta Biswa Sarma and Tata Sons Chairman N. Chandrasekaran. Chapter 4 examines the industrial financing, land allocation and supply chain dimensions of the project; this chapter confines itself to its implications for research and workforce formation.

Reported figures for the plant's eventual scale vary considerably by source and date. At the time of the ground-breaking ceremony in August 2024, the project was widely reported, including by the Union Government's own news service, as expected to create 15,000 direct jobs and a further 12,000 indirect jobs, a combined figure of approximately 27,000 (News on Air, 2024; Business Today, 2024). Other contemporaneous reports cited a lower direct-jobs figure of 1,500 (Assam Tribune, 2024a). Daily production capacity has been reported both as 48 million chips at full operational scale (at the time of the foundation stone announcement) and, in a 2026 report, as 15 billion chips annually, a figure broadly consistent with the earlier daily estimate but not identical to it, and the two have not been reconciled in available reporting. By contrast with these projected totals, the most recent and specific figure located during this research describes actual current employment rather than an eventual target: an Assam Tribune report, published as the facility approached its "early 2026" production start, states that the plant currently provides jobs to 2,000 youths, predominantly from Assam, with the facility's chief executive, Randhir Thakur, stating that for every job created directly at Jagiroad, an additional ten jobs would be created in the surrounding ecosystem (Assam Tribune, 2026). No single figure in this range can be treated as definitive; the pattern across sources is of large, round projected totals issued at each project milestone, against a much smaller and specific reported current headcount as the facility neared operation.

Skill formation tied to the plant runs through two channels beyond the IIT Guwahati convening role described in section 17.2.1. First, on 3 January 2025, the National Institute of Electronics and Information Technology (NIELIT) was formally inaugurated as a Deemed to be University at an event in Guwahati attended by the Governor of Assam, the Union Minister of Electronics and Information Technology Ashwini Vaishnaw, and Chief Minister Himanta Biswa Sarma. At the same event, NIELIT's Director General signed a Memorandum of Understanding with Tata Electronics' chief executive to establish skill centres and develop diploma and certification programmes and workshops specifically in semiconductor Assembly, Testing, Marking and Packaging technologies, with a new NIELIT campus planned at Jagiroad itself (Mokokchung Times, 2025). Second, the Assam Tribune's 2026 reporting states that approximately 500 women from Assam are undergoing training in chip packaging operations at other Tata Electronics facilities, and that the company has signed memoranda of understanding with ten equipment vendors from Singapore, Malaysia and Japan, alongside an existing training and research support agreement with Tokyo Electron, with collaboration involving IIT Guwahati and NIELIT described as "underway" for further training programme development (Assam Tribune, 2026). Separately, the national Chips to Startup (C2S) programme, run by the Ministry of Electronics and Information Technology, aims to train 85,000 engineers in Very Large-Scale Integration and embedded system design and to produce 175 Application-Specific Integrated Circuits and 20 System-on-Chip working prototypes over five years, delivered through roughly 100 academic institutions and research organisations nationally, including Indian Institutes of Technology (Ministry of Electronics and Information Technology, 2024). IIT Guwahati's specific throughput under this national programme, as distinct from its convening role in section 17.2.1, could not be verified from Assam-specific sources and is recorded as a gap.

The pattern across sections 17.2 and 17.3 is consistent: Assam now has real, dated institutional commitments tying its universities and a national skilling body to the Jagiroad plant, which is a substantive change from a research ecosystem that previously had little connection to the State's industrial base. What is not yet available in public reporting is a verified, audited account of how many people have actually completed this training and been placed in plant or supply-chain employment, as opposed to how many have been announced as eventual beneficiaries of programmes still being built out. Chapter 5 records a similar pattern in respect of Assam's wider higher-education-to-employment pipeline, and the semiconductor skilling effort should be read as a high-visibility instance of that broader structural question rather than as a separate problem.

17.4 Intellectual Property and the Geographical Indication Portfolio

Unlike most figures in this chapter, Assam's Geographical Indication registrations are, in principle, individually verifiable against the GI Registry's own publication record, since each registration is gazetted with a product name and a date. In practice, this research could not

access the GI Registry's own searchable database directly, and secondary reporting on Assam's cumulative GI count is markedly inconsistent. One frequently repeated figure states that Assam held 41 GI tags as of 2025, registered between April 2007 and March 2025, of which 21 belong to Bodo community products (a figure that appears internally inconsistent with the same source's total, and is reported here as stated in the source rather than corrected). A separate compilation lists 31 named and dated registrations. Other 2026 reporting states the total at approximately 37 prior to that year's additions. Given this spread, this chapter records individually named and dated GI registrations that are corroborated by more than one source, and treats the precise current cumulative total as unverified.

Confirmed Registrations

GI tagged product	Category	Year registered
Muga Silk of Assam	Textile / handicraft	2007
Assam (Orthodox) Tea	Agricultural	2008
Tezpur Litchi	Agricultural	2013
Karbi Anglong Ginger	Agricultural	2014
Joha Rice of Assam	Agricultural	2016
Boka Chaul / Chokuwa Rice	Agricultural	2018
Kaji Nemu (Assam lemon)	Agricultural	2019
Sakua Rice	Agricultural	2019
Judima (Dimasa rice wine)	Agricultural / traditional	2021
Gamosa / Gamocha	Textile	2022
Majuli Mukha Shilpa (masks)	Cultural handicraft	2024
Majuli manuscript painting	Cultural handicraft	2024
Assam Jaapi	Cultural handicraft	2024
Assam Bihu Dhol	Cultural handicraft	2024
Sarthebari metal craft	Handicraft	2024
Asharikandi terracotta craft	Handicraft	2024
Panimeteka (water hyacinth) craft	Handicraft	2024
Mising handloom products	Textile	2024
Bodo Dokhona	Textile	2024
Bodo Eri silk	Textile	2024
Bodo Gamsa	Textile	2024
Nine Bodo musical instruments (Jwmgra, Serja, Sifung, Thorkha, Gongar Dunjina, Kham, Khardwi, Gongona, Jotha)	Cultural / instruments	2024
Karbi Anglong handloom products	Textile	2026
Assam Bihu Pepa	Cultural / instrument	2026
Bah Silpa (Assamese bamboo craft)	Handicraft	2026
Deori handloom products	Textile	2026

Source: Compiled from AssamInfo (n.d.), corroborated for the 2026 additions by The Shillong Times (2026), Eastern Mirror Nagaland (2026) and Organiser (2026). Years for pre-2024 entries and the large 2024 batch are as stated by the compiling source; the GI Registry's own gazette was not directly accessible during this research and individual dates should be treated as reported rather than independently verified against the primary register.

The 2024 batch, heavily weighted toward Bodo community textiles, instruments and crafts, together with the four additional 2026 registrations covering Karbi Anglong handloom, Deori handloom, Bihu Pepa and bamboo craft, indicate a deliberate recent policy push to register the intangible cultural production of Assam's tribal communities, a pattern distinct from the earlier, more agriculture-weighted registrations of 2007 to 2021.

17.4.3 Commercialisation

A GI tag confers legal protection against imitation and, where actively marketed, a price premium, but registration alone does not create market access. None of the sources consulted for this chapter identified a State-run GI product testing laboratory, an export-oriented GI marketing board, or published turnover data for any Assam GI product's export or premium-price sales. This mirrors the pattern found in Chapter 12 with respect to Assam's self-help group and handloom weaving networks: the State has built the legal and cultural registration layer but not the aggregation, quality certification and market linkage layer that would convert registration into household income. Given that several 2024 and 2026 GI registrations cover craft and textile products made predominantly by women in tribal and riverine communities, closing this commercialisation gap connects directly to the livelihood promotion agenda examined in Chapter 12.

17.5 Specialised Knowledge Institutions

Three institutions established in Assam over the past two decades extend the State's knowledge base into pharmaceutical research, design and social science, though the extent of their integration with the wider innovation ecosystem addressed elsewhere in this chapter is not established in available sources.

The National Institute of Pharmaceutical Education and Research (NIPER), Guwahati, established in 2008, is discussed in section 17.2.4 above in respect of its Bio-NEST bioincubator. The National Institute of Design (NID), Assam, established under the NID (Amendment) Act, 2019, occupies a 30-acre campus at Tocklai, Jorhat, whose architecture incorporates a bamboo geodesic dome and dedicated wood and bamboo workshops, and which offers a Bachelor of Design programme with specialisations in Textile and Apparel Design, Communication Design, and Industrial Design, a curriculum with an evident, if not formally documented, connection to the State's handloom and craft economy examined in section 17.4. The Tata Institute of Social Sciences (TISS), Guwahati, was established as an off-campus centre in 2011, with its foundation stone laid in 2010, and now operates from a 24.5-acre campus within the Assam Engineering College grounds at Jalukbari, offering a five-year integrated Masters programme and a two-year Master of Arts in Social Work across

four specialisations (community organisation and development practice, counselling, livelihoods and social entrepreneurship, and public health), together with Master's programmes in Peace and Conflict Studies and in Sociology and Social Anthropology.

17.6 Youth Science Outreach

The Assam Science Technology and Environment Council (ASTEC), an autonomous body under the State's Department of Science, Technology and Environment established in 1986 to 1987, has built one of the State's more extensive and verifiable science outreach networks: 219 Aryabhatta Science Centres, one in each of the State's development blocks at the time of establishment, the first batch launched on 28 February 2008, National Science Day. Each block-level centre was equipped with audio-visual systems, a library of science video films, and soil testing and microbiology kits (ASTEC, n.d.). This is a real, State-built, block-level science infrastructure network, though no source located during this research provided a current operational status assessment, updated equipment inventory, or usage data for these centres, which is recorded as a gap in section 17.8.

The earlier, unverified draft of this chapter claimed that over 1,200 Atal Tinkering Labs (ATLs) had been established in Assam under the national Atal Innovation Mission. No Assam-specific figure could be verified during this research. Nationally, more than 10,000 ATLs have been established across India, engaging over 1.1 crore students, with the Union Government announcing a plan to establish 50,000 further ATLs nationally over 2025 to 2030 (search-derived national reporting, unattributed to a single dated source with sufficient specificity for citation). Assam's specific ATL count, and hence whether the earlier chapter's 1,200 figure bore any relationship to reality, is recorded as a measurement gap rather than repeated or estimated.

17.7 Skill Development for High-Tech Industry

Section 17.3.3 above records the two specific, dated skilling initiatives tied to the Jagiroad plant: the NIELIT to Tata Electronics Memorandum of Understanding of January 2025, and the IIT Guwahati convened Semiconductor Horizons Workshop of May 2024. What could not be verified during this research is any published account of the Assam Skill Development Mission's own curriculum reform specifically for cleanroom technology, precision electronics, or other semiconductor-adjacent trades, despite the Mission's status as the State's primary vocational training body. The Mission's own course listing is maintained through a downloadable configuration file and an external dashboard rather than a searchable public curriculum document, which limited what could be verified about current course content during this research. This is recorded as a measurement gap. What is documented is workforce activity at the level of the anchor employer itself, namely the approximately 500 women reported to be training in chip packaging operations and the 2,000 people reported in current direct employment at Jagiroad (Assam Tribune, 2026), rather than at the level of a State skilling mission with a published enrolment and placement record comparable to those maintained for, for example, the rural livelihoods programmes examined in Chapter 12.

17.8 Measurement Gaps

This chapter could not verify a substantial number of figures central to assessing Assam's innovation and knowledge economy, and it is important to record them explicitly rather than to allow the absence of a figure to be silently filled by an earlier, invented one. Assam's research and development expenditure as a share of Gross State Domestic Product could not be verified from any credible source. India's national Gross Expenditure on Research and Development stood at 0.84 per cent of Gross Domestic Product in 2023 to 2024, according to a government statement to Parliament reported in July 2026, up from 0.66 per cent in 2019 to 2020, with the private sector's share of national R&D spending overtaking the government's for the first time in that year, at 51.8 per cent against 48.2 per cent (Business Standard, 2026). No State-disaggregated figure for Assam, whether from the Department of Science and Technology or the State's own Directorate of Economics and Statistics, could be located; this is a first-order gap for a State receiving one of the country's largest single high-tech industrial investments, and the earlier draft's figure of 0.15 per cent of Gross State Domestic Product is accordingly withdrawn as unverifiable rather than repeated.

Other significant gaps include: an audited register of startups incubated through The Nest, as distinct from the Chief Minister's public figures; the actual relationship, if any, between the 200 crore rupee Assam Venture Capital Fund announced in January 2026 and the 310 crore rupee Capital Venture Fund described in the 2025 to 2030 Startup and Innovation Policy; a verified count of GI tags currently held by Assam against the GI Registry's own primary database, which could not be directly accessed during this research; any published technology transfer or patent licensing register for IIT Guwahati, CSIR-NEIST, AAU or Tezpur University specific to Assam-based enterprises; CSIR-NEIST's current, as opposed to historical, active research portfolio and output; a reconciled, audited figure for direct and indirect employment at the Jagiroad plant, given the wide spread between the 1,500, 15,000, and 27,000-total figures reported at different points and the 2,000 currently-employed figure reported as the plant approached operation; IIT Guwahati's specific throughput of trained engineers under the national Chips to Startup programme; current operational status and usage data for ASTEC's 219 Aryabhata Science Centres; the number of Atal Tinkering Labs operating in Assam; and a published, searchable current curriculum for the Assam Skill Development Mission's semiconductor and electronics-adjacent trades. A State attempting to manage a transition into high-technology manufacturing should be able to publish each of these figures on demand; that most could not be independently verified during this research indicates the underlying data either does not exist in published form or is not being systematically compiled.

17.9 Strategic Priorities

1. **Publish an audited innovation and startup register.** Against a Chief Minister's public figure of 615 startups incubated since 2021 and a stated 200 crore rupee Assam Venture Capital Fund (Newkerala, 2026), for which no independent programme report could be located, the Department of Innovation, Incubation and Startup should publish an annual register of incubated startups, disbursed grant amounts by tier, and verified employment

created, reconciled against the Startup and Innovation Policy 2025 to 2030's funding structure. Target: first published register by the end of 2027, with Assam restored from the "Aspiring Leader" tier to the "Leaders" tier or above in the DPIIT States' Startup Ecosystem Ranking by its next edition after 2026, and sustained in a top-two tier through to 2031.

2. **Establish university-industry technology transfer offices at IIT Guwahati, CSIR-NEIST, AAU and Tezpur University.** No Assam-specific patent licensing or spinout register could be verified for any of the four institutions during this research, a substantial gap given their combined research capacity. Target: a functioning technology transfer office publishing an annual patent and licensing report at each of the four institutions by 2029, and at least ten Assam-registered enterprises operating on licensed university technology by 2031, rising to fifty by 2047.
3. **Convert the Jagiroad semiconductor skilling commitments into an audited placement pipeline.** The NIELIT to Tata Electronics Memorandum of Understanding of January 2025 and the IIT Guwahati convened semiconductor skilling partnership of May 2024 are real, dated commitments, but current verified direct employment at the plant stood at 2,000 as it approached production in early 2026 (Assam Tribune, 2026), well below the 15,000 to 27,000 range projected at the 2024 ground-breaking. Target: a jointly published NIELIT, IIT Guwahati and Tata Electronics annual training and placement report from 2027 onward, with a verified 15,000 Assam residents trained in semiconductor-adjacent trades and a stated proportion placed in plant or supply-chain employment by 2031.
4. **Build a GI product commercialisation and testing infrastructure.** Assam's confirmed GI portfolio spans at least 25 distinctly named and dated registrations across agricultural, textile and craft categories, with a substantial 2024 to 2026 expansion into Bodo, Karbi, Mising and Deori community products, but no State-run GI testing laboratory or export marketing board could be identified. Target: establish at least one accredited GI product testing and certification facility and a State GI marketing body by 2029, with independently verified export or premium-market sales data published annually from 2030 onward.
5. **Commission and publish a verified Assam R&D expenditure survey.** Assam's research and development spending as a share of Gross State Domestic Product could not be verified from any source during this research, against a national figure of 0.84 per cent of Gross Domestic Product in 2023 to 2024 (Business Standard, 2026). Target: a first published, methodologically documented State R&D expenditure survey, disaggregated by government, higher education and private sector spending, by 2028, with a numerical baseline established at that point rather than assumed.
6. **Resolve the reported inconsistency in Assam's startup venture capital instruments.** The 200 crore rupee Assam Venture Capital Fund announced in January 2026 and the 310 crore rupee Capital Venture Fund described in the 2025 to 2030 policy document do not reconcile in available reporting. Target: a single, published statement from the Department of Innovation, Incubation and Startup clarifying fund structure, corpus and deployment status within one year of this report's publication.

7. **Extend science outreach infrastructure verification and renewal.** ASTEC's 219 Aryabhatta Science Centres represent real, State-built, block-level infrastructure established from 2008, but no current operational or usage data could be located. Target: a full operational audit of all 219 centres by 2028, with equipment renewal and connectivity upgrades completed at centres found non-functional, and an accompanying, verified count of Atal Tinkering Labs operating in Assam published for the first time.

CHAPTER 18: AGRICULTURE, ALLIED SECTORS AND FOOD SECURITY

Agriculture and allied activities account for approximately 35 per cent of Assam's Gross State Value Added at current prices for 2025 to 2026, roughly double the national primary sector share (Government of Assam, 2025, as recorded in Chapter 3). Chapter 3 establishes that this weight is substantially a compositional artefact, reflecting an unusually large tea plantation sub-sector, an extractive industry classified within the primary aggregate, and a manufacturing base too small to dilute the denominator, rather than evidence of agricultural strength. This chapter examines the sector on its own operational terms and reaches a consistent finding: a structure of very small, fragmented holdings; a rice economy still overwhelmingly dependent on a single monsoon season; contested and internally inconsistent official data on irrigation coverage; and a tea industry that produces roughly half of India's tea while its smallholder growers sell green leaf below the cost of production.

Against this structural weakness, the State has recorded genuine delivery achievements in the past two Kharif Marketing Seasons. Paddy procurement under the Minimum Support Price mechanism crossed 8 lakh metric tonnes for the first time in 2024 to 2025, and inland fish production has risen for six consecutive years, moving the State close to self-sufficiency in fish, though not all the way there. These are real gains, verified below from primary and departmental sources, and they matter because they show that State machinery can move commodity systems when incentives and institutional design are aligned. The same period saw the Agriculture and Allied Activities budget head fall from a revised estimate of Rs 6,676 crore in 2025 to 2026 to a budgeted Rs 5,421 crore in 2026 to 2027, a decline of 19 per cent, though still above the 2024 to 2025 actual of Rs 4,782 crore (PRS Legislative Research, 2026, as recorded in Chapter 2). Whether procurement and fisheries gains can be sustained and extended to the weaker parts of the sector, particularly tea grower income and irrigation, on a flat or falling allocation is an open question this chapter does not resolve but flags for the fiscal chapter's attention.

A second and unexpected finding concerns the State's own statistics. This chapter draws its core cropping, land use, livestock, fishery and horticulture data from the Directorate of Economics and Statistics' *Assam at a Glance 2025* publication, cross-checked wherever possible against departmental press reporting. In two instances, on irrigated area and on fish production, the Directorate's own tables and the reporting attributed to the line department diverge by a wide margin within the same broad period. This chapter reports both figures rather than silently choosing one, and treats the divergence itself as a governance finding: a sector cannot be planned reliably when the State's own data systems do not agree with each other.

The chapter proceeds through cropping pattern and productivity, irrigation, agricultural marketing and MSP procurement, food processing, animal husbandry and dairy, fisheries, horticulture and sericulture, agricultural credit and insurance, and the tea sector, before closing with measurement gaps and strategic priorities.

18.1 Cropping Pattern, Land Use and Productivity

Assam's total geographical area is 78.44 lakh hectares (7,843,800 hectares), of which forest occupies 18.29 lakh hectares and a further 25.16 lakh hectares is not available for cultivation, comprising barren and uncultivable land and land under non-agricultural use. Net area sown stood at 27.56 lakh hectares in 2022 to 2023 (provisional), against a total cropped area of 41.22 lakh hectares (Directorate of Economics and Statistics, Assam, 2025). Dividing the two published aggregates gives a cropping intensity of approximately 149.5 per cent, meaning the average unit of net sown land carries very close to one and a half crops a year. This is a computed ratio rather than a figure separately published by the Directorate as a headline statistic, and a directly published cropping intensity series, which would allow the trend over time to be tracked with confidence, could not be located and is recorded as a measurement gap in section 18.10.

Rice: Area, Production and Yield by Season

Rice is grown in Assam across three distinct seasonal crops, Ahu (autumn, sown pre-monsoon and harvested before the main flood peak), Sali (winter, the principal monsoon-season crop) and Boro (summer, grown under irrigation or residual moisture in the dry season). The Directorate of Economics and Statistics' provisional estimates for 2023 to 2024 are as follows.

Crop	Area (lakh hectares)	Production (lakh MT)	Yield (kg per hectare)
Ahu rice (autumn)	0.60	0.79	1,329
Sali rice (winter)	18.58	42.97	2,348
Boro rice (summer)	3.78	11.64	3,080
Total rice	22.96	55.39	2,444
Wheat	0.09	0.13	1,434
Maize	1.04	5.33	5,143
Potato	0.99	10.23	10,193
Total food grains	25.63	62.09	2,451
Sugarcane	0.29	13.80	47,231
Jute (dry fibre)	0.57	6.81 (lakh bales)	2,161
Rapeseed and mustard	3.20	2.51	786
Total oilseeds (excluding coconut)	3.63	2.66	776

Figures are provisional for 2023 to 2024, converted from the Directorate's published data in thousand hectares and thousand tonnes to lakh units and rounded to two decimal places. Source: Directorate of Economics and Statistics, Assam (2025).

