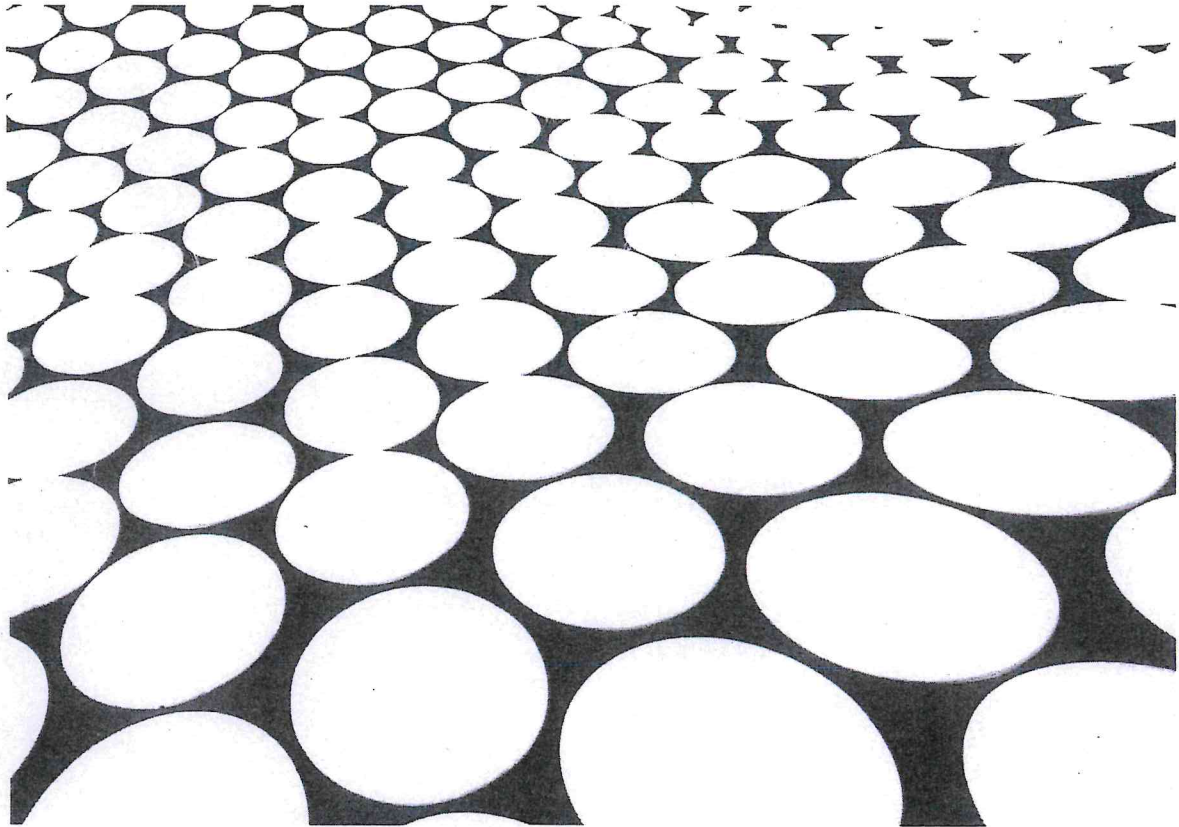




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School Infrastructure Management by Local Bodies in Tamil Nadu

Analysis and Recommendations on Operations and
Maintenance Expenses



December 2021

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Abbreviations:

BDO	Block Development Officer
CEO	Chief Education Officer
CoSE	Commissionerate of School Education
CPWD	Central Public Works Department
CTP	Commissionerate of Town Panchayat
DEO	District Education Officer
DMA	Directorate of Municipal Administration
DRD & PRD	Directorate of Rural Development & Panchayat Raj Department
EM	Estate Manager
FY	Financial Year
GO	Government order
GoTN	Government of Tamil Nadu
NAS	National Achievement Survey
NCC	National Cadet Corps
O&M	operations and maintenance
PPP	Public Private Partnership
PWD	Public Works Department
RMSA	Rashtriya Madhyamik Shiksha Abhiyan
SDGs	Sustainable Development Goal
SED	School Education Department
SFC	State Finance Commission, Government of Tamil Nadu
SFC	State Finance Commission
SS	Samagra Shiksha
SSA	Sarva Shiksha Abhiyan
SSFC	Sixth State Finance Commission
TE	Teacher Education
TEI	Teacher Education Institutions
TNEB	Tamil Nadu Electricity Board
TNSPC-2021	Tamil Nadu State Policy for Children-2021
UDISE	Unified District Information System for Education
UNICEF	United Nations Children's Fund
WASH	Water, Sanitation and Hygiene
YoY	Year on Year

1 Background and Context

UNICEF works in over 190 countries and territories to save children's lives, to defend their rights, and to help them fulfill their potential, from early childhood through adolescence. In India UNICEF work across India to save children's lives, help them fulfill their potential and defend their rights.

Tamil Nadu is the seventh most populous state in India. Close to fifty per cent of the state's population live in urban areas. Tamil Nadu is one of India's pioneer states for initiating pro-poor policies and social protection programmes for children and women in the most marginalized communities. The State introduced progressive legislations and schemes such as social security measures, expansion of health, nutrition, WASH and education systems and public distribution system. Over the decades, these social policies were implemented effectively with high public investment in social sector and strong administrative structures and systems that facilitated effective planning and monitoring. This significantly demonstrated impact on well-being of children in health, nutrition and education.

Considering the substantial progress made in last couple of decades in improving outcomes for children and reducing multi-dimensional deprivations in Tamil Nadu, the UNICEF state office for Tamil Nadu's programme efforts focuses largely on enhancing social inclusion and strengthening an enabling environment by developing a convergent social policy approach and comprehensive systems that integrate efforts for greater impacts on child well-being. UNICEF works around the **three pillars of social policy work** - public finance for children, decentralization and child friendly local governance, and social protection for vulnerable families and their children.

2 The Sixth SFC and its Terms of Reference

The three-tier structure envisaged under the 73rd and 74th Constitutional Amendments has been in place for two decades in Tamil Nadu. As envisaged in Article 243 (I) and 243 (Y) of the Constitution of India, inserted through the 73rd and 74th Amendments, each State has to constitute a State Finance Commission once in five years to review the financial position of the local bodies and to make its recommendations to the Governor of the State.

The State Finance Commission reports are landmark documents, for they mark, not only the fulfillment of the constitutional obligation to have a specially tasked body to recommend on the appropriate sharing of resources by the State Governments with the local bodies, but also provide an opportunity to look back periodically on the journey thus far on decentralization by assessing the role, performance and needs of the local bodies. As a constitutional body, the State Finance

Commission is in a unique position to examine and evaluate the path taken so far and influence through its recommendations, the future of the critical institutions which are at the base of the pyramid of governance in the country.

In pursuance of the constitutional provisions and the State legislations, State Finance Commissions are being constituted in Tamil Nadu once in five years. The Sixth State Finance Commission (SSFC) was constituted and notified in the Tamil Nadu Government Gazette thru G.O.Ms.No.171.

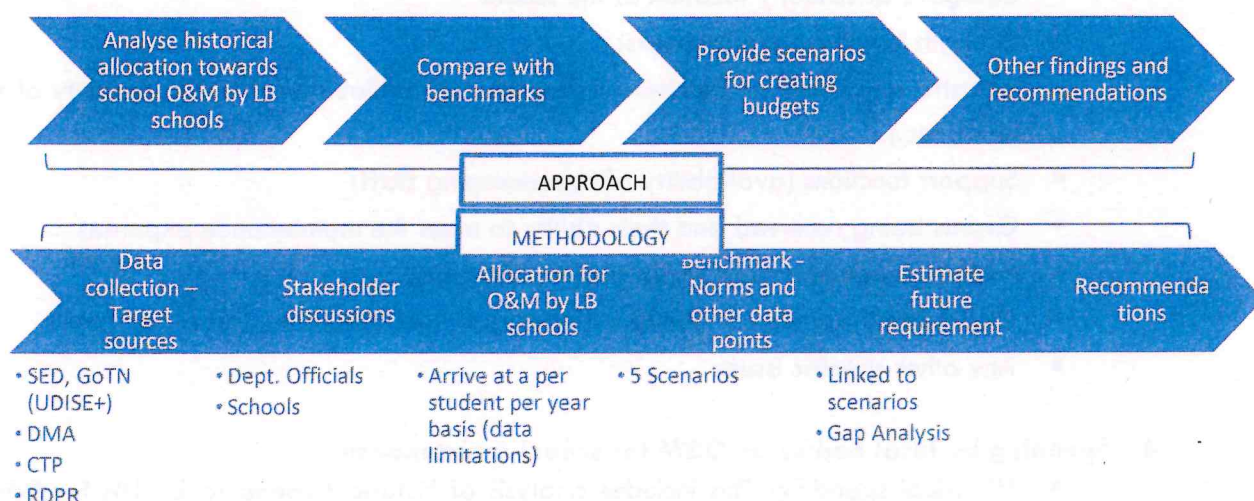
The Commission's terms of reference include reviewing the financial position of the rural and urban local bodies - village panchayats, panchayat union councils, district panchayats, town panchayats, municipalities and municipal corporations and making recommendations. The Commission covers the period of five years commencing from April 1, 2022.

3 Report in focus

UNICEF (Tamil Nadu and Kerala state office) is assisting The Sixth State Finance Commission, GoTN on various initiatives. One such initiative is in the education sector relating to estimating the future requirements of operations and maintenance (O&M) expenses of Schools run by local bodies - panchayat, municipalities and corporations). This report attempts to assess the historical spend by Government entities towards maintenance of school infrastructure and compare it with aspirational benchmarks, further the report brings out suitable approach and provides scenarios for creating budgets for school infrastructure maintenance amongst other recommendations.

4 Approach and Methodology

The A&M is presented in the diagram below:



1. **Defining the objective:** The objective of the study is to analyse the spending by local bodies (urban and rural) for operations and maintenance (O&M) of schools run by Local Bodies (LBs). The current levels of spending are then measured against good practices to see if there is a need for increase in spending for O&M.
2. **Data collection:** The first step was to identify the relevant departments and information to be collected from. Following departments were identified as relevant for the study:
 - School Education Department
 - Commissionerate / Directorate of Municipal Administration
 - Commissionerate of Town Panchayats
 - Directorate of Rural Development & Panchayat Raj Department
 - Forest Department
 - Adi Dravidar and Tribal Welfare Department
 - PWD: Building division
 - UDISE+

Then from each department/ agency the key information to be obtained was drawn. This was followed by writing to respective department(s) along with specific data request relevant to that department. Further visits to department to follow up on the request and to have discussion were also undertaken. In addition to the above we also referred public documents such as:

- a) TN budget documents
- b) TN policy notes of various department(s)
- c) SFC reports and ATRs of previous SFC, TN

3. **Stakeholder consultations:** Discussion with school teachers was undertaken in more than 20 districts. Key areas covered are outlined below:

- Category of school / location of the school
- Strength (students and teachers)
- Infrastructure facilities (number of class rooms, availability of toilet, capacity of the toilet, etc.)
- Support functions (availability of housekeeping staff)
- Grants being received and their ability to meet the maintenance expenses
- Historical maintenance details and amount being spent
- Operational process in getting maintenance work done (local body or PWD)
- Any other specific issues

4. **Spending by local bodies on O&M for school maintenance**

- **Historical spending:** This includes analysis of historical spending by LBs for School O&M expenses. Also, to analyse the trend and reasons for increase or decrease YOY. Then subsequently arrive at the O&M spending on a per student basis. It may be noted that while spending towards utilities such as energy, water etc. (which are met by local bodies directly) are also to be considered under O&M, the analysis here has been limited to repairs, maintenance and upkeep of school premises. However, if the spending towards
- **Norm based spending:** If we go by the norms prescribed by CPWD for school building and infrastructure maintenance, then what would be the yearly maintenance cost was arrived at.
- **Benchmark: The next step was to obtain the following details:**
 - a. Comparison of spending by schools in different local bodies. Spending in Corporations was compared with village panchayats (considering limited data availability) to arrive at the gap.
 - b. Spending by a government aided school in Chennai for the purpose of benchmarking on a per student basis.
 - c. Spending for O&M based on allocations (after adjustments) for Ekalavya School (a special category residential school for tribal children) by Government of India. The cost was normalised on a per student basis
 - d. Spending for O&M based on allocations (after adjustments) in case of school development on PPP basis in Gujarat. The cost was normalised on a per student basis

We then compared the spending by schools run by LBs against the benchmarked numbers. This helped us to arrive at the gap/ need to increase the current spending levels to improve the service levels by upkeep of school infrastructure. Based on this exercise we arrived at the funding requirements for O&M for school in near future. In this process, we attempt to understand the financing gap that is needed to bring about parity between government schools in Tamil Nadu and also set higher aspirations based on select benchmarks.

5 TN State policy for Children 2021

In order to remain steadfast in its commitment to create a bright future for its children, and achieve the Sustainable Development Goals for children, Govt of Tamil Nadu has developed the Tamil Nadu State Policy for Children-2021 (TNSPC-2021).

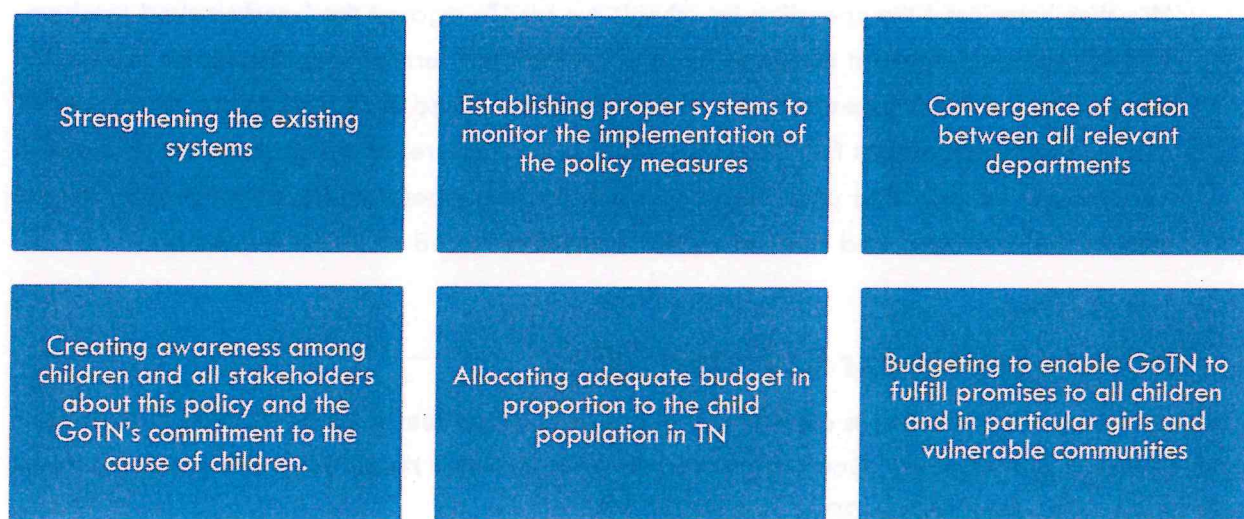
Vision:

To ensure holistic development of every child in an enabling safe environment to reach her/his full potential and achieve the Sustainable Development Goals for children.

Mission:

The Government of Tamil Nadu will endeavour to ensure that every child is protected from all forms of violence, abuse and exploitation, shall have access to quality health care & education, will be able to freely express his/her views on any issue concerning him/her and to ensure the principle of "Leave no one behind".

The Tamil Nadu State Policy for Children 2021 will be put into action by developing a comprehensive Plan of Action. The overarching objective of this policy is to ensure prevention and protection of children from all/any form of violence particularly from vulnerable sections.



The policy says every child shall have access to quality healthcare and education and able to freely express his or her views on any issue concerning him/her. **The Government will introduce and adopt child protection policy in all panchayat and urban local bodies for creating child safe spaces in whole state of Tamil Nadu.**

6 Tamil Nadu State Mission of Education for All

Samagra Shiksha is an Integrated Scheme for School Education aimed at ensuring inclusive and equitable quality education from Class 1-12th Standard. Samagra Shiksha subsumes three then existing schemes – Sarva Shiksha Abhiyan (SSA), Rashtriya Madhyamik Shiksha Abhiyan (RMSA) and Teacher Education (TE). The main outcomes of the Scheme are envisaged as Universal Access, Equity, Quality and strengthening of Teacher Education Institutions (TEIs), etc. The broader goal is to improve school's effectiveness in terms of providing quality education and equitable learning outcomes.

Samagra Shiksha aims to adopt a holistic approach to education with an intention to bring about administrative reform and focus on quality of education with an impetus on Teachers and Technology. It aims to introduce growing efforts to promote digital learning, enhance inclusion, reduce gender gaps, skill development, regional balance, and sports & physical education. Need for increased convergence between different programmes implemented by Samagra Shiksha and various directorates of School Education Department, Government of Tamil Nadu by instilling allocative efficiency and optimal utilization of budgetary and human resources.

Over the years, recognizing the importance of the efforts made to enhance the quality of education, the Tamil Nadu State Government has placed a greater focus on expansion of education, significantly improving the quality of education imparted and ensuring that educational

opportunities are available to all segments of the society. With this commitment the state government aims to build human capital by providing universal access, equity, quality at primary, upper primary, secondary and higher secondary level. Thereafter, increasing the enrolment in higher education and bring in a focus on employability in manufacturing and service sector.

Despite being **among the top three states** in school education – Tamil Nadu did not get a good score in learning outcomes and quality domain in 2021 (stood 22nd on this aspect)¹. This poses a significant challenge towards the objectives of Samagra Shiksha Scheme. It has to be noted that by 2030, Tamil Nadu aims to ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes as part of SDGs.

Beyond the health consequences of Covid-19, the pandemic has caused closure of schools and high proportion of children in the age group of 6-14 are not enrolled in school in 2020 as compared to 2018 in rural areas². In addition to this, according to the ASER report³, one in four children in Class VIII in Tamil Nadu were not able to read Class II level texts and only 50% students studying in Class VIII were able to grasp division. Key indicators from the Unified District Information System for Education (UDISE), and National Achievement Survey (NAS) indicate that the state needs to focus on foundational skills in literacy and numeracy to have better learning outcomes.

The implication of global pandemic and adoption of education technology is likely to transform the education ecosystems across India and Tamil Nadu as well. This also creates various challenges and opportunity to reimagine the future of school education for 6.8 million students enrolled in Government and aided schools across ~45,000 schools in Tamil Nadu (out of 12 million students and ~59,000 schools)⁴.

7 School Education in Tamil Nadu

Tamil Nadu currently has 58,771 schools⁵ under private and government administration. These include schools that follow state, central and international syllabi. Within these, 37,439⁶ schools are under the control of Government of Tamil Nadu (including the Department of School Education) and the Local bodies in the state. The School Education Department, GoTN has budgetary allocation towards different areas. These are discussed in the following sections.

¹ Performance Grading Index Report 2021; Ministry of Education, GoI

² Annual Status of Education Report 2020, ASER Centre, New Delhi

³ Annual Status of Education Report 2018, ASER Centre, New Delhi

⁴ Annual Status of Education Report 2018, ASER Centre, New Delhi

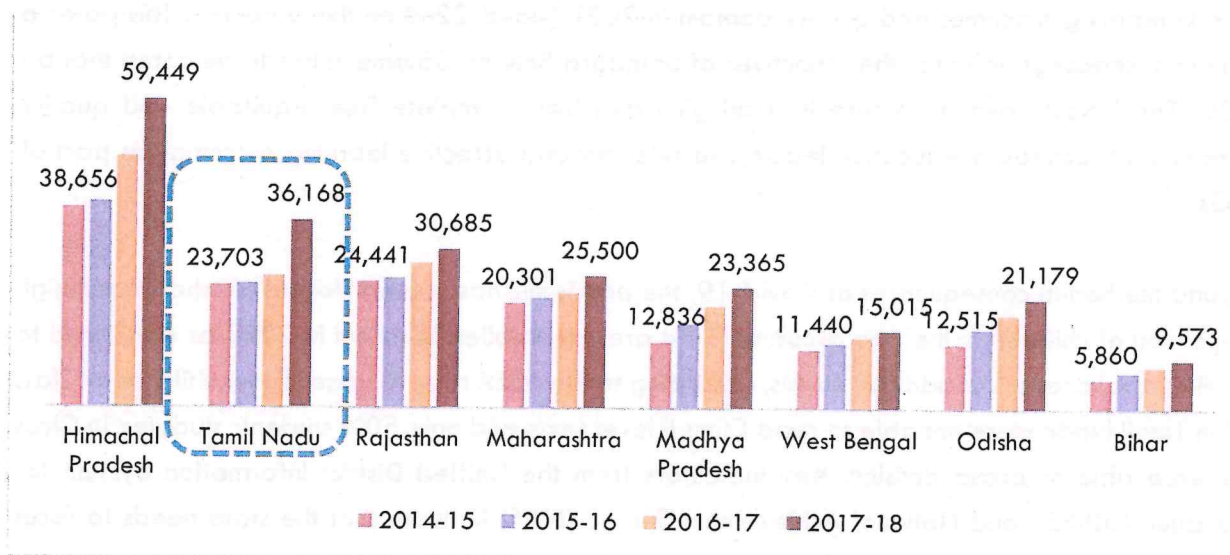
⁵ UDISE+ 2019

⁶ UDISE +2019

7.1 Expenditure Brief on School Education in Tamil Nadu

The Govt of Tamil Nadu has been increasing expenditure towards school education in the recent past. While the trends across states is not consistent, it may be noted that Tamil Nadu is one of the states whose spending on school education is one of the highest when measured on a per student basis.

Figure 1: Per student Expenditure of 8 States in India (INR)

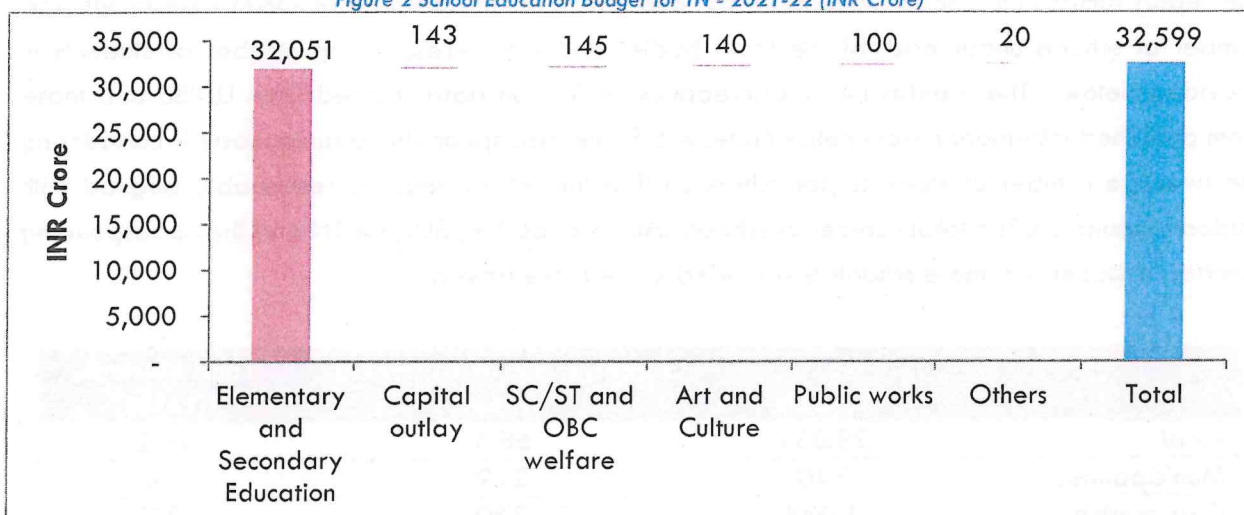


Source: State Education Finances Report, Centre for Policy Research, June 2020

As may be seen from the chart above, the allocation has increased by more than 50% over the period of 4 years. We understand that this upward revision is predominantly on account of implementation pay commission recommendations.

The funding for schools in Tamil Nadu comes from multiple sources. Predominant source is from budgetary allocation for School Education Department. School Education Department has an overall budget outlay for financial year 2020-21 is INR 32,599 crores. These are spent on various initiatives. The following are the avenues to which budgets are allocated.

Figure 2 School Education Budget for TN - 2021-22 (INR Crore)



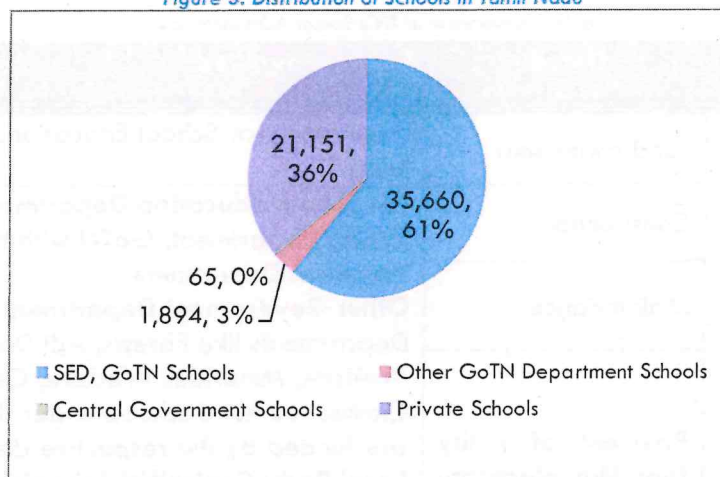
Source: Finance Department, Budget for 2021-22, Government of Tamil Nadu

It may be noted that the allocation for Public Works is only about 0.3% of the total budgetary allocation for school education department in Tamil Nadu. This is the only fund from SED for school maintenance.

7.2 Distribution of Schools in Tamil Nadu

The following figure presents distribution of schools in Tamil Nadu by management type.

Figure 3: Distribution of Schools in Tamil Nadu



Source: UDISE+

It may be noted that more than 60% of the schools are under the control of Government of Tamil Nadu and only about a third are under private administration.

The report focuses on schools maintained by local body for the purpose of O&M assessment. The number of schools under each of the local bodies and the corresponding number of students is provided below. There exists minor discrepancy ($< 1\%$) in data sourced from UDISE and those from published information from Policy Notes etc. Some assumptions have been made in considering the average number of students per school so that the total number is reasonably aligned with student population. The total number of schools with local bodies, SED, GoTN and the corresponding number of students in these schools is provided in the table below.

	No. of Schools	Average No. of students / school	Total Students (Lakh)
Rural	28,031	68.5	19.2
Municipalities	740	219	1.6
Corporation	1,044	350	3.7
Total LB	29,815		24.5
SED, GoTN	6,029	444	26.8
Total	35,844		51.2

From the above, it may be noted that 83% of the total number of Government schools discussed here (i.e. SED+LB) are under the control of local bodies and 48% of the total number of student study in these local body schools.

7.3 Overview of Government School Administration in Tamil Nadu

Administration of schools in Tamil Nadu is broadly across the following aspects:

Table 1: Overview of TN's School Administration

S. No.	Aspect	Detail	Entities involved*
1	School Infrastructure and Utilities	Land ownership	Department of School Education, GoTN/Local Body
		Construction	For School Education Department Schools: Public Works Department, GoTN with funds from School Education Department
		Maintenance	Other Government Department Schools: Departments like Forests, Adi Dravidar and Tribal Welfare, Minorities Welfare, Other Backward Classes too have schools under their control. These are funded by the respective departments.
		Payment of utility fees like electricity and water charges, etc.	Local Body Controlled Schools: Respective Local Body. There are some schools which are designated as School Education Department schools in UDISE but maintenance alone is the responsibility of LBs.

S. No.	Aspect	Detail	Entities involved*
2	Curriculum	Teachers Recruitment, Payroll, Training and Development, Syllabus, Pedagogy	School Education Department, GoTN
3	Examination	Conduct of Exams	
		Evaluation and issue of certificates	

* Represents arrangement in general. There could be some exceptions
Source: Stakeholder consultations

The above table represents a typical arrangement with respect to Operations and Maintenance and there could be exceptions. Specific working arrangements for operations and maintenance in case of schools involving local bodies is presented in section 8.1 of this report.

Since, the focus of this study is limited to operations and maintenance of schools under the control of local bodies, the typical arrangement in SED, GoTN and local body schools is presented below. It may be noted that in the data provided by UDISE+, the segregation based on funding for school O&M is indistinguishable between SED, GoTN schools and Local body schools. Hence, these have been aggregated and represented herein.

Table 2: handling O&M in schools run by LBs

School category	Primary School	Elementary Middle School /	High School	Higher Secondary School
Corporation, Municipality	Respective Local Body's Engineering wing responsible for Buildings/School			
Village Panchayat	Block Panchayat's Engineer	Block Panchayat's Engineer	PWD	PWD
School Education Department	Block Panchayat's Engineer	Block Panchayat's Engineer	PWD	PWD
Source: Stakeholder discussions				

Having understood the overall working arrangements with respect to government schools in Tamil Nadu, it is imperative to understand in brief the legislative history of schools under local bodies. The same is discussed in the following section.

7.4 Schools Run by Local Bodies

The involvement of local bodies with administration of education in general and that of primary education in particular was the result of several factors. Under the Elementary Education Act of 1870, the local bodies were created and empowered to levy local tax for elementary education. The local bodies represented the self-government for the people and were entrusted with the important task of social service including primary education. The local bodies had been empowered to administer education in the state by the following Acts; The Tamil Nadu Elementary Education Act, 1920, the Madras City Municipal Corporation Act, 1919; the Tamil Nadu District Municipal Act 1919, the Tamil Nadu Panchayat Act, 1958 and the Madurai Municipal Corporation Act, 1971.⁷

Under these Acts the local bodies were managing bodies for schools, transfers and postings of teachers, maintenance of buildings, provision of school facilities, opening of new schools etc. The Directorate of School Education was entrusted only to supervise the schools under local bodies.

The Government of Tamil Nadu in 1981 took over the service of the teachers working in the Panchayat union schools and the powers vested with local bodies relating to education were transferred to the Directorate of School Education. In the year 1989 the state government transferred the powers vested with corporations and municipalities relating to education to this directorate and all the teachers working in municipalities and corporations were absorbed as government servants.

1981

- GoTN transferred the education-related powers of Local Bodies to the Directorate of School Education
- GoTN absorbed the service of teachers working in the Panchayat Union Schools into its fold

1989

- GoTN transferred the education-related powers vested with Corporations and Municipalities to this Directorate
- GoTN absorbed all the teachers working in municipalities and corporations as government servants.

Tamil Nadu Panchayats Act, 1994

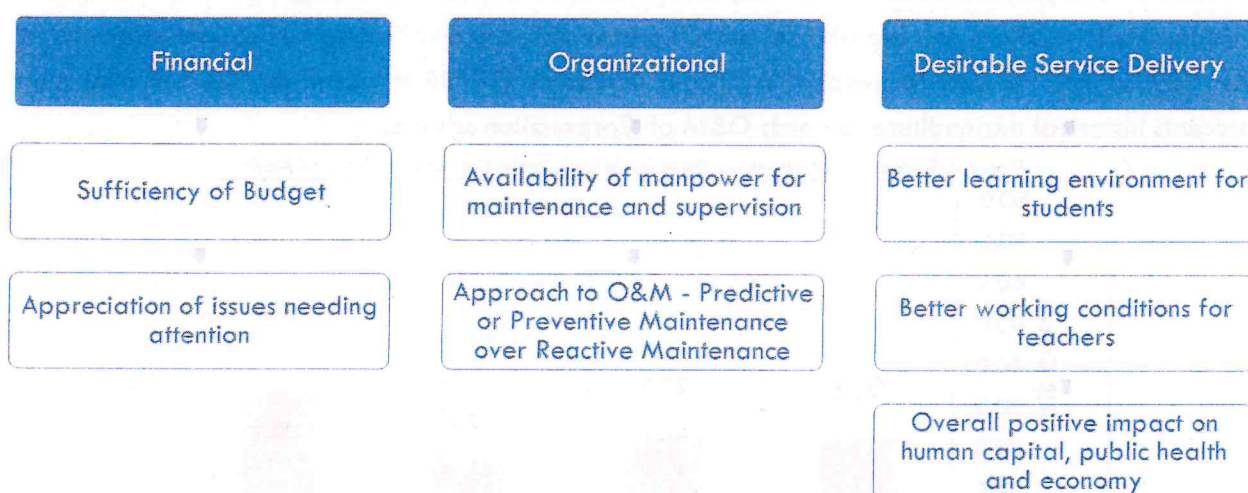
- It is the statutory responsibility of the Panchayat Unions concerned to ensure the maintenance of infrastructure facilities in these Schools

However, the local bodies are still looking after the maintenance of school buildings originally under their control. At present the local bodies do not have any educational activity other than maintenance of school building.

⁷ Source: School education department, GoTN

8 School Infrastructure Maintenance in Focus

Development and upkeep of school infrastructure is critical for having a consistent supply of human resources that can work for both economic and social development. Creation of new infrastructure can have its own share of advantages in terms of granting access of a particular public good (in this case school education) to a hitherto unserved population. In parallel, the upkeep and maintenance of existing infrastructure becomes critical owing to the need for utilizing the infrastructure to provide the intended public good with desirable quality consistently. There are two critical aspects concerning O&M of schools. These are financial and organizational.



The following section provides a brief overview of finances and organization concerning school maintenance of subject schools. It is imperative to understand that since education is a basic service, it is not prudent to have a return on investment-based approach. For this purpose, provision and maintenance of school infrastructure needs to be viewed with its own merit rather than financial or economic merit. Please refer Annexure 1 for additional details.

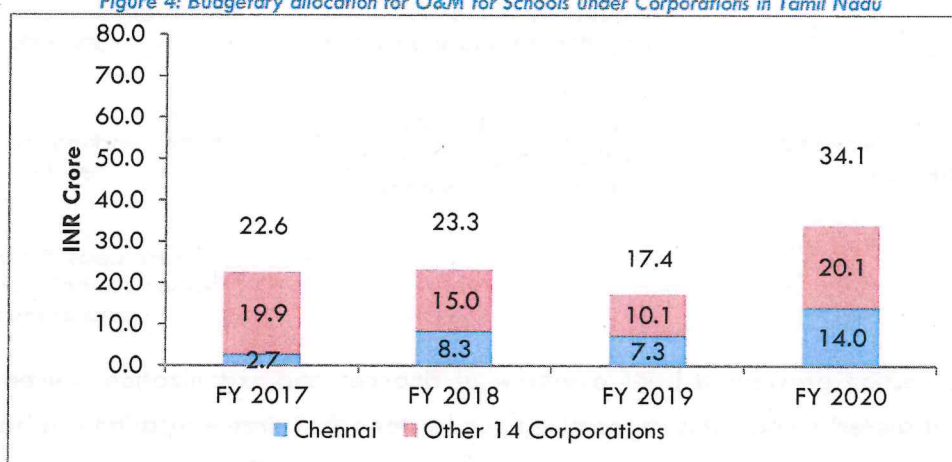
8.1 Current status and allocations

Budgetary allocations for operations and maintenance of Government schools in Tamil Nadu are from multiple sources. These are:

Budget Sources for School O&M					
LB funds	SFC devolution	Allocation as part of SED Budget	Allocation as part of RDPR Budget - SIDS	Special Schemes from Gol	CSR and Alumni through outreach

As mentioned above, Government of Tamil Nadu, in addition to provision from state budget and SFC devolutions, had undertaken an alumni outreach initiative wherein alumni can contribute in cash or kind to their alma-mater. Another similar initiative is reaching out to corporates for contributions through CSR. It may be noted that the quality of some schools that get corporate assistance are comparable to their private sector counterparts in terms of both facilities and general upkeep and maintenance. However, the scenario with a majority of schools that rely only on traditional sources mentioned above is typical and always wanting for more financial and organizational bandwidth to cope with the requirements. The needs of a school are obtained in writing from the head of a school. However, the allocation is normally on the basis of availability and grants linked to number of students. In addition, we are also faced with issues due to unavailability of reliable data for all the types of local bodies with respect to number of schools and O&M expenses. The following chart presents historical expenditure towards O&M of Corporation schools.

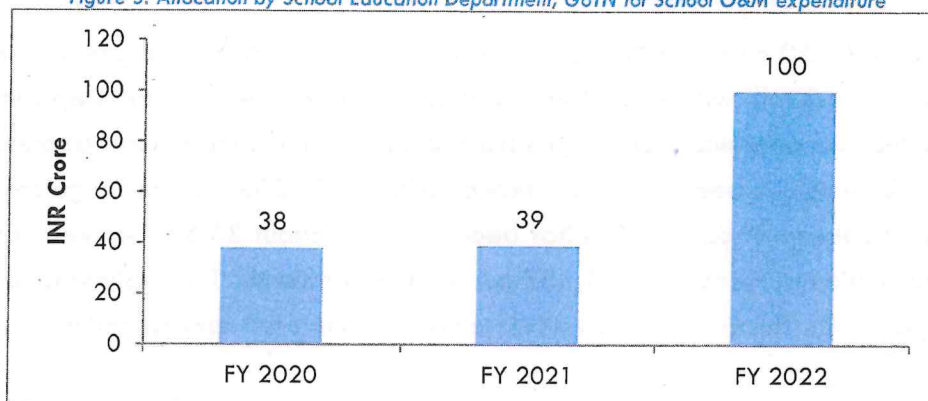
Figure 4: Budgetary allocation for O&M for Schools under Corporations in Tamil Nadu



Source: Respective Corporations

In the figure mentioned in the chart above, there is a possibility that those expenses included under the head operations and maintenance (Account Head: 230) could include capital expenditure. However, the entire amount has been considered to be for O&M only for the purpose of our analysis. The School Education Department for the purpose of periodic maintenance had allocated the following budget in the recent years.

Figure 5: Allocation by School Education Department, GoTN for School O&M expenditure



Source: Budget for School Education Department, DMA, DRD & PRD

In case of SED, GoTN too, the allocation is not linked to need but based on availability. The allocation for SED, GoTN is through the state budget (reference D. No. 43 of GoTN budget). The In case of rural local bodies, a sum of INR 150 crore has been allocated in FY 2022 for the purpose of school infrastructure maintenance (predominant use). In addition, Government of India through Samagra Shiksha has allocated the following amounts for schools based on the strength of students.

Table 3: Samagra Shiksha allocation for School Maintenance

No of students	Annual Grant (Rs.)
1 to 30	10,000
31 to 100	25,000
101 to 250	50,000
251 to 1000	75,000
1001 and more	100,000

Source: Samagra Shiksha

The following table presents a summary of overall allocations to Government schools (Including SED and Local Body) for O&M.

Table 4: Summary of allocation for School Maintenance from different sources (GoTN, SED and LB Schools)

Sources	Amount (INR Crore)	Source
LB Funds (incl SFC)	226	
Corporations	48 (38+10)	Respective Corporations with escalation
Municipalities and TPs	28 (27+1)	DMA
SIDS (RLBs) – part of SFC	150	Policy Note of RDPR for 2021-22, RDPR
SFC Devolution - Other	64	
Urban	NA	
Rural	64	Policy Note of RDPR for 2021-22
SED, GoTN	100	Policy Note of SED, GoTN for 2021-22
Gol Scheme	78	
Total	468	

Allocation from different sources aggregates to INR 468 crore.

8.1.1 Allocation through SFC

An allocation of INR 150 crore for the current year has been made for the predominant purpose of maintenance of schools with rural local bodies. Discussions with RDPR Department, GoTN confirmed that the allocation under SIDS too is from SFC devolution to rural local bodies. In addition, about INR 63.93 crore has been allocated through SFC for FY 2021-22 for engagement of staff for cleaning and upkeep of schools. This has been paid for about 33,587 workers. On this basis, the average allocation works out to INR 1,587 per worker per month. This implies that these workers are not hired regularly. This in turn has an adverse impact on overall upkeep and hygiene in schools.

It may be noted that in all the O&M budgets indicated in this section, the cost towards electricity and water charges have not been considered. In case the same is considered, the overall allocation would increase. Greater Chennai Corporation has allocated separate budgets for housekeeping and facility management in schools. However, to maintain parity the same is excluded from the purview of benchmarking discussed in section 8.3 of this report. While ascertaining the financing gap for school O&M, sanitation and housekeeping too have been considered on the basis of average allocation made by GCC.

8.2 Infrastructure Maintenance challenges

Private schools generally tend to have a dedicated organization for maintenance and upkeep of school infrastructure and assets. They also tend to take decisions regularly on the basis of need which is planned once in a year, reviewed almost on a quarterly basis and monitored. This is possible owing to an organizational structure that provides for continuous feedback and an avenue for escalation in the event of an urgent need. However, the same cannot be said about Government owned schools. Interactions held with officials and school representatives in 21 districts and key points raised in these stakeholder consultations are outlined in section

8.2.1 Organizational Challenges

In the context of Operations and Maintenance, we have seen that the responsibility is either the Engineering wing of the Local body or the Public Works Department. More often, the Engineers are not dedicated for schools and instead are responsible for all infrastructure in a particular region. Hence, this becomes a bottleneck in providing quality maintenance to schools that can lead to a productive outcome in terms of overall experience for students and teachers. Further, there is absence of preventive maintenance in schools which leads to inevitable breakdown maintenance leading to reduced availability of school's assets which in turn can potentially affect performance of students and teachers.

8.2.2 Availability and access to financial resources

This section discusses the work flow related to infrastructure maintenance in schools managed by SED, GoTN and local bodies.

For School Education Department, the Public Works Department (PWD), Government of Tamil Nadu (GoTN) does maintenance of school buildings only in High schools and Higher Secondary schools, i.e., for schools functioning under Secondary Education Department. PWD, GoTN does construction of new schools building and other related buildings too.

Following are the process involved for High School and Higher Secondary school's repair and maintenance work:

- Preparation of budget by School Education department, GoTN (usually based on previous year estimates), segregated into different education districts and intimated to the concerned Chief Education Officers
- Preparation of maintenance requirement by Head of School and submission to Block Education Officer who in turn submits it to DEO and then to CEO
- BEO and Engineers from Local PWD together prepare estimates and then submitted to CEO
- CEO allocates funds to school based on prevailing priorities. This results in overall allocation being less than requirement. This is intimated to the head of school.
- Head of School coordinates with local PWD for execution of work. PWD manages tendering and supervision. Completion is certified by Head of School and payment is approved by PWD.
- Payment from Treasury to Contractor

Process for Primary and Elementary Education Department or Local Body schools - work flow process:

The process here is similar to the above scenario. Except that the execution is managed by the Block Development Officer responsible or the Engineering wing in the local body. However, the issues and constraints remain the same with respect to availability of funds and manpower.

The above process substantiates that the need for undertaking repairs and maintenance work is initiated only by the school teachers and the Headmaster/Headmistress. There is absence of routine visits with a view to undertake preventive/predictive maintenance by the engineers concerned. There is absence of a facility management organization which can productively engage in preventive/predictive maintenance and as a consequence enhance user experience in these schools.

Having understood the above constraints, it is imperative to quantify them through a process of benchmarking with suitable comparators. The same has been discussed in the following section.

8.3 Benchmarking

For better comparison and to overcome data limitations on O&M (Municipalities and Town Panchayats in particular), benchmarking has been undertaken on a per student basis. Scenarios discussed in each of the subsections here present O&M budgets on a per student basis.

8.3.1 Comparison between different Managements in TN Government Schools

Based on data availability, the following benchmarks are drawn for financial allocations to O&M. The following table presents number of students, escalated budgets for the current year based on past allocations.

Table 5: Comparison of different Managements in TN Government Schools

School O&M - Management	No. of Students (Lakh)	Budget-Based on Historical allocation (INR Crore)	Average allocation per student (INR per year)
Corporations	3.59	37.60	1,049
Chennai	1.03	15.44	1,500
Other cities (14)	2.56	22.17	867
Village Panchayat	38.63	150	388

Source: GCC, DMA, Directorate of RD & PRD

As observed in the table above, there is wide disparity in allocation between Corporation and Panchayat schools.

8.3.2 Comparison with typical private school

We had undertaken interactions with a typical large Government aided school in Chennai which has been in existence for more than 100 years and which has also expanded recently both in terms of infrastructure as well as student intake. The school has a total strength of 3,779 students and has an allocation of INR 75 lakhs per year only for repairs and maintenance of buildings. This works out to an allocation **INR 1,985 per student per year**.

8.3.3 Comparison with Government of India's Ekalavya Model Residential School

Government of India has come out with the plan of Ekalavya Model schools for promoting school infrastructure in tribal areas. These schools are to be run as residential schools. The following table provides the break-up of estimated expenditure.

Table 6: Comparison with Ekalavya Model Residential School

Component	Maximum permissible annual expenditure (INR Lakh)	Remarks
Staff salary	358	This includes salary of 52 regular staff as envisaged in the recruitment rules circulated to states
Direct expenditure on students (upto 22,000 per student)	105.60	Includes expenditure towards mess, uniform, text books, daily use items, medical, bedding, CBSE fees, school bag, etc.
Operational expenditure	25	Includes expenditure towards water & electricity, misc. (postage, telephone, POL, office stationery, furniture repair, equipment repair, etc.); computer lab maintenance; maintenance and repair of buildings; conducting admission tests
Expenditure on academic & co-curricular activities	4	Conduct of NCC/scout & guide activities, professional development of teachers, setting up of museum corner; vocational courses; other activities (pace setting activity, art & culture workshop, development of resource room, etc.)
Administrative expense of state society (2%)	10	2% of the total permissible recurring cost shall be kept towards administrative expense of the state society
Funds for capital expenditure (procurement of computers, smart classes, major repairs)	10	This amount shall be retained at the NESTS and may be made available to state EMRS societies based on submission of detailed plan by the state society. For certain common activities the work may be entrusted to central agencies. Funds under this head shall be used for schools which have students till 12th class only and running with full strength
Centralised activities (2%)	10	This amount shall be retained at the NESTS for carrying out central activities including sports/cultural meet, capacity building programmes, etc.
Total	522.60	
Total number of students	480	
Maximum cost per student per annum (Rs Lakh)	1.09	
Source: Report published by Government of India		

From the above table, it may be observed that a total of INR 25 lakhs is allocated for Operations and Maintenance. However, to make this comparable to a non-residential school and to exclude miscellaneous expenses, only 40% of this is considered for the purpose of benchmarking on a conservative basis. This works out to INR 10 lakh for 480 students. This translates to **INR 2,083 per student per year**.

8.3.4 Based on Gujarat Government's PPP initiative

Government of Gujarat is undertaking development of schools on PPP in which the contract proposes payment to private developer on a per student basis. The payment pertaining to O&M of school has various components out of which repairs and maintenance of infrastructure is a part. This is suggested in the document as **INR 6,500 per student per year**. However, these are supposedly large schools which operate on a different model and contain facilities different (excess) from a typical government school in Tamil Nadu. Hence, for the purpose of this benchmarking, only 40% of this amount is considered. This works out to **INR 2,600 per student per year**.

8.3.5 Based on Standards Governing Infrastructure Maintenance

A typical school with about 2 sections per grade and 12 grades was considered for the purpose of standards-based benchmarking. Going by the typical area required for classrooms or students at the rate of 1 sq.m. per student, a classroom of 500 sq.ft. can accommodate a maximum of 45 students. Besides, there are other facilities such as staff rooms, toilets, library etc. These facilities are categorized as must haves and nice to have facilities based on typical facilities required in schools. Based on these two scenarios were worked out to determine the area required per student. These are presented as under.

Table 7: Requirement assessment based on Typical school

Component	Total No.	Unit area	Area (sft)	Category
Classrooms	24	500	12,000	Must Have
Library	1	1,000	1,000	Must Have
Labs	1	3,000	3,000	Must Have
Indoor Auditorium	1	4,500	4,500	Nice to Have
HMs office	1	2,000	2,000	Must Have
Store etc.	1	3,500	3,500	Must Have
Staff Room	1	2,000	2,000	Must Have
Toilets	1	3,000	3,000	Must Have
Total			31,000	
Built up area per student based on Must Have facilities		24.5	sft	
Built up area per student based on all facilities		28.7	Sft	
Source: CPWD Maintenance Manual, 2019 and analysis based on data				

The following table present the CPWD norms for school maintenance as adopted to the current context. For the purpose of costing, average area required is considered at 24.5 sqft per student

Table 8: Analysis based on CPWD norms

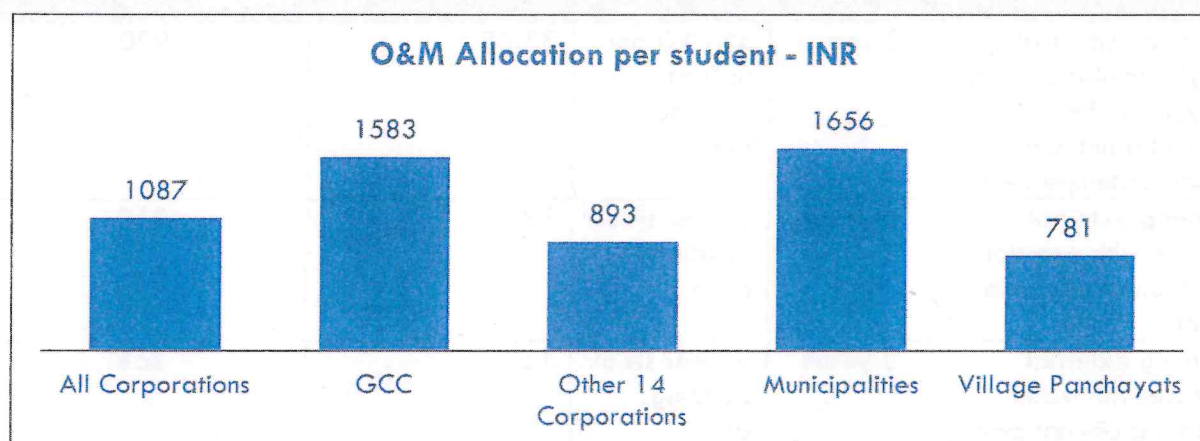
Maintenance Norms for Schools	Frequency	Cost	Average cost per year per unit (INR)	Average Cost per student per year based on 24.5sqft per student
Painting with plastic/ Acrylic Emulsion paint, Acrylic Synthetic enamel paint, Oil bound distemper, etc.	2 years	55 - 90 per sq.ft of building area	38.75	920
Painting external surface with exterior emulsion or equivalent paint	5 years	65 per sft of building area	13	319
Painting external surface with water proofing cement paint	3 years	45 per sft of building area	15	368
Cleaning and disinfecting of water storage/ distribution tanks, water mains	6 months	900 per tank	1,800	13
Cleaning of Manholes/ Gully chambers and flushing of building sewers	1 year	2,500 per building	5,000	17
Cleaning of storm water drains	1 year	Rs. 2 per rft	Assumed as INR 2 per student per year	49
Cleaning Electrical installation, fans etc.	1 year	Rs. 5 per fitting	50 per classroom	1
Premix, semi dense/ dense carpeting of roads	5 years	Rs. 225 / sft	45	276*
Collection of water samples for physical, chemical and bacteriological analysis of water	6 months	Rs. 1,200 / sample	2,400	17
Total Per student per year (INR)				1,980
Source: CPWD Maintenance Manual, 2019 adapted for current situation				
* Since most schools do not have a road within the premises whereas it's likely they have large open spaces, the cost of maintenance of such spaces is likely to be minimal. Hence these are considered at 25% of the cost of same area of road.				

Based on benchmarks aligned to CPWD norms, it works out to INR 1,980 per student per year. This is similar to the case of private school as detailed in section 8.3.2.

8.3.6 Summary of Comparisons

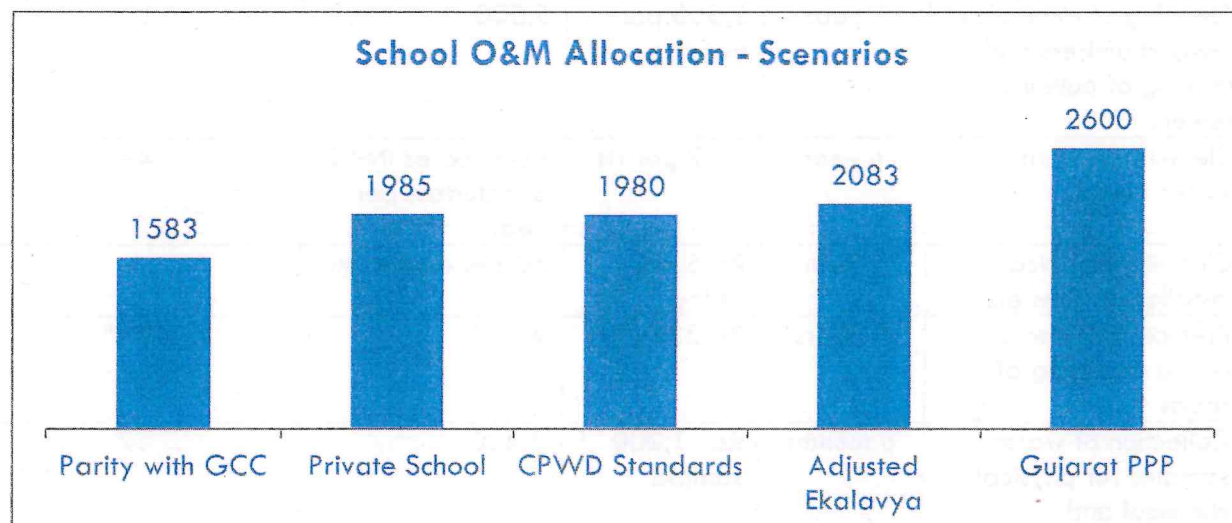
Summary of each of the benchmarks considered in sub-sections of the previous section are presented herein.

Figure 6 O&M per student per year in schools under different administrations (INR)



Source: Analysis based on primary data and secondary research

Figure 7 Scenarios for O&M allocation per student per year (INR)



From the above, it is evident that all the external benchmarks seem higher than the amounts allocated by entities in Tamil Nadu. Further, there is a great disparity between schools managed by different entities within GoTN itself. As a first, step, this anomaly needs correction. As mentioned earlier, the benchmarks are aspirational and hence should be understood in that context rather than a simple comparison. Estimation of allocation required based on select benchmarks is provided in the following section.

8.4 Estimation of infrastructure maintenance expenses

Owing to external benchmarks being higher and as a matter of better judgment being considered as an essential requirement, the estimates are drawn based on benchmarks with private schools, adjusted Ekalavya and adjusted Gujarat new schools.

In the ensuing scenario analysis, a question may arise as to why government schools should be spending higher towards O&M just because comparables in private sector and special government schools tend to spend higher. It is not just about allocating a higher budget; it is also about having a strong facility management organization. This is necessary to ensure that the monies allocated are spent effectively and assets are better maintained for better utilisation. This also might lead to overall reduction in life cycle cost of these assets.

8.4.1 Scenario 1: Benchmarking to bring parity of all school O&M budgets with GCC

As seen in the comparison above, there is high disparity between O&M allocation for schools in Chennai (under GCC) and other local bodies. This scenario aims to eradicate that disparity and suggests a similar allocation across all government schools in Tamil Nadu. The approach towards eradication of this disparity stems from the ideology stated in the Policy Note of GoTN for RDPR Department for the year 2021-22 which states “We must strive to achieve prosperity by developing the villages. For this, the amenities available in town should be brought to the villages as well”

Hence, a value of INR 1,583 is considered as an allocation on a per student basis for maintenance and INR 943 per student per year has been considered as an allocation for sanitation. Estimates are drawn for rural, municipal and corporation schools in Tamil Nadu. Separate budgets are allocated for maintenance and sanitation. The estimate has been drawn for about 19.2 lakh rural students, 1.62 lakh students in municipal schools, 3.65 lakh students in corporation schools and 26.8 lakh students in School Education Department schools.

Table 9: Benchmarking – parity with GCC

Scenario No.	Benchmark	Amount/ student/ year	Requirement (Rural schools)	Requirement (Municipal Schools)	Requirement (Corporation Schools)	Requirement (SED Schools)	Total
Scenario 1	Parity with GCC	INR	INR crore/ annum				
	Maintenance	1,583	304	27	58	424	813
	Sanitation	943	181	15	34	252	483
	Total	2,526	485	42	92	676	1,296

8.4.2 Scenario 2: Benchmarking based analysis with private school

In this scenario, a value of INR 1,985 is considered as an allocation on a per student basis for maintenance and INR 943 per student per year has been considered as an allocation for sanitation. Estimates are drawn for rural, municipal and corporation schools in Tamil Nadu. Separate budgets

are allocated for maintenance and sanitation. The estimate has been drawn for about 19.2 lakh rural students, 1.62 lakh students in municipal schools, 3.65 lakh students in corporation schools and 26.8 lakh students in School Education Department schools.

Table 10: Benchmarking with private school

Scenario No.	Benchmark	Amount/ student/ year	Requirement (Rural schools)	Requirement (Municipal Schools)	Requirement (Corporation Schools)	Requirement (SED Schools)	Total
Scenario 2	Private School	INR	INR crore/ annum				
	Maintenance	1,985	381	32	73	531	1,017
	Sanitation	943	181	15	34	252	483
	Total	2,928	562	47	107	784	1,500

Source: Analysis based on stakeholder discussions

8.4.3 Scenario 3: Based on benchmark with CPWD norms

In this scenario, a value of INR 1,980 is considered as an allocation on a per student basis for maintenance and INR 943 per student per year has been considered as an allocation for sanitation. Estimates are drawn for rural, municipal and corporation schools in Tamil Nadu. Separate budgets are allocated for maintenance and sanitation. The estimate has been drawn for about 19.2 lakh rural students, 1.62 lakh students in municipal schools, 3.65 lakh students in corporation schools and 26.8 lakh students in School Education Department schools.

Table 11: Benchmarking with CPWD norms

Scenario No.	Benchmark	Amount/ student/ year	Requirement (Rural schools)	Requirement (Municipal Schools)	Requirement (Corporation Schools)	Requirement (SED Schools)	Total
Scenario 3	CPWD Norms	INR	INR crore/ annum				
	Maintenance	1,980	380	32	72	530	1,015
	Sanitation	943	181	15	34	252	483
	Total	2,923	561	47	106	782	1,498

Source: Analysis based on stakeholder discussions

8.4.4 Scenario 4: Based on benchmark with Ekalavya Model School after adjustments

In this scenario, a value of INR 2,083 is considered as an allocation on a per student basis for maintenance and INR 943 per student per year has been considered as an allocation for sanitation. Estimates are drawn for rural, municipal and corporation schools in Tamil Nadu. Separate budgets are allocated for maintenance and sanitation. The estimate has been drawn for about 19.2 lakh rural students, 1.62 lakh students in municipal schools, 3.65 lakh students in corporation schools and 26.8 lakh students in School Education Department schools.

Table 12: Benchmarking with Ekalavya Model School

Scenario No.	Benchmark	Amount/ student/ year	Requirement (Rural schools)	Requirement (Municipal Schools)	Requirement (Corporation Schools)	Requirement (SED Schools)	Total
Scenario 4	Prorated Ekalavya ⁸	INR	INR crore/ annum				
	Maintenance	2,083	400	34	76	558	1,068
	Sanitation	943	181	15	34	252	483
	Total	3,026	581	49	110	810	1,551

Source: Analysis based on report published by Govt of India

8.4.5 Scenario 5: Gujarat PPP

In this scenario, a value of INR 2600 is considered as an allocation on a per student basis for maintenance and INR 943 per student per year has been considered as an allocation for sanitation. Estimates are drawn for rural, municipal and corporation schools in Tamil Nadu. Separate budgets are allocated for maintenance and sanitation. The estimate has been drawn for about 19.2 lakh rural students, 1.62 lakh students in municipal schools, 3.65 lakh students in corporations schools and 26.8 lakh students in School Education Department schools.

Table 13: Benchmarking with Govt of Gujarat's PPP Model

Scenario No.	Benchmark	Amount/ student/ year	Requirement (Rural schools)	Requirement (Municipal Schools)	Requirement (Corporation Schools)	Requirement (SED Schools)	Total
Scenario 5	Gujarat PPP ⁹	INR	INR crore/ annum				
	Maintenance	2,600	499	42	95	696	1,332
	Sanitation	943	181	15	34	252	483
	Total	3,543	680	57	129	948	1,816

Source: Analysis based on report published by Govt of Gujarat

8.4.6 Summary of Scenarios and Gap Analysis

The required allocation for O&M expenses of schools based on each of the scenarios is presented below. In addition, the gap between current allocation and the requirement has also been presented.

⁸ Expenses allocated for Ekalavya school include expenses other than O&M (like teacher salary, boarding, food, etc.). Therefore, for benchmarking with TN schools, only 40% of this amount is considered

⁹ Expenses allocated for these schools include O&M only. However, considering the multi-facilities provided in these schools, for benchmarking we have considered 40% of the allocation only.

Table 14: Summary of Benchmarking Scenarios

S No	Benchmark	Amount/ student/ year	Req. (Rural schools)	Req. (Municipal Schools)	Req. (Corporation Schools)	Req. (SED Schools)	Total	Current Allocation	Gap
		INR	INR crore/ annum						
1	Parity with GCC*	1,583	304	27	58	424	813	394	419
	Sanitation	943	181	15	34	252	483	74	409
	Total	2,526	485	42	92	676	1,296	468	828
2	Private School	1,985	381	32	73	531	1,017	394	623
	Sanitation	943	181	15	34	252	483	74	409
	Total	2,928	562	47	107	784	1,500	468	1,032
3	CPWD Norms	1,980	380	32	72	530	1,015	394	621
	Sanitation	943	181	15	34	252	483	74	409
	Total	2,923	561	47	106	782	1,498	468	1,030
4	Prorated Ekalavya	2,083	400	34	76	558	1,068	394	674
	Sanitation	943	181	15	34	252	483	74	409
	Total	3,026	581	49	110	810	1,551	468	1,083
5	Gujarat PPP	2,600	499	42	95	696	1,332	394	938
	Sanitation	943	181	15	34	252	483	74	409
	Total	3,543	680	57	129	948	1,815	468	1,347

From the table above, it is observed that the annual gap at current levels is between INR 419 crore to INR 938 crore for LB and SED schools considering maintenance alone. However, when sanitation is also included, the gap widens to the range of INR 828 crore to INR 1,347 crore

9 Key Findings and Recommendations

9.1 Key findings

1. Noticeable disparity in O&M spending between rural schools and urban schools when the data was normalised to arrive at the spending on a per student per year basis. Disparity was also observed between different types of local bodies and different local bodies within the same type i.e between GCC and other Corporations etc.
2. Absence of O&M plan: During the discussions, it was not clear whether a school specific O&M plan exists for maintenance and upkeep of schools which can be used as a functional document.
3. Unscheduled emergency maintenance leading to disrupting classes and on-school activities
4. Shortfall in O&M spending leads to large spending at a later stage: Many schools run on a tight budget, and the lack of periodic maintenance results in unforeseen and untreated problems

- to balloon into serious structural deficiencies potentially leading to higher cost of repairs and restoration
5. Early identification of issues and getting it rectified on time looks difficult in the current set of operations. Further, teaching staff being involved in O&M is not in the best interest of the education sector
 6. During our discussions with key stakeholders, we understand lack of adequate resources which leads to postponement of maintenance. This leads to deterioration of assets under maintenance. Further, break-down maintenance is the norm in most cases. Periodic maintenance is seen only in few cases.
 7. Periodic maintenance is rare and is mostly breakdown maintenance leading to reduced availability of quality school infrastructure. This affects service delivery.
 8. Lack of monitoring the contractors leads to delay in completion of assigned civil and other related works. Further, also the quality check of work done by them
 9. Teachers are made to focus on non-teaching work (like supervision of the contractor's work) leading to additional work pressure on them. The challenge here is two-fold:
 - a. This reduces teacher's availability for teaching work
 - b. Facility management and other administrative tasks are seen as a constraint to teaching. This leads to loss of focus and may limit their productivity even during the limited time available. This in turn has a potential adverse impact on human development
 - c. Teachers are not specialists in facility management. Hence their involvement in supervision and oversight is likely to be far less effective as compared to monitoring by specialist
 10. Need to streamline allocation of cleaning staff and their pay which is critical to maintain clean and tidy schools.

9.2 Recommendations

1. Need to have a comprehensive school O&M policy in Tamil Nadu: For schools, preventative maintenance is key to running functional buildings and facilities. Given how crucial maintenance is for the upkeep and operational functionality of assets, investing in a long-term maintenance programme could be the answer to ensuring schools are always looking their best. Routine implementation means maintenance becomes one less thing to worry about.
 - a) With a maintenance programme, works can also be scheduled during school breaks or at the end of the year when students are absent from school or fewer in number.
 - b) A maintenance programme will help extend the life expectancy of school assets, freeing up capital for new buildings, or investing in greater teaching resources.
 - c) Issues such as loose roof tiles or cracking concrete walls pose a danger to both students and staff and must be rectified before injuries result. There is a need to take proactive

measures in having essential safety measures in place (eg. fire safety systems, clearing bushes on pathway, electrical points) as well as keep records of maintenