Stocktaking on Management of Public Investment in Selected States

A Report on Tamil Nadu

National Institute of Public Finance and Policy
New Delhi

Preface

The National Institute of Public Finance and Policy (NIPFP) is an autonomous non-profit organisation whose primary functions are to undertake research, consultancy and training in the field of public economics and related policy. The institute emerged as a premier think tank in India and has made significant contributions to policy reforms at all levels of the government.

The present study was commissioned by the World Bank wherein a stocktaking on management of public investments in selected States is proposed. The study seeks to provide an overview of the evolving institutional framework for public investment management in Odisha.

Subnational governments play a critical role in the level, composition and management of public investments. After the dissolution of the Planning Commission, several models for managing public investments and project appraisal have emerged at the State level. Given the challenging economic environment, fiscal consolidation is anticipated to persist, limiting opportunities for expanding infrastructure expenditure. Consequently, it is critical to maximize the efficiency of public investments and mobilise private investments in infrastructure to scale up infrastructure investments. There is also a need to develop an institutional framework for managing investment towards climate change for both mitigation and adaptation measures. Climate resilient public infrastructure is critical given India's exposure to climate risks. The study uses the World Bank framework for PIM modified to the Indian context to understand the strengths and challenges of the framework in operation in the state.

We hope this study will be of interest and use not only to policymakers but also to the wider academic community working in this area. The study was planned and conducted by Supriyo De, RBI Chair Professor, NIPFP and R. Kavita Rao, Director, NIPFP with inputs from Ragnvald Michel Maellberg, Senior Public Sector Specialist, World Bank. The study team included Lekha Chakraborty, Professor, NIPFP; Piyali Das, Assistant Professor; Mayurakshi Mitra, Research Fellow; Seema Maurya, Research Fellow; and Divya Rudhra, Research Fellow. The Governing Body of the Institute does not take any responsibility for the views expressed in the report. The opinions expressed here are those of the authors only.

Acknowledgement

This is a report on the project *'Stocktaking on management of public investments in Tamil Nadu'*. We extend our gratitude to the officials of the Government of Tamil Nadu from the Department of Finance, Tamil Nadu Infrastructure Development Board and Bureau of Public Enterprises. We sincerely thank T. Udhayachandran, Finance Secretary for his valuable contribution. We would also like to extend our gratitude to Prashant Wadnere, Additional Secretary to the Government of Tamil Nadu for his invaluable insights and generous sharing of expertise. Additionally, we acknowledge S. Ravindran, COO, TNIDB and J. Saravana, Joint Secretary, Department of Finance for sharing their perspectives and experiences. We acknowledge the nodal officer, B Pavan, Project Monitoring Unit (PMU), Tamil Nadu Investment Development Board (TNIDB) for coordinating and facilitating the interview process. We would also like to thank CR Balaji, Additional Director and Joint Secretary, Bureau of Public Enterprises and T. V. Premgopal, Deputy Director, Bureau of Public Enterprises for their support and input.

In the completion of this study, we had the opportunity to discuss various dimensions concerning this project with several officials in the Department of Economic Affairs (DEA), Ministry of Finance, and colleagues at NIPFP who contributed important materials and views. We would like to particularly acknowledge the insightful inputs received from Mr. Sanjay Prasad, Additional Secretary, Department of Expenditure, Ministry of Finance; and Mr. Anurag Goyal, Senior Advisor, NITI Aayog.

Contents

Tamil Nadu
Stocktaking of Public Investment Management

Public Investment Management (PIM) at a glance[1]

Tamil Nadu **Governance structure**: State **Population[2] ('00):** 7,65,360 (2021-22) **Gross State Domestic Product (GSDP)[3] 2021-22:** 2,065,436 **GSDP / Capita**: ₹ 2,69,865(2021-22)			
Annual Real Average Decadal Growth Rate (2012-22)	6.1%	**Total Capital Outlay 2021-22 (₹ Cr) (% of GSDP)**	37,010.78 (1.79)
Total Expenditure on Centrally sponsored schemes 2022 (₹ Cr) (% of GSDP)	36,566.81 (1.77%)	**Externally Aided Projects 2021-22 (₹ Cr) (% of GSDP)**	34,004.35 (1.64%)
Private infrastructure finance 2020 (₹ Cr)	282 4 projects	**State Sector schemes 2021-22 (₹ Cr) (% GDSP)**	52,801.55 (2.56%)
Gross Fiscal deficit 2021-22 (% GSDP) **Gross Revenue Deficit 2021-22 (% GSDP)**	3.90% 2.25%	**Outstanding Debt 2021-22 (₹ Cr)** **Total debt stock 2021-22 (% GSDP)**	6,10,667 28.87%
Share of Grants in Aid from Centre (2021-26) **% of total vertical devolution**	40,351 3.96%	**Devolution of State's Own Tax Revenue to Local Bodies (2021-22)**	10%
Capital Outlay outturn 2021-22 (%)	87.74%	**Revenue Outlay Outturn 2021-22 (%)**	97.26%
Share of State sponsored w/time-overrun 2021-22	52%	**Average time overrun of State sponsored projects with completion target from 2014 till 2022**	4.42 Years
Cost overrun of Central Sector Projects >₹ Cr 150 (% above of original cost)	45.71	**Average Central Sector Projects >₹ Cr 150 w/time overruns in months (range)**	40.85 (2-171)
Climate Vulnerability Index score (CEEW)	0.339 Rank 12th	**Human Development Index (2021-22)**	0.686

[1] Time period of this report is limited to 2021-2022 and the report is updated as on date 21st February 2024.
[2] https://mospi.gov.in/GSVA-NSVA
[3] State Finance Audit Report of the Comptroller and Auditor General of India for the year ended March 2022.

1. Key Findings and Messages

1. Public infrastructure is a key driver of development. In the context of limited fiscal resources, enhanced public spending efficiency is important. To ensure that public resources are efficiently utilized, it is imperative to study the institutions and processes governing public investment in infrastructure. Enhancing infrastructure spending and governance together is more effective than increasing spending alone for the efficient delivery of economic and social infrastructure. Climate resilient public infrastructure is critical given Tamil Nadu's exposure to climate risks. Increasing frequency of severe weather events such as droughts, floods and cyclones pose threat to infrastructure with significant fiscal risks. The present study on Public Investment Management (PIM) applies a comprehensive framework to assess infrastructure governance practices that may identify areas of improvement in procedures and processes used by governments to provide infrastructure assets.

2. To continue on a robust growth path, Tamil Nadu has kept the fiscal policy accommodative, with a focus on public investment. In terms of Gross State Domestic Product (GSDP), Tamil Nadu is the second largest state in India. Tamil Nadu's economy is diversified, has large industrial base and abundant skilled labor, and has attracted sizeable volume of foreign direct investments over the last decade. Its annual real growth averaged 6.1 percent between 2012 and 2022, above the growth rate of the national economy. During this period, the total average expenditure represents 14.1 percent of its Gross State Development Product (GSDP). Post-COVID recovery was strong with growth rate about 7.92 percent in 2021-2022, driven by strong performance in secondary sector. Revenue expenditures is the largest component of total expenditure which accounts for 86.2 percent of total spending, while capital outlay spending made up 12.6 percent, in 2021-2022. Efficient utilisation of fiscal resources along with higher capital expenditure may help boost growth via multiplier effect.

3. The state is fiscally disciplined and compliant with the fiscal norms stipulated under the Tamil Nadu Fiscal Responsibility and Budgetary Management Act (TNFRBM) with some exceptions during the time of economic uncertainties. Enhanced spending efficiency is a priority and there is a scope to strengthen the state's institutions for PIM. The state financed projects under implementation from 2014- end-march 2021 are experiencing implementation delays with an average of 4.5 years. There is slippage in the capital outlay outturn. It needs better institutional mechanism for monitoring and evaluation of fund requirements. Further, the allocations for Operations and Maintenance (O&M) expenses have been decreasing which might exacerbate asset depreciation. The capital spending on O&M may be raised for sustainable and effective capital investment.

4. In Tamil Nadu, the institutional structure for infrastructure governance has multiple public entities with different and sometime overlapping roles. This creates a potential for lack of coordination of investment plans of the public sector as a whole. It also has associated fiscal risks. The quality of planning of the project is a key bottleneck that can lead to poor execution at the implementation stage. It can lead to time and cost overruns, resulting in a series of revised cost estimates and cost escalations. This could be addressed through enhanced scrutiny of all major projects including: a) publish updated appraisal guidelines including to streamline climate change dimensions, b) scrutinize all projects and their appraisal by taking input from an independent agency or experts, c) enhance the public investment prioritization mechanism, d) streamline public-private partnerships (PPP) in the PIM system and e) regular reporting on PIM. The state would also benefit from a PIM Information System for seamless management across all the dimensions of the PIM cycle. If implemented, it may facilitate reporting, enhance transparency and improve efficiency of PIM.

5. For the projects funded through the budget, the outlays for new and ongoing projects are appropriated on an annual basis. However, information on total project costs and multiyear commitments for most major projects are not included in the budget documentation. Adding public investment plan documentation to the budget documentation that discloses total project costs and multiyear commitments for major projects would allow to enhance transparency of PIM.

6. Public investment is also undertaken through public corporations of the state. BPE reviews and publishes a consolidated report on financial performance of PCs. It also reviews the investment plans of public corporations. An appraisal methodology for these investments and including climate change dimensions is yet to be published. However, it does not publish a consolidated report on investment plans. The information on investment plans of public corporations maybe published in a consolidated way.

7. The state has a robust institutional mechanism for systematic appraisal and review for different project types through different institutions, i.e. Planning and Special Initiatives Department (PDSI), Department of Finance (DoF), Tamil Nadu Investment Development Board (TNIDB), and Bureau of Public Enterprises (BPE). The projects are subject to rigorous technical, economic, and financial analysis in the Detailed Project Report. Currently, the state has the good practice of ensuring that the projects are technically approved before being appropriated from the budget. However, it maybe suggested that the details of the methodology used for the appraisal maybe clarified in a published technical note. There is a need for additional guidelines on the methodology used to undertake cost-benefits or Economic rate of return analysis. Likewise, guidelines on how to streamline climate change dimensions could be issued.

8. Selecting the right projects for funding is critical for improving the effectiveness and efficiency of budgetary resources. There is guidance provided in sector strategies, but no published project selection guidelines are available. It is suggested that the guidelines for project selection maybe clarified in a published document. There is also scope for a published guideline on the prioritisation framework depending upon the readiness of the project. This may guide the allocation of limited budgetary resources and ensure project alignment with policy goals.

9. Tamil Nadu's project implementation and monitoring systems are sound. Large projects are subject to rigorous monitoring through PDSI and DoF. PDSI has a dedicated monitoring unit called the Department of Evaluation and Applied Research (DEAR) to evaluate schemes and projects. A High-Level Official Committee on the Major Infrastructure Projects under the Chairmanship of Minister of Finance and Human Resource Management review the major infrastructure projects. To ensure the prompt completion of ongoing projects, the government also regularly updates the progress of Major Infrastructure Projects through web portal, "e-Munnetram".

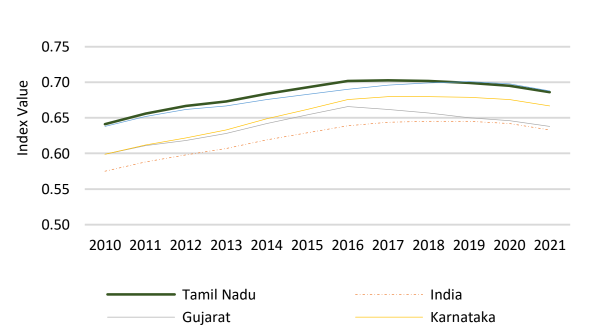
10. Tamil Nadu has a strong framework for adaptation to climate change through the Tamil Nadu State Action Plan on climate change (TNSAPCC). Given Tamil Nadu's coastal geography and its susceptibility to climate change, the state is investing in climate sustainable and resilient public infrastructure. Tamil Nadu Green Climate Company (TNGCC) coordinate and implement activities proposed to be undertaken as per state action plan on climate. District Climate Change Mission formulates development plans to make districts and villages resilient to climate change. However, it can accelerate progress on climate-sensitive public investment management. For all public investment projects, analysis of the impact of climate change may also be included during appraisal and selection process.

11. The state may coordinate public investment across all entities in response to climate change either through the budget or extra-budgetary institutions. A detailed assessment of fiscal risks to public assets and infrastructure due to climate change will help in adaption. The state needs to develop and publish a framework for managing investment towards climate change.

2. Overview of the state

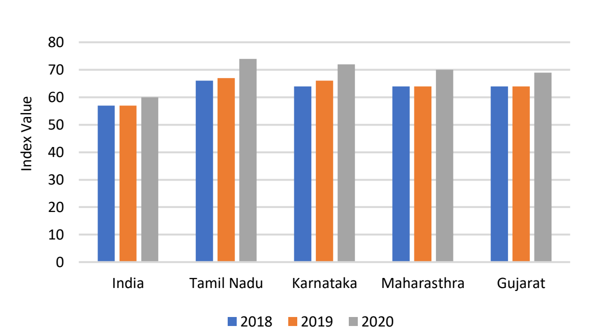
12 **Development in Tamil Nadu has made progress over the past decade.** Tamil Nadu, India's southernmost state, is India's sixth largest in terms of population (72.15 million, 2011 census) and tenth largest in terms of area (130,060 km^2). Its Human Development Index (HDI) improved from 0.641 in 2010 to 0.686 in 2021, above the average of Indian states of 0.575 in 2010 and 0.633 in 2021 (figure 1). Tamil Nadu's HDI improvement over the past decade has been below comparator states such as Gujarat, Maharashtra, and Karnataka. In terms of progress on SDGs, Tamil Nadu has done well and scored 74 and ranked 2nd on the SDG India 2020-21 Index[4] up from a score of 66 and rank of 3rd in 2018 (Figure 2).

Figure 1: Evolution of the HDI in Tamil Nadu



Source: https://globaldatalab.org/

Figure 2: Progress on India's SDG index



Source: Niti Aayog

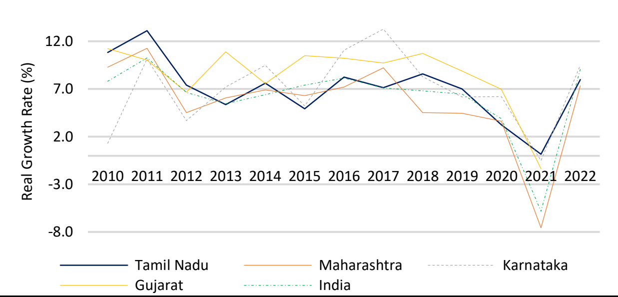
13 **The second largest economy in India, Tamil Nadu has registered real growth over the past decade.** Highly urbanized, the state observed an increase in its urbanization rate from 34 percent to 53 percent of its total population.[5] In terms of Gross State Domestic Product (GSDP), Tamil Nadu is the second largest state in India. Tamil Nadu's economy is diversified, has large industrial base and abundant skilled labor, and has attracted sizeable volume of foreign direct investments over the last decade. Its annual real growth averaged 6.1 percent between 2012 and 22, above the growth rate of the national economy and Maharashtra but below Gujarat and Karnataka (figure 1)[6]. While growth has mainly been from service led tertiary sector, secondary sector particularly manufacturing also registered robust development between 2016 and 2019 (figure 2). Primary sector wherein agriculture provides livelihood to about 40 percent of the population has seen significant swings in growth. Post pandemic growth in Tamil Nadu has been robust at 7.92 percent in 2021-22, driven by strong performance in secondary sector.

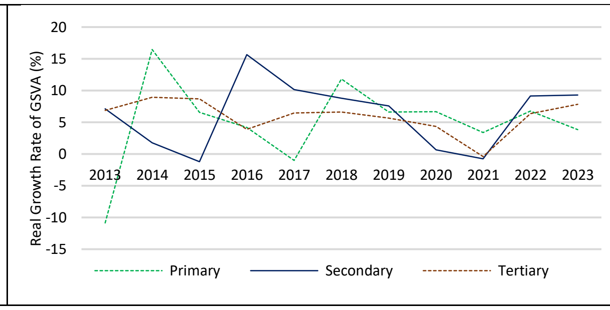
Figure 3: Real growth in Tamil Nadu and comparators	Figure 4: Real gross state value added (GSVA) rates

[4] https://pib.gov.in/PressReleasePage.aspx?PRID=1911165

[5] a) Policy Note 2022-2023, Municipal Administration and Water Supply Department, Tamil Nadu; b) Population Projection for India and States 2011-2036, National Commission on Population, Ministry of Health and Family Welfare, 2019.

[6] Year 2011-12 is abbreviated as 2012, and similarly, other years follow this convention.





Source: Reserve Bank of India (RBI), Handbook of statistics of Indian States, 2023 and MoSPI

14 **Revenue receipts have declined in Tamil Nadu driven by a decline in own-tax revenues.** Over the past decade, the state has witnessed a decline in revenue receipts as a share of GSDP (Figure 5). The impact of the pandemic exacerbated this situation. The revenue receipts to GSDP fell from 11.34 percent (2011-12) to 10.05 percent (2021-22). This trend is largely on account of a decline in the state's own- tax revenue as a share of GSDP that fell from 7.9 percent (2012) to 5.9 percent (2022).

15 **Total spending has been relatively stable over the past decade and is composed mainly of revenue expenditures.** Total spending in Tamil Nadu has averaged 14.1 percent of GSDP between 2012 and 2022. Some variation in the spending is observed over this decade with a low in 2013 of 13.3 percent of GSDP in 2014 and highs of 15.3 and 15.1 percent of GSDP in 2015 and 2021 respectively (figure 6). During this period, revenue expenditures and loans and advances repayments represented on average 82 percent of total spending while capital outlays represented 18 percent of total spending. While capital outlay spending increased by 30 percent between 2018 and 2022 to 1.8 percent of GSDP, it remained below the spending level of 2012 of 2.2 percent of GSDP.

Figure 5: Revenue receipts evolution and composition

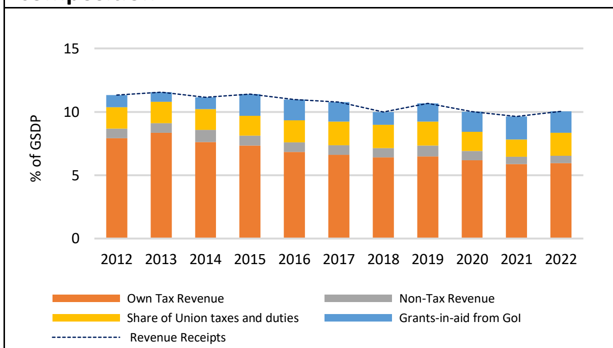


Figure 6: Expenditure evolution and composition

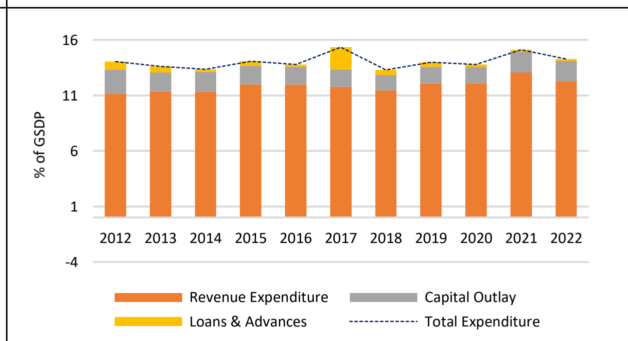


Figure 7: Composition of revenue expenditures

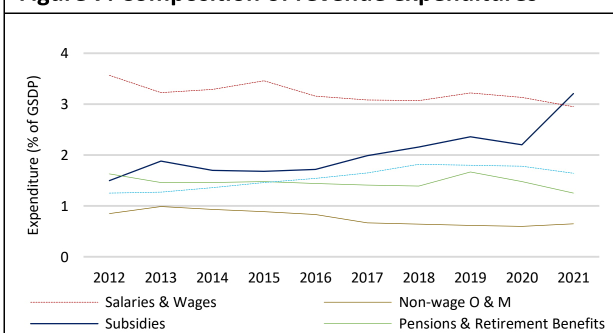
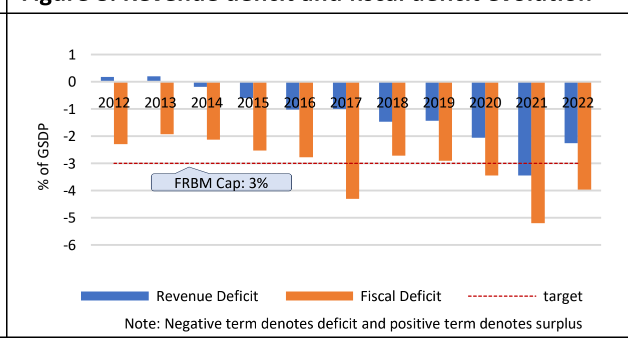


Figure 8: Revenue deficit and fiscal deficit evolution



Source: State Finance Audit Reports, CAG, RBI's Handbook of Statistics of Indian States, Tamil Nadu White Paper on Government's Finances, and Accounts at Glance (Various Issues)

16 **While subsidies represent an increasing part of revenue expenditures over the past decade, wages, pensions and operation and maintenance expenditures have declined (figure 7).** Spending on subsidies amounted to 3.21 percent of GSDP in 2021 up from 1.5 percent of GSDP in 2012. Spending on interest and grants-in-aid also increased during the same period. Meanwhile, between 2012 and 2021, spending operations and maintenance, pensions and salaries and wages declined by 23.5 percent, 23.3 percent, and 17.4 percent respectively.

17 **Increasing deficits over the past years have led to debt level above the threshold of the Tamil Nadu Fiscal Responsibility and Budgetary Management Act (FRBM), 2003 (amended in 2021).** The state has adhered to the Tamil Nadu FRBM act's 3 percent fiscal deficit limit except in 2017, following the 2016 demonetization and implementation of GST in 2017, and 2020-22 due to the COVID-19 pandemic (figure 8). Increasing deficits have resulted in debt levels above comparator states and Tamil Nadu's debt rose above the FBRM debt ceiling of 28.7 percent of GSDP in 2021-22 (figure 9). Tamil Nadu has increased the use of guarantees, particularly to support infrastructure investments in the power sector and, to a lesser extent, the transport Sector. They represented 4.45 percent of GSDP in 2022, up from 2.24 percent in 2017 and below the ceiling of 10 percent of GSDP set by the Tamil Nadu FRBM act (figure 10).

Figure 9: Debt in Tamil Nadu and comparator states

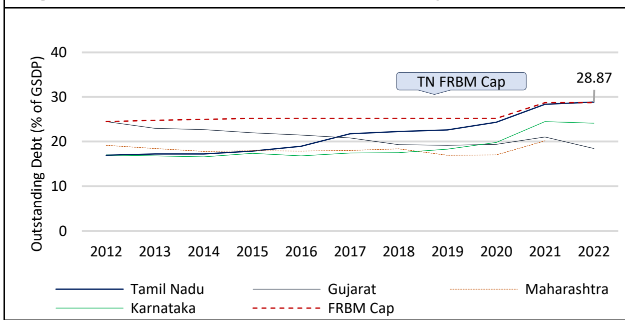
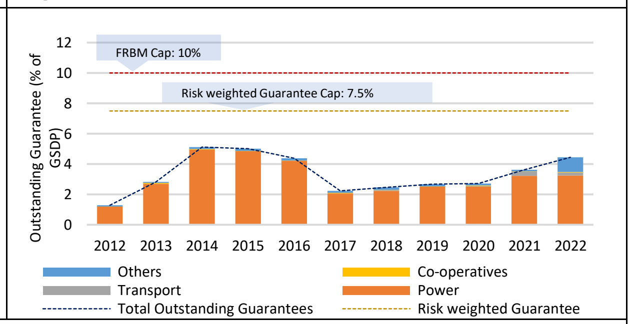


Figure 10: Use of Guarantees in Tamil Nadu

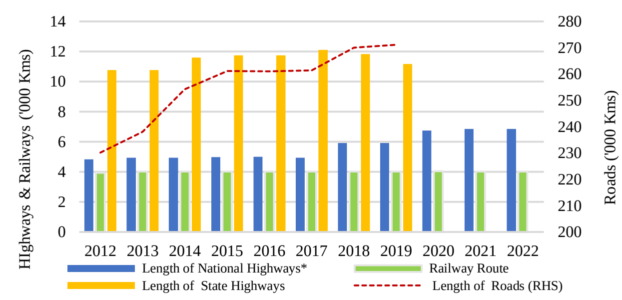


Note: Outstanding debt includes internal debt, loans from GoI, and Public account liabilities. It does not include off-budget borrowings.
Source: State Finance Audit Reports, CAG, RBI Handbook of Statistics on Indian States, and Tamil Nadu White Paper on Government's Finances

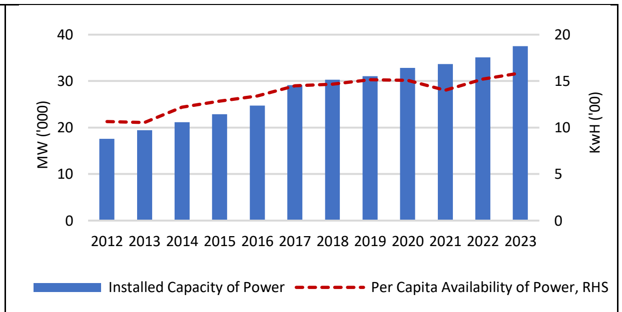
3. Trends in Infrastructure

18 **Tamil Nadu benefits from robust social and economic infrastructure that has improved substantially over the past years**. Both social and economic infrastructure has improved over the past years. The robust social infrastructure i.e. health and education, is reflected in the high HDI (figure 1). A priority for Tamil Nadu, economic infrastructure i.e. transport, power, water and sanitation, have seen significant progress (figures 11-14). Continued investments in infrastructure development would nevertheless be required to improve access to and quality of infrastructure services necessary for continued economic progress.

Figure 11: Evolution of transport infrastructure	**Figure 12: Power sector infrastructure**



Source: RBI Handbook of Statistics on Indian States



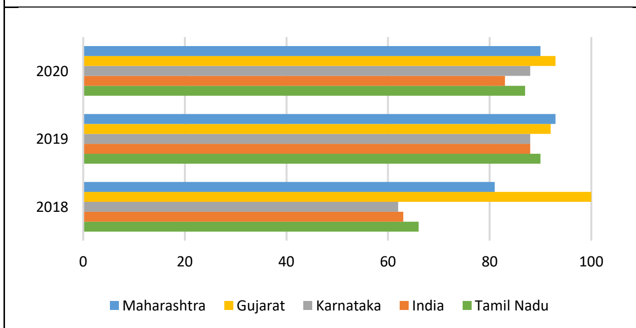
Source: : RBI Handbook of Statistics on Indian States

19 **Transport infrastructure has improved significantly over the past decade.** Total length of roads increased by 17 percent between 2012 and 2019. The state stands out for its robust infrastructure connectivity through state and national Highways. It has four international airports (Chennai, Madurai, Coimbatore, Trichy) and four major seaports (Chennai Port, Kamarajar Port, VOC Port, Kattupalli). As per the Logistics Ease Across Different States (LEADS) Report 2022, Tamil Nadu is listed among the "Achievers"[7] across all other coastal states of India. It is among top three export-oriented state in India with 57 formally approved Special Economic Zones (SEZ)[8].

20 **To accompany its development, investments in energy has improved access to power in Tamil Nadu.** Installed capacity of power was 37,514 in 2023 up 113 percent since 2013 and per capita availability improved by 49.4 percent during the same period (figure 12). The state leads the nation in installed wind capacity with its significant contribution of 24% to the country's total wind power capacity. Additionally, it secures the fourth position in installed solar energy capacity.

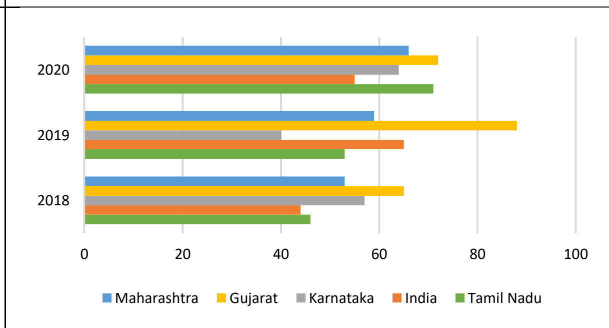
21 **Tamil Nadu has made progress on infrastructure related SDG indicators.** Hence, the score of SDG 6, measuring access to clean water and sanitation, improved to 87 in 2020, up from 63 in 2018 (Figure 13). This is above the average in India but below comparator states such as Gujarat and Karnataka. Also, quality of water related services needs improvement with 80% of cities receiving less than 80 liters of water per capita per day, vs. the national standard of 135 liters per capita per day and with most ULBs facing acute water shortages. The score of SDG 9, Industry, innovation, and infrastructure, improved by more than 50 percent between 2018 and 2020 and is above the national average and comparator states but Gujarat. This reflects improvements in telecommunications, road connectivity and manufacturing (figure 14).

Figure 13: SDG 6 – Clean water and sanitation



Source: https://sdgindiaindex.niti.gov.in/

Figure 14: SDG 9: Industry, innovation, and infrastructure



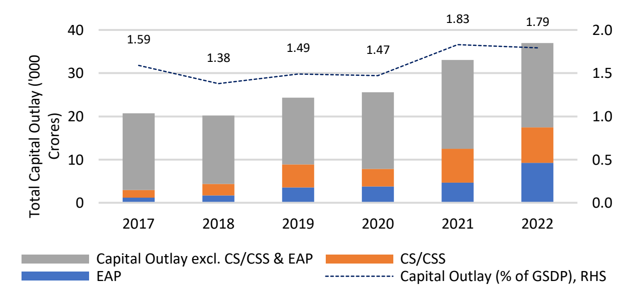
Source : https://sdgindiaindex.niti.gov.in/

[7] States in this category exhibits exceptional logistic ecosystem with commendable infrastructure and transparency in regulatory process.
[8] Government of Tamil Nadu. 2021. *Tamil Nadu Industrial Policy 2021*.

4. Evolution of Tamil Nadu's public investment efforts

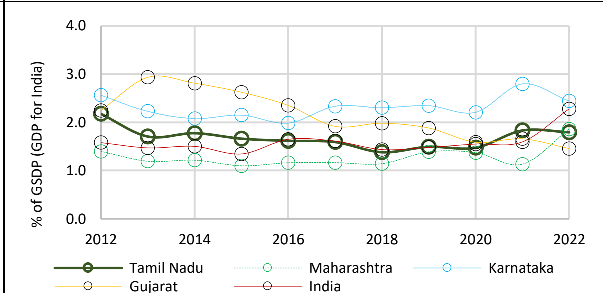
22 **Total public investments have increased substantially over the past years.** Reflecting the priority given by the authorities to develop infrastructure to spur Tamil Nadu's development effort, total public investments (the sum of capital outlays, central schemes (CS), centrally sponsored schemes (CSS) and externally aided projects (EAP)) totaled 1.79 percent of GSDP in 2022, up from 1.38 percent of GSDP in 2018 (figure 15). This continued during the pandemic and the state government incurred an additional capital expenditure of INR 10,000 crore on capital works, above budgeted expenditure. After the pandemic, Tamil Nadu has pursued its public investment drive. Compared to other states, between 2012 and 2019, Tamil Nadu's capital outlays averaged 1.67 percent of GSDP below comparator states such as Gujarat and Karnataka and above Maharashtra. This trend has changed since 2020 with Tamil Nadu's capital outlays averaging 1.70 percent of GSDP between 2020 and 2022, above the levels of Gujarat and Maharashtra (figure 16).

Figure 15: Evolution of public investments



Source: State Finance Accounts Reports and State Finance Audit Reports, CAG

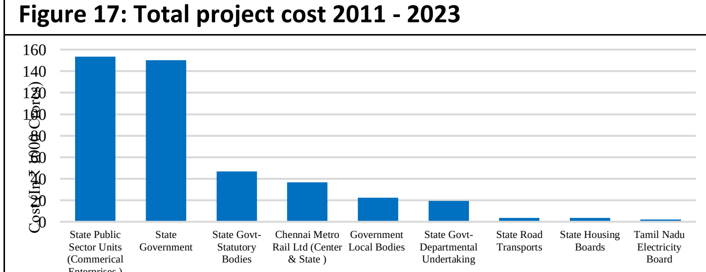
Figure 16: Capital outlay trends in selected states



RBI: Handbook of Statistics on Indian States (HSIS)

23 **Public Sector Entities (PSE) are significant actors in PIM in Tamil Nadu.** There is a total of 54 PSEs in Tamil Nadu (2019-20), employing a total of 229,484 (table 1). In 2019-20, most PSEs were loss making and total losses amounted to INR 17,430 crores. PSE are active in key sectors including energy, trading, transport, water, sanitation, manufacturing, agriculture, and construction. Their public investments are significant (figure 17) and according to available data as important as the remaining part of the administration. Meanwhile, these investments are not captured in public finance data as they are treated as extra budgetary entities making it difficult to assess the overall level of public investments.

Figure 17: Total project cost 2011 - 2023



Source: CMIE-CapEx

Table 1 – Overview of PSEs in Tamil Nadu

	2018-19	2019-20
#PSE	54	54
#PSE making profit	30	26
#employees	235,135	229,484
Total Net Profit (INR, Cr)	-17,032	-17,430

Source: Finance Department, Review of Performance of PSEs 2018-19 and 2019-20

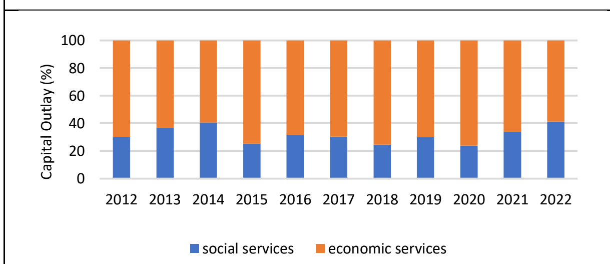
5. Allocation of public investments in Tamil Nadu

Sector allocation

24 **Public investment allocations between social and economic sectors in Tamil Nadu have broadly been aligned with GoTN's strategic priorities.** Between 2012 and 2022, capital outlay distribution between social and economic services averaged 31.55 and 68.45 percent with significant fluctuations across the years (figure 18). This is broadly in line with the 2023 Tamil Nadu vision issued by the Government of Tamil Nadu (GoTN) in 2012 that planned for an allocation of 28.4 percent to social sectors during this period. The slightly higher actual allocation to social sector reflects the strategic priority of increasing allocations to health in the context of the COVID-19 pandemic with social sector capital outlays increasing by 112 percent between 2019 and 2022[9].

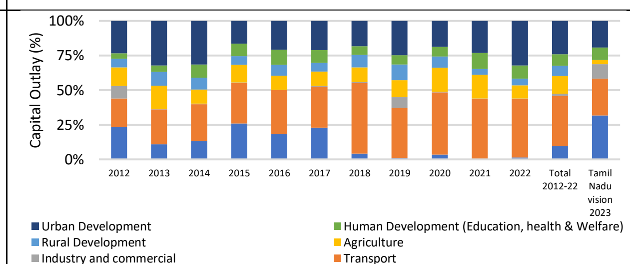
25 **Public investments have been focused on transport, urban development, and energy.** The two main sectors benefiting from capital outlays between 2012 and 2022 were transport and urban development which includes water and sanitation (figure 19). Meanwhile, capital outlays do not include public investments financed by CS. In Tamil Nadu these are focused on transport and energy bring total public investments in the transport and energy sector up. The focus of public investments in these key sectors is likely explaining the improvements in infrastructure indicators discussed in section 4.2. Capital outlays in rural development and agriculture were substantially higher than planned for in the 2023 Tamil Nadu Vision. Industrial and commercial focused capital outlays were below what was planned for in the 2023 Vision.

Figure 18: Capital outlays across economic and social services



Source: RBI State Finances- A Study of Budgets

Figure 19: Capital outlays across sectors



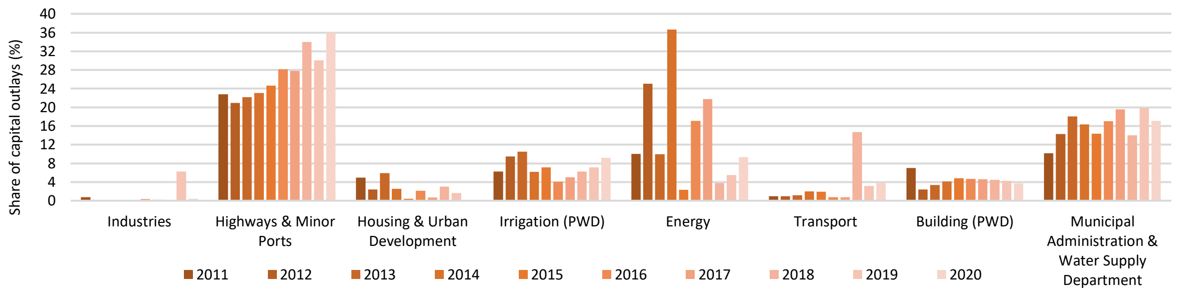
Source: RBI State Finances- A Study of Budgets and Tamil Nadu Vision 2023

Departmental allocation

26 **Capital outlay distribution across departments reflects strategic spending priorities.** As illustrated by figure 18, transport, urban development and water and sanitation as well as energy have benefited from the highest shares of capital outlays in the Tamil Nadu budget between 2012 and 2020. The Highways and Ports, Energy, and Municipal Administration and Water Supply Departments have consistently received higher budgetary allocations for capital outlays over the last decade. Meanwhile, only the Highways and Ports department saw a systematic increase in capital outlay allocation over the past decade. During this period, large investments in the energy sector were financed through CS. This explains that state financed capital outlays to energy were relatively low – though still substantial certain years. Overall, this confirms that capital outlays were allocated in line with the Tamil Nadu 2023 vision.

Figure 18: Capital outlay distribution across selected Departments

[9] The capital outlay on social services was 6996.17 crores and 14854.6 crores in 2018-19 and 2021-22 respectively.

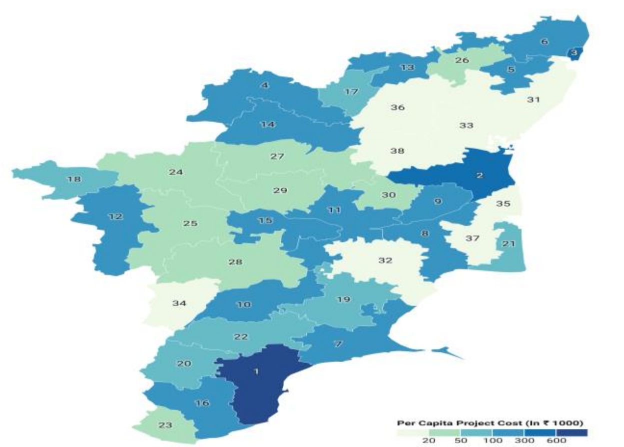


Source: Appropriation Accounts of Tamil Nadu

Geographical allocation

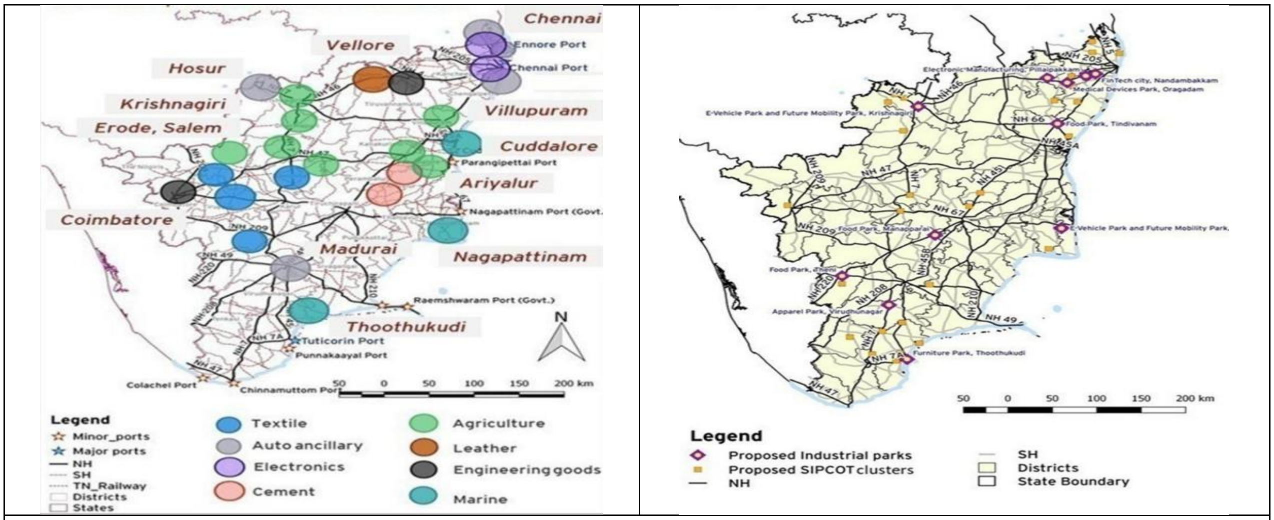
27 **The Geographical allocation of public investments in Tamil Nadu reflect its cluster and corridor approach.** Tamil Nadu is using a cluster and corridor to promote economic development i.e. 2021 Tamil Nadu Industrial Policy and 2023 Logistics Policy. Many clusters and corridors have been developed and additional ones are under preparation (figure 19). As illustrated by figure 19, showing the geographical distribution of cumulative public investments in Tamil Nadu over the past decade, these investments have been focused in line with the priority clusters and corridors.

Figure 19: Geographical distribution of public investments in Tamil Nadu & Clusters and corridors in Tamil Nadu



S. No	Districts	Per Capita Project Cost ('000)	S. No	Districts	Per Capita Project Cost ('000)
1	Thoothukkudi	754.21	21	Nagapattinam	50.70
2	Cuddalore	442.09	22	Virudhunagar	50.30
3	Chennai	352.60	23	Kanniyakumari	48.26
4	Krishnagiri	284.96	24	Erode	46.17
5	Kancheepuram	266.58	25	Tiruppur	39.36
6	Thiruvallur	222.71	26	Ranipet	37.81
7	Ramanathapuram	189.00	27	Salem	37.32
8	Thanjavur	184.14	28	Dindigul	26.25
9	Ariyalur	152.43	29	Namakkal	23.06
10	Madurai	134.58	30	Perambalur	22.47
11	Tiruchirappalli	114.63	31	Chengalpattu	16.90
12	Coimbatore	114.60	32	Pudukkottai	15.56
13	Vellore	111.69	33	Viluppuram	13.35
14	Dharmapuri	111.17	34	Theni	5.46
15	Karur	104.65	35	Mayiladuthurai	3.53
16	Tirunelveli	102.93	36	Tiruvannamalai	3.30
17	Tirupathur	61.98	37	Thiruvarur	0.43
18	Nilgiri	61.74	38	Kallakurichi	0.00
19	Sivaganga	52.71	39	Kallakurichi	NA
20	Tenkasi	51.02			

Existing clusters and corridors in Tamil Nadu	Planned clusters and corridors in Tamil Nadu

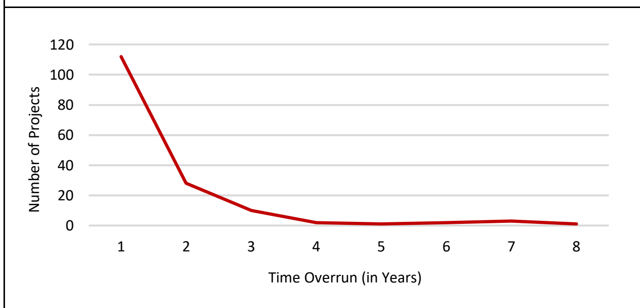


Source: CMIE-CapEx, Tamil Nadu Logistic Policy and Integrated Logistics Plan 2023

7. Operational efficiency of public investments in Tamil Nadu

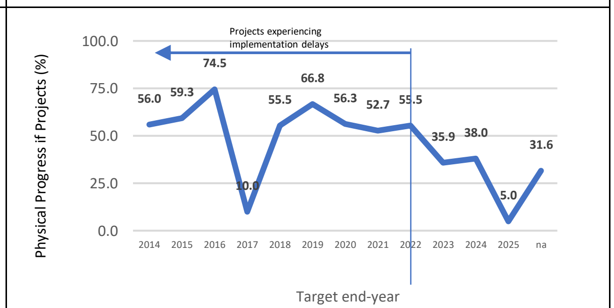
28 **Projects experience implementation delays and, to a certain extent, cost overruns[10].** Capital investment projects in Tamil Nadu experience both time and cost overruns. The 2021-22 CAG's Finance Account Report listed 570 projects under implementation at end-March 2022 totaling INR 23,907 crores (US$2.9 billion). Out of these, 27.9 percent (4.49 percent in value of projects) experienced implementation delays, averaging 4.5 years. Most delayed projects had a delay of 1-2 years (figure 20). Only 4 delayed projects also experienced cost overrun (averaging 71 percent above initial budgeted cost). Projects with implementation delays had an average of 53.9 percent physical progress. Most project in the portfolio (65 percent in value and 57.7 percent in number) had a target finishing date in 2022. These projects had a physical implementation rate of 55 percent (figure 21). Out of the 395 projects expected to be between 2022-25, 24 projects experienced cost overruns, averaging 156 percent above initial budgeted cost.

Figure 20: Time overruns of Capital Projects- State Government



Source: Finance Accounts Report 2021-22

Figure 21: Status of Physical Progress of Incomplete Capital Projects



Source: Finance Accounts Report 2021-22

29 **Central sector projects in Tamil Nadu also experience time and cost overruns.** An analysis of central sector projects in Tamil Nadu provides some additional information on nature of problems arising in project execution. Cost overruns of Central Sector Projects (150 crore and above) in Tamil Nadu averaged

[10] From the field interview, the list of incomplete capital works in CAG Finance Account (Fig 20, 21) does not reflect the complete picture as it does not include all projects but only some projects financed through the budget. Internal data needs to be consolidated for a comprehensive analysis of time and cost overruns for all projects.

48 percent of initial costs in April 2023 with 27 out of 71 projects experiencing cost overruns[11]. In November 2023, 31 out of 75 Central Sector projects had cost overruns, averaging 45.8 percent of initial costs. Central sector projects also experience time overruns with delays varying between 2 and 171 months (both in April and November 2023). The number of projects experiencing delays was 44 in April 2023 and 41 in November 2023. The main reasons for cost escalation are: under-estimation of original cost, high cost of environmental safeguards, rehabilitation measures, higher than expected land acquisition costs, shortage of skilled manpower and time overruns[12]. It is likely that similar challenges explain time and cost overruns of state financed projects. There are delays in project implementation and cost overruns as the budgeting cycle is not in sync with the climatic cycle for Tamil Nadu. [13]

30 **Capital outlay outturn has been improving but remains below revenue expenditure outturn.** As illustrated by figure 22, capital outlay outturn has been lower than revenue expenditure outturn between 2012 and 2022. Since 2018, there has been an improvement in capital outlay outturn, moving from 73 to 88 percent in 2022. During this period, the gap between capital outlay and revenue expenditure outturn has also been reduced. This shows that while operational efficiency, particularly related to planning, budgeting, and appraisal of public investments, of public investments in Tamil Nadu has been relatively low over the past decade, it has improved over the past years.

31 **Capital outlay outturn for social sectors have been more volatile and below capital outlay for economic sectors.** outlay outturn. Figure 23 shows that capital outlay outturn in social sectors haven been more volatile than for economic sectors. Also, capital outlay outturn in social sectors averaged 70 percent compared to 96 percent for economic sectors between 2012 and 2022. Capital outlay outturn in social sectors improved in recent years, averaging 82 percent between 2020 and 2022. While this is a significant improvement compared to previous years, it remains below the level observed for economic sector capital outlays which averaged 91 percent during the same period. This could indicate that there are specific challenges related to public investment management planning, budgeting and execution in social sectors.

Figure 22: Revenue expenditure outturn and Capital outlay outturn

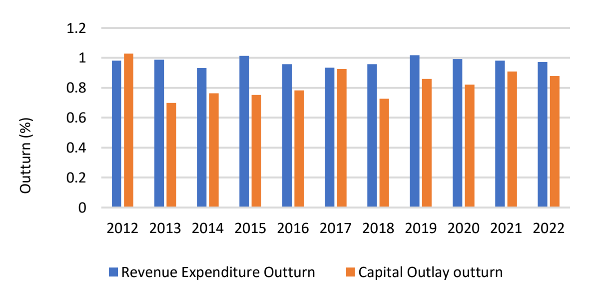
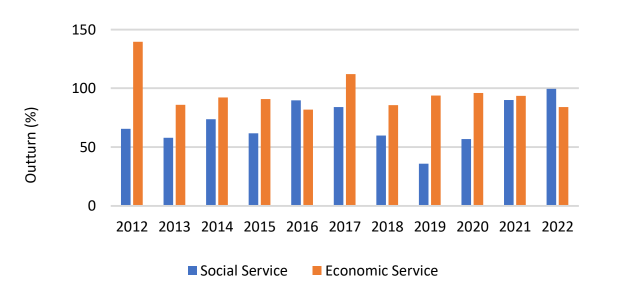


Figure 23: Social and economic sector capital outlay outturn



Source: RBI Handbook of Statistics of Indian States

[11] Flash Reports on Central Sector Projects, MOSPI
[12] Based on field interviews
[13] Based on the field interview, it was concluded that time or cost overruns depend on many factors, including the type of project, the capacity of implementing agencies, implementation departments, the complexity of the project location, geography, and interruptions that may occur. Additionally, the budgeting cycle and climatic cycle are not in sync. For example, there is monsoon during November-December in some districts, and in June and July in others. However, the budget is presented in February-March. By the time distribution and expenditure start, the southwest monsoon hits the Tamil Nadu coast, and by the time tenders are floated and finalized, it's the northeast monsoon. These factors do affect project implementation cost overruns.

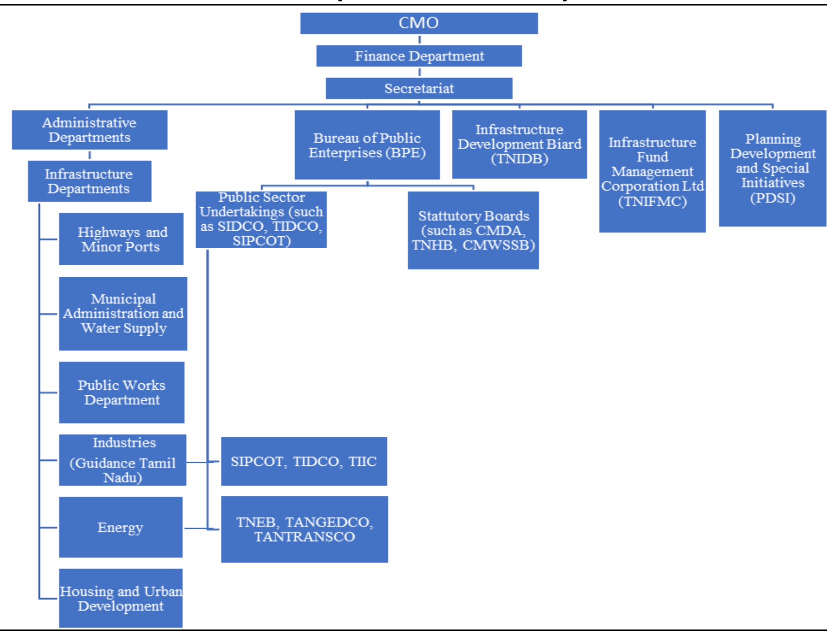
8. State PIM Institutions

32 This analysis has been undertaken based on a framework developed by the World Bank and NIPFP. The framework is anchored in the Public Investment Management Assessment Framework of the IMF and the World Bank's "Must have features of PIM" framework. The analysis of the institutional framework for investment management includes planning and strategy, appraisal, selection, management, monitoring and evaluation. The present analysis does not cover local entities involvement in PIM. The assessment is presented below and summarized in table 3.

Key institutions involved in PIM in Tamil Nadu and overview of the PIM process in Tamil Nadu

33 **A system with multiple actors.** The infrastructure governance institutional structure in Tamil Nadu involves multiple public entities with different and some cases overlapping roles. Chart 1 presents an overview of the key public institutions involved in the PIM cycle, while Table 1 briefly presents these institutions and their mandate.

Chart 1: Overview of key actors in the PIM cycle in Tamil Nadu



Source: Based on field interviews, subject to cross-checking with the concerned Departments

Table 1: Key Institutions in Public Investment Management	
Institution	**Mandate and delegation of powers**
Planning and Special Initiatives Department (PDSI)	• State Planning Commission (SPC) subsumed under this department after the abolition of the Planning Commission. • Planning, allocation, monitoring and evaluation of major schemes and projects. • Administrative control of State Planning Commission (SPC), Department of Economics and Statistics (DoES), Department of Evaluation and Applied Research (DEAR), Special Area Development Programme (SADP), The Chennai Metro Rail Limited (CMRL), and a Joint Sector Company. • Long-term strategic and medium-term operational planning through the SPC. • Coordinates special and innovative projects involving several Government Departments. • Launch new Special Initiatives to expedite the progress of important infrastructure and development projects • Facilitate new and special projects like the Chennai Metro Rail Project under the Special Initiatives wing. • Co-ordinates with the NITI Aayog • Monitors projects of Nodal department of the State Government for coordination with the Union Government through PRAGATI (Pro-Active Governance and Timely Implementation) / e-Samiksha Portals. • Regularly uploads the present status of the issues received from the various departments regarding issues raised in the PRAGATI portal. • Evaluates development schemes and flagship schemes, Centrally Sponsored Schemes and Externally Aided Projects through Evaluation and Applied Research Department • Formulation and implementation of specific programmes relating to land and water use and the impact of changing environmental factors like pollution, global warming etc., through the Tamil Nadu State Land Use Research Board (TNSLURB) • Ensures balanced growth and development among regions and monitoring the Implementation of the Programme under the "State Balanced Growth Fund" (SBGF) • Nodal agency for review of major infrastructure projects costing more than 100 crores being implemented by the Departments of Secretariat namely Energy, Highways and Minor Ports, Housing and Urban Development, Industries, Investment Promotion and Commerce, Municipal Administration and Water Supply and Public Works Departments.
Tamil Nadu Infrastructure Development Board (TNIDB)	• TNIDB is set up under Tamil Nadu Infrastructure Development Board (TNIDB), Act in 2012. • Nodal agency for infrastructure development. Coordinate public investment and leverage the private sector. • Financially supports infrastructure projects. • TNIDB has administrative authority to lay down a framework of processes and procedures for the identification, prioritization, and implementation of infrastructure projects. It seeks to enable private sector participation where feasible. • Sectors under purview- Minor Minerals, Water Supply Systems, Infrastructure for Education, Gas and Gas Works, Infrastructure for Health, Industrial Estates, Industrial Parks and Special Economic Zones, ICT, Inland Waterways, Irrigation including dams and canals, Ports, Power Generation, Transmission and Distribution, Roads bridges and Railways, Solid Waste Management, Urban transportation, and Wastewater sewerage treatment system.
Tamil Nadu Infrastructure Development Fund (TNIDF)	• Financial support to facilitate the project design, development, functioning and management • Channelize funds from the private sector into public infrastructure investment. • Total financial support to a project is not more than 20 % of the Total Project Cost. • Financial support from the TNIDF is approved only when public financial support from departmental budgetary resources have been exhausted. • Forms of financial support for projects undertaken under PPP mode - 1. Subsidy or capital grant during the construction period to improve the viability of the project 2. Operational grants during the operational period or part thereof of the project 3. Annuity payments for a specified period in the life of the project 4. Equity investment in the entity implementing the project 5. Special purpose vehicle for funding
Guidance Tamil Nadu	• Nodal agency for investment promotion and single window facilitation. • Assists in the promotion of private investment.

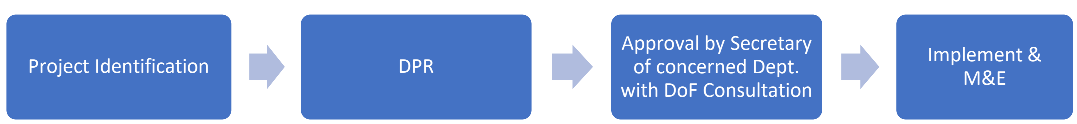
	• In-house expertise on sector, policy, and country experts who provide support to the investor during the entire investment cycle.
Tamil Nadu Infrastructure Fund Management Corporation (TNIFMC)	• Investment management company managing multiple funds registered under the SEBI AIF Regulations, the GoTN is invested in all the funds • Objective: generate attractive risk-adjusted returns through sustainable investing principles; channelling private investments into the start-ups and enterprises in the state.
Department of Finance (DoF)	• Manages the public finances of GoTN.; prepares the state budget and manages the debt obligations; • Balances overall receipts and expenditure • Scrutinizes the proposals of the administrative departments • Evaluate the proposals concerning needs, cost-effectiveness, budget provisions, financial procedure
Bureau of Public Enterprises (BPE) and Project Investment Committee (PIC)	• Nodal department for all the State Public Sector Undertakings /Statutory Boards • Formulates policy and guidelines on performance improvement, evaluation, financial delegation, personnel management, • Review of capital projects and expenditure, • Advice relating to revival, restructuring or closure of State Public Sector Undertakings /Statutory Boards, • Collects and maintains information in the form of a review of State Public Sector Undertakings /Statutory Boards in several areas. • PIC reviews the investment plans of public sector undertakings

PIM process in Tamil Nadu:

For projects with estimated cost < 10 crore

34 **A simplified procedure.** A simplified procedure is in place with project identification undertaken by the concerned line department. Subsequently, a Detailed project report (DPR) is prepared by the concerned departments which functions as a detailed technical and economic proposal. The DPR is submitted for review and approval to the Secretary of the concerned department. The approval by the Secretary of the concerned department is done in consultation with DoF (Figure 24).

Figure 24 PIM cycle for projects with estimated cost <10 crore



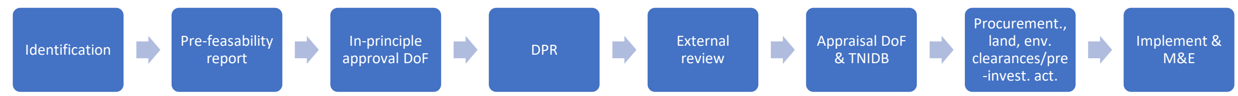
Source: Interviews with state officials

For projects with estimated cost > 10 crore

35 **A more complex and comprehensive process involving multiple departments.** The process is presented in figure 25. Different project types will require different institutional involvement:

1. PPP Projects and non-PPP Projects above 500 crores are reviewed, evaluated, and cleared by TNIDB. Independent external consultants review and appraise the proposals.
2. PSU Projects are reviewed by the BPE.
3. Engineering, Procurement and Construction Projects are under the Administrative Department.

Figure 25 PIM cycle for projects with estimated cost >10 crore



Source: Interviews with state officials

Externally Aided Projects (EAP)

36 **EAPs follow the following additional reviews:**

1. Preliminary Project Report/ Feasibility Study with tentative financial details, routed through Department of Economic Affairs (DEA), Ministry of Finance (MoF) of the Government of India (GoI)
2. Fulfilment of debt sustainability criteria – If state is debt stressed, state should obtain concurrence of DEA with agreed debt cap of EAP.
3. Comprehensive DPR for external assistance projects are recommended to GoI for central government approval, funding, and external loan assistance. GoI must give administrative sanction for the implementation of the project[14] –
    a) DPR[15] reflects techno-economic (economic viability, financial analysis, social cost-benefit, value addition, maintenance).
    b) Ecological (land use, ecological sustainability)- Environmental and Social Impact Investment.
    c) Socio-cultural (target population, gender, social impact).
    d) Institutional (organizational analysis, capacity building).
    e) Disaster Management Measures.
    f) Implementation Plan.
4. DPRs to be submitted to the state government, Ministry of Environment and Forest, State pollution control board.
5. Monitoring and Evaluation – submit a project completion report.
6. Impact Assessment study after 3-4 years project completion.

37 **While overall procedures and process exist, they could benefit from being clarified and made more transparent.** As noted above, there are PIM processes in place for a broad set of different type of projects and project size. Meanwhile, some of the processes and procedures are yet to be fully mapped out which could create uncertainties and cause unnecessary delays. Processes and procedures for projects above 10 crores and below 500 crores would benefit from clarification. Mapping the procedures and processes fully and presenting them in a set of published guidelines could also be beneficial for the efficiency of the institutional structure. Also, there is currently no Public Investment Management Information System that allows to manage the entire process. Such as system covering all the dimensions of the PIM cycle, could if implemented also contribute to enhanced transparency and potentially result in improved efficiency.

Strategic Planning

Fiscal targets and rules

38 **The state has a legal architecture to support debt sustainability. Tamil Nadu Fiscal Responsibility and Budget Management Act, 2003 (TNFRA 2003, amended in 2021)** mandates the govt to ensure fiscal stability and sustainability along with enhancing the scope for improving social and physical infrastructure. The Act requires the presentation of a Medium-Term Fiscal Plan alongside the Budget before the Legislative Assembly. The broad provisions of the act are: i) eliminate the revenue deficit by 2023-2024; ii)

[14] GOM No 43, PDSI dated 30.7.2020
[15] For example, Comprehensive Detailed Project Report for Chennai Metro Phase 2

an annual fiscal deficit below 3 per cent of GSDP; and iii) a debt/GSDP below 28.7 %[16]. In line with the TNFRA, the Finance Minister tables a half-yearly report in the Legislative Assembly on the State's compliance with the act. The Comptroller and Auditor-General (CAF) of India, reviews the provisions of the act and makes it public through the State Finance Audit Report.

39 **A Medium-Term Fiscal Policy Statement (MTFP) is prepared.** It is tabled in the State legislature each financial year along with the annual financial statement and requests for grants. This set forth a three-year projection for prescribed fiscal indicators with numerical debt ceilings. The medium-term fiscal policy statement (MTFP) aligns budget preparation and public investment plans with fiscal policy[17]. Although the MTFP is prepared before the budget preparation, it is limited to fiscal aggregates for Tamil Nadu. Tamil Nadu's MTFP constrains the approved budget to some extent. The final capital budget is somewhat lower than the capital projection of the MTFP. Further, the budget estimate is somewhat higher than the MTFP projection of fiscal deficit to GSDP.

Investment planning

40 **Tamil Nadu prepares state and sectoral strategies to guide public investment decisions.** Tamil Nadu has a robust corpus of state and sector strategies. Its Vision 2023 Phase 1 and 2 released in 2012 and 2014 respectively have a list of costed projects by sector for public investment. The vision was broadly adhered to during its implementation phase. A new growth strategy, Towards 1 trillion, has been issued in 2023. Several sectoral policies for Industries, Logistics, and aerospace among others have been put in the public domain. Most of the strategic plans have broad investment targets but do not include costed plans. Strategies are used as strategic guidance for project decision-making. Meanwhile, during budget discussions, project decisions are informed by current strategic priorities and fiscal situation. Table 2 presents the details of key strategies and policies along with their salient features. Strategies and policies have output focused targets and elements of Monitoring and Evaluation systems.

Table 2: Overview of Strategic Planning in Tamil Nadu

[16] The debt ceiling cap has been revised multiple time through amendments. It was 24.5% in 2011-12, 24.8% (2012-13), 25% (2013-14), 25.2% (2014-15), 28.7% (2022-23) and 29.01% in 2023-24.

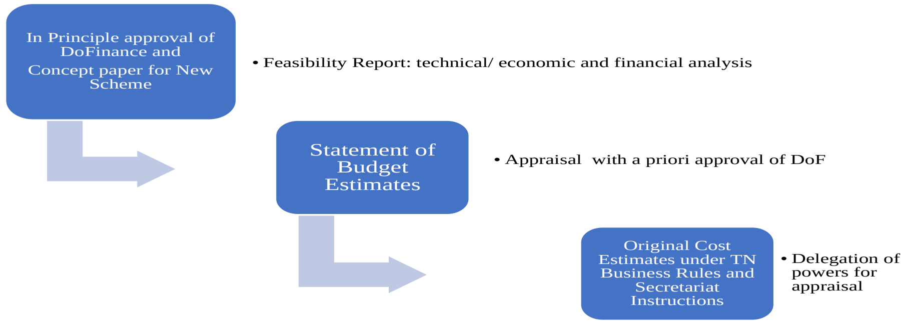
[17] From the field interview it can be concluded that the budgeting exercise involves extensive discussions with the implementing agencies

Vision/ Strategic Policy Document	Salient Features
Vision Tamil Nadu 2023 (published in 2012)	• Tamil Nadu Vision for 2023 is a strategic plan for Infrastructure development. There are three phases of this study- Vision formulation, Sector report and project profile, and Implementation road map. • The document lists sector-specific projects along with the Mode of finance, Implementation agency and investment requirement along with the outcomes to be achieved by 2023. • The six core sectors highlighted in the report are Energy, Transport, Industrial and commercial, Urban Infrastructure, Agriculture and Human Development.
Logistics Policy and Integrated logistics plan (published in 2023)	• The document provides a logistic policy framework for the next 5 years and an integrated logistics plan for the next 10 years. It outlines various interventions, their outcomes, and stakeholders for implementation. • The key objective is to reduce the cost of logistics and increase private participation in the development of infrastructure. • Fiscal support is provided for the logistics sector promotion along with a cash incentive of 50% of technology adoption cost for adopting modern technology. There is a 100% reimbursement of registration fees for business units developing solutions for technology efficiency improvement. • The Plan includes 50 interventions across 6 policy themes covering the logistics sector of the state. Investment quantum is also defined for some of the measures.
Tamil Nadu Aerospace and Defence Industry Policy (published in 2022)	• This policy is aligned with the state's overarching industrial strategy. The main aim of is to transform Tamil Nadu into the preferred destination for investments, innovation, the development of aerospace and defence products and services. • The Tamil Nadu Industrial Development Corporation (TIDCO) plays a central role in facilitating aerospace and defence projects. The government intends to infuse about Rs. 5,000 crores over a decade to create the Aerospace and defence (A&D) ecosystem through multiple initiatives. • Under this policy, the Ministry of Defence has identified five strategic nodes (Chennai, Coimbatore, Hosur, Salem, and Tiruchirapalli) to facilitate the Tamil Nadu Defence Industrial Corridor project. These nodes will be interconnected with each other and act like clusters of shared facilities for manufacturing, testing, and warehousing. • The policy also plans to provide financial support mechanisms through the Tamil Nadu Emerging Sector Seed Fund (for new ventures), equity financing for sustainable financing, the Industrial Ecosystem Fund, and the Research and Technology Fund. Infrastructure enablers like TIDCO and SIPCOT are in charge of the creation of industrial infrastructure and industrial parks. Furthermore, a single-window portal will be established to enhance the ease of doing business. • Subsidies and incentives are promoted to promote investment such as land cost incentives, stamp duty incentives, and green industry incentives.
Tamil Nadu Industrial Policy (published in 2021)	• The objective is to make Tamil Nadu a preferred destination to invest and create products. The main pillars of this policy include the achievement of balanced regional growth and industrial growth, to encourage FDI and exports. It lays down criteria for incentives to sunrise sectors, industrial parks, logistics Infrastructure, Incentives for FDI etc. • Corridor-based industrial development is being undertaken by GoTN, Industrial corridors like the Chennai Bengaluru Industrial Corridor and others are under implementation. • For improving ease of doing business GoTN has introduced a single window facility for enterprises where investment in plant and machinery exceeds Rs. 50 crore and turnover that exceeds Rs. 250 crores. • GoTN supports manufacturing projects by providing incentive packages like fixed capital subsidies for large, mega and ultra mega projects, training subsidies (Rs. 4000 per worker per month for 6 months for residents of Tamil Nadu), Green Industry Incentive, land cost subsidies etc.
City Gas Distribution Policy (published in 2023)	• This policy aims to achieve faster implementation of City Gas Distribution (CGD) infrastructure in the State. It encourages the use of natural gas for industrial/commercial, transport, and household purposes in a phased manner. • State-level committee on CGD will take measures on infrastructure in the part of the state in alignment with govt initiatives to encourage the use of PNG and CNG.

Project Appraisal

41 **Major capital projects are systematically subject to rigorous technical, economic, and financial analysis.** Appraisal and approval of public funded schemes and projects is under the ambit of PDSI. Any project[18] above 500 crores are mandated by the law to be appraised by the TNIDB, including projects of the State PSUs. Projects may either be approved on stand-alone basis or as individual projects within an approved scheme envelope. All such projects must go through the formulation, appraisal, and approval of the PDSI, DoF, TNIDB and many Line Ministries. They may be executed through budgetary, extra-budgetary resources, or a combination of both. The appraisal and approval process for a project can be visualized through the following chart:

[18] The OM of 5th August, 2016 defines a "project" as 'one- time expenditure resulting in creation of capital assets, which could yield financial or economic returns or both.



For all new projects, a Concept Paper (CP) is to be prepared while seeking in-principle approval, holding stakeholder consultations and conducting pilot studies. For ongoing schemes, careful rationalization is done through the merger and dropping of redundant schemes.

42 **TNIDB has a dedicated Project Preparation Fund for appraisal.** The project preparation commences with a Feasibility Report. It helps to establish if the project is techno-economically sound, with a financial analysis to ascertain if resources are available to finance the project. It provides a firm basis for starting land acquisition, approval of pre-investment activities, etc. In-principle approval for initiating a project is granted by the Financial Adviser concerned after examining project feasibility and availability of financial resources.

43 **For the appraisal of projects, a standard methodology is followed as given in the Detailed Project Report (DPR) for each capital project.** The DPR lists out the reasons for selecting the project among other options including geographical location of the investment. An Environmental and Social Impact Assessment is made. Measures are identified to mitigate the adverse impact and issues with land acquisition, diversion of forest land, wildlife clearances, rehabilitation and resettlement are addressed in this section. The DPR gives details on choice of technology to be used in the project. A detailed financial analysis is also made with the cost estimates, budget for the scheme/project, means of financing and phasing of expenditure. Infrastructure projects are assessed based on the cost and tenor of the debt. Issues relating to project sustainability, including stakeholder commitment, operation-maintenance of assets after project completion and other related issues should are addressed. The time frame of the project is also indicated with the proposed zero date for commencement. A financial and economic cost-benefit analysis is undertaken for infrastructure projects. For public goods and social sector projects an appraisal is also done. A risk analysis is also undertaken to focus on the identification and assessment of implementation risks and how they are proposed to be mitigated. Risk analysis includes legal/contractual risks, environmental risks, revenue risks, project management risks, regulatory risks, etc. The appraisal is not published[19]. In some cases, appraisals are reviewed by external consultants.

Prioritization, Selection and Budgeting

44 The government undertakes a central review of major project appraisals before decisions are taken to include projects in the budget. Major projects (including donor- or PPP-funded) are centrally reviewed. Project proposals are reviewed by the Planning and Finance departments. PPP projects are appraised and reviewed by TNIDB in concurrence with the Finance Department prior to inclusion in the budget. Capital outlays are appropriated on an annual basis and the budget does not have capital outlay forecasts. The sectoral strategies provide strategic guidance for project selection and decision-making. However, during budget discussions, some project selection decisions are informed by current strategic priorities and fiscal situation. There is no formal pipeline of appraised projects. There are currently limited

[19] From field interviews: There are no detailed guidelines for the methodology that can be used for economic and financial analysis. For infrastructure project appraisal and assessment, there is no unified tool available which helps project decision making. In practice, it is observed that cost benefit analysis may not be the most appropriate tool for public projects.

published guidelines for project selection and prioritization. The Department of Finance is currently working on simplified guidelines.

Operation and Monitoring and Evaluation

45 **Large projects are subject to rigorous monitoring.** PDSI reviews and monitors major state government Infrastructure projects (>100 crores). Headed by the Chief Secretary of the State, PDSI has a dedicated monitoring unit called the Department of Evaluation and Applied Research (DEAR) to evaluate schemes and projects. The focus is on monitoring of project implementation, but some evaluation studies have been made and published. A High-Level Official Committee on the Major Infrastructure Projects under the Chairmanship of Minister of Finance and Human Resource Management review the major infrastructure projects. For all major projects, total project costs, as well as physical progress, are monitored during project implementation by the concerned Line Department and PDSI. Data on the progress of Major Infrastructure Projects is regularly updated through the web portal, **"e-Munnetram"**. There is systematic data, available to the State government, on portfolio delays and cost overruns on for majority of projects in the portfolio.

46 **Financial performance of PSU is monitored.** The BPE oversees PSU and monitors their financial performance. It reviews and publishes an annual report on the financial performance of public corporations. A consolidated report of PSU financial performance, namely "Review of Public Sector Enterprises" is published on 63 State PSUs and Statutory Boards. BPE reviews PSU's investment plans but these plans are yet to be presented in a consolidated report.

47 **High priority schemes and flagship programmes are implemented in coordination with the Union Government. PDSI** is the Nodal department of the State Government for coordination with the Union Government through **PRAGATI (Pro Active Governance and Timely Implementation) / e-Samiksha Portals**. Under PRAGATI portal, issues related to high priority schemes and flagship programmes are dealt with by PDSI. These projects are being implemented by the Departments namely Energy, Highways and Minor Ports, Housing and Urban Development, Industries, Investment Promotion and Commerce, Municipal Administration and Water Supply and Public Works Departments[20].

48 **There are no consolidated asset registers that are updated by surveys of the stocks, values, and conditions of public assets.** However, line departments like Highways and Ports, Transport and Urban Infrastructure maintain their own asset registers. The Urban Local Bodies also maintain asset registers. The process of creation of Asset Register Management Information System is underway[21] with access only to state officials. It is a comprehensive software that tracks ongoing and new projects

[20] From field interview, it was gathered that some individual departments have project management software wherein projects are monitored
[21] Based on field interviews

Table 3: Summary Assessment of Public Investment Management in Tamil Nadu

No	Institutional Features	Institutional Strength	Effectiveness
1	Is there a medium-term fiscal framework (MTFF) to align budget preparation w/ fiscal policy?	**Medium:** An MTFF is prepared prior to budget preparation, which includes fiscal aggregates and allows distinctions between recurrent and capital spending. However, it doesn't allow distinctions between, and ongoing and new projects. *High rating requires that MTFF is prepared prior to budget preparation, which includes fiscal aggregates and allows distinctions between recurrent and capital spending, and ongoing and new projects.*	**Medium:** MTFF to some extent constrains the approved budget. However, the final capital budget is somewhat lower than the capital allocation in the MTFF and budget estimate is somewhat higher than the MTFF projection for fiscal deficit as a percentage of GSDP. *High effectiveness indicates that the budget document is consistent with the allocations that were indicated in the MTFF, in particular for capital spending. If the final capital budget is largely in line with the capital allocation in the MTFF, effectiveness could be rated as high.*
2	Does State government prepare costed State and sectoral strategies for public investment targets and M&E system?	**Medium:** State or sectoral public investment strategies or plans are published. It covers projects funded through the budget regardless of financing source (e.g. EAP, public corporation, PPP). Strategies include broad aggregate cost estimates and measurable output/outcome targets. However, not all projects funded through the budget are covered. *High rating indicates that both state and sectoral public investment strategies or plans are published and cover all projects funded through the budget regardless of financing source (e.g. donor, public corporation, PPP). Strategies include broad aggregate cost estimates and measurable output/outcome targets*	**Medium:** Some projects approved in the budget have been identified in national or sectoral plans. Differences between initial estimates in the plan and the budgets are more moderate. *High effectiveness implies that initial estimates are generally accurate. If broad cost estimates in plans are broadly in line with budgeted capital expenditure for the same period as the strategy, effectiveness should be considered as high.*
3	Are major capital projects subject to rigorous technical, economic, and financial analysis?	**Medium:** Major projects are systematically subject to technical, economic, and financial analysis, and selected results of this analysis are published. However, it is uncertain whether the results of this analysis are published and undergo independent external review. *High rating requires that major projects are systematically subject to rigorous technical, economic, and financial analysis, and selected results of this analysis are published or undergo independent external review.*	**Medium*:** Some major projects are systematically appraised and there is no evidence that low-value projects are included in the pipeline. *However, it is uncertain that-* *1. There is a rigorous process wherein some project appraisals are expected to contain recommendations for change and even requests for project resubmissions after revision* *2. Share of major projects subject to rigorous project appraisal* *3. Only high-value projects, ready for implementation are included in the pipeline. Other projects are rejected or returned for further development* **(Subject to the requirement of suitable information)*

No	Institutional Features	Institutional Strength	Effectiveness
4	Is there a standard methodology and central support for the appraisal of projects?	**Medium.** There is a standard methodology but the institutions providing central support may have overlapping roles. PDSI, TNIDB, and Finance Department provide effective central support; (Central support unit advises the entities proposing most capital projects). However, there is no EFC/SFC mechanism for central support for project appraisal. *High rating requires that there is both a standard methodology and central support for project appraisal.*	**Medium.** There is a standard methodology used for project appraisal. The methodology may not be consistently applied for most major projects. However, There is a need to improve the guidelines. *High effectiveness indicates that the standard methodology is used actively to ensure high-quality project appraisals for most major projects. The methodology is consistently applied for most major projects.*
5	Does the government undertake a central review of major project appraisals before decisions are taken to include projects in the budget?	**Medium.** Major projects (including donor- or PPP-funded) are reviewed by a central authority (PDSI/TNIDB) prior to inclusion in the budget. However, there may be no input from an independent agency or experts prior to inclusion in the budget. *High rating requires that All major projects (including donor- or PPP-funded) are scrutinized by a central ministry, with input from an independent agency or experts prior to inclusion in the budget.*	** Subject to the requirement of suitable information like-* 1. *Rigorous central review of major project proposals and proposals are regularly rejected or returned for further development.* 2. *Rigor of the review process clearly documented in project review documents and at least 10 percent of the reviews include independent inputs.*
6	Does the government publish and adhere to standard criteria for project selection?	**Low:** There are no published criteria or a required process for project selection. Departments may have certain criteria but it is not in the public domain. *High rating requires that there are published criteria for project selection, and generally projects are selected through the required process.*	**Low:** Actual project selection is not significantly affected by a defined selection criteria. These criteria may be missing completely. Projects can be selected through ad-hoc approaches *High rating requires that the entire capital budget is selected in accordance with the specified criteria and through the required process*
7	Does the government maintain a pipeline of appraised investment projects for inclusion in the annual budget?	**Low:** The government does not maintain a pipeline of appraised investment projects. *There is no comprehensive pipeline of appraised investment projects that is used for selecting projects in the annual budget and over the medium-term*	**Low:** Projects are not selected from the pipeline. Institutional design is low, hence effectiveness is low. *High rating requires that all projects are selected from the pipeline.*
8	Is there a multi-year forecast of capital spending by department and are projections of total construction costs of major capital projects prepared and published	**Low.** No published projections of capital spending by department or sector. Total cost of major capital projects including the annual detailed breakdown of cost is also not published. Projections of total construction cost of major projects are also not published. *High rating requires that 3-5 year projections of capital spending by department or sector published; total cost of major capital projects published*	**Low.** Medium-term capital spending projections by departments do not exist. There may be no published estimates of the total construction cost. In addition, there is no information about subsequent changes to the total construction cost. *High rating requires that projections are consistent with subsequent budget allocation. Some deviation is always possible, but medium-term projections should on average be broadly in line with budget allocations.*

No	Institutional Features	Institutional Strength	Effectiveness
		including annual detailed breakdown of cost	
9	Are total project outlays appropriated by the legislature at the time of a project's commencement?	**Low.** Outlays are appropriated on an annual basis, but information on total project costs is not included in the budget documentation. *High rating requires that Outlays are appropriated on an annual basis and information on total project costs, and multiyear commitments is included in the budget documentation.*	**Low.** Budget documents include only few major projects that are appropriated. Information on total project cost may not be available in budget documentation, only information is proposed annual budget allocation. *High rating requires that total project costs and multiyear commitments are disclosed for most major projects. This can be in the budget itself, or in another credible document, for instance, a PIP that is reconciled with the budget or MTFF.*
10 (a)	Does the government monitor the financial performance of PCs?	**High:** The government reviews and publishes a consolidated report on financial performance of PCs. Major infrastructure projects for economic infrastructure are coordinated with the state govt. and PCs	**High:** Review process covers the largest PCs measured by assets. A comprehensive review report of public sector enterprises is prepared by the Bureau of Public Enterprises (BPE), Finance department. The financial performance of the PSUs reports information on turnovers, total assets, profit/loss. There is information sharing and coordination by govt and PC on public investments.
10 (b)	Does the government oversee the investment plans of public corporations (PCs)	**Medium:** The government reviews the investment plans of PCs. Project Investment Committee (PIC) reviews PC's public investments. Ceilings are determined for both investments and disinvestment. However, there is no consolidated report on investment plans of PCs	**Medium:** There is some complementarity between Government and PCs investment into capital projects. However, the information on investment plans on projects is not reported in a consolidated way. *High rating requires that that there is extensive information sharing and coordination on public investments, documented in a consolidated ownership report. Formal requirements for reporting, review and disclosure are being followed in practice, and it is easy to assess the consistency and complementarity between government and PC investment projects. The review process covers the largest PCs measured by assets or most of the total PC infrastructure investments*
11	Are major capital projects subject to monitoring during project implementation?	**High:** For all major projects, total project costs, as well as physical progress, are centrally monitored during project implementation**.**	**High:** There is systematic data on portfolio delays and cost overruns for the majority of projects in the portfolio and that few monitored projects are behind schedule or over budget.
12	Are asset registers (Central, Departmental etc.) updated by surveys of the stocks, values, and conditions of public assets regularly?	**Medium:** Asset registers are maintained. However it is not clear if its comprehensive or updated regularly at reasonable intervals. *High rating indicates that asset registers are comprehensive and updated regularly at reasonable intervals.*	**Medium:** Asset Registers are maintained but it's not clear if it is comprehensive

9. Resilience of public investments

49 **Tamil Nadu is exposed to climate change.** Tamil Nadu is ranked 12th of Indian states on the Council on Energy, Environment and Water's (CEEW) climate change vulnerability index with a score of 0.339. Tamil Nadu is exposed to draughts and floodings. The state has 15 percent of India's 7,500 km long coastline and is exposed to regular cyclones (see Table 4). Given this, Tamil Nadu is facing infrastructure vulnerabilities due to climate change. According to the Tamil Nadu State Action Plan on climate change (TNSAPCC), climate change is also likely to impact water resources, agriculture, and urban areas. Furthermore, sea-level rise could range between 7 and 37 cm, presenting substantial risk to coastal infrastructure, livelihoods and populations.

Table 4: Tamil Nadu' s exposure and vulnerability to Climate Change	
Temperature Rise	Temperature may increase by about 3.1 °C; heat waves
Extreme Rainfall Events, Cyclone and Drought risk	Increasing variability in rainfall-pattern of extreme rainfall events. Projections show increase in flooded area (12 % to 26%) based on Global Climate Models. Drought risk-Decrease in rainfall of 3.24% by the end of the century. Impacts crop production.
Sea Level Rise	Coastal state- threatened by sea level rise. Projected estimates of average medium range of Sea Level Rise for some areas may range from 7.12 cm to 36.98

50 **Institutions have been established to address the climate change challenges.** Many institutions have been established to work on Tamil Nadu's response to climate change. Table 5 briefly presents these institutions and their mandate. The establishment of the Tamil Nadu Green Climate Company (TNGCC) has been particularly important as it coordinates and implement activities proposed to be undertaken as per state action plan on climate.

Table 5: Key Institutions for Climate Change response	
Institution	Climate change responsibility
Tamil Nadu Governing Council on Climate Change (GCCC)	Headed by Chief Minister, it was established to give policy direction to Tamil Nadu Climate Change Mission. It provides guidance on long-term climate-resilient development strategies, pathways, and action plans. It gives counsel on climate adaptation and mitigation efforts and recommendations for TNSAPCC and monitors its implementation.
Department of Environment and Climate Change in the Ministry of Environment, Forest, and Climate Change (MEFCC)	Nodal Agency for formulating climate change related schemes, plans, programs, and their implementation. Tasked with preparation of a holistic climate change policy. It oversees the Environment Management Agency, the State Environment Impact Assessment Authority, the Coastal Zone Management Authority, the Environment Management Information System Centre, the Geographical Information System Cell and the Climate Change Cell. It coordinates major environment and climate change projects The Department is responsible for the preparation of environmental management plans for towns and provides environmental clearances on projects.
Tamil Nadu Green Climate Company (TNGCC)	TNGCC was set up to address the climate crisis in the State. It coordinates and implements activities proposed to be undertaken as per the TNSAPCC in line with the Nationally Determined Contributions (NDC). TNGCC's main objectives are: • plan, execute, and monitor programs for climate change adaptation and mitigation. • reduce greenhouse gas emissions by benchmarking industries and promoting eco-friendly technologies. • develops collaboration and strengthen community engagement to build long term commitment for a net zero carbon future for Tamil Nadu. • build standards for energy efficient infrastructure to reduce energy consumption and reduce emissions. • monitoring mechanism for better compliance of environmental standards through transparent and credible systems.
District Climate Change Mission	District Climate Change Mission formulates development plans to make districts and villages resilient to climate change. MEFCC has initiated the District Climate Change Mission. It is headed by the District Collector and District Forest Officers take on the role of District Climate

	Officers. This mission focuses on implementing site and sector-specific adaptation, mitigation strategies and action plans that are tailored to each district's needs. It ensures that every project planned for implementation in a district undergoes a thorough assessment from a climate change perspective.
Tamil Nadu Energy Development Agency (TEDA)	TEDA is focused on shifting from conventional fossil fuel to renewable energy for electricity. It is the State Nodal Agency (SNA) of the Ministry of New and Renewable Energy Sources (MNRE) that implements public schemes for renewable energy.
Environment Information System (ENVIS)	ENVIS is an environmental information database that provides information on Environment and related issues to decision makers; it is engaged in collection, collation, storage, retrieval, dissemination of environmental information.

51 **Several strategies and policies have been issued to tackle climate change in Tamil Nadu.** Multiple strategies and policies have been issues by the Government of Tamil Nadu to address the climate change challenges it is facing. These are presented briefly in Table 6.

Table 6: Tamil Nadu s Climate Change Strategies

Key Strategies	Coverage
Tamil Nadu State Action Plan on Climate Change (TNSAPCC)	TNSAPCC, aligned with NDC, aims to address climate change vulnerability at the state level with a comprehensive climate response framework. It has undergone revision as TNSAPCC 2.0 for the period 2023-2030. Key focus areas include agriculture, water, coastal area management, disaster management and mitigation, health, and energy.
Tamil Nadu Climate Change Mission (TNCCM)	Its primary objective is to formulate a comprehensive climate change policy for the state, encompassing non-conventional alternative energy sources and emerging technologies. The mission is dedicated to developing intelligent infrastructure systems aimed at mitigating the impact of natural disasters on critical infrastructure.
Green Tamil Nadu Mission	The mission's primary goal is to enhance the forest intensity of the recorded forest area and expand forest and tree cover to reach 33% of the state by 2030-31. The mission places a strong emphasis on bringing transparency and accountability in decision-making processes.
Tamil Nadu Wetlands Mission (TNWM)	Aims to safeguard wetlands by implementing a holistic conservation and management plan, emphasizing ecological restoration and livelihood options. Key objectives include notifying identified wetlands under the Environment Protection Act 1986, digital inventorization, and ecological restoration.

52 **An assessment of PIM and Climate change has been undertaken.** The assessment covers four dimensions i.e. climate-aware planning, coordination across entities, climate related criteria in appraisal and selection of public investments, budgeting and risk management. It is presented in table 6.

Table 6: PIM and Climate Change in Tamil Nadu	
C1. Climate-aware planning: Is public investment planned from a climate change perspective?	
Are national and sectoral public investment strategies and plans consistent with NDC or other overarching climate change strategy on mitigation and adaptation?	**Fully Met:** National and sectoral public investment strategies and plans are consistent with NDC or other overarching climate change strategies for most sectors
Do central government and/or sub-national government regulations on spatial and urban planning, and construction address climate-related risks and impacts on public investment?	**Partially Met:** Central government and/or sub-national government regulations on spatial and urban planning, or construction (through building codes) addresses climate-related risks and impacts on public investment. (The Tamil Nadu Regional and Urban Planning Development Act, 2023 is being amended to include elements like disaster risk and climate change in spatial and urban planning)
C2. Coordination between entities: Is there effective coordination of decision making on climate change related public investment across the public sector?	
Is decision making on public investment coordinated across central government from a climate-change perspective?	**Fully Met/ Partially Met:** Decision-making on public investment is coordinated across budgetary central government from a climate-change perspective.
C3. Do project appraisal and selection include climate-related analysis and criteria?	
Does the appraisal of major infrastructure projects require climate related analysis to be conducted according to a standard methodology with central support?	**Not Met:** The appraisal of major infrastructure projects does not require climate-related analysis to be conducted according to a standard methodology.
Are climate-related elements included among the criteria used by the government for the selection of infrastructure projects?	**Not Met:** Either there are no explicit selection criteria or climate-related elements are not included among the criteria used by the government for the selection of projects for financing.
C.4 Budgeting and portfolio management: Is climate-related investment spending subject to active management and oversight?	
Are planned climate related public investment expenditures, sources of financing, outputs and outcomes identified in the budget and related documents, monitored, and reported?	**Partially Met:** Some planned climate-related public investment expenditures are identified in the budget and related documents, including investment expenditures funded externally, by extrabudgetary entities, and PPPs. *However, Climate-related expenditure is monitored and reported but not climate-related investment*
C5. Risk management: Are fiscal risks relating to climate change and infrastructure incorporated in budgets and fiscal risk analysis and managed according to a plan?	
Does the government publish a national disaster risk management strategy that incorporates the potential impact of climate change on public infrastructure assets and networks?	**Fully Met:** The government publishes a disaster risk management strategy that identifies and analyses the key climate-related risks to public infrastructure assets and networks in terms of hazards, exposure and vulnerability, and includes the government's plans to mitigate and respond to these risks.
Does the government conduct and publish a fiscal risk analysis that incorporates climate related risks to public infrastructure assets?	**Not Met:** The government does not conduct a fiscal risk analysis that incorporates climate related risks to public infrastructure assets.

10. List of recommendations from the assessment

Table 7: Summary of Recommendations	
Strategic Planning	
1	Improve coordination of major projects regardless of funding source by taking inputs from an independent agency or experts along with the central authority that reviews and scrutinize all major projects.
2	Develop a Public Investment Management Information System that allows seamless management of the investment cycle.
3	Develop a harmonized system of PIM including PPP's, wherein reports on status of projects in public investment pipeline is regularly updated.
4	Strengthen the planning process by disclosing total project costs and multiyear commitments for major projects through Public investment plan documentation in the budget documentation.
5	Publish information on investment plans of public corporations in a consolidated way.
6	Publish a comprehensive pipeline of appraised investment projects that are ready for implementation . This may be used for selecting high value projects.
Project Appraisal	
7	Publish a technical note with details of the methodology used for the appraisal. There is a need for additional guidelines on the methodology used to undertake cost-benefits or Economic rate of return analysis.
8	Publish a note on appraisal methodology which incorporates climate change dimensions, and which is applicable for all public investments.
Prioritization, Selection and Budgeting	
9	Develop and publish guidelines for project selection.
10	Publish guidelines on the framework for prioritization among projects. It may depend on readiness of the project.
Operation, Monitoring and Evaluation	
11	Strengthen the institutional mechanism for monitoring and evaluation of the fund requirement to reduce slippage in outlay.
12	Regularly update Asset registers comprehensively and at reasonable intervals.
13	Publish regularly consolidated reports with exhaustive information on Public Investments
Climate Sensitive Public Investment	
14	Develop and publish a framework for managing public investments towards climate change.
15	Strengthen the appraisal and selection process by incorporating the analysis of the impact of climate change for all public investment projects.
16	Publish selection criteria that include climate-related elements used for selecting projects for financing
17	Coordinate public investment across *all* entities in response to climate change either through the budget or extra-budgetary institutions.
18	Conduct an assessment of fiscal risks to public assets and infrastructure due to climate change.

11. References

Barro, Robert J. 1990. Government Spending in a Simple Model of Endogenous Growth. *Journal of Political Economy, 98*(S5), 103-125.

Bhattacharya, Rudrani., Sen Gupta, Abhijit., and Sikdar, Satadru,. 2020. *Building Infrastructure to Promote Inclusive Growth*. (Working Paper No. 20/321), National Institute of Public Finance and Policy, New Delhi.

Blanchard, O., and Perotti, R. 2002. An Empirical Characterization of the Dynamic Effects of Changes in Government Spending and Taxes on Output. *The Quarterly Journal of Economics*, *117*(4), 1329–1368.

Blanchard, Olivier J. 2019. *Public Debt and Low-Interest Rate*. (Working Paper No. 25621), National Bureau of Economic Research, Massachusetts Avenue Cambridge.

Bose, Sukanya., and Bhanumurthy, N. R. 2013. *Fiscal Multipliers for India*. (Working Paper No. 125), National Institute of Public Finance and Policy, New Delhi.

Environment Climate Change and Forests Department. 2021. *Compendium of Government Orders On Climate Change (2021-2023)*, Government of Tamil Nadu.

Government of Tamil Nadu. 2019. *Tamil Nadu Solar Energy Policy 2019.*

Government of Tamil Nadu. 2021. *Tamil Nadu Industrial Policy 2021*.

Government of Tamil Nadu. 2023. *Energy Department Policy Note 2023-24.*

Government of Tamil Nadu. 2023. *Tamil Nadu Logistics Policy and Integrated Logistics Plan 2023.*

Mundle, Sudipto., and Sahu, Ajaya. 2022. The Budget Bets on Capital Expenditure to Revive Growth How Will This Strategy Play Out?. *Economic & Political Weekly*, 57, 40-46.

Turnovsky, S.J. 1997, Equilibrium Growth in a Small Economy Facing an Imperfect World Capital Market. *Review of Development Economics*, 1, 1-22.