Sali accounts for approximately 81 per cent of total rice area and 78 per cent of total rice production, confirming its position as the dominant crop of the valley floor and, by extension, the crop whose fortunes each year are most exposed to the flood cycle examined in Chapter 14. Boro, grown under irrigation or residual soil moisture in the dry season, occupies only about 16 per cent of rice area but delivers 21 per cent of production, reflecting a yield of 3,080 kilogrammes per hectare against Sali's 2,348 kilogrammes, an advantage of

approximately 31 per cent attributable substantially to assured water and to the more consistent adoption of improved varieties in the Boro season. Ahu, once a more prominent component of the cropping calendar, has been reduced to a marginal 2.6 per cent of rice area and 1.4 per cent of production, the smallest and lowest-yielding of the three seasons.

The productivity gap between Sali and Boro is the single most consequential fact in this section for policy, because it indicates the scale of yield that assured irrigation can unlock within a variety mix Assam already grows, without requiring a change of crop or cropping calendar. Section 18.2 examines why that assured irrigation remains scarce.

The Index of Agricultural Production, published by the Directorate on a base of 2007 to 2008 equal to 100, stood in 2023 to 2024 (provisional) at 166.90 for rice, 194.40 for pulses, 179.06 for food grains, 148.45 for oilseeds and 158.29 for all commodities combined (Directorate of Economics and Statistics, Assam, 2025). Pulses have grown fastest among the major groups, though from a small base, while oilseeds have grown the slowest, a pattern consistent with the low average oilseed yield of 776 kilogrammes per hectare recorded in the table above.

The Agriculture Census for the reference year 2021 to 2022 recorded 30.21 lakh operational holdings in Assam covering 25.77 lakh hectares, giving an average operational holding size of approximately 0.85 hectares (Directorate of Economics and Statistics, Assam, 2025). The distribution is heavily skewed toward the smallest size class: marginal holdings of less than one hectare number 24.20 lakh, or 80 per cent of all holdings, but occupy only 7.29 lakh hectares, 28 per cent of operated area. At the other end, large holdings of more than ten hectares number only 13,000, well under one per cent of holdings by count, yet occupy 5.73 lakh hectares, 22 per cent of operated area, a share almost as large as that held by the four-fifths of farmers in the marginal category.

This structure explains a great deal of what follows in this chapter. A holding of well under a hectare, farmed predominantly under rainfed Sali paddy, generates a marketable surplus too small to justify individual investment in irrigation, storage or mechanisation, and leaves the household exposed in full to both price risk and flood risk in a single cropping season. Aggregation, whether through cooperatives, producer companies or the self help group network examined in Chapter 12, is therefore not an optional refinement to Assam's agricultural strategy but close to a structural necessity given the underlying farm size distribution.

Fertiliser consumption in 2023 to 2024 totalled 2,88,656.62 tonnes, comprising 2,01,484 tonnes of nitrogen, 51,367.63 tonnes of phosphorus and 35,801.99 tonnes of potash, at a consumption rate of approximately 59 kilogrammes per hectare of gross cropped area (Directorate of Economics and Statistics, Assam, 2025). A verified, directly comparable national average consumption rate for the same reference year could not be retrieved in this session and is not asserted here; the earlier draft of this chapter's claim of a specific national benchmark of 138 kilogrammes per hectare could not be verified and has accordingly been dropped rather than repeated.

18.2 Irrigation

Irrigation is the clearest instance in this chapter of the State's own data not agreeing with itself. The Directorate of Economics and Statistics' *Assam at a Glance 2025* records a net irrigated area of 2.51 lakh hectares and a gross irrigated area, comprising canal and tubewell sources, of 2.02 lakh hectares for 2023 to 2024, sourced to the Chief Engineer, Irrigation Department (Directorate of Economics and Statistics, Assam, 2025). Separately, the Irrigation Minister informed the State Assembly, as reported in March 2025, that net irrigated area had reached 6.95 lakh hectares and gross irrigated area 8.80 lakh hectares in 2024 to 2025, up from 3.25 lakh hectares and 4.55 lakh hectares respectively in 2015 to 2016, describing the coverage as having almost doubled over the intervening decade (Sentinel Assam, 2025a).

These two figures, both attributable to the Irrigation Department and referring to closely adjacent years, differ by a factor of nearly three on net irrigated area. They cannot both be correct as stated, and this chapter does not attempt to adjudicate between them; both are reported as a documented conflict rather than resolved by selecting the more favourable number. What is not in dispute under either reading is the conclusion that follows from dividing net irrigated area by net sown area of 27.56 lakh hectares: irrigation coverage lies somewhere between roughly 9 per cent (Directorate of Economics and Statistics figure) and roughly 25 per cent (Assembly statement figure) of net sown area, a low proportion under either reading for a State with the highest per-hectare water availability of any Indian State, a paradox Chapter 3 also records. The Irrigation Department's own State Irrigation Plan sets a target of raising coverage to 52 per cent of cultivated area by 2027 (Irrigation Department, Government of Assam, 2024), a target that is far from being met on either of the two figures reported above.

Given the flood and drainage dynamics documented in Chapter 14, expansion of irrigation in Assam is properly understood less as canal-based large scheme construction, for which the terrain and hydrology are often unsuited, and more as a portfolio of minor and micro interventions: shallow tube wells, solar-powered lift irrigation under the PM-KUSUM scheme, and rehabilitation of community managed ponds and beels of the kind catalogued in the fisheries data of section 18.6, several of which double as irrigation sources in the dry season. The Boro rice yield premium documented in section 18.1.2 is the strongest available evidence that assured water, wherever it can be delivered, converts directly into food grain output in Assam's existing variety mix.

18.3 Agricultural Marketing and MSP Procurement

Assam's paddy procurement under the Minimum Support Price mechanism crossed a historic threshold in the 2024 to 2025 Kharif Marketing Season. Combining the first crop cycle, at 6,97,802.74 tonnes, and the second crop cycle up to 5 September 2025, at 1,04,757.98 tonnes, total procurement reached 8,02,560.72 tonnes, described by the Chief Minister as a historic achievement in the State's agricultural development (ChiniMandi, 2025). This is the first time recorded procurement has crossed the 8 lakh tonne mark, and it follows a sustained build-up from a much smaller base in earlier seasons documented elsewhere in State reporting, though

a single consistent multi-year series with a verified starting point could not be assembled from the sources retrieved this session and is recorded as a gap in section 18.10.

Procurement in the following Kharif Marketing Season, 2025 to 2026, was more modest in its outcome, illustrating that the prior season's record is not yet a stable new floor. Reporting from December 2025 set the season's overall procurement target at 7,55,500 tonnes, distributed among the Assam Food and Civil Supplies Corporation Limited, the Assam State Agricultural Marketing Board, the National Agricultural Cooperative Marketing Federation of India and the Food Corporation of India, operating through 179 procurement centres (Sentinel Assam, 2025b). By the close of the first-crop procurement window on 30 June 2026, however, reporting referenced a first-crop target of 8,00,000 tonnes, against which 6,88,796.40 tonnes had been procured, an achievement rate of 86 per cent, from 51,780 of 72,098 registered farmers, through 185 active procurement centres (Sentinel Assam, 2026a). The two reported targets, 7,55,500 tonnes at the start of the season and 8,00,000 tonnes at its close, are not reconciled in the sources retrieved and are reported here as a further instance of the data inconsistency documented in section 18.2. What is clear on either reading is that roughly three in ten registered farmers who applied were not among those who ultimately transacted, a participation gap worth investigating alongside the procurement volume itself.

The Minimum Support Price for the 2025 to 2026 season was set at Rs 2,369 per quintal for common variety paddy and Rs 2,389 per quintal for Grade A variety, an increase of Rs 69 per quintal on the previous season (Sentinel Assam, 2025b, 2026a). Procurement in the 2025 to 2026 first crop season was carried out substantially through the Assam Food and Civil Supplies Corporation Limited, which accounted for 5,37,191.46 tonnes from 41,548 farmers, with the National Agricultural Cooperative Marketing Federation of India, the Food Corporation of India and the Assam State Agricultural Marketing Board accounting for smaller shares (Sentinel Assam, 2026a).

The transition from historically low farm-gate price realisation, in which farmers reportedly sold to intermediaries well below the notified Minimum Support Price, to a procurement system moving upward of 6.9 to 8.0 lakh tonnes a season through a network of paddy procurement centres, is a genuine institutional achievement and should be recorded as such. It should equally be recorded that the achievement rests on demand-driven, season-specific targets that have moved inconsistently across successive years in the State's own public reporting, and that farmer participation, at 51,780 of 72,098 registrants in the most recent season reported, still leaves a substantial minority of registered farmers without a completed transaction. Reconciling procurement centre capacity, payment turnaround and farmer participation is a more immediate priority than expanding the nominal procurement target, since a higher target achieved at the same 86 per cent participation rate would still leave a comparable number of registered farmers unserved.

18.4 Food Processing and Value Addition

Chapter 3 identifies food processing intensity, the share of primary agricultural, horticultural, livestock and fisheries output processed within the State, as the single largest identified employment opportunity in the Assam economy, and sets a target of raising it to 25 per cent

by 2035 and 40 per cent by 2047 from an unspecified and evidently low present level. This chapter's task is to describe the physical infrastructure this target depends on, and the description is thin relative to the ambition.

The State's principal dedicated food processing infrastructure is the North East Mega Food Park at Tihu, Nalbari, inaugurated in May 2015 at a project cost of Rs 76 crore on 50 acres, comprising industrial sheds, developed plots for lease to processing units, a dry warehouse of 10,000 tonnes capacity and cold storage of 3,000 tonnes capacity, with six satellite Primary Processing Centres proposed at Nagaon, Badarpur, Tinsukia, Barapani, Krishnai and Kajalgaon to provide processing and storage facilities closer to farms (Press Information Bureau, 2015). At inauguration the park was projected to leverage a further Rs 250 crore of investment across 30 to 35 processing units, generate an annual turnover of Rs 450 to 500 crore, provide direct and indirect employment to 6,000 people, and benefit 25,000 to 30,000 farmers. These are the founding project figures; a current audit of how many of the projected units are operational, what employment and farmer benefit have actually materialised more than a decade after inauguration, and whether the six satellite centres were built, could not be retrieved in this session and is recorded as a measurement gap.

The Pradhan Mantri Formalisation of Micro Food Processing Enterprises scheme operates in Assam under the standard North Eastern and Himalayan State funding pattern of 90 per cent Central and 10 per cent State share, against a national target of formalising approximately 2 lakh micro food processing units (Ministry of Food Processing Industries, 2025). An Assam-specific count of units approved, seed capital disbursed or beneficiaries covered under the scheme could not be retrieved in this session and is recorded as a gap; the earlier draft's figure of 4,200 micro-processors assisted could not be verified and has been dropped.

Processing capacity in tea, the sector's most developed processing chain, is examined separately in section 18.9, since it operates through a distinct industry structure of estate and bought-leaf factories rather than through the general food processing schemes described here.

18.5 Animal Husbandry and Dairy

The 20th Livestock Census, with reference year 2019, recorded 109.09 lakh cattle, 4.22 lakh buffaloes, 43.15 lakh goats and a combined poultry population of 451.25 lakh, of which fowls accounted for 331.06 lakh and ducks 120.19 lakh (Directorate of Economics and Statistics, Assam, 2025, sourcing the Directorate of Animal Husbandry and Veterinary Department). Provisional and projected output estimates for 2023 to 2024 record milk production of 1,150 million litres, egg production of 623 million numbers and meat production of 68,800 tonnes (Directorate of Economics and Statistics, Assam, 2025). A separately reported figure for 2023 to 2024 gives milk production at 1,149.7 million litres, up from 1,069.4 million litres in 2022 to 2023, egg production at 623 million, matching the Directorate's figure exactly, and meat production at 68.80 thousand tonnes, also consistent (Sentinel Assam, 2025c). The two sources therefore corroborate one another closely on livestock output, in contrast to the irrigation and, as section 18.6 shows, fisheries data.

Meat production of 68,800 tonnes should be read against an estimated requirement of approximately 3,370 lakh kilogrammes, or 3.37 lakh tonnes, a year, derived by the reporting outlet from the Indian Council of Medical Research's per capita consumption guideline of 10.8 kilogrammes (Sentinel Assam, 2025c). On that reckoning, in-State meat production covers roughly one fifth of estimated requirement, with the balance met through inter-State supply, though a verified, department-published self-sufficiency percentage for meat, as distinct from the reporting outlet's derived estimate, could not be located and is recorded as a gap.

The West Assam Milk Producers' Cooperative Union Limited, marketed as Purabi Dairy, is the State's principal organised dairy cooperative. Its processing plant has a rated capacity of 1.5 lakh litres per day; average daily procurement had risen to 1.6 lakh litres by 2025 to 2026, with peak procurement crossing 2 lakh litres per day, and annual turnover reached Rs 400 crore in 2025 to 2026, a 33 per cent increase over Rs 306 crore in 2024 to 2025 (Ministry of Cooperation, Government of India, 2026). The cooperative has entered a partnership with the National Dairy Development Board to double processing capacity to 3 lakh litres per day, and the Chief Minister announced in July 2025 a State-wide target of reaching 10 lakh litres per day of processing capacity within three years, with new units planned at Silchar, Dibrugarh and Jorhat among other locations (Business Standard, 2025). A milk production subsidy of Rs 5 per litre was launched in July 2025 to support dairy farmers directly (News on Air, 2025).

Set against these figures, the scale of the organised procurement sector remains small relative to total State production. One report places Assam's total daily milk production at approximately 29 lakh litres, of which the organised sector, even after the addition of newer processing plants, procures well under 3 lakh litres per day (Sentinel Assam, 2025c). If that estimate is approximately right, organised cooperative procurement currently reaches a low single-digit percentage of total daily production, meaning the State's ambitious 10 lakh litre per day processing target is as much a challenge of extending procurement infrastructure and cooperative membership into unorganised milksheds as it is a challenge of installing processing capacity. Whether the 29 lakh litre per day production estimate itself has been independently verified against a livestock census-based calculation could not be established in this session and is recorded as a further gap.

18.6 Fisheries

As with irrigation, Assam's fisheries statistics present two figures that do not agree. The Directorate of Economics and Statistics' *Assam at a Glance 2025*, sourced to the Directorate of Fisheries, records fish production of 4,73,881.18 tonnes, approximately 4.74 lakh tonnes, for 2023 to 2024 (Directorate of Economics and Statistics, Assam, 2025). Separately, a Fisheries Department production trajectory reported in July 2026 gives a different and generally higher series: 3.73 lakh tonnes in 2019 to 2020, rising to 3.93 lakh tonnes in 2020 to 2021, 4.17 lakh tonnes in 2021 to 2022, 4.43 lakh tonnes in 2022 to 2023, 4.99 lakh tonnes in 2023 to 2024, a record 5.29 lakh tonnes in 2024 to 2025, and an estimated 5.54 lakh tonnes in 2025 to 2026 (Sentinel Assam, 2026b). For the single overlapping year, 2023 to 2024, the

two sources differ by approximately 5 per cent, 4.74 lakh tonnes against 4.99 lakh tonnes, a smaller gap than the irrigation discrepancy but still an unreconciled difference between two arms of the same State Government reporting on the same indicator for the same year.

This chapter uses the Fisheries Department trajectory as the basis for the trend discussion that follows, since it is the more recent, more granular and departmentally specific series, while flagging the Directorate of Economics and Statistics figure as a documented alternative for 2023 to 2024.

On the Fisheries Department trajectory, production has risen every year for six consecutive years, from 3.73 lakh tonnes in 2019 to 2020 to an estimated 5.54 lakh tonnes in 2025 to 2026, a cumulative increase of approximately 48 per cent (Sentinel Assam, 2026b). Despite this sustained growth, Assam remains a net importer of fish. Imports, drawn principally from Andhra Pradesh, Uttar Pradesh, West Bengal and Bihar, have fluctuated rather than declined steadily over the same period: 20,073 tonnes in 2019 to 2020, falling to 12,829 tonnes in 2020 to 2021, rising to a peak of 26,430 tonnes in 2022 to 2023, and standing at 20,623.56 tonnes in 2025 to 2026 (Sentinel Assam, 2026b). This fluctuating pattern, rather than a steady decline, corrects an unverified claim in the earlier draft of this chapter that imports had fallen in a straight line from 55,000 tonnes in 2018; no source for that 2018 figure or for a linear decline could be retrieved, and the claim has accordingly been dropped and replaced with the verified series above.

The Fisheries Department has calculated that if 90 per cent of the State's population consumes an average of 20 kilogrammes of fish a year, actual demand would be of the order of 6.62 lakh tonnes (Sentinel Assam, 2026b). Against that demand estimate, even the highest production figure available, 5.54 lakh tonnes for 2025 to 2026, leaves a shortfall of just over 1 lakh tonnes, or approximately 16 per cent of estimated requirement. The State is therefore correctly described as approaching, but not yet at, self-sufficiency in fish, a more precise formulation than the "near self-sufficiency" language sometimes used in official communication.

Assam's inland fisheries rest on a varied resource base. As at 2023 to 2024, the Directorate of Fisheries recorded 2,072 registered and unregistered beels covering 71,843.50 hectares, 5,60,019 ponds and tanks covering 96,968.53 hectares, river fisheries across 11,304.48 hectares, forest fisheries across 6,260.06 hectares, derelict water bodies and swamps across 83,021.86 hectares, and reservoir fisheries across 3,096 hectares, an aggregate water resource base of approximately 2.72 lakh hectares (Directorate of Economics and Statistics, Assam, 2025). Fish seed production in the same year stood at 20,179.57 million numbers. The scale of derelict and swamp water bodies, at over 83,000 hectares, indicates a substantial reserve of underutilised water surface that could support further aquaculture expansion under schemes

such as the Pradhan Mantri Matsya Sampada Yojana, subject to tenure, drainage and wetland ecology considerations that this chapter has not independently assessed.

18.7 Horticulture and Sericulture

The Directorate of Horticulture and Food Processing, Assam, estimated horticultural area for 2023 to 2024 at 6.94 lakh hectares, comprising fruits at 1.64 lakh hectares, vegetables at 3.01 lakh hectares, spices at 1.17 lakh hectares and tuber crops at 1.12 lakh hectares, with combined production of approximately 22.24 lakh tonnes across the four categories, comprising fruits at 2.70 lakh tonnes, tuber crops at 8.48 lakh tonnes, spices at 5.34 lakh tonnes and vegetables at 5.72 lakh tonnes (Directorate of Economics and Statistics, Assam, 2025). A note on this figure is required in the interest of transparency: the Directorate's published table labels the production column simply "M.T." without the "thousand" qualifier used consistently in the corresponding area column, but dividing the stated production by the stated area for each category yields plausible per-hectare yields, for example approximately 7.5 tonnes per hectare for tuber crops, only if the production figures are read as thousand tonnes; read literally as tonnes, the implied yields would be under two kilogrammes per hectare, which is not credible. This chapter accordingly reads the production series as thousand tonnes, consistent with the area series, and reports the resulting production estimate of approximately 22.24 lakh tonnes with that caveat attached rather than presenting it as unambiguous.

Assam's horticultural portfolio includes several products with Geographical Indication protection, a subject Chapter 17 treats in depth: Kaji Nemu, the Assam lemon, which received its Geographical Indication tag in 2019 and was declared the State fruit in February 2024; Joha rice, an aromatic premium rice variety; and Boka Chaul, a soft, par-boiled rice requiring only soaking rather than boiling (GI Registry India, 2025, as recorded in Chapter 17). These products illustrate the value-addition opportunity available within Assam's existing crop base, discussed further in the strategic priorities below, though the marketing, certification and export infrastructure needed to convert Geographical Indication status into realised farm-gate premium is, as Chapter 17 records, still largely absent.

Sericulture is a further allied activity of particular significance to Assam, which alone among Indian States produces Muga silk, itself Geographical Indication protected and designated the State fabric. In 2023 to 2024, 8,722 private-sector sericulture villages engaged 2,40,350 Eri farmers, 32,353 Muga farmers and 28,473 Mulberry farmers, cultivating food plants across 29,581.42 hectares for Eri, 13,059.02 hectares for Muga and 2,648.42 hectares for Mulberry. Cocoon production reached approximately 7,371 tonnes for Eri and 146.55 tonnes for Mulberry, with Muga cocoon production recorded separately by number at 10,859.18 lakh cocoons. Raw silk production reached approximately 5,527 tonnes for Eri, 203 tonnes for Muga and 15.4 tonnes for Mulberry (Directorate of Economics and Statistics, Assam, 2025, sourcing the Directorate of Sericulture, Assam). Eri silk, produced overwhelmingly for

domestic textile use, dominates the sector by volume, while Muga, the smaller but higher-value output, carries the State's distinctive export and craft identity.

18.8 Agricultural Credit, Insurance and Risk Management

Between 2020 to 2021 and 2024 to 2025, Assam farmers received Rs 531.51 crore in claims under the Pradhan Mantri Fasal Bima Yojana and the Restructured Weather Based Crop Insurance Scheme, with a further Rs 25.61 crore still pending as at 30 June 2025 (Sentinel Assam, 2025d). Over the same five-year period, 46.77 lakh farmer applications were enrolled, but only 7.46 lakh farmers, approximately 16 per cent of applicants, actually received a benefit payment, a conversion rate that reflects both the design of an indemnity scheme, under which a payout occurs only where a notified loss is established, and possible gaps in yield data collection and claim processing that the source article specifically attributes delays to (Sentinel Assam, 2025d). In the 2025 to 2026 Kharif season, 5,06,452 farmers were insured as at 31 July 2025, covering 4.51 lakh hectares (Sentinel Assam, 2025d). Under the scheme as operated in Assam, the State Government fully subsidises the farmer's premium share for insured area up to one hectare, so that a farmer growing a notified crop on up to one hectare pays a nominal premium of Rs 1 (Directorate of Agriculture, Government of Assam, n.d.).

A verified, Assam-specific figure for total institutional agricultural credit flow or the number of active Kisan Credit Cards in the State could not be retrieved in this session; the earlier draft's figures of Rs 14,850 crore in credit flow and 11.40 lakh active cards are unverified and have been dropped rather than repeated. What can be reported is the national policy context within which Assam's farmers operate: the national Ground Level Credit target for agriculture and allied sectors for 2025 to 2026 was set at Rs 32.5 lakh crore, including Rs 5 lakh crore earmarked for animal husbandry, dairying and fisheries, and the Kisan Credit Card crop loan limit was raised nationally from Rs 3 lakh to Rs 5 lakh, with the collateral-free limit raised from Rs 1.6 lakh to Rs 2 lakh, effective from January 2025 (Press Information Bureau, 2025). Whether Assam's farmers, with an average operational holding of 0.85 hectares as recorded in section 18.1.3, are drawing on these enhanced limits at a rate comparable to farmers in States with larger average holdings is not established by any source retrieved in this session.

Assam's cooperative structure, which provides an institutional channel for agricultural credit alongside commercial and regional rural banks, comprised 11,626 registered cooperative societies with 41.94 lakh members, share capital of Rs 200.41 crore and working capital of Rs 384.49 crore in 2023 to 2024 (Directorate of Economics and Statistics, Assam, 2025). This aggregate covers all cooperative societies, not agricultural credit societies alone, and a disaggregation isolating Primary Agricultural Credit Societies specifically could not be retrieved and is recorded as a gap.

18.9 The Tea Sector: Volume, Structure and Value Capture

Assam produced 687.76 million kilogrammes of tea in calendar year 2025, up from 658.92 million kilogrammes in 2024, an increase of 28.84 million kilogrammes, and accounted for over 50 per cent of India's national production of 1,369.98 million kilogrammes in 2025, which itself grew by 66.45 million kilogrammes, or approximately 5 per cent, over 2024 (Tea Board of India data, as reported in Sentinel Assam, 2026c). The Tea Board's own reporting describes the 2025 figures as provisional and subject to revision. Of Assam's 2025 output, big growers, meaning the organised estate sector, contributed 345.39 million kilogrammes and small growers 342.37 million kilogrammes, an almost even split in which small growers accounted for approximately 49.8 per cent of State production (Sentinel Assam, 2026c). Assam alone therefore accounts for roughly half of India's tea and, on the customary international estimate recorded in Chapter 3, close to one seventh of world production, from a State that is home to under 0.4 per cent of the world's population.

Assam's organised tea sector comprised 763 big grower gardens in 2024, cultivating 2,32,864.28 hectares, alongside 1,33,502 registered small tea growers cultivating 1,25,802.83 hectares, a combined tea area of approximately 3.59 lakh hectares (Directorate of Economics and Statistics, Assam, 2025, sourcing the Tea Board of India's Regional Office, Guwahati). A separately published industry account for June 2025 gives closely corroborating figures of 762 organised gardens, 481 estate factories and 331 bought-leaf factories, approximately 1,33,000 registered small tea growers, and 3.59 lakh hectares under cultivation, and states that the tea industry directly employs approximately 7 lakh workers, with roughly twice that number engaged in ancillary activities (eGov Magazine, 2025). Chapter 3 separately records the State's tea area, on Tea Board figures for a slightly different reporting point, at approximately 3.47 lakh hectares, of which 1.14 lakh hectares is held by roughly 1.2 lakh small growers; the modest variation across these figures, spanning 1.14 to 1.26 lakh hectares of small grower area and 1.2 to 1.33 lakh registered small growers depending on source and vintage, is reported here rather than collapsed into a single false-precision number.

The bought-leaf factory segment, comprising 331 factories that purchase green leaf from small growers who lack their own processing capacity, is the structural link between the smallholder tea economy and the branded, exported product, and it is also, as the next subsection shows, the point at which value capture by the grower breaks down.

Tea sold through the Guwahati Tea Auction Centre in 2023 to 2024 totalled 50.30 million kilogrammes of leaf grade at an average price of Rs 216.78 per kilogramme, and 23.50 million kilogrammes of dust grade at an average price of Rs 203.87 per kilogramme (Directorate of Economics and Statistics, Assam, 2025, sourcing the Tea Board of India). These auction prices, for made tea ready for sale, stand in stark contrast to the raw green leaf prices examined next.

Green leaf prices paid to small tea growers fell through 2025 to levels widely reported as below the cost of production. Prices that stood in the region of Rs 30 per kilogramme before the Durga Puja period in parts of Upper Assam had, by late August 2025, crashed to Rs 10 to 15 per kilogramme, with reports of prices as low as Rs 10 to 11 per kilogramme in some areas, against a stated production cost of Rs 25 to 27 per kilogramme for green leaf (ETV Bharat, 2025). Growers interviewed in Golaghat district described receiving prices that left "nothing" once labour and input costs were covered (ETV Bharat, 2025). The All Assam Small Tea Growers' Association has demanded a statutory Minimum Support Price of Rs 30 per kilogramme for green leaf, a demand it has pressed since at least 2021 and which remained unmet through 2025 (Sentinel Assam, 2021; ETV Bharat, 2025). Since approximately four to five kilogrammes of green leaf are required to produce one kilogramme of made tea, a factory buying leaf at Rs 11 per kilogramme is acquiring the raw material for a kilogramme of made tea, before processing cost, for roughly Rs 44 to 55, against a Guwahati auction average realisation for made leaf tea of Rs 216.78 per kilogramme, illustrating the scale of margin retained downstream of the grower.

Contributing factors cited by local officials include competition from imported tea, with one legislator noting that more than 300 companies nationally were reported to be importing lower-cost tea, including from Kenya, and blending it into product sold domestically, depressing demand for Assam-origin leaf (ETV Bharat, 2025, citing Mrinal Saikia, MLA). A verified, quantified assessment of how much of the 2025 price collapse is attributable to import competition, to oversupply from expanded small grower area, to bought-leaf factory market power, or to weak auction-linked price discovery at the green leaf stage could not be assembled from the sources retrieved in this session and is recorded as a gap.

Following a recommendation of the Minimum Wages Advisory Board on 26 February 2026, the Governor of Assam approved an interim wage increase of Rs 30 a day for tea garden workers, effective 1 April 2026, applying uniformly to workers in estate and small tea gardens in both valleys. In the Brahmaputra valley the daily wage rose from Rs 250 to Rs 280; in the Barak valley, from Rs 228 to Rs 258 (Business Standard, 2026). The Chief Minister indicated that further wage discussion would follow within six months under the Union Government's new Labour Codes, and suggested the eventual settled wage could exceed Rs 300 a day (Business Standard, 2026). The persistent Brahmaputra to Barak valley wage differential of Rs 22 a day after the increase is itself a long-standing feature of Assam's tea wage structure that this chapter has not been able to trace to a specific current justification in the sources retrieved.

The 2026 to 2027 State Budget moved on two fronts to support the tea economy financially even as garden wages and small grower prices remained under pressure. It raised the

Agricultural Income Tax exemption threshold from Rs 2.5 lakh to Rs 10 lakh of annual agricultural income, and introduced a subsidy of Rs 3 per kilogramme for export-oriented and premium-quality Assam tea (Government of Assam, 2026, as recorded in Chapter 2). As Chapter 2 observes, any fiscal measure touching the tea sector must be read against the condition of small growers documented in this section; a tax exemption threshold increase chiefly benefits larger, tax-liable estate operations rather than the small grower selling green leaf at a loss, while the per-kilogramme export subsidy, if it reaches export-oriented processors rather than being fully absorbed as processor margin, could in principle support the premium segment of the market that offers the clearest route to better grower realisation. Whether the subsidy's design includes a pass-through requirement to growers could not be established from the sources retrieved and is recorded as a gap.

Chapter 12 separately records that the State announced in July 2026 that 3,50,000 tea garden workers were to receive land deeds alongside houses under the rural housing programme, converting a historically title-less estate workforce into title-holding households, a measure with potential long-run significance for the tea garden population's access to credit and asset-based entitlements that sits alongside, but does not resolve, the immediate wage and price pressures documented here.

18.10 Measurement Gaps

This chapter identifies nine specific measurement gaps that limit confident assessment of the sector. First, and most consequential, the State's own data systems disagree with each other on two indicators central to this chapter: net irrigated area, reported at 2.51 lakh hectares by the Directorate of Economics and Statistics against 6.95 lakh hectares in Assembly testimony by the Irrigation Minister for closely adjacent years, and inland fish production for 2023 to 2024, reported at 4.74 lakh tonnes by the Directorate against 4.99 lakh tonnes by Fisheries Department reporting. Neither discrepancy is reconciled in any source retrieved in this session. Second, a directly published, time-series cropping intensity figure from the Department of Agriculture or the Directorate of Economics and Statistics, as distinct from the ratio computed in section 18.1.1 from two separately published aggregates, could not be located. Third, a consistent multi-year Minimum Support Price paddy procurement series with a verified starting point could not be assembled; only the 2024 to 2025 and partial 2025 to 2026 season figures reported in section 18.3 could be verified. Fourth, the current operational status of the North East Mega Food Park at Nalbari, more than a decade after its 2015 inauguration, including units actually operating, employment actually generated and farmers actually benefiting, against the founding projections cited in section 18.4, could not be verified. Fifth, an Assam-specific count of beneficiaries, units approved or seed capital disbursed under the Pradhan Mantri Formalisation of Micro Food Processing Enterprises scheme could not be retrieved. Sixth, a verified, Assam-specific figure for total institutional agricultural credit flow and the number of active Kisan Credit Cards could not be retrieved; only national policy parameters could be confirmed. Seventh, a disaggregation of Assam's 11,626 cooperative societies isolating Primary Agricultural Credit Societies specifically, with their membership and lending volume, could not be retrieved. Eighth, a quantified decomposition of the 2025 tea green leaf price collapse among import competition,

oversupply, bought-leaf factory pricing power and weak price discovery could not be assembled, nor could the pass-through design, if any, of the 2026 to 2027 Budget's tea export subsidy to growers. Ninth, the small tea grower area and count reported across sources retrieved in this session range from 1.14 to 1.26 lakh hectares and 1.2 to 1.33 lakh growers depending on vintage and issuing office; a single authoritative current figure could not be established.

Where earlier drafting of this chapter asserted precise figures that could not be verified in this session, including a national fertiliser consumption benchmark, a linear multi-year decline in fish imports from a stated 2018 base, specific PMFME beneficiary counts, and specific institutional credit and Kisan Credit Card totals, those figures have been omitted rather than reproduced, consistent with the treatment recorded throughout this chapter.

18.11 Strategic Priorities

1. **Reconcile the State's own agricultural data systems before setting new targets on top of them.** The Directorate of Economics and Statistics and the Irrigation and Fisheries Departments currently publish materially different figures for net irrigated area and for fish production covering the same or adjacent years, documented in sections 18.2 and 18.6. Target: a single reconciled, jointly published irrigation and fisheries data series, with a documented methodology, before the end of 2027, and an annual joint statistical reconciliation exercise thereafter.
2. **Close the Sali to Boro yield gap through targeted irrigation and variety expansion rather than through unfunded aspiration.** Sali rice, at 2,348 kilogrammes per hectare across 18.58 lakh hectares, yields 31 per cent less than Boro rice at 3,080 kilogrammes per hectare (Directorate of Economics and Statistics, Assam, 2025), a gap substantially attributable to assured water availability. Target: expand net irrigated area, on the Directorate of Economics and Statistics baseline of 2.51 lakh hectares or the Assembly-reported baseline of 6.95 lakh hectares, whichever is confirmed accurate under priority 1, to at least 40 per cent of net sown area by 2031 and 60 per cent by 2047, prioritising solar lift irrigation under PM-KUSUM and community pond and beel rehabilitation over large canal schemes given Assam's terrain and flood exposure.
3. **Convert MSP procurement success into full farmer participation, not merely a higher headline target.** Only 51,780 of 72,098 registered farmers, 72 per cent, transacted in the 2025 to 2026 first-crop procurement season despite 185 active procurement centres (Sentinel Assam, 2026a). Target: raise farmer participation among registrants to at least 90 per cent by 2029 through resolution of payment and logistics bottlenecks, before pursuing further increases in the nominal procurement target beyond the 8 lakh tonne level already reached in 2024 to 2025.
4. **Build organised dairy procurement infrastructure into unorganised milksheds, not only additional processing capacity.** Organised cooperative procurement through WAMUL and Purabi Dairy reaches well under 3 lakh litres of an estimated 29 lakh litres produced daily across the State (Sentinel Assam, 2025c), even as processing capacity targets rise toward 10 lakh litres a day (Business Standard, 2025). Target: raise organised

sector procurement to at least 25 per cent of estimated State production by 2031 and to a majority share by 2047, through village-level cooperative membership expansion beyond the existing Brahmaputra valley heartland into Barak valley and hill districts.

5. **Close the remaining fish production to demand gap and stabilise self-sufficiency.** Even at the record estimated 2025 to 2026 production of 5.54 lakh tonnes, a shortfall of just over 1 lakh tonnes remains against estimated demand of 6.62 lakh tonnes (Sentinel Assam, 2026b). Target: eliminate the production to demand gap by 2031, using the derelict and swamp water body reserve of over 83,000 hectares identified in section 18.6.3 as the principal expansion base, and end structural reliance on inter-State fish imports, which stood at 20,623.56 tonnes in 2025 to 2026, by 2035.
6. **Establish a transparent green leaf price floor mechanism for small tea growers, backed by verified cost data.** Green leaf prices fell to Rs 10 to 11 per kilogramme in 2025 against a stated production cost of Rs 25 to 27 per kilogramme (ETV Bharat, 2025), while auction realisation for made tea averaged Rs 216.78 per kilogramme in 2023 to 2024 (Directorate of Economics and Statistics, Assam, 2025). Target: establish, jointly with the Tea Board of India, a published, cost-audited minimum green leaf price benchmark, updated quarterly, by 2028, and require that the Rs 3 per kilogramme export subsidy introduced in the 2026 to 2027 Budget carry a documented grower pass-through condition rather than terminating at the processor.
7. **Extend Geographical Indication protection into realised farm-gate premium for Kaji Nemu, Joha rice and Boka Chaul.** Chapter 17 records that Assam's Geographical Indication portfolio lacks the certification laboratories, cooperative aggregation and export linkages needed to convert legal protection into price premium. Target, coordinated with Chapter 17's priorities: establish dedicated quality certification and aggregation infrastructure for the three Geographical Indication-tagged food crops by 2031, with a measured farm-gate price premium over non-certified equivalents reported annually from 2032.
8. **Publish an annual State Agriculture and Allied Sectors Statistical Reconciliation Report.** Given the irrigation, fisheries and procurement target discrepancies documented throughout this chapter, the Directorate of Economics and Statistics should publish, from 2027 onward, a single annual document reconciling figures reported by line departments, the Directorate itself, and ministerial or Assembly statements on the core indicators of this chapter, namely irrigated area, fish production, MSP procurement targets and outturns, milk procurement, and small tea grower area and count, so that policy target-setting in the sector rests on an agreed factual base rather than on whichever figure was most recently quoted.

CHAPTER 19: TOURISM, CULTURE AND CREATIVE ECONOMY

Assam's tourism asset base is, on the evidence available, genuinely exceptional and largely unmanufactured: a globally significant wildlife population recovered from near extinction, a newly inscribed cultural World Heritage property, a river system that is itself a designated national waterway, and a living tradition of textile and craft production that remains embedded in ordinary household life rather than confined to a museum. The central finding of this chapter is that this asset base has, since 2024, begun to convert into measurable visitor flows and international recognition, most visibly through the inscription of the Charaideo Moidams on the UNESCO World Heritage List and a doubling of the annual passenger handling capacity of Guwahati's international airport. It is also, on the same evidence, an asset base whose economic conversion remains partial, uneven across circuits, and thinly measured, with basic figures such as full-year visitor totals for the most recent financial year, footfall at two of the State's premier wildlife parks, and even the current stock of Geographical Indication registrations proving difficult to establish with confidence from the public record.

A second finding concerns the reliability of the figures already in circulation. Assam's own tourism statistics, when tracked from year to year, contain real volatility that secondary reporting frequently smooths into a misleadingly linear growth story. Domestic arrivals fell to 13.52 lakh in 2020 to 2021 under pandemic restriction, surged to a still unexplained peak of 98.12 lakh in 2022 to 2023, and settled back to 70.41 lakh in 2023 to 2024 (Assam Tourism Development Corporation, n.d.; The News Mill, 2025). A framework that reported only the peak, or only the most recent partial year, would materially misstate the trend. This chapter reports the full available series and states clearly where a year is complete and where it is partial.

A third finding concerns the gap between headline religious tourism claims and what can actually be verified. The Kamakhya Temple is unambiguously one of Assam's largest single tourist and pilgrimage draws, but published footfall estimates for it vary by an order of magnitude across sources and across years, from roughly two lakh on a single reopening day to over eight lakh devotees during the 2026 Ambubachi observance, with no single, consistently defined annual count available. This chapter treats that variance as a finding in its own right rather than resolving it by selecting the most convenient number, which is precisely the practice this framework exists to correct.

Fourth, the creative economy built on Assam's handloom and craft base is real and large by national standards, Assam recorded the highest number of handloom weavers of any Indian State in the most recent national census, but the specific figures most often quoted for individual centres such as Sualkuchi are drawn from surveys a decade or more old, and no more recent, comparably authoritative count could be located. The Geographical Indication portfolio built on this base, examined in detail in Chapter 17, is a genuine and growing institutional asset, and this chapter connects it to the tourism and creative economy dimension specifically.

This chapter covers the tourism asset inventory across natural, heritage, religious and riverine circuits; tourism infrastructure, including air connectivity, hospitality capacity and river cruise development; tourist arrival trends; cultural heritage preservation; creative industries and handicrafts; and film and media. It closes with a statement of measurement gaps and a set of strategic priorities.

19.1 The Tourism Asset Inventory

Assam's tourism assets fall into four circuits that are geographically overlapping but analytically distinct in visitor profile, seasonality and infrastructure requirement.

The natural and wildlife circuit is anchored by Kaziranga National Park and Tiger Reserve, a UNESCO natural World Heritage Site since 1985 and home to the world's largest population of the greater one horned rhinoceros, together with Manas National Park, also a natural World Heritage Site since 1985 and the subject of one of Assam's clearest conservation recovery stories, Orang National Park, and Dehing Patkai National Park, upgraded from wildlife sanctuary status and notified as a national park on 9 June 2021, which protects the largest surviving stretch of lowland rainforest in India (Dibrugarh District Administration, n.d.; Time8, 2020). Chapter 13 examines the ecological condition of this network in detail, including the 2022 rhinoceros census figure of 2,613 animals in Kaziranga and the unresolved absence of a more recent State-wide census; this chapter treats that population, and the Manas recovery from the List of World Heritage in Danger, as the ecological foundation on which wildlife tourism revenue and international visibility now rest.

The cultural and heritage circuit is anchored by the Charaideo Moidams, examined in detail in section 19.2, together with the Ahom-era monuments of Sivasagar town, principally the Rang Ghar amphitheatre, the Talatal Ghar palace complex and the Kareng Ghar, and the river island of Majuli. Majuli is conventionally described as the world's largest inhabited river island, though its area has contracted sharply under Brahmaputra erosion, from a historical extent sometimes cited at around 1,200 square kilometres to a present extent estimated at approximately 422 square kilometres in secondary compilations, a process examined from a land loss perspective in Chapter 13 (Explorer Horizons, 2024). Majuli is the seat of the Vaishnavite Sattras institution founded by the fifteenth century saint-reformer Srimanta Sankardeva, and its Sattras are simultaneously a living religious community, a repository of classical performing arts, and a heritage tourism draw. Reported counts of surviving Sattras on Majuli vary considerably across sources, from as few as 22 to as many as 31, against an original establishment sometimes put as high as 65, with the discrepancy attributed to consolidation and to losses from river erosion over the twentieth century (Explorer Horizons, 2024; Neelstoria, 2023). This chapter records the range rather than a single figure, since no authoritative current census of active Sattras could be located.

The religious and pilgrimage circuit is anchored by the Kamakhya Temple on Nilachal Hill in Guwahati, one of India's principal Shakti Peethas and the site of the annual Ambubachi observance, together with the multi-faith pilgrimage centre at Hajo and the historic Sattras of Barpeta. Footfall at Kamakhya is treated separately in section 19.1.1 given the scale of numerical inconsistency across sources.

The riverine and adventure circuit rests on the Brahmaputra itself, declared National Waterway 2 on 1 September 1988 over its 891 kilometre navigable stretch between Sadiya and the Bangladesh border, and is examined together with river cruise infrastructure in section 19.4.3 (Inland Waterways Authority of India, n.d.).

The scale of pilgrimage to Kamakhya is not in doubt; the precise annual figure is. The Assam Tourism Minister told the State Assembly on 12 March 2025 that more than 41 lakh domestic and foreign tourists had visited the Kamakhya Temple over the four years spanning 2021 to 2022 through the partial year 2024 to 2025, within a total of nearly 2.44 crore tourist arrivals to the State as a whole over the same period (The News Mill, 2025). That is a meaningful, officially stated, multi-year figure, but it is not an annual figure, and no single-year Kamakhya-specific total was located for this chapter.

Reporting on the annual Ambubachi Mela, the temple's largest single religious gathering, is similarly inconsistent. Ahead of the 2025 observance, held from 22 to 26 June, official sources anticipated close to ten lakh pilgrims, while reporting on the reopening day itself put actual attendance at around two lakh (Asian News International, 2025). For the 2026 observance, described in government reporting as the Ambubachi Mahayog, the Chief Minister stated on 27 June 2026 that more than eight lakh devotees had attended, calling it one of the largest gatherings in the event's history (Prokerala, 2026). These figures, an advance estimate of ten lakh, a same-day count of two lakh, and a subsequent year's post-event count of eight lakh, cannot be reconciled into a single trend without knowing whether they use consistent counting methods, and this chapter does not attempt to force them into one. What can be stated with confidence is that Kamakhya draws a pilgrim population in the high hundreds of thousands to low millions on its major festival dates and receives sustained year-round visitation as part of the broader Guwahati tourism circuit.

The temple is also the subject of the Maa Kamakhya Divya Lok Pariyojana, a corridor redevelopment project sanctioned under the Prime Minister's Development Initiative for North East Region at a stated cost of Rs 498 crore, intended to expand pilgrim handling capacity to between 8,000 and 10,000 persons at a time and announced by the Prime Minister in February 2024 as part of a wider Rs 11,000 crore package of Guwahati development projects (Organiser, 2024; GKToday, n.d.). Construction was subsequently stayed by the Gauhati High Court pending a hydrological survey of the effect of the corridor on the water sources of Nilachal Hill, with the Chief Minister stating in June 2024 that work was expected to resume within two to three months pending clearance from the Indian Institute of Technology, Guwahati (ETV Bharat, 2024). No confirmation of the project's subsequent construction status could be located for this chapter, and its current physical progress is recorded as a measurement gap in section 19.8.

19.2 Charaideo Moidams: World Heritage Inscription and Management

On 26 July 2024, at the 46th session of the World Heritage Committee held in New Delhi, the Moidams, the mound-burial system of the Ahom dynasty at Charaideo, were inscribed on the UNESCO World Heritage List as India's 43rd World Heritage property and the first World Heritage Site from north eastern India to be inscribed under the cultural, rather than natural, category (Press Information Bureau, 2024; News on AIR, 2024a). Chapter 13 examines this inscription in its environmental governance dimension; this chapter records its cultural and touristic significance and current management status.

The inscribed property comprises 90 individual moidams at Charaideo, selected as the best preserved and most architecturally complete group from a wider corpus of 386 moidams identified across the historical territory of the Ahom kingdom, which ruled Assam for roughly six centuries from the thirteenth century founding of the dynasty by Sukaphaa (Press Information Bureau, 2024). Popularly likened to the pyramids of Egypt for their earthen mound form over royal burial chambers, the moidams represent a funerary tradition distinct from the cremation practices that came to dominate elsewhere in the subcontinent (Drishti IAS, n.d.). The site had been on India's Tentative List since 15 April 2014 and was formally nominated for inscription in 2023.

Management of the inscribed property is divided between the Archaeological Survey of India, which manages the Group of Four Maidams, and the Assam Directorate of Archaeology, which manages the remainder of the site, under a Site Management Plan covering the period 2023 to 2030 (Time8, 2020; Press Information Bureau, 2024). At an event on 5 February 2026 at which the Chief Minister unveiled the official UNESCO World Heritage plaque at the site, the State Government stated that Rs 25 crore had been allocated for conservation, including regular maintenance, additional staffing and an annual maintenance fund, and announced plans for a dedicated research centre under a State university to support doctoral study of the site, including scientific work on preservation of unexcavated mounds (Social News XYZ, 2026). The same event identified urgent development of the buffer zone, comprising a further 21 moidams, temples and royal burial sites beyond the inscribed core, as a priority, alongside planned homestays and eco-guesthouses and promotion of the associated Me-Dam-Me-Phi ancestor veneration festival as a tourism draw (Social News XYZ, 2026).

On visitor numbers, the same February 2026 statement put footfall over the preceding year at approximately 80,000 domestic visitors and around 200 foreign visitors (Social News XYZ, 2026). These are small absolute numbers for a site of global heritage status, and they indicate a property still at the early stage of converting its designation into visitor economy activity, a pattern consistent with the general finding of this chapter that Assam's tourism asset base outstrips its current visitor conversion. Chapter 13 observes that the State's demonstrated capacity to manage encroachment and development pressure around Charaideo, rather than the inscription itself, will determine whether the site becomes a durable governance success on the model of Kaziranga and Manas; the tourism dimension of that same test is whether the announced interpretation and homestay infrastructure is actually delivered against the buffer zone it is meant to serve, since a site with weak on-ground interpretation converts heritage

status into a photograph opportunity rather than a multi-day visitor experience with the local economic multiplier the State evidently intends.

19.3 Tourist Arrival Trend

The Assam Tourism Development Corporation publishes an official year-by-year series of domestic and foreign tourist arrivals extending back to 2004 to 2005. The table below reproduces the most recent decade of that series together with the Corporation's own historical figures, and appends the partial 2024 to 2025 figure separately given elsewhere by the Tourism Minister.

Year	Domestic arrivals	Foreign arrivals	Status
2018 to 2019	60,27,002	41,209	Full year
2019 to 2020	51,46,307	18,594	Full year, pre-pandemic
2020 to 2021	13,51,690	347	Full year, pandemic trough
2021 to 2022	17,01,701	1,231	Full year, early recovery
2022 to 2023	98,12,195	18,946	Full year, peak of series
2023 to 2024	70,41,206	26,129	Full year
2024 to 2025	57,48,772	14,000	Partial year, to December 2024 only

Source: Assam Tourism Development Corporation (n.d.), Directorate of Tourism figures, corroborated for 2021 to 2022 through 2024 to 2025 by the Tourism Minister's statement to the Assam Legislative Assembly on 12 March 2025 as reported in *The News Mill* (2025).

The volatility in this series is analytically important. The 2022 to 2023 peak of 98.12 lakh domestic arrivals, more than the 2018 to 2019 pre-pandemic full year figure and nearly forty per cent above the following year's outturn, is most plausibly a rebound effect combining pent-up post-pandemic travel demand with base-year distortion, rather than a sustainable new plateau, since arrivals fell back to 70.41 lakh the following year. A framework that anchored a five-year or 2047 target to the 2022 to 2023 peak, as opposed to the more representative 2023 to 2024 figure, would set a materially misleading baseline. No verified full-year total for 2024 to 2025 could be located; the December 2024 partial figure of 57.49 lakh domestic and 14,000 foreign arrivals is the most recent point available and is recorded as such, with the complete year's outturn recorded as a measurement gap in section 19.8.

A statement to the Assam Legislative Assembly on 14 July 2026 by the Tourism Minister put cumulative tourist arrivals to Assam between 2016 to 2017 and 2025 to 2026 at 6,04,85,638, of which 2,41,192, or roughly 0.4 per cent, were foreign nationals (Sentinel Assam, 2026). For calendar year 2025 specifically, a Union Government statement to the Lok Sabha on 10 August 2026 recorded 33,858 foreign tourist visits to Assam, against 68,992 for Sikkim, which led the north eastern region, with Tripura at 27,320, Mizoram at 11,484, Meghalaya at

7,116, Nagaland at 5,425, Arunachal Pradesh at 4,582 and Manipur at 2,892 (Business Today, 2026). For the first half of calendar year 2026, Assam recorded 32,471 foreign visits against Sikkim's 43,734, and 46.04 lakh domestic visits, indicating that Assam remains the region's second-ranked, rather than leading, destination for international visitors despite having by far the largest and most internationally marketed wildlife and heritage asset base in the north east (Business Today, 2026). The same Union statement noted that its figures measure tourist visits rather than unique individual tourists, so a returning visitor within the reference period is counted more than once, a caveat that applies equally to the Assam-specific figures reported throughout this section.

The most frequently cited top source countries for foreign visitors to Assam are the United Kingdom, France, the United Arab Emirates, Australia, the United States, Switzerland, Nepal, Bangladesh, Canada, Sri Lanka, Japan, Spain, Belgium and Israel, and the Assam Legislative Assembly was told in July 2026 that Australia, Japan and all twenty-seven European Union member states had recently revised their travel advisories for Assam favourably, citing improvement in the law and order situation (Sentinel Assam, 2026). A favourable advisory revision by major source markets is a leading indicator worth monitoring, since it typically precedes rather than follows a rise in bookings, but it had not yet visibly moved Assam's regional ranking against Sikkim as of the mid-2026 data available.

Among individual sites, Kaziranga has the most reliable published visitor count. The park recorded 4,06,564 tourists in 2024 to 2025, including 17,693 foreign visitors, generating approximately Rs 10.90 crore in park revenue and making Kaziranga India's third most visited national park after Ranthambore and Periyar (Guwahati Plus, 2025; Deccan Herald, 2025). This represents continued growth from 1,32,930 visitors in 2014 to 2015, through 2,34,416 in 2021 to 2022, 3,24,836 in 2022 to 2023 and 3,27,493 in 2023 to 2024, a roughly threefold increase over the decade (Guwahati Plus, 2025). No comparably specific 2024 to 2025 visitor figures could be located for Manas or Orang National Parks; both parks reopened for the 2024 to 2025 ecotourism season in the third quarter of 2024, with Manas resuming public access on 27 September 2024 and Orang's safari operations facing a temporary pause into the same season, but their footfall for the year is recorded as a measurement gap (The Statesman, 2024; Sentinel Assam, 2024).

19.4 Tourism Infrastructure

The single largest recent infrastructure addition to Assam's tourism gateway is the new terminal at Lokapriya Gopinath Bardoloi International Airport, Guwahati, named "The Bamboo Orchids." The terminal was inaugurated by the Prime Minister on 20 December 2025 and began commercial operations on 22 February 2026, raising the airport's annual passenger handling capacity to 13.1 million (Adani, 2025; News on AIR, 2025b, 2026). The building spans approximately 1,40,000 square metres and includes a ninety-foot indoor rainforest feature marketed as the "Sky Forest" (Happy Fares, 2026). A capacity expansion of this scale is a necessary, though not sufficient, condition for the international arrival growth the State's own targets imply; whether airline route additions and seat capacity materialise to

use that capacity is not yet observable in the arrival data reviewed in section 19.3, which runs only to mid-2026.

Guwahati's five-star hotel stock is set to expand substantially. The Chief Minister stated in May 2025 that eleven new five-star hotels were in the pipeline for Guwahati, including two Marriott properties, a Marriott Resort and Spa and a Fairfield by Marriott, on a combined 25-acre site representing an announced investment of Rs 500 crore, together with four further Marriott hotels, two Taj Hotels in the Aerocity area, a replacement Taj property at Khanapara, a Lemon Tree Hotel on the national highway, and a 100-room expansion of the existing Radisson Blu (The Week, 2025). These are announced and under-construction projects rather than completed inventory; existing operating five-star capacity in Guwahati at the time of the announcement comprised the Radisson Blu, the Vivanta Guwahati and existing Taj properties (The Week, 2025). No independently verified current room count for Guwahati's luxury hotel stock, completed or under construction, could be located, and this is recorded as a measurement gap.

The Advantage Assam 2.0 Investment and Infrastructure Summit, held in Guwahati on 25 and 26 February 2025, generated widely varying reported investment totals across secondary sources, ranging from roughly Rs 2.5 lakh crore to figures in excess of Rs 4.9 lakh crore for all sectors combined, a spread wide enough that this chapter does not adopt any single aggregate figure (Elets eGov, 2025). Within that summit, Reliance Industries announced a Rs 50,000 crore multi-sector investment package that explicitly included hospitality among its target sectors, though no separately verified hospitality-specific or tourism-specific investment subtotal from the summit could be confirmed (Elets eGov, 2025).

The Brahmaputra, declared National Waterway 2 in 1988 over its 891 kilometre navigable length between Sadiya and the Bangladesh border, carries a mix of government, tourism and private vessel traffic alongside its role in freight and defence logistics (Inland Waterways Authority of India, n.d.). Established private cruise operators include Assam Bengal Navigation, operating on the Brahmaputra and Ganga since 2003, and international operators including Pandaw offer scheduled Brahmaputra itineraries. A new entrant, Viking Brahmaputra, an 80-guest vessel to be built indigenously by Hooghly Cochin Shipyard Limited, is scheduled to begin operations in late 2027 (Assam Tribune, 2025).

The Inland Waterways Authority of India has been expanding passenger and cruise-support infrastructure on the river: two steel gangway tourist jetties were completed at Pandu and Bogibeel in August 2025, with two further jetties under construction at Pandu targeted for completion by the end of 2025, and four additional tourist terminals are planned at Silghat, Biswanathghat, Neamati and Guijan (Sentinel Assam, 2025). Ro-Pax ferry services operate on the Neamati to Kamalabari and Sualkuchi to North Guwahati to South Guwahati routes, serving riverine communities as much as tourists, and lighthouse infrastructure is under

development at Pandu, Silghat, Biswanath and Bogibeel in partnership with the Directorate General of Lighthouses and Lightships (Sentinel Assam, 2025). This is a programme of individually modest but cumulatively significant infrastructure additions, and it is a more concrete basis for river tourism growth projections than the still-distant 2027 arrival of a single new luxury vessel operator.

19.5 Cultural Heritage Preservation

Cultural preservation responsibility in Assam sits with the Directorate of Cultural Affairs, supporting the Sattriya performing tradition, Bihu folk culture, mask-making and oral literature through artist support and monastic grants. Two points in this area require correction against commonly repeated but unverified claims.

First, Sattriya, the classical dance tradition of the Vaishnavite Sattras, was accorded status as one of India's eight classical dance forms by the Sangeet Natak Akademi on 15 November 2000, a significant and well documented national recognition (Anantam IAS, n.d.). It has not, however, been inscribed on the UNESCO Representative List of the Intangible Cultural Heritage of Humanity. That list currently comprises sixteen elements from India, most recently Deepavali, added in 2025, and running from the 2008 inscriptions of Kutiyattam Sanskrit theatre and Vedic chanting through Garba in 2023; no element from Assam or the wider north east appears on it (Wikipedia, n.d.). A claim of UNESCO intangible heritage status for Sattriya surfaced repeatedly in preliminary research for this chapter and should be treated as incorrect; the correct and still substantial claim is national classical status, not international inscription. This distinction matters for a State development framework because it affects what kind of advocacy, a UNESCO nomination campaign versus consolidation of an existing national status, is the appropriate next step, and conflating the two would misdirect institutional effort.

Second, the Charaideo inscription discussed in section 19.2 is Assam's third World Heritage property overall but its first under the cultural, rather than natural, criteria, a distinction with real consequence for the conservation instruments available: cultural sites are protected primarily through archaeological and buffer-zone regulation rather than the species and habitat management regimes that apply to Kaziranga and Manas, and the institutional capacity for the former is comparatively less established in Assam, as the still-modest scale of the Rs 25 crore initial conservation allocation noted in section 19.2 suggests relative to a global heritage designation.

19.6 Creative Industries and Handicrafts

Assam's handloom sector is, by national census measurement, the largest in India. The Fourth All India Handloom Census, conducted in 2019 to 2020 by the Ministry of Textiles, recorded 12.83 lakh individual weavers and 12.46 lakh handlooms in Assam, drawn from 10.9 lakh weaving households, the highest concentration of weaving households of any Indian State, with more than 90 per cent of weavers being women (Fibre2Fashion, n.d.; Assam Tribune, n.d.). This is the most authoritative available figure for the sector as a whole, and it is now

several years old; no more recent State-wide census-grade count was located, and an updated figure is recorded as a measurement gap.

For Sualkuchi specifically, sometimes described as the centre of Assam's commercial silk weaving and popularly nicknamed "the Manchester of the East," reported weaver and handloom counts vary considerably by survey vintage: a 2011 census-linked figure of 16,975 handlooms and 19,530 weavers, a 2012 study figure of 12,056 weavers of whom 57 per cent were women, and an undated compilation citing 13,752 active commercial handlooms with 54.75 per cent women weavers (Sundari Silks, n.d.; Noesis Literary, n.d.). None of these can be confirmed as the current figure, and this chapter records the range rather than adopting any single number as authoritative, consistent with the anti-fabrication standard applied throughout this framework; a genuinely current count of active Sualkuchi handlooms and weavers is a measurement gap.

Muga silk, the golden wild silk unique to Assam, received Geographical Indication registration in 2007, examined together with the rest of Assam's GI portfolio in Chapter 17 (Apex Fashion Lab, n.d.). Assam's share of national and global Muga production is reported inconsistently across sources: the Chief Minister has stated Assam accounts for 90 per cent of India's Muga silk production, while academic and industry sources variously report figures of 95 per cent of India's output and, in one estimate, 96.58 per cent of global demand against effectively the whole of India's output (DD News, n.d.; Fibre2Fashion cited estimates). All sources agree Assam is overwhelmingly dominant in Muga production nationally and globally; the precise percentage is not resolved in the public record and is recorded as such rather than adopting the most frequently repeated figure by default.

Beyond silk weaving, Sarthebari in Bajali district is the centre of Assam's bell-metal craft tradition, producing utensils, ritual objects and musical instruments, and Asharikandi in Dhubri district is the State's principal terracotta craft centre; both received Geographical Indication registration in 2024 with support from NABARD's Guwahati regional office, alongside four other crafts in the same NABARD-supported batch, together said to support close to one lakh people directly, a figure reported by NABARD but not independently verified for this chapter (Big News Network, 2024). On 1 April 2024 the State announced that nineteen traditional products and crafts had together received Geographical Indication registration, comprising six items including Bihu Dhol, Jaapi, Sarthebari metal craft, Panimeteka water hyacinth craft, Asharikandi terracotta craft and Mising handloom products, together with thirteen items associated with Bodo community textiles, instruments and dress, including Dokhona, Gamsa, Eri silk and nine named musical instruments (ANI, 2024; The Print, 2024). This is the same batch recorded in Chapter 17's Geographical Indication table, and its heavy weighting toward Bodo community material culture reflects a deliberate recent policy emphasis on registering the intangible cultural production of Assam's tribal communities, a pattern Chapter 17 identifies as distinct from the more agriculture-weighted registrations of the 2007 to 2021 period.

Chapter 17 records that Assam's cumulative Geographical Indication count is itself contested across sources, with figures of 31, 37 and 41 registrations all appearing in recent secondary reporting, and this chapter adopts the same position: individually named and dated registrations corroborated by more than one source are treated as confirmed, and the precise cumulative total is not. For the tourism and creative economy sector specifically, the practical significance of the Geographical Indication portfolio is that it is the one asset in this chapter for which individual claims are, in principle, independently verifiable against a public register, and it therefore offers the clearest foundation for authenticated craft tourism and branded export development, discussed further in section 19.9.

19.6.3 Mukha Shilpa and Craft-Linked Tourism

Majuli's mask-making tradition, Mukha Shilpa, centred on institutions including the Natun Samaguri Satra, received Geographical Indication registration in 2024 alongside Majuli manuscript painting, formally linking a living craft practised within the Sattrā system to a protected designation and to the island's broader heritage tourism positioning (Gaatha, n.d.). This is a useful illustration of how the cultural preservation function examined in section 19.5 and the creative economy function examined in this section are, on Majuli, effectively the same activity viewed from two angles: the mask-maker is simultaneously sustaining a Sattrā ritual practice and producing a marketable, now formally protected, craft object.

19.7 Film and Media

The Assam State Film (Finance and Development) Corporation, incorporated on 4 September 1974, provides loans, grants and subsidies to support Assamese cinema production (Wikipedia, n.d.-b). Under the Assam State Film Policy Rules, 2019, adopted by the State Cabinet in July 2019, eligible feature films of at least 72 minutes' duration may receive a production subsidy of 25 per cent of eligible cost, capped at Rs 25 lakh per film, with a maximum of 20 films supported in a year; a film that subsequently wins a National Film Award may receive the remaining 75 per cent of eligible cost refunded, up to a further cap of Rs 1 crore, and any individual producer is limited to two films' worth of support across a career (LegitQuest, n.d.; Sentinel Assam, 2019). Separate grant-in-aid provisions exist for documentary, animation, children's and science fiction films with a thematic connection to Assamese culture, land or people (LegitQuest, n.d.). This is a materially more constrained subsidy regime than the Rs 50 lakh figure that has circulated in some secondary summaries of Assam's film policy; the verified capped figure is Rs 25 lakh in production subsidy, with the larger sum available only as a post hoc National Award bonus under the stated conditions.

No verified, current figures on Assamese film production volume, screen infrastructure, or the volume of national or international productions filmed in Assam's landscapes were located for this chapter, and these are recorded as measurement gaps. Given the scale of Assam's landscape and heritage assets documented earlier in this chapter, an actively promoted film-location incentive, distinct from the domestic Assamese-language production subsidy examined above, is a plausible complementary instrument, but its absence or presence in current policy could not be confirmed from available sources.

19.8 Measurement Gaps

This chapter was unable to verify a number of figures that a State tourism and culture strategy would ordinarily require. The full-year 2024 to 2025 domestic and foreign tourist arrival total for Assam as a whole could not be located; only the partial year figure to December 2024 is available. Visitor footfall for Manas and Orang National Parks in 2024 to 2025 could not be located, in contrast to the well documented Kaziranga figure, leaving a significant gap in assessing wildlife tourism performance across the full protected area network examined in Chapter 13. A single, consistently defined annual pilgrim count for the Kamakhya Temple could not be established; the figures available range from a two lakh same-day count to an eight lakh post-event count in different years, and a four-year cumulative figure was the only officially stated multi-year data point found. The current construction status of the Maa Kamakhya Divya Lok Pariyojana corridor project, stayed by the Gauhati High Court in 2024 pending a hydrological survey, could not be confirmed beyond a June 2024 statement that work was expected to resume within two to three months. A current, authoritative count of active handlooms and weavers specifically at Sualkuchi could not be established, with available figures spanning surveys from 2011 and 2012 and one undated compilation. Assam's precise share of national and global Muga silk production is reported inconsistently, from 90 to 100 per cent, across official and academic sources. Assam's total cumulative stock of Geographical Indication registrations is reported inconsistently across sources as 31, 37 or 41, a matter examined in full in Chapter 17. A verified, official, recent estimate of tourism's share of Gross State Domestic Product or of tourism sector employment could not be located from a primary government source; academic literature repeatedly cites figures near 5.5 per cent of output and 10.5 per cent of employment, but the vintage and underlying methodology of these figures could not be confirmed, and they are not used as headline statistics in this chapter for that reason. A verified, tourism sector-specific investment subtotal from the Advantage Assam 2.0 summit of February 2025 could not be confirmed, against a wide and inconsistent range of reported whole-summit totals. Finally, current Assamese film production volume, screen infrastructure and the scale of external productions filmed in Assam could not be located. Where this chapter has reported a range or a partial figure rather than a single number, that reflects the state of the public record rather than an editorial choice to under-report the sector's performance.

19.9 Strategic Priorities

1. **Publish a single, reconciled annual tourism statistics bulletin.** Against a public record in which even the current financial year's full arrival total, individual park footfall for Manas and Orang, and Kamakhya's annual pilgrim count cannot presently be established with confidence, the Tourism Department should publish an annual bulletin consolidating domestic and international arrivals, by circuit and by major site, on a common financial year basis, replacing the current pattern of ad hoc legislative answers and press statements as the primary public data source. Target: first consolidated bulletin published for 2026 to 2027 within six months of that year's close, and every year thereafter.

2. **Convert the Charaideo Moidams inscription into a fully realised visitor destination, not a plaque.** Against a first full year of only approximately 80,000 domestic and 200 foreign visitors following a global heritage inscription (Social News XYZ, 2026), and an initial Rs 25 crore conservation allocation, the State should complete the announced interpretation centre, buffer zone development covering the further 21 associated moidams, and homestay infrastructure under the 2023 to 2030 Site Management Plan on a published timeline. Target: interpretation centre and buffer zone visitor infrastructure operational by 2029, with annual visitation to the site reaching at least five lakh domestic and 20,000 foreign visitors by 2035, tracked against the verified 2025 to 2026 baseline established under priority 1.
3. **Resolve the Kamakhya corridor project's legal and hydrological questions and publish a revised timeline.** The Rs 498 crore Maa Kamakhya Divya Lok Pariyojana has been under Gauhati High Court stay pending hydrological survey since 2024, with no confirmed public update on its status since June 2024 (ETV Bharat, 2024). The State and the Survey authorities should complete and publish the hydrological assessment, secure the required clearance, and issue a revised construction timeline, since an announced flagship project with an unresolved, unpublicised legal status for over two years is itself a governance failure independent of the project's eventual merits. Target: hydrological survey findings and a revised construction timeline published within twelve months.
4. **Close the wildlife park data gap at Manas and Orang.** Kaziranga's footfall, revenue and foreign visitor share are precisely reported; the equivalent figures for Manas, a UNESCO natural World Heritage Site with an internationally recognised conservation recovery story, and Orang are not published in comparably accessible form. Target: comparable footfall, revenue and foreign visitor reporting for Manas and Orang published on the same basis as Kaziranga from the 2026 to 2027 season onward, supporting a coordinated wildlife tourism marketing strategy across all three parks rather than Kaziranga alone.
5. **Commission an updated handloom and craft census for priority centres, led by Sualkuchi.** The most recent verifiable figures for Sualkuchi's weaver and handloom base date to 2011 and 2012, over a decade old, against a national handloom sector in which Assam already leads on the more recent 2019 to 2020 Fourth All India Handloom Census (12.83 lakh weavers, 12.46 lakh handlooms statewide). Target: an updated, published count for Sualkuchi and other priority craft centres, including Sarthebari and Asharikandi, by 2028, disaggregated by gender and by whether production uses a Silk Mark or equivalent Geographical Indication certification, establishing the baseline that Chapter 17's certification and market access recommendations require.
6. **Build authenticated, Geographical Indication-linked craft tourism circuits.** With at least twenty-five individually confirmed Geographical Indication registrations spanning silk, terracotta, bell metal, bamboo craft and Bodo community textiles and instruments (Chapter 17), and a live GI Registry that is in principle publicly searchable but was not directly accessible during this research, the State should establish verified craft trails linking Sualkuchi, Sarthebari and Asharikandi to the wider heritage and river cruise circuits, with on-site certification display so visitors can distinguish genuine GI-registered

production from unregistered imitation. Target: certified craft trail infrastructure operating at all three centres by 2031, integrated into the Charaideo, Majuli and Kamakhya circuits described in section 19.1.

7. **Match river cruise jetty and terminal investment with an operator development strategy.** The Inland Waterways Authority of India's jetty and terminal programme at Pandu, Bogibeel, Silghat, Biswanathghat, Neamati and Guijan is proceeding on a published, if modest, timeline, but the only major new luxury operator identified, Viking Brahmaputra, is not expected to begin service until late 2027. Target: at least three distinct river cruise operators, spanning budget Ro-Pax, mid-market and luxury segments, operating scheduled Brahmaputra services calling at four or more of the new terminals by 2031, up from the currently limited operator base.
8. **Correct the Sattriya heritage claim in State promotional material and pursue the genuine next step.** Sattriya holds Sangeet Natak Akademi classical dance status conferred in 2000 but is not on the UNESCO Representative List of Intangible Cultural Heritage, contrary to claims encountered during this research; State cultural promotion material should be audited and corrected accordingly, and the Directorate of Cultural Affairs should assess and, if merited, pursue an actual UNESCO nomination dossier for Sattriya or the Majuli Sattria tradition as a defined project with its own timeline, rather than allowing the incorrect claim to substitute for the real campaign. Target: promotional material audit completed within one year; a decision on whether to pursue formal UNESCO nomination taken and published within two years.

CHAPTER 20: CROSS-CUTTING THEMES AND INTEGRATED POLICY IMPERATIVES

This chapter does not introduce a new sector. It examines seven themes that cut across every sector chapter in this framework and asks whether the State's institutional architecture is coherent across them: performance against the Sustainable Development Goals, gender mainstreaming and the Gender Budget, youth policy and the demographic dividend, migration in its internal and cross-border forms, science and technology coordination, the statistical system that underlies every quantitative claim in this Report, and the mechanisms of citizen participation. The central finding is that Assam has genuine, verifiable achievements on several of these fronts, and that in nearly every case the achievement is better documented at the level of a single scheme or index than at the level of the system that is supposed to convert it into durable change.

Assam entered the "Front Runner" category of the NITI Aayog SDG India Index for the first time in the 2023-24 round, yet still ranked 23rd of 28 States, and its weakest individual goal is Quality Education, which Chapter 5 traces to a secondary dropout rate of 17.5 per cent in 2024 to 2025 (NITI Aayog, 2024, as reported in Pratidin Time, 2024; Ministry of Education, 2026). The State now runs a Gender Budget Statement allocating a sum reported as either 12,214 crore rupees or 12,160 crore rupees for 2026 to 2027, depending on the source, and a cash transfer scheme, Orunodoi, that has grown in three phases to reach approximately 37 to 40 lakh women; but the scheme's own publicised annual run rate does not reconcile with the 3,700 crore rupee budget line Chapter 2 records for it in the same financial year, and this framework cannot resolve that discrepancy from the material available. Assam has entered the phase of the demographic transition in which the working age share is rising, as Chapter 1 establishes, but this chapter finds that no verified, current, State level figure exists for what share of the population is actually of youth age, that the State has been reported as preparing a Youth Policy since at least July 2025 without confirmation that it has been notified, and that the instruments actually operating, the Chief Minister's Atmanirbhar Asom Abhijan and the Swami Vivekananda Assam Youth Empowerment Scheme, are seed capital and loan programmes rather than a policy framework.

Migration is the theme on which this framework's evidence base is thinnest. Assam is a net out migrating State on 2011 Census evidence and features prominently among the source States for inter-state migrant labour in destinations such as Kerala, but no current, State specific count of annual out-migration could be verified in this session, and figures of the kind that circulate in secondary compilations, claiming that a given number of workers leave Assam every year, could not be traced to a primary source and are accordingly not reproduced here. On the international border, by contrast, the evidence is current and specific: 86 per cent of Assam's frontier with Bangladesh was fenced as of July 2026, and the State Government reports substantive movement on implementing the Assam Accord's Clause 6 protections. The statistical system chapter examines a foundational problem that bears on every other chapter in this Report. Assam's Gross State Domestic Product series, and by extension every ratio computed against it in Chapter 2 and elsewhere, rests on a 2011-12 base year that the Union Government has now superseded nationally with a 2022-23 base, and this

framework could not establish when, or whether, Assam's own series will be rebased to match. A comparable problem affects the char and chapori tracts, whose most recent dedicated socio-economic survey dates to 2002-03.

This chapter proceeds thematically rather than by department, because the themes it covers do not belong to single departments. Each section states what could be verified, states the year and source of every figure, and records what could not be verified as a gap rather than filling it with an inherited or invented number. Section 20.8 consolidates the gaps and section 20.9 sets out strategic priorities.

20.1 Assam in the SDG India Index: Performance and Institutional Architecture

NITI Aayog's SDG India Index scores every State and Union Territory from 0 to 100 across the Sustainable Development Goals and assigns States to one of four bands: Aspirant for scores of 0 to 49, Performer for 50 to 64, Front Runner for 65 to 99, and Achiever for 100. In the fourth edition, covering 2023-24 and released in mid-2024, Assam recorded a composite score of 65, an improvement of 8 points over the 2020-21 round and of 16 points since the index began in 2018, which placed the State in the Front Runner category for the first time (NITI Aayog, 2024, as reported in Pratidin Time, 2024). Assam was one of ten States newly promoted into that category in the same round, alongside Arunachal Pradesh, Chhattisgarh and Uttar Pradesh among others (Drishti IAS, 2024).

The category change should not obscure the State's position relative to its peers. Assam ranked 23rd of 28 States in the same round, a position essentially unchanged in kind even as the label attached to it changed, because the entire distribution of States shifted upward together. India's national composite score rose to 71 in 2023-24 from 66 in 2020-21 and 57 at the 2018 baseline (Pratidin Time, 2024). Assam's score of 65 sits at the floor of the Front Runner band, seven points below the improved national average, so the label "Front Runner" describes a State that has crossed a threshold rather than one that has closed the gap with the median performer.

The composite score conceals wide variation across the seventeen goals. According to the goal-wise breakdown compiled by Pratidin Time (2024) from the NITI Aayog release, Assam's strongest and weakest individual goal scores were as follows.

SDG Goal	2023-24 Score	Rank Among States	Movement Since Prior Round
SDG 7, Affordable and Clean Energy	100	2nd	Maintained near the top
SDG 15, Life on Land	91	4th	Up from 78
SDG 6, Clean Water and Sanitation	85	22nd	Up from 64
SDG 2, Zero Hunger	47	22nd	Up slightly from 41

SDG 9, Industry, Innovation and Infrastructure	44	23rd	Not stated
SDG 4, Quality Education	41	25th	Down from 43

Source: Pratidin Time (2024), compiled from NITI Aayog's SDG India Index 2023-24. This framework was unable to independently retrieve the full goal-wise table from a NITI Aayog primary publication in this session and reports the above as attributed to the compiling source. Rank movements marked "not stated" were not given in the retrieved source.

The pattern is legible against the rest of this Report. Quality Education is Assam's single weakest goal, and it is also the only goal on this list whose score fell rather than rose between rounds. Chapter 5 records a secondary stage dropout rate of 17.5 per cent for 2024 to 2025 and identifies distance to school, the economics of the secondary stage decision, and accumulated learning deficit as its principal drivers, which is a plausible and directly relevant explanation for a declining SDG4 score set against improvement almost everywhere else. Zero Hunger and Industry, Innovation and Infrastructure are Assam's next weakest goals; Chapter 6 documents that child undernutrition and anaemia have not responded to intervention in the way maternal mortality has, which is consistent with SDG2 remaining near the bottom of the distribution even as most other goals improved, and Chapter 3 documents Assam's limited non-farm and manufacturing absorption, consistent with a weak SDG9 score. Conversely, Clean Water and Sanitation posted the largest single point gain among Assam's strong goals, from 64 to 85, in the same period that Chapter 10's water supply and sanitation programmes were expanding, and section 20.7 below records verified Jal Jeevan Mission and Swachh Bharat Mission Grameen coverage data consistent with that trajectory.

The Transformation and Development Department is Assam's nodal department for SDG implementation and hosts a dedicated SDG Cell reporting to the Additional Chief Secretary, along with a Centre for SDGs that coordinates capacity building and monitoring across departments, districts, and autonomous councils (Government of Assam, Transformation and Development Department, n.d.). The Department organised a State level workshop on a Northeast Region District SDG Index and Dashboard in February 2022 to strengthen district level localisation of the goals, and engaged a professional services firm as Project Management Unit in January 2023 to support implementation and monitoring (Government of Assam, Transformation and Development Department, n.d.). Assam now comprises 35 districts following the creation of four new districts in August 2025, up from 31, which is the territorial unit against which any published District SDG Index would need to be read and which affects the comparability of district level series across that boundary, a caveat Chapter 1 raises in relation to the 2022 to 2023 delimitation and district reorganisation generally.

This framework could not retrieve a published, current District SDG Index for Assam, could not verify the number of indicators the State SDG Cell tracks, and could not verify whether the Northeast Region District SDG Index and Dashboard exercise begun in 2022 has produced a recurring, publicly available output. These are recorded as gaps in section 20.8. An institutional architecture that convenes workshops and engages a project management unit

is a necessary but not sufficient condition for a functioning sub-state monitoring system, and the absence of a retrievable district level product after several years of institutional investment is itself informative.

20.2 Gender Mainstreaming and the Gender Budget

Assam publishes a Gender Budget Statement alongside its annual budget, a practice the Finance Department has maintained in successive years including 2024-25 (Government of Assam, Finance Department, n.d.). For 2026 to 2027, reporting on the figure diverges. One account gives the Gender Budget as 12,214 crore rupees (Dailyhunt, compiling Pratidin Time, 2026); a separate account gives it as 12,160 crore rupees spread across approximately 300 schemes (India Today NE, 2026). The two figures are close enough that they may reflect rounding or a late revision between reporting dates rather than a substantive disagreement, but this framework could not reconcile them against a primary Finance Department statement in this session and reports both rather than selecting one.

Measured against the total budgeted expenditure of 1,56,715 crore rupees for 2026 to 2027 that Chapter 2 records from the same budget (PRS Legislative Research, 2026), the reported Gender Budget figures imply a share of approximately 7.8 per cent of total expenditure, a computation made in this framework rather than one stated by either source. This can be checked against the Child Budget for the same year, reported at 19,199 crore rupees, which the source states explicitly as 12.25 per cent of the total budget (India Today NE, 2026); 19,199 divided by 1,56,715 also yields approximately 12.25 per cent, confirming that both the Gender Budget and Child Budget figures are being measured against the same total expenditure base used in Chapter 2, which lends confidence to the computed Gender Budget share even where the absolute figure is contested. The same 2026 to 2027 budget reports a Green Budget of 8,648 crore rupees and a Divyang, or persons with disabilities, Budget of 946 crore rupees (Dailyhunt, compiling Pratidin Time, 2026), which this framework notes for completeness without further analysis, as they fall outside this chapter's gender and youth focus.

Cross-Cutting Budget Category	2026 to 2027 Allocation (crore rupees)	Share of Total Budgeted Expenditure
Child Budget	19,199	12.25 per cent (stated by source)
Gender Budget	12,214 or 12,160 (sources differ)	Approximately 7.8 per cent (computed)
Green Budget	8,648	Not stated
Divyang (Disability) Budget	946	Not stated

All figures in crore rupees, for the 2026 to 2027 Budget. Total budgeted expenditure of 1,56,715 crore rupees is as recorded in Chapter 2. Sources: Dailyhunt, compiling Pratidin Time (2026); India Today NE (2026); PRS Legislative Research (2026) for the total expenditure denominator.

Orunodoi is Assam's principal direct benefit transfer scheme targeted at women in low income households and is the largest single instrument through which the State's gender mainstreaming commitment is expressed in cash terms. The scheme has been delivered in three successive phases. Orunodoi 1.0, launched in 2020, reached approximately 18 lakh beneficiaries at 830 rupees a month. Orunodoi 2.0, from October 2021, expanded coverage to approximately 28 lakh beneficiaries and raised the transfer to 1,000 rupees a month. Orunodoi 3.0, launched on 7 October 2025, again expanded eligibility and the amount, with beneficiary counts reported across a range from 37.2 lakh to approximately 38 lakh to a stated ceiling of 38 to 40 lakh, at a transfer of 1,250 rupees a month (thenewsmill, 2025).

Phase	Launch	Reported Beneficiaries	Monthly Transfer
Orunodoi 1.0	2020	Approximately 18 lakh	830 rupees
Orunodoi 2.0	October 2021	Approximately 28 lakh	1,000 rupees
Orunodoi 3.0	7 October 2025	Reported between 37.2 lakh and 40 lakh across sources	1,250 rupees

Source: thenewsmill (2025), with beneficiary range cross-checked against Dailypioneer (2026) reporting a figure of 37.2 lakh and News on Air (2026) reporting distribution of a supplementary grant to 40 lakh women.

The scale of the scheme's reported annual cost does not reconcile with the figure this framework can verify from the budget itself. Press reporting around the Orunodoi 3.0 launch put the annual cost at approximately 5,000 crore rupees in one account and, in another, at 5,604 crore rupees, computed as roughly 467 crore rupees disbursed monthly. Chapter 2 of this framework, drawing on PRS Legislative Research's analysis of the Assam Budget documents themselves, records a 2026 to 2027 budget line of 3,700 crore rupees for Orunodoi (PRS Legislative Research, 2026). A budget line of 3,700 crore rupees and a publicised annual run rate of 5,000 crore rupees or more cannot both describe the same allocation in the same year without further explanation, which this framework was unable to obtain. Possible explanations include that the budget line captures only part of the financial year following the October 2025 relaunch, that the press figures describe an annualised full year run rate at eventual full coverage rather than the amount actually appropriated, or that one or both figures are simply inaccurate. This framework does not resolve the discrepancy and records it as a measurement gap in section 20.8, while noting that a gap of this size, on the State's largest women-targeted cash transfer programme, is a significant weakness in public financial reporting.

Two further developments were reported for early 2026. A Liquefied Petroleum Gas subsidy addition from January 2026 was reported to bring the effective monthly transfer to approximately 1,500 rupees for eligible households, and a one time grant of 9,000 rupees was reported credited to 40 lakh women on 10 March 2026 (News on Air, 2026). The LPG subsidy addition is reported only in secondary scheme tracking sources of uncertain reliability and is noted here with that caveat; the 9,000 rupee one-time grant is reported by News on Air, a Prasar Bharati outlet, and is treated as better sourced.

Beyond Orunodoi, the 2026 to 2027 Budget carries the Mukhya Mantrir Nijut Moina Asoni scheme, providing monthly financial assistance of between 1,000 and 2,500 rupees to more than 5.5 lakh girl students (India Today NE, 2026), and continues the Mukhya Mantri Mahila Udyamita Abhiyaan, which Chapter 12 examines in detail as a self help group linked enterprise scheme providing 10,000 rupees in seed capital followed by a subsidised loan of 25,000 rupees, under which the Chief Minister distributed cheques to 32,787 beneficiaries in November 2025 (Government of Assam, 2025; ANI, 2025, as recorded in Chapter 12). Chapter 12 also records that the scheme's claimed beneficiary universe of approximately 39.4 lakh women could not be verified against official scheme documents, a gap this chapter does not attempt to re-verify.

Mission Basundhara 3.0, the State's land governance and titling programme launched on 20 October 2024, is reported to have distributed land pattas to over one lakh indigenous landless families, with one reported figure of 1,06,905 beneficiaries (GKToday, 2024, as cross-checked against IMPRI India). This framework searched specifically for evidence that the scheme mandates joint titling naming a female spouse, a claim that appeared in an earlier, unverified draft of this chapter, and could not find such a provision documented in any source retrieved this session. The claim is accordingly dropped rather than repeated, and the actual gender content of Mission Basundhara's titling practice is recorded as a gap. On safety, the State operates a 181 women's helpline integrated with district level One Stop Centres, State Commission for Women referral, and Women Police Stations, a genuinely State-wide architecture on the evidence available (news reporting on the 181 helpline launch, cross-checked against multiple district helpline pages).

20.3 Youth Policy and the Demographic Dividend

Chapter 1 establishes that Assam has completed the fertility transition, that the working age share of the population is rising as the share below fifteen falls, and that the annual addition to the labour force is at or near its historical peak, all measured against the 2011 Census because the decennial census due in 2021 was deferred. Chapter 1 deliberately declines to state a precise current percentage for any youth age band, treating the age of the underlying data as a substantive limitation rather than a technical footnote, and this chapter follows the same discipline.

Two media sourced estimates circulate and disagree, in ways that illustrate the problem rather than resolve it. One account states that Assam's youth, defined as ages 15 to 29, comprised nearly 28 per cent of the State's population as of a 2025 estimate, implying approximately 1.0 crore youth out of a total population estimated at 3.6 crore, up from 87.9 lakh recorded for the same age band at the 2011 Census (Organiser, 2025). A separate account states that "over one third" of Assam's population falls in the 15 to 34 age group (India Today NE, 2026). These use different age bands, draw on different underlying methodologies that neither source fully discloses, and cannot be reconciled into a single verified figure. This framework does not adopt either figure as established and records the absence of a current, methodologically transparent youth population estimate as a measurement gap, consistent with the position Chapter 1 takes on the broader age structure.

As of the most recent reporting retrieved in this session, Assam does not appear to have a notified, consolidated State Youth Policy. Coverage from July 2025 describes a policy in preparation, oriented toward jobs, education and health and conceptually aligned with the national Draft Youth Policy's ten year horizon from 2023 to 2033 and its five themes of education and skill development, employment and entrepreneurship, youth leadership and civic participation, health and wellbeing, and social justice and inclusion (Organiser, 2025). No source retrieved in August 2026 confirmed that this policy had subsequently been finalised and notified; recent coverage instead documents individual scheme launches, including a Second Chance Education drive for out of school youth and the Nijut Babu scheme, a monthly stipend of 1,000 rupees for first year undergraduate students and 2,000 rupees for postgraduate students, launched in February 2026 (The Shillong Times, 2026). This framework accordingly treats Assam's youth policy landscape as a set of discrete schemes rather than as an integrated policy framework, and records the notification status of a consolidated policy as a gap. An earlier, unverified draft of this chapter referred to a "State Youth Policy (2023-2030)" as an operating instrument with three named pillars; this framework could not substantiate that policy's existence in that form and has not repeated the claim.

The schemes that do operate are concrete and, on the evidence available, of meaningful scale. The Chief Minister's Atmanirbhar Asom Abhijan, launched on 23 September 2023, provides seed capital of 2 lakh rupees to entrepreneurs in a general category and 5 lakh rupees to those in a professional category, covering engineers, and MBBS and BDS graduates among others. Across its first two completed phases, the scheme reported 99,971 beneficiaries as of July 2026, comprising 25,277 in the first phase and 74,694 receiving a first tranche disbursement in the second, with a further tranche and Entrepreneurship Development Programme training component attached to disbursement (Daily Pioneer, 2026; New Kerala, 2026). A separate, older instrument, the Swami Vivekananda Assam Youth Empowerment Scheme, targets 2 lakh youth with 50,000 rupees in seed money and bank linked loans of 1 lakh rupees for new entrepreneurs or 2 lakh rupees for existing ones, restricted to applicants who are members of a self help group or joint liability group (Government of Assam, n.d.). A third phase of the Atmanirbhar scheme, referred to in scheme tracking sources as CMAAA 3.0, was reported to be under registration in 2026, though this framework treats that reporting with caution given the lower reliability of the sources describing it.

The Assam Economic Survey 2025-26, drawing on Periodic Labour Force Survey data for 2023-24, records an overall unemployment rate for persons aged 15 and above of 3.9 per cent, up from 1.7 per cent in 2022-23 and above the national figure of 3.2 per cent for the same period. The rate was 3.6 per cent for rural men and 3.5 per cent for rural women, against a markedly wider urban gap of 5.7 per cent for urban men and 11.8 per cent for urban women (NE Now, 2026, citing the Assam Economic Survey 2025-26). The urban female figure in particular indicates that Assam's labour market absorbs women into rural, largely agricultural and informal, activity far more readily than into urban employment, a pattern

consistent with the limited non-farm and manufacturing absorption Chapter 3 documents at the State level.

Two further figures appeared in the same body of media reporting on Assam's youth employment situation: a count of more than 21 lakh registered job seekers, and a claim that urban youth unemployment reached 27.5 per cent by late 2024 (Organiser, 2025). Neither figure could be traced in this session to a primary labour department or PLFS release, and both are reported here as attributed claims rather than as verified figures. If accurate, the gap between the State-wide urban unemployment rate of 5.7 to 11.8 per cent and a youth-specific urban rate approaching 27.5 per cent would indicate that unemployment in Assam, as in most of India, is disproportionately a youth phenomenon, concentrated among first time labour market entrants; this framework flags the plausibility of that pattern without certifying the specific figure.

Chapter 1's own formulation is the correct frame for this section: a large cohort of young people who are undereducated and underemployed does not produce a demographic dividend but a demographic liability, and whether Assam's rising working age share becomes the former or the latter depends on outcomes this framework documents elsewhere, principally the secondary education retention problem in Chapter 5 and the industrial and services absorption capacity examined in Chapter 3. The seed capital and loan schemes reviewed in this section address the supply of credit to individual young entrepreneurs; they do not, on the evidence reviewed here or in Chapter 12's parallel finding on self help group enterprises, address the aggregation, market access, and skilled employment generation constraints that determine whether a much larger number of young people entering the labour force each year find productive work.

20.4 Migration: Internal, Inter-State and Cross-Border Dimensions

Migration is the weakest evidenced theme in this chapter, and this framework states that limitation plainly rather than filling it with numbers that could not be verified. Academic literature on migration from India's northeastern region, drawing on 2011 Census data, records that the region as a whole held approximately 1.52 crore migrants at that enumeration, that the youth population aged 15 to 29 comprised approximately 29 per cent of the region's population, and that roughly 30 per cent of workers from the region migrated to mainland India (Baruah, 2024). These figures describe the northeastern region as a whole rather than Assam specifically, and this framework did not locate a disaggregated, current, Assam-only out-migration count from a primary source in this session.

At the destination end, Assam is identifiable in State level migration data for at least one major receiving State. Kerala's migrant labour data, drawing on the 2011 Census, ranks Assam as the second largest source State for inter-state migrant workers recorded in Kerala, after West Bengal and ahead of Bihar, Jharkhand, Chhattisgarh and Manipur (Khadar & Anjali, 2024). Multiple academic case studies of labour migration from specific Assam districts, including Dhemaji and Lakhimpur, and of migrant experience during the pandemic period, corroborate a pattern of seasonal and semi-permanent out-migration toward Kerala, Karnataka, Tamil Nadu, Gujarat and Maharashtra, driven by limited local non-farm

employment (cross-referenced against Chapter 3's account of Assam's absorption capacity) and by the lean agricultural season that Chapter 12 identifies as the central rationale for the employment guarantee programme in Assam. This framework did not, however, find a verifiable current count, whether from the Periodic Labour Force Survey, the Census, or a State labour department source, of how many workers leave Assam annually or of the total stock of Assam-origin migrants currently outside the State. Claims to the effect that a specific number, in the range of a million or more, migrate from Assam every year appear in secondary compilations but could not be traced to a primary release, and this framework does not reproduce them as established fact.

The evidence on Assam's international border with Bangladesh is considerably more current and specific than the evidence on domestic labour migration. As of July 2026, Assam's Minister for Border Protection and Development reported that of the State's 267.5 kilometre border with Bangladesh, 228.541 kilometres, or approximately 86 per cent, had been fenced, leaving 38.959 kilometres, or approximately 14 per cent, uncovered. Of the uncovered stretch, 34.609 kilometres are riverine sections where conventional fencing is not feasible, and a further 4.35 kilometres along the Kushiya river in Sribhumi district remain unfenced because of objections raised by Border Guard Bangladesh (India Today NE, 2026). For the riverine gap, the Border Electronically Dominated QRT Interception Technique, a surveillance and sensor based system known as BOLD-QIT, has been deployed to cover approximately 61 kilometres of difficult Brahmaputra riverine terrain in Assam where physical fencing cannot be constructed (India Today NE, 2026).

Border Fencing Status, Assam-Bangladesh Frontier	Length (kilometres)	Share of Total
Total border length	267.5	100 per cent
Fenced	228.541	Approximately 86 per cent
Unfenced, riverine	34.609	Approximately 13 per cent
Unfenced, non-riverine (Kushiya river, Sribhumi)	4.35	Approximately 2 per cent

Position as reported in July 2026. Source: India Today NE (2026), citing Assam Minister Atul Bora.

At the national level, the Ministry of Home Affairs Annual Report for 2024-25 records approximately 3,232.218 kilometres fenced along the full India-Bangladesh border, and the Union Budget for 2026 to 2027 allocated approximately 5,576.51 crore rupees for border infrastructure and management nationally, of which approximately 5,266 crore rupees was capital expenditure directed substantially at surveillance and border modernisation (India Today NE, 2026). These are national, not Assam-specific, figures and are reported here as context for the scale of the programme within which Assam's fencing completion sits.

Domestic implementation of the Assam Accord's Clause 6, which concerns constitutional, legislative and administrative safeguards for the Assamese people, has proceeded through a High Level Committee chaired by Justice (Retired) Biplab Kumar Sarma, which submitted 67 recommendations. The State Cabinet was reported on 5 September 2024 to have approved implementation of approximately 80 per cent of these, comprising 57 of the 67

recommendations, with a target implementation date of 15 April 2025 (News on Air, 2024). Subsequent reporting describes the State Government and the All Assam Students' Union reaching consensus on most State-level recommendations by 23 November 2025. Measures reported as part of implementation include publication of laws and official notifications in four languages, Assamese, English, Bengali and Bodo, and provisions making Assamese or, in the Bodoland Territorial Region, Assamese or Bodo, a compulsory subject in schools. Approximately 15 of the 67 recommendations, including matters resembling reservation and Inner Line Permit type protections, were reported to remain unresolved as they would require constitutional amendment and lie substantially outside the State Government's unilateral authority. This framework treats the September 2024 Cabinet decision, reported by the Prasar Bharati outlet News on Air, as the more reliably sourced element of this narrative, and the November 2025 consensus milestone, sourced to current affairs compilation sites, as less firmly established, though not necessarily inconsistent with a phased implementation process running from 2024 into 2025 and 2026.

20.5 Science, Technology and Innovation Coordination

The Assam Science Technology and Environment Council, established in 1987 as an autonomous body under the State's Department of Science, Technology and Environment, is the State's nodal institution for coordinating research, development and science popularisation activity, with a mandate spanning remote sensing and geospatial applications, renewable and non-conventional energy, biotechnology, and environmental management (ASTECH, n.d.). As of August 2026, the Council's published activity includes a Summer Internship and Technical Training Programme, a Green Skill Development Programme targeted at Scheduled Caste and Scheduled Tribe candidates, an Environment Education Programme coordinated through District Nodal Agencies, a Youth-led Climate Action Programme with results announced on 7 August 2026, a Chief Minister's Climate Resilient Village Fellowship, the National Children's Science Congress, a network of Aryabhata Science Centres, a Patent Information Centre, and data infrastructure comprising an Environmental Information System and a Biodiversity Data Bank, alongside its remote sensing based monitoring function (ASTECH, n.d.).

This is a genuine and reasonably diverse programme portfolio for a body of its type, but this framework was unable to verify several matters that would be necessary to assess its impact: the Council's annual budget and its trend over recent years, the number of patents facilitated through the Patent Information Centre and their disposition, the staffing strength of the Council relative to its mandate, and any external evaluation of programme outcomes such as the Green Skill Development Programme or the Climate Resilient Village Fellowship. These are recorded as gaps in section 20.8. The Council's role as coordinator rather than executor of science and technology policy means that its effectiveness depends substantially on uptake by line departments and district administrations, a linkage this framework could not independently assess from the material available.

20.6 Statistical System Strengthening and Evidence-Based Policymaking

Every fiscal ratio in Chapter 2 of this framework, and every ratio elsewhere in this Report expressed as a share of Gross State Domestic Product, is computed against a series compiled on a 2011-12 base year, which remains Assam's current basis as of the 2024-25 series (databank compiled by NEDFI, drawing on Directorate of Economics and Statistics data). This is not a peculiarity of Assam; at the time of the most recent national revision, 34 of India's States and Union Territories, all except Lakshadweep, Dadra and Nagar Haveli, and Daman and Diu, were still compiling their Gross State Domestic Product on the 2011-12 base.

That national position has now changed at the Union level. A 26 member Advisory Committee on National Accounts Statistics, chaired by economist Biswanath Goldar, was constituted to revise India's national accounts base year from 2011-12 to 2022-23, and the Ministry of Statistics and Programme Implementation released the revised national series on 27 February 2026 (ANI, 2026). A Sub-Committee on Regional Accounts, chaired by Ravindra H. Dholakia and including representatives of State Governments, the Reserve Bank of India, NITI Aayog and academic institutions, has correspondingly issued a Uniform Guideline for States to compile Gross State Value Added estimates on the new 2022-23 base, with the stated intent of improving accuracy, consistency and comparability of regional economic performance and of moving States toward more direct estimation and less reliance on fixed ratios and national proxies (ANI, 2026).

This framework could not establish, from any source retrieved in this session, whether or when Assam's Directorate of Economics and Statistics intends to publish a GSDP series rebased to 2022-23, and this is recorded as a measurement gap of first order importance, because it bears directly on the comparability of every GSDP-denominated ratio in this Report's fiscal chapter once a rebased series eventually appears. A change of base year mechanically alters the level of GSDP and can materially shift ratios such as the tax to GSDP share or the fiscal deficit to GSDP share that Chapter 2 analyses, independent of any change in underlying fiscal behaviour, and users of this Report should treat all such ratios as provisional pending the rebasing exercise.

Assam's char and chaporī tracts, the riverine sandbar settlements Chapter 1 identifies as coinciding with the areas of greatest population concentration and greatest hydrological hazard, are administered through the Directorate of Char Areas Development, now organised under the Directorate of Minority Affairs and Char Areas. The most recent comprehensive socio-economic enumeration of this population that this framework could identify is the Socio-Economic Survey of 2002-03, which recorded a char population of approximately 24.90 lakh persons across approximately 3.60 lakh hectares, a poverty rate of approximately 80 per cent below the poverty line, and a literacy rate of approximately 44 per cent against a State average of 73.18 per cent at that time (Directorate of Char Areas Development, n.d.). No subsequent repeat survey, whether periodic or one-off, was identified in this session. A dataset now more than two decades old is the evidentiary foundation for policy targeting a population that Chapter 1 identifies as demographically and hydrologically distinctive within the State, and this is recorded as a significant gap in section 20.8. An earlier, unverified draft

of this chapter asserted that the State conducts a "bi-annual" char socio-economic survey; this framework found no evidence to support that claim and has not repeated it.

The Directorate of Economics and Statistics has participated in the National Sample Survey since its 14th round in 1958-59, serves as Assam's State Agricultural Statistics Authority, and compiles data under national schemes including the Improvement of Crop Statistics, the Crop Estimation Survey, Land Use Statistics, Crop Forecasting and Timely Reporting Schemes, in addition to publishing an annual Statistical Handbook and Economic Survey of Assam (Directorate of Economics and Statistics, n.d.). This is a functioning core statistical office with a long institutional history, and the PLFS-based unemployment figures reported in section 20.3 above, drawn from the Assam Economic Survey 2025-26, are evidence that the office produces and publishes usable labour market data at the State level.

This framework could not, however, retrieve district-level Periodic Labour Force Survey results for Assam, despite national commentary indicating that recent PLFS rounds have moved toward improved district-level representativeness in their sample design. Whether Assam-specific district labour force estimates exist and are simply not published in a form this framework could locate, or whether the sample expansion has not yet been extended to Assam in practice, could not be determined and is recorded as a gap.

20.7 Citizen Engagement and Participatory Governance

Digital citizen consultation in Assam operates principally through MyGov, the national citizen engagement platform, which reported a little over 6.32 crore registered users nationally as of 10 July 2026 and operates dedicated State-level instances, including one for Assam, in 22 States. This framework could not retrieve an Assam-specific registered user count for the assam.mygov.in instance, and treats the figure of "12 lakh registered citizens" that appeared in an earlier, unverified draft of this chapter as unverifiable; it is not repeated here and is recorded as a gap.

Participatory governance in Assam is more concretely evidenced at the level of mission implementation than at the level of a dedicated consultation platform. Under the Jal Jeevan Mission, Assam had connected approximately 5.79 million of its 7.22 million rural households to piped water supply as of the most recent reporting retrieved, a coverage rate of approximately 81.65 per cent, with a further update citing 5.90 million functional household tap connections (reported by Construction World, drawing on Jal Jeevan Mission data). The Mission's guidelines route planning and monitoring through Village Water and Sanitation Committees at the local level, which is the specific participatory mechanism underlying this coverage figure, though this framework could not independently verify the functional status of these committees across Assam's villages. Under Swachh Bharat Mission Grameen Phase II, all of Assam's 25,437 villages had been classified as ODF Plus Aspiring, with 4,479 further classified ODF Plus Rising and 999 as ODF Plus Model, and solid waste management arrangements reported in 7,967 villages, liquid waste management in 23,466 villages, and

both in 5,996 villages (Press Information Bureau, 2025). This village-by-village classification exercise is itself a form of locally verified, bottom-up reporting, distinct from a top-down completion statistic, though it shares the general limitation Chapter 10 identifies elsewhere in this Report, that a classification records the existence of an arrangement rather than confirming its continued function.

The clearest evidence of participatory strength in Assam's governance system remains the one Chapter 12 documents in detail: turnout of over 74 per cent in the May 2025 Panchayati Raj Institution elections. Chapter 12 pairs that finding with a sobering counterpoint, that the same elected tier commands aggregate internal revenue of only 45 crore rupees and receives well under a fifth of its statutorily recommended Finance Commission transfers. Read together with the findings of this chapter, the pattern is consistent: Assam's citizens participate at scale where a participation channel exists, whether at the ballot box, in scheme enrolment such as Orunodoi's reach to tens of lakhs of women, or in mission-level community classification exercises, but the institutional and fiscal architecture that would let that participation shape resource allocation, whether at the panchayat level examined in Chapter 12 or at the State policy consultation level examined here, remains comparatively underdeveloped and, in the specific case of Assam's MyGov footprint, is not even measurable from published data.

20.8 Measurement Gaps

This chapter identifies a substantial number of gaps, several of them consequential for the rest of this Report. On the SDG India Index, this framework could not retrieve a current, published District SDG Index for Assam, nor confirm the number of indicators tracked by the State SDG Cell, nor establish whether the Northeast Region District SDG Index and Dashboard exercise begun in 2022 has produced a recurring public output. On gender budgeting, the Gender Budget figure for 2026 to 2027 is reported inconsistently as 12,214 crore rupees or 12,160 crore rupees, and, more seriously, Orunodoi's publicised annual cost of approximately 5,000 to 5,604 crore rupees does not reconcile with the 3,700 crore rupee budget line Chapter 2 records for the same scheme in the same year; this framework could not resolve that discrepancy and flags it as a priority for verification against a primary Finance Department source. The gender content of Mission Basundhara's titling practice, specifically whether joint titling naming a female spouse is mandated, could not be verified.

On youth and demography, no current, methodologically transparent, State-level figure for the youth population share exists; two media-derived estimates using different age bands, approximately 28 per cent for ages 15 to 29 and "over one third" for ages 15 to 34, could not be reconciled. The notification status of a consolidated State Youth Policy could not be confirmed as of August 2026. Reported figures of more than 21 lakh registered job seekers and 27.5 per cent urban youth unemployment could not be traced to a primary source. On migration, no current, verifiable, Assam-specific count of annual out-migration exists in any source retrieved this session, whether from the Periodic Labour Force Survey, the Census, or a State labour department release; this is arguably the largest single evidentiary gap in this chapter, given migration's importance to household income strategy in flood- and

lean-season-affected districts documented elsewhere in this Report. On science and technology, ASTEC's budget, staffing, and the outcomes of its patent facilitation and skill programmes could not be verified. On statistics, Assam's timeline for adopting the new national 2022-23 GSDP base year could not be established, no char area socio-economic survey more recent than 2002-03 could be identified, and Assam-specific district-level PLFS results could not be retrieved. On citizen engagement, the number of registered users on Assam's MyGov state instance could not be retrieved, and the functional status, as opposed to nominal existence, of Village Water and Sanitation Committees under the Jal Jeevan Mission could not be independently verified.

The recurring shape of these gaps is instructive. In several cases, most notably the GSDP base year, the char area survey, and the Orunodoi budget reconciliation, the missing information is not obscure; it concerns a rebasing exercise the Union Government has already completed and communicated to States, a survey the responsible Directorate has apparently not repeated in over two decades, and a discrepancy between two figures the State's own budget process and the State's own public communications should be capable of reconciling. These are gaps in publication and reconciliation discipline rather than gaps in underlying State capacity, and section 20.9 treats them accordingly.

20.9 Strategic Priorities

1. **Reconcile the Orunodoi budget discrepancy and publish a scheme financial statement.** Chapter 2 records a 3,700 crore rupee budget line for Orunodoi in 2026 to 2027, while press reporting around the Orunodoi 3.0 launch cites an annual run rate of approximately 5,000 to 5,604 crore rupees for a scheme reaching 37 to 40 lakh beneficiaries at 1,250 rupees a month. Target: the Finance Department should publish, alongside the 2027 to 2028 Budget, a reconciled Orunodoi financial statement showing budgeted allocation, actual monthly disbursement, and beneficiary count on a common basis, with the gap eliminated from the 2027 to 2028 Budget documents onward.
2. **Adopt the revised national GSDP base year on a published timeline.** The Union Government finalised a national accounts base year revision from 2011-12 to 2022-23 in February 2026 and issued a Uniform Guideline for State-level Gross State Value Added compilation on the new base; Assam's Directorate of Economics and Statistics has not, on the evidence available to this framework, published an adoption timeline. Target: publish a rebased GSDP series for Assam on the 2022-23 base by the 2028 to 2029 Budget cycle, with a published bridge table reconciling the old and new series so that the fiscal ratios in Chapter 2 and elsewhere in this Report remain interpretable across the transition.
3. **Commission a State-wide char and chapori socio-economic survey.** The most recent identified dedicated survey of this population dates to 2002-03, more than two decades before this Report, covering a population Chapter 1 identifies as concentrated in the State's highest hydrological hazard and, in parts, highest fertility geography. Target: complete and publish a new comprehensive char area socio-economic survey by 2029, with a commitment to repeat it at a defined interval, of no more than ten years, thereafter.

4. **Establish and publish a functioning District SDG Index.** Institutional steps toward a Northeast Region District SDG Index and Dashboard were reported from 2022, but no current public output could be retrieved in this session. Target: publish an annual District SDG Index covering all 35 districts from 2028 onward, disaggregating Assam's weakest goals, Quality Education, Zero Hunger and Industry, Innovation and Infrastructure, to district level so that the resource allocation decisions Chapter 5, Chapter 6 and Chapter 3 recommend can be targeted geographically.
5. **Notify a consolidated State Youth Policy and consolidate youth scheme reporting under it.** As of August 2026, Assam operates the Atmanirbhar Asom Abhijan, the Swami Vivekananda Assam Youth Empowerment Scheme, Nijut Babu, and other youth-facing instruments as discrete schemes rather than under a notified policy framework, despite a policy having been reported in preparation since at least July 2025. Target: notify a State Youth Policy by 2028, with a published, audited annual report consolidating beneficiary counts, seed capital and loan disbursement, and repayment or survival outcomes across all youth entrepreneurship schemes on a common financial year basis.
6. **Close the urban female employment gap.** Periodic Labour Force Survey data for 2023-24 records an urban female unemployment rate of 11.8 per cent against 5.7 per cent for urban men and against a State-wide overall rate of 3.9 per cent. Target: reduce the urban female unemployment rate to below 8 per cent by 2031 and to parity with the urban male rate by 2047, through skilling and placement programmes targeted specifically at urban women, tracked through a published sex-disaggregated urban employment indicator series.
7. **Publish an Assam-specific migration statistical series.** No current, verifiable count of Assam's annual inter-state out-migration exists in a form this framework could retrieve, despite migration's evident importance to household income strategy in the districts Chapter 12 identifies as most exposed to seasonal labour demand collapse. Target: the Directorate of Economics and Statistics, in coordination with the Periodic Labour Force Survey's district-level sample expansion, should publish an annual estimate of inter-state out-migration by district of origin from 2029 onward.
8. **Complete Assam-Bangladesh border fencing and publish riverine coverage separately.** As of July 2026, approximately 86 per cent of Assam's 267.5 kilometre border with Bangladesh was fenced, with the remaining 14 per cent comprising largely riverine terrain where BOLD-QIT surveillance substitutes for physical fencing. Target: complete fencing of the 4.35 kilometre non-riverine gap at Sribhumi by 2028, subject to resolution of the cross-border objections affecting it, and publish annual coverage and functional-status reporting for the BOLD-QIT riverine surveillance system separately from the fenced-length statistic, since the two instruments provide different types of border management capability.

CHAPTER 21: VISION 2047 - STRATEGIC PRIORITIES AND DEVELOPMENT

This chapter closes the report rather than opening a new inquiry. Its task is to state, without inventing figures the preceding twenty chapters do not support, what a defensible long-term development trajectory for Assam looks like, what the medium-term priorities are, how they might be financed within the fiscal constraints Chapter 2 establishes, and how progress should be measured. It draws exclusively on the baselines, targets and named programmes already verified in Chapters 1 to 20, cross-referencing them rather than restating them in full, and it says plainly where those chapters conflict with one another or leave a gap that a synthesis exercise cannot responsibly fill.

Three findings recur across the report and shape everything that follows. The first is a governance paradox that Chapter 6 states most sharply and that Chapters 8, 10 and 12 confirm from other angles: Assam's administration performs at or near the national frontier when it is given a single, measurable, externally audited objective and sustains attention on it across political cycles, as the fall in the Maternal Mortality Ratio from 480 to 84 deaths per lakh live births over two decades demonstrates (Registrar General of India, 2025), and as the completion of more than 99 per cent of Pradhan Mantri Gram Sadak Yojana Phase I rural roads and a record 8.02 lakh tonnes of paddy procurement in 2024 to 2025 further illustrate (Chapters 8, 18). The same administration performs poorly where the outcome depends on sustained operation and maintenance rather than a discrete deliverable act, as the near-total absence of sewage treatment capacity, the roughly two in five non-functional minor irrigation schemes, and the persistence of child anaemia at 68.4 per cent all show (Chapters 6, 10). The strategic task of the next two decades is narrower than a list of sector targets. It is to extend the delivery model that produced the maternal mortality result to the services that require it and have not yet received it.

The second finding concerns evidence itself. A remarkable number of the twenty preceding chapters report, as a primary finding rather than a footnote, that the State's own data systems disagree with each other on indicators central to planning: net irrigated area is reported at 2.51 lakh hectares by one Assam Government source and 6.95 lakh hectares by another for closely adjacent years, a threefold discrepancy (Chapter 18); the 2026 to 2027 Gender Budget is reported at both Rs 12,214 crore and Rs 12,160 crore, and the Orunodoi scheme's publicised annual cost of roughly Rs 5,000 to 5,604 crore does not reconcile with the Rs 3,700 crore budget line the Finance Department has itself published for the same year (Chapter 20); and the widely repeated claim that the 2024 floods affected 42.95 lakh persons across 7,794 villages could not be traced to a retrievable primary disaster management bulletin, against a verified mid-season snapshot of 16.25 lakh persons on 3 July 2024 (Chapter 14). Nearly every sector chapter in this report independently recommends the same remedy: an annual, dated, reconciled sector statement. This chapter treats that recurrence as a finding in its own right and proposes, in section 21.7, that these recommendations be coordinated rather than left as twenty separate publication obligations.

The third finding is fiscal and structural. Assam's Gross State Domestic Product has grown at a nominal rate few Indian States have matched, reaching an estimated Rs 7,41,626 crore in 2025 to 2026 (Government of Assam, 2026; PRS Legislative Research, 2025), yet own tax revenue is budgeted to fall from 4.7 per cent of Gross State Domestic Product in 2024 to 2025 actuals to 4.1 per cent in 2026 to 2027 (PRS Legislative Research, 2026), the fiscal deficit has run above 4 per cent of Gross State Domestic Product in three of the last four reporting positions against a Sixteenth Finance Commission ceiling of 3 per cent (Chapter 2), and the primary sector's 35 per cent share of Gross State Value Added, against a national share near 19 per cent, reflects the smallness of Assam's manufacturing base rather than the strength of its agriculture (Chapter 3). A vision for 2047 that does not confront the narrowing of the State's own revenue base relative to its economy, and the low employment elasticity of its recent growth, would not be a vision grounded in this report's own evidence.

This chapter does not organise the State's long-term ambition around a fixed number of named flagship missions. Several of the sector chapters warn explicitly against branding exercises that outrun what is actually funded and delivered, and this chapter follows that discipline: where it refers to programmes, they are the real, named, budgeted programmes. Chapters 1 to 20 have already verified, among them the Numaligarh Refinery expansion, the Jagiroad semiconductor facility, Mission Basundhara, the Jal Jeevan Mission, Ayushman Asom, Orunodoi, the Assam State Action Plan on Climate Change and the Flood Early Warning System, not an invented catalogue of catchily titled missions.

21.1 The Long-Term Vision and Its Evidentiary Basis

Table 21.1 consolidates the baseline indicators against which any Vision 2047 exercise for Assam must be judged, each traced to the chapter and source that established it.

Indicator	Baseline value	Reference period	Source
Gross State Domestic Product, current prices	Rs 7,41,626 crore	2025 to 2026 estimate	Chapter 3 (Government of Assam, 2026; PRS Legislative Research, 2025)
Per capita GSDP as share of national, gross basis	84 per cent	2025 to 2026	Chapter 3 (PRS Legislative Research, 2026)
Human Development Index	0.655, rank 31 of India's States and Union Territories	2024 to 2025	Chapter 1 (Global Data Lab, 2024; United Nations Development Programme, 2025)
Maternal Mortality Ratio (national figure 87)	84 per lakh live births	2022 to 2024	Chapter 6 (Registrar General of India, 2025)
Secondary school dropout rate	17.5 per cent	2024 to 2025	Chapter 5 (Ministry of Education, 2026)
Higher education gross enrolment ratio	16.9 per cent	2023 to 2024 reported	Chapter 5 (Government of Assam, 2024)

(national figure 28.4 per cent)			
Forest cover, share of geographical area	36.10 per cent	2023 assessment	Chapters 1 and 13 (Forest Survey of India, 2024)
Flood-prone share of land area	39.58 per cent	Standing structural figure	Chapters 1 and 14 (Government of Assam, Water Resources Department, n.d.)
Own tax revenue as share of GSDP	4.1 per cent	2026 to 2027 budgeted	Chapter 2 (PRS Legislative Research, 2026)
Fiscal deficit as share of GSDP	3.0 per cent budgeted; 6.7 per cent at the 2025 to 2026 revised stage	2026 to 2027 / 2025 to 2026	Chapter 2 (PRS Legislative Research, 2026)
Multidimensional poverty headcount	14.47 per cent, down from 36.97 per cent in 2013 to 2014	2022 to 2023	Chapter 1 (NITI Aayog, 2023)
SDG India Index score	65, Front Runner category, rank 23 of 28 States	2023 to 2024	Chapters 1 and 20 (NITI Aayog, 2024)
Urbanisation share (national figure 31.16 per cent)	14.08 per cent	2011 Census	Chapter 11 (Registrar General of India, 2011)

Read together, this table supports a specific and modest long-term proposition rather than a sweeping one. Assam is a State whose nominal output is expanding rapidly, whose demographic transition is complete at the State level, and which has demonstrated, in maternal survival and in rural road delivery, that its administration is capable of frontier-level performance under the right institutional conditions. It is also a State whose human development ranking, at 31st among India's States and Union Territories, sits far below what its growth rate alone would predict, whose own revenue base is shrinking relative to its economy, and whose two structural hazards, a flood-prone share of land approaching forty per cent and uniform Seismic Zone V classification, are permanent parameters rather than emergencies to be relieved (Chapter 1).

The defensible long-term vision that follows from this evidence is convergence on three fronts simultaneously: convergence of per capita income with the national level, which Chapter 3 finds Assam has moved from 74 per cent of the national gross per capita product in 2023 to 2024 to 84 per cent in 2025 to 2026 and targets at 95 per cent by 2035 and parity by 2047; convergence of human development outcomes, particularly health and education, with the level that Assam's income already supports, rather than the level its history has left it at; and convergence of the lagging development regions, namely the char and chapori tracts, the tea garden belt and the hill districts, with the State average, a target Chapter 7 frames as no development region recording outcomes more than ten percentage points below the State average by 2047. None of these is a number this chapter invents. Each is a target a sector chapter has already set on evidence this chapter has not needed to re-derive.

One structural conflict must be recorded rather than resolved. Chapter 3 targets a rise in the manufacturing share of Gross State Value Added from approximately 19 per cent to 30 per cent by 2047, with an intermediate milestone of 24 per cent by 2035, while Chapter 4 presents a table targeting 25 per cent by 2031 and 32 per cent by 2047 from the same 19 per cent baseline. Both use the same starting figure, which Chapter 3 itself cautions is the whole industry sector, including construction and petroleum refining, rather than manufacturing narrowly defined, and neither chapter reconciles its year-by-year milestone with the other's. This chapter records the conflict rather than adopting either figure as authoritative and returns to it in section 21.7.

21.2 Medium-Term Priority Action Plan, 2026 to 2030

The medium-term period is not a blank canvas. Chapters 2 through 20 have already set, sector by sector, priorities with 2031 target years, and the task of this section is to consolidate the ones with the most direct bearing on the cross-cutting findings of section 21.1 rather than to add new ones. Table 21.2 sets out the priority action for each of the sectors examined in this report, together with the verified baseline and the target already established in the relevant chapter.

Sector	Baseline (verified)	Priority action, 2026 to 2030	Verified 2031 target	Source
Fiscal management	Own tax revenue 4.1 per cent of GSDP; own-source revenue 36 per cent of revenue receipts	Property tax and land revenue reform; restore revenue surplus; publish contingent liability statement	Own tax revenue 5.5 per cent of GSDP; own-source revenue share 50 per cent; revenue surplus at least 0.5 per cent of GSDP	Chapter 2
Health	Maternal Mortality Ratio 84 per lakh live births; child anaemia 68.4 per cent	Extend the maternal mortality delivery model to nutrition under a single named authority; convert sanctioned health posts to occupied posts	MMR below 50; anaemia among children aged 6 to 59 months below 40 per cent	Chapter 6
Education	Secondary dropout 17.5 per cent; Grade 3 foundational proficiency unmeasured at scale	Foundational Learning Mission with district accountability, constituted jointly with Sixth Schedule councils	80 per cent Grade 3 proficiency; secondary dropout below 8 per cent	Chapter 5
Economic structure	Primary sector 35 per cent of GSVA;	Raise food processing intensity and	Employment elasticity at least 0.4 by 2035; per	Chapter 3

	employment elasticity 0.1 to 0.3	downstream petrochemical integration; broaden the export base	capita GSDP at 95 per cent of national by 2035	
Rural development	Panchayati Raj internal revenue Rs 45 crore, down from Rs 56 crore; State Finance Commission grant release 14 per cent	Release recommended grants in full; build block-level producer companies above the self help group network	Panchayati Raj internal revenue at least Rs 250 crore; grant release at least 90 per cent	Chapter 12
Water and sanitation	Sewage generation approximately 809 million litres a day against effectively nil treatment capacity	Septage management plan and operational faecal sludge treatment facility in every statutory town	At least 80 per cent of generated septage reaching treatment	Chapter 10
Transport and logistics	Rail carries approximately 5 per cent of regional export movement	Complete valley trunk doubling; establish a State logistics cost observatory	Rail freight share at least 20 per cent; logistics cost differential reduced by 25 per cent	Chapter 8
Energy	Installed capacity 2,231.86 MW against a projected shortfall of up to 21.4 billion units by 2034 to 2035	Contract firm long-term power purchase agreements; make storage the priority technology	1,000 MWh of grid-scale battery storage contracted and operating	Chapter 9
Urban development	75 per cent of urban development capital outlay directed to Guwahati	Concentrate capital in not more than eight selected secondary towns	Guwahati's share of urban capital outlay below 45 per cent	Chapter 11
Environment	Forest cover 36.10 per cent, declining by approximately 84 square kilometres 2021 to 2023	Consolidate Unclassed State Forests; gazette the Deepor Beel eco-sensitive zone	Forest cover at least 37.5 per cent	Chapter 13
Climate and disaster	Flood-prone share 39.58 per cent; SAPCC 2.0 approved four years late	Publish a reconciled season-end flood report; establish a Disaster Reconstruction Reserve	Reserve equal to one year's average SDRF and NDRF releases (approximately Rs 670 crore)	Chapter 14

Governance	12,485 police posts vacant (15.64 per cent); no consolidated civil service establishment statement exists	Publish consolidated establishment and vacancy data; fill judicial and supervisory police vacancies	Overall police vacancy below 5 per cent; subordinate court pendency below 4 lakh cases	Chapter 15
Digital governance	69 per cent of Gram Panchayats connected under BharatNet	Terrain-appropriate connectivity for char, chapori and hill Gram Panchayats	90 per cent of Gram Panchayats connected by any technology	Chapter 16
Social justice and inclusion	Multidimensional poverty 14.47 per cent, concentrated in char, tea garden and hill geographies	Complete a fresh char socio-economic survey; publish a geography-based Inclusion Report	Occupancy of at least 90 per cent of sanctioned teaching and health posts in lagging blocks	Chapter 7

Source: as stated in each row; consolidated from the "Strategic Priorities" sections of Chapters 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15 and 16.

Three cross-cutting observations follow from this table that the individual chapters, addressing their own sectors, did not need to state. First, the fiscal, rural governance and social justice rows describe the same underlying institutional weakness from three angles: a third tier of government that has neither an own revenue base nor a reliable transfer entitlement cannot deliver the water, sanitation, nutrition and school-functioning outcomes that depend on it, regardless of the sectoral allocation made at the State level. Second, four of the fourteen rows, health, education, rural development and disaster management, describe a target that is explicitly modelled on the maternal mortality delivery method identified in section 21.2's opening finding, namely a single named accountable authority, a measurable published objective and sustained multi-year effort. Third, the energy, transport and urban rows share a common warning that this report repeats in Chapters 8, 9 and 11: constructing an asset is not the same as operating it, and the medium-term period should be judged by functionality indicators, litres delivered, hours of supply, kilometres maintained to standard, rather than by announcement value.

21.3 Financing the Vision: A Fiscal Strategy Consistent with Chapter 2

Any financing strategy for this chapter must take Chapter 2's findings as binding rather than as a starting point for more ambitious substitute targets. Chapter 2 establishes that revenue receipts for 2026 to 2027 are budgeted at Rs 1,18,562 crore, of which 36 per cent, or Rs 42,449 crore, is raised from the State's own resources and 64 per cent, or Rs 76,113 crore, arrives as Union transfers, comprising the State's share in central taxes at 40 per cent of revenue receipts and grants in aid at 24 per cent. Own tax revenue is budgeted at 4.1 per cent of Gross State Domestic Product for 2026 to 2027, down from 4.7 per cent in the 2024 to 2025 actuals, a decline the Comptroller and Auditor General has independently confirmed

reflects own revenue growing more slowly than the economy in successive years (Comptroller and Auditor General of India, 2026).

This chapter therefore adopts, without modification, Chapter 2's own financing targets: own tax revenue raised to at least 5.5 per cent of Gross State Domestic Product by 2031 and 7 per cent by 2047; the State's own declared objective of raising own-source revenue from 36 per cent to 50 per cent of revenue receipts by 2031, which Chapter 2 assesses as correctly directed but, on present trends, unlikely to be achieved without the property tax, stamp duty and land revenue reform it recommends; a restored revenue surplus of at least 0.5 per cent of Gross State Domestic Product by 2031, so that the capital programme is not financed entirely from borrowing; and a reduction in the gap between budget estimates, revised estimates and actuals to within 10 per cent at the aggregate level by 2031, since Chapter 2 finds that revised estimates in Assam have run substantially above both budgeted amounts and eventual actuals, most starkly in 2025 to 2026, when total expenditure was budgeted at Rs 1,55,985 crore, revised to Rs 2,00,782 crore, and is expected on the pattern of prior years to be followed by an actual figure well below the revised estimate.

The fiscal deficit for 2026 to 2027 is targeted at 3 per cent of Gross State Domestic Product, consistent with the Sixteenth Finance Commission's recommendation for the 2026 to 2031 award period. Chapter 2's own assessment is that this target is a budget-stage estimate the recent record does not support, given a revised deficit of 6.7 per cent in 2025 to 2026 against a budgeted 3.7 per cent, and an actual of 4.4 per cent in 2024 to 2025. This chapter does not substitute a different deficit target. It records, as Chapter 2 does, that outstanding liabilities stand at approximately 24 per cent of Gross State Domestic Product against a Fiscal Responsibility and Budget Management Act ceiling of 32 per cent, that this headroom is currently sustained by rapid nominal growth rather than by primary balance, and that the debt position should accordingly be treated as satisfactory at present and structurally vulnerable to any deceleration in nominal growth.

On the expenditure side, Chapter 2 finds that committed expenditure, comprising salaries, pensions and interest payments, absorbs 63 per cent of revenue receipts in the 2026 to 2027 budget, with interest payments alone at 10 per cent of revenue receipts, at the threshold the Fourteenth Finance Commission recommended States remain below. Pension and interest expenditure are both growing faster than revenue receipts, while the salary head is budgeted to fall in absolute terms in a year in which the Budget itself announces approximately 33,000 new health posts, a projection Chapter 2 treats as optimistic and Chapter 15 finds cannot presently be tested against any consolidated establishment record. A financing strategy for 2047 must therefore treat the resolution of this contradiction, between an announced expansion of the health workforce and a falling salary projection, as a precondition for credible medium-term budgeting, not a detail to be reconciled later.

Two further financing instruments recur across the sector chapters and belong in a consolidated strategy rather than in twenty separate departmental submissions. The first is the Disaster and Reconstruction Reserve Chapter 2 recommends and Chapter 14 costs at approximately one year of average annual State Disaster Response Fund and National Disaster Response Fund releases, on the order of Rs 670 crore based on releases recorded

between 2021 to 2022 and 2024 to 2025, rising to three years of average releases by 2047. The second is the consolidated contingent liability statement Chapter 2 recommends, covering guarantees, off-budget borrowing by State undertakings and public private partnership commitments, made more urgent by Chapter 9's finding that the power tariff subsidy commitment to the distribution utility, running to approximately one rupee per unit on subsidised slabs and growing automatically as consumption grows, is a larger and more certain exposure than the Rs 2,690 crore of disclosed guarantees recorded as at 31 March 2025.

Third-tier finance is the final and most consequential element of the financing strategy, because it determines whether resources allocated at the State level reach the point of service delivery. Chapter 2 records that internal revenue generation of Panchayati Raj Institutions fell from Rs 56 crore in 2019 to 2020 to Rs 45 crore in 2024 to 2025, and that release against State Finance Commission recommendations has run below 20 per cent across most award periods, with only Rs 292 crore, or 14 per cent, of the Rs 2,106 crore recommended by the Sixth State Finance Commission released by the fourth year. Chapter 12 sets the corresponding target of at least 90 per cent of recommended grants released from 2027 to 2028 onward, and aggregate Panchayati Raj internal revenue of at least Rs 250 crore by 2031 and Rs 1,000 crore by 2047 in constant prices. This chapter adopts both figures without modification, because no credible Vision 2047 financing strategy can rest on a third tier that presently commands own revenue smaller than the pending administrative liability under a single centrally sponsored employment scheme, which Chapter 12 records at Rs 90.34 crore as at 20 March 2026.

21.4 Centre-State Relations and the Fiscal Federal Architecture

Assam's fiscal and developmental trajectory over the period to 2047 will be shaped substantially by decisions taken outside the State. Chapter 2 establishes that the Sixteenth Finance Commission's award period runs from 2026 to 2031, that the Commission's report was submitted to the President on 17 November 2025 and laid before Parliament on 1 February 2026, and that it recommends a fiscal deficit ceiling of 3 per cent of Gross State Domestic Product for States, with the borrowing ceiling computed after excluding the fifty-year interest-free capital expenditure loans the Union Government extends to States. For a State whose revenue receipts remain 64 per cent dependent on Union transfers, comprising the share in central taxes and grants in aid, the terms of the Finance Commission award are not a technical matter of intergovernmental accounting but determine, as Chapter 2 states, roughly two-thirds of the resources the State Government commands.

Disaster financing illustrates the practical stakes of this dependence. Chapter 14 records that Assam received Rs 3,362.18 crore cumulatively under the State Disaster Response Fund and National Disaster Response Fund between 2021 to 2022 and 2025 to 2026, funded on a 90:10 Centre-to-State basis for the north eastern and Himalayan States, and that Assam's specific share of the Sixteenth Finance Commission's national disaster management corpus of Rs 2,04,401 crore for the 2026 to 2031 period could not be established from the Commission's published volumes, a gap this chapter records again in section 21.7. Chapter 14 further

documents that supplementary National Disaster Response Fund releases for reconstruction, as opposed to routine relief, arrive on a discretionary, High Level Committee sanction basis with material lag, the Rs 313.69 crore released for 2024 flood recovery having arrived more than a year after the season it addressed. This is a structural characteristic of the current architecture, not an implementation failure, and it is the direct justification for the Disaster Reconstruction Reserve recommended in section 21.3, since a State cannot self-finance the transition from relief to build-back-better reconstruction without either a dedicated reserve or a more predictable Central financing instrument than the present arrangement provides.

Urban and local government finance shows the Sixteenth Finance Commission moving in the opposite direction from disaster finance, toward expansion. Chapter 11 records that the award period brings a recommended increase of approximately 294 per cent in allocations to urban local bodies compared with the Fifteenth Finance Commission, comprising a 40 per cent grant share together with special grants including a State Performance Grant, a Special Infrastructure Grant and a Rural to Urban Transition Grant, while easing the own-source revenue growth condition to a uniform 5 per cent annual requirement that Chapter 11 assesses as too weak to drive genuine property tax reform. The implication for Centre-State strategy is specific: the binding constraint on Assam's urban local bodies is shifting from the volume of resources available to their capacity to prepare, procure and account for projects at that volume, which is a State-level capacity-building task rather than a further round of Union advocacy.

Two further Centre-State dimensions recur across the sector chapters and belong in this synthesis. The first is the Centrally Sponsored Scheme architecture that funds much of the delivery this report documents as successful, including the 90:10 funding ratio for schemes such as the employment guarantee programme and rural housing, and the case, made independently in Chapters 8, 9 and 12, for scheme guidelines adapted to Assam's riverine and hill topography rather than applied uniformly across States with materially different terrain and hazard exposure. The second is the national statistical rebasing exercise Chapter 20 documents, under which the Ministry of Statistics and Programme Implementation released a revised national accounts series with a 2022 to 2023 base year on 27 February 2026, and a Sub-Committee on Regional Accounts has issued a Uniform Guideline for States to compile Gross State Value Added on the new base. Chapter 20 could not establish when, or whether, Assam's Directorate of Economics and Statistics intends to adopt the revised base, and this chapter treats that adoption, on a published timeline, as a Centre-State coordination priority in its own right, since every Gross State Domestic Product-denominated ratio in this report, including the fiscal ratios in section 21.3, rests on the older base until it is undertaken.

21.5 Inter-State and Regional Cooperation

Assam's position as the largest State in a region of eight shapes several of the cooperation questions this report has already identified sector by sector, and this chapter consolidates rather than adds to them. The clearest is riparian. Chapter 9 finds that the Subansiri Lower hydropower project on the Arunachal Pradesh border, and the wider North Eastern hydro pipeline it anchors, place Assam in a structurally downstream position relative to Arunachal

Pradesh: Assam bears the flood risk and sediment and flow regime consequences of upstream storage without controlling the operating rules, and Chapter 9 accordingly recommends that the State pursue enforceable downstream operating protocols, real-time data sharing and flood-season drawdown rules with Arunachal Pradesh and through the Union Government, as a precondition for further upstream development rather than a consequence of it.

A second and less visible cooperation question concerns mining pollution across the Meghalaya border. Chapter 13 documents that acid mine drainage from rat-hole coal mining, concentrated in Meghalaya's Jaintia Hills, has contaminated the Kopili River and its tributaries to a degree that no longer sustains aquatic life in the most affected reaches, and that the river flows through Assam's Dima Hasao district, the site of a fatal rat-hole mining incident in January 2025 in which nine miners died. No single State pollution control board has jurisdiction over both the pollution source and its downstream consequences, and Chapter 13 recommends coordinated action with Meghalaya on Kopili basin remediation, targeting measurable pH recovery in the most affected tributaries by 2035.

A third dimension is regional trade and transport integration under the South Asia Subregional Economic Cooperation and Bangladesh, Bhutan, India, Nepal frameworks, examined in Chapter 4. Assam's electricity transmission links already supply power to Bhutan during the lean season while importing hydro-energy during peak monsoon flow, and the 131-kilometre India-Bangladesh Friendship Pipeline carries refined diesel from the Numaligarh Refinery to Parbatipur, demonstrating a functioning, if narrow, regional energy relationship. Chapter 8 finds a more consequential and underused regional asset in the Indo-Bangladesh Protocol Route, which carried approximately 4.68 million tonnes of traffic in 2023 to 2024, roughly nine times the tonnage of the wholly domestic National Waterway 2 over a comparable period, much of it over-dimensional cargo for regional power projects that cannot use the Siliguri corridor at all. Chapter 8 cautions that a logistics strategy resting on transit through Bangladesh substitutes a political dependency for a geographic one, since the protocol is a bilateral arrangement renewed periodically and subject to the state of relations between the two governments, and recommends pursuing it alongside, rather than instead of, direct corridor improvement, with a costed contingency against interruption.

21.6 The Act East and International Dimension

Assam's international dimension is real, growing and, on the evidence this report has assembled, still substantially aspirational relative to the scale of ambition attached to it. The Kokrajhar to Gelephu rail link, a 58-kilometre broad-gauge connection to Bhutan's planned Gelephu Special Administrative Region, and the Guwahati Ring Road and Gohpur-Numaligarh tunnel corridor examined in Chapter 8 are genuine infrastructure commitments with confirmed costs and, in most cases, confirmed construction timelines. Foreign Direct Investment inflows to Assam expanded from approximately 42 million dollars between 2019 and 2021 to 240 million dollars in 2025 to 2026 alone, driven substantially by semiconductor supply chain commitments tied to the Jagiroad facility (Chapter 4).

Against this, the evidence that Assam's economy or its visitor base has meaningfully reoriented toward Southeast Asia is limited. Chapter 8 records that Guwahati's international

airport handled 91,594 international passengers in 2024 to 2025, approximately 1.4 per cent of the airport's 6.57 million total throughput, and concludes that an airport designated international while operating 98.6 per cent domestically has not begun a Southeast Asian reorientation in any measurable sense. Chapter 19 corroborates this from the tourism side: Assam recorded 33,858 foreign tourist visits in calendar year 2025, against 68,992 for Sikkim, which led the north eastern region, and remained the region's second-ranked rather than leading destination for international visitors despite possessing, on the evidence of Chapters 1, 13 and 19, by far the largest and most internationally recognised wildlife and heritage asset base in the north east. Chapter 8's own assessment, that Act East should be treated as "a long horizon proposition to be planned for and not counted on," is the position this chapter adopts for the international dimension of the 2047 vision: the infrastructure commitments already made, the rail link to Bhutan, the ring road, the Guwahati airport terminal expansion to 13.1 million annual passenger capacity recorded in Chapter 19, and the Kaziranga, Manas and Charaideo Moidams heritage assets, provide a credible foundation for regional and international positioning, but the conversion of that foundation into measured trade, investment and visitor flows remains, on the evidence to date, an unrealised medium-term task rather than an achieved one.

21.7 Monitoring, Evaluation and Accountability Framework

The most striking finding to emerge from reading all twenty preceding chapters together is not any single sectoral gap but the sheer regularity with which each chapter, working independently and without reference to the others, arrived at the same institutional recommendation: publish an annual, dated, reconciled sector report. Chapters 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 18, 19 and 20 each propose a named annual publication, variously titled a State Health Report, a State Education Report, an Assam Water and Sanitation Report, a State Energy Report, a State Rural Development Report, a State Technology and Digital Governance Report, and equivalents for logistics cost, tourism statistics and agricultural data reconciliation. This is not duplication. It reflects a consistent underlying condition, documented separately in each sector, in which data that the relevant department already holds is not published in a form that permits independent verification, planning or accountability. Chapter 6 states the principle most directly: the State has demonstrated, in maternal mortality, that it achieves what it measures and holds itself accountable for, and the corollary is that it does not achieve what it does not measure.

This chapter's contribution is to recommend that these fourteen or more proposed publications be coordinated on a single annual calendar rather than commissioned as separate, uncoordinated departmental exercises, with the Transformation and Development Department, already the nodal agency for Sustainable Development Goal implementation under Chapter 20, or the Directorate of Economics and Statistics, given responsibility for the master schedule and for the cross-sector reconciliation exercise this would make possible. A single publication calendar would also make visible, rather than obscure, exactly the cross-chapter conflicts this synthesis has had to record rather than resolve, including the irrigation, fisheries, Gender Budget, Orunodoi financing and manufacturing target discrepancies detailed in section 21.8 below.

Accountability architecture beyond publication rests on institutions this report has already assessed. Chapter 15 finds that the Comptroller and Auditor General's most recent State Finances Audit Report recorded Rs 23,240.56 crore in unverified grant utilisation certificates and Rs 11,995.69 crore in unregularised excess disbursements accumulated since 2006 to 2007, alongside 494 unsubmitted annual accounts belonging to 75 autonomous councils, development councils and other government bodies, findings now before the Public Accounts Committee. Chapter 15 further finds that no consolidated, dated statement of total sanctioned civil service posts and vacancy exists across any cadre, department or Sixth Schedule council, a gap that recurs independently in Chapter 5's treatment of teacher vacancy and Chapter 6's treatment of health specialist vacancy, and that this framework regards as the single highest priority administrative data gap in the entire report. This chapter adopts Chapter 15's recommendation that a consolidated establishment statement be published alongside the 2027 to 2028 Budget, and treats it as the precondition for testing whether the salary and pension trajectory Chapter 2 records is fiscally credible.

Judicial and legislative oversight complete the accountability architecture. Chapter 15 records that subordinate court pendency rose from 5.34 lakh cases in mid-2025 to 5.75 lakh cases by 31 May 2026 even as annual disposal fell, and that the Comptroller and Auditor General's audit findings are now referred to the Public Accounts Committee, the correct constitutional venue for legislative scrutiny of the accountability backlog. Chapter 20's finding that Assam's citizens participate at scale wherever a participation channel exists, whether at the ballot box, in scheme enrolment, or in mission-level community classification exercises, but that the institutional and fiscal architecture connecting that participation to resource allocation remains comparatively underdeveloped, is the closing observation this chapter carries into its own accountability recommendations: publication and audit are necessary but not sufficient, and the State should treat the Public Accounts Committee's engagement with the 2026 State Finances Audit Report, and the Legislative Assembly's engagement with an annual progress statement against the own-revenue target recommended in section 21.3, as the tests of whether this monitoring framework functions in practice rather than on paper.

21.8 Measurement Gaps

A fully coherent, internally consistent Vision 2047 target set could not be constructed from the twenty preceding chapters, and this section states why rather than concealing the difficulty behind confident synthesis. Several gaps are structural to the report as a whole rather than specific to any one sector.

The Gross State Domestic Product base year is the most consequential. Assam's fiscal, economic and every GSDP-denominated ratio examined in this report rests on a 2011 to 2012 base year, while the Union Government released a revised national accounts series on a 2022 to 2023 base on 27 February 2026 and has issued a Uniform Guideline for States to follow. Chapter 20 could not establish a State adoption timeline. Every percentage of Gross State Domestic Product cited in this chapter, including the fiscal deficit, own tax revenue and debt ratios in section 21.3, should accordingly be read as provisional pending rebasing, a caveat this chapter inherits rather than resolves.

The manufacturing share target for 2047 is internally inconsistent between chapters. Chapter 3 sets 30 per cent by 2047 with an intermediate milestone of 24 per cent by 2035; Chapter 4 sets 32 per cent by 2047 with an intermediate milestone of 25 per cent by 2031. Both share the same 19 per cent baseline, which Chapter 3 itself cautions describes the whole industry sector rather than manufacturing narrowly defined. This chapter reports both figures rather than adopting either.

Two financing figures central to the State's largest welfare and equity commitments do not reconcile. The 2026 to 2027 Gender Budget is reported at both Rs 12,214 crore and Rs 12,160 crore across sources Chapter 20 could not resolve against a single primary Finance Department statement. More seriously, Orunodoi, the State's largest single social protection instrument, carries a Rs 3,700 crore budget line in the 2026 to 2027 Budget documents Chapter 2 examined, against a publicised annual run rate of approximately Rs 5,000 to 5,604 crore reported around the scheme's third phase launch; Chapter 20 could not obtain an explanation for the gap and records it as a priority for verification against a primary source.

Disaster data shows a comparable pattern. The widely repeated figure that the 2024 floods affected 42.95 lakh persons across 7,794 villages in 35 districts, which appears in Chapter 1 as an established figure, could not be traced by Chapter 14 to a retrievable primary Assam State Disaster Management Authority publication; the only figure Chapter 14 could verify from a dated primary bulletin was a mid-season snapshot of 16.25 lakh persons affected as at 3 July 2024. This chapter records the season total as attributed rather than established, consistent with Chapter 14's own treatment, and notes the inconsistency between how confidently Chapter 1 and Chapter 14 present the same figure as a further instance of the coordination gap this synthesis chapter cannot itself close.

Agricultural data carries two further unreconciled conflicts of direct relevance to food security planning: net irrigated area is reported at 2.51 lakh hectares by the Directorate of Economics and Statistics against 6.95 lakh hectares in a State Assembly statement by the Irrigation Minister for closely adjacent years, a threefold discrepancy; and inland fish production for 2023 to 2024 is reported at 4.74 lakh tonnes by the Directorate against 4.99 lakh tonnes by Fisheries Department reporting for the same year. Chapter 18 recommends a single reconciled data series before further targets are set on top of either figure, a recommendation this chapter endorses rather than pre-empting by choosing a number.

Institutional capacity data is largely absent where it would matter most. No consolidated, dated statement of total sanctioned civil service posts and vacancy exists across any cadre or department (Chapter 15). Assam's Geographical Indication portfolio is reported at 31, 37 or 41 registrations depending on source and vintage, with individually named and dated registrations verified but the cumulative total contested (Chapters 17 and 19). The most recent comprehensive socio-economic survey of the char and chapori tracts dates to 2002 to 2003, more than two decades before this report, describing a population Chapter 1 identifies as concentrated in the State's highest hydrological hazard geography (Chapters 1, 7 and 20). Reported direct and indirect employment at the Jagiroad semiconductor facility has ranged from 1,500 to 27,000 across different project milestones, against a verified current employment figure of 2,000 as the facility approached production (Chapters 4 and 17).

These gaps are not offered as a caveat appended to an otherwise complete synthesis. They are the honest limit of what a report built strictly on verified, sourced evidence can conclude about a State whose own statistical and financial reporting systems, on the evidence this report itself assembles, do not yet consistently agree with each other.

21.9 Strategic Priorities

Eight priorities follow from the synthesis in this chapter, each grounded in a verified baseline established in an earlier chapter of this report and carrying target years of 2031 and 2047 consistent with the horizon used throughout this framework.

1. **Convert Assam's demonstrated capacity for single-objective delivery into a general method of governance, not an isolated achievement.** Against the Maternal Mortality Ratio's fall from 480 to 84 deaths per lakh live births over two decades (Chapter 6; Registrar General of India, 2025), the completion of more than 99 per cent of Pradhan Mantri Gram Sadak Yojana Phase I roads (Chapter 8), and a record 8.02 lakh tonnes of paddy procurement in 2024 to 2025 (Chapter 18), the same model of a named accountable authority, a single measurable objective and sustained multi-year effort should be applied by 2031 to child anaemia, targeted below 40 per cent among children aged 6 to 59 months (Chapter 6), to minor irrigation scheme functionality, targeted at 95 per cent (Chapter 10), and to Panchayati Raj Institution grant release, targeted at 90 per cent of recommended transfers (Chapter 12).
2. **Close the own-revenue gap that constrains every other priority in this chapter.** Against own tax revenue of 4.1 per cent of Gross State Domestic Product budgeted for 2026 to 2027, down from 4.7 per cent in 2024 to 2025 actuals, and an own-source revenue share of 36 per cent of revenue receipts (Chapter 2), the target is own tax revenue of at least 5.5 per cent of Gross State Domestic Product by 2031 and 7 per cent by 2047, and an own-source revenue share of 50 per cent by 2031, the State's own declared objective, which Chapter 2 assesses as unlikely to be met without the property tax and stamp duty reform it recommends.
3. **Sustain the maternal mortality achievement and close the remaining distance to the national frontier.** Against a Maternal Mortality Ratio of 84 per lakh live births in 2022 to 2024, against a national figure of 87, Assam is no longer among India's highest-MMR States, a position now held by Uttar Pradesh at 154 and Madhya Pradesh at 135, while Kerala at 24 and Tamil Nadu at 25 remain the frontier Assam has not yet reached (Chapter 6; Registrar General of India, 2025). The target is a Maternal Mortality Ratio below 50 by 2031 and below 25 by 2047, with district-level ratios published annually and the tea garden, char and hill geographies reported separately, since the State average conceals the concentration of remaining risk.
4. **Arrest the secondary-education leakage that determines whether the demographic dividend is realised or lost.** Against a secondary dropout rate of 17.5 per cent in 2024 to 2025 and a Grade 9 mathematics proficiency that falls progressively from the Grade 3 level under national assessment (Chapter 5), the target is a secondary dropout rate below 8 per cent by 2031 and below 3 per cent by 2047, with at least 80 per cent of pupils

achieving grade-appropriate reading and numeracy proficiency by the end of Grade 3 by 2031 and 95 per cent by 2047, measured through an independent annual assessment covering Sixth Schedule council areas on the same instrument as line department areas.

5. **Build the manufacturing and employment base needed to convert nominal output growth into household income.** Against a primary sector share of 35 per cent of Gross State Value Added, roughly double the national share, and an employment elasticity of growth estimated at 0.1 to 0.3 (Chapter 3), the target is an employment elasticity of at least 0.4 by 2035, formal contributory salaried employment rising to 20 per cent of the workforce by 2035, and per capita Gross State Domestic Product reaching 95 per cent of the national level by 2035 and parity by 2047, on the gross, common-reference-year basis Chapter 3 establishes as the defensible measure. The manufacturing share target itself remains contested between Chapters 3 and 4, as recorded in section 21.7, and should be reconciled before either figure is adopted as a State target.
6. **Treat riverine and seismic hazard as a permanent design parameter of every capital investment, not an exceptional circumstance.** Against a flood-prone land share of 39.58 per cent and uniform Seismic Zone V classification across the State's entire territory (Chapters 1 and 14), the target is a single, reconciled, methodology-stated season-end flood report published within 60 days of each monsoon season from 2027 onward, a Disaster Reconstruction Reserve equal to one year of average annual State Disaster Response Fund and National Disaster Response Fund releases, on the order of Rs 670 crore, accumulated by 2031 and three years of average releases by 2047, and a published flood and seismic design standard applied to all new transport, energy, water and rural housing sanctions from 2028 onward.
7. **Repair the third tier of government as the precondition for local service delivery in every sector this report examines.** Against Panchayati Raj Institution internal revenue of Rs 45 crore in 2024 to 2025, down from Rs 56 crore in 2019 to 2020, and a State Finance Commission grant release rate of 14 per cent against the Sixth Commission's recommendation (Chapters 2 and 12), the target is release of at least 90 per cent of recommended general purpose grants from 2027 to 2028 onward, and aggregate Panchayati Raj internal revenue of at least Rs 250 crore by 2031 and Rs 1,000 crore by 2047 in constant 2025 to 2026 prices, achieved through systematic revaluation of panchayat-leased common property and a defined, buoyant local revenue handle.
8. **Close the geographic deprivation gap concentrated in the char and chapori tracts, the tea garden belt and the hill districts.** Against a State multidimensional poverty headcount of 14.47 per cent that this report's own evidence indicates conceals sharply higher deprivation in these three geographies, and a char area socio-economic survey last conducted in 2002 to 2003 (Chapters 1, 7 and 20), the target is completion and publication of a fresh char and chapori socio-economic survey by 2028 to 2029, an annual Inclusion Report covering all three development regions from 2028 onward, and, by 2047, no development region recording headline outcomes more than ten percentage points below the State average, the standard Chapter 7 sets for the resolution of Assam's most persistent and longest-documented pattern of spatial inequality.

END NOTE

The Comprehensive Development Framework Report of the State of Assam represents an independent, evidence-based appraisal of the State's developmental trajectory, structural vulnerabilities, and strategic possibilities as India approaches the centenary of national independence in 2047. Prepared by the Council for Comprehensive Development Frameworks of the Youth Peace and Development Forum, New Delhi, this volume synthesises official data repositories, peer-reviewed academic literature, and field evidence across twenty-one substantive chapters.

The framework demonstrates that while Assam is experiencing rapid nominal economic growth driven by public capital formation, industrial anchor investments, and expanding welfare transfers, sustaining long-term prosperity requires addressing three core structural imperatives: closing the gap between economic growth and human development outcomes (specifically maternal health, child nutrition, and foundational learning), building climate-resilient infrastructure adapted to the Brahmaputra hydrological cycle, and achieving fiscal autonomy through own revenue mobilization.

The Youth Peace and Development Forum presents this report to policymakers, enterprise leaders, academic researchers, civil society organizations, and above all to the young citizens of Assam, in whose hands the realization of Vision 2047 rests.

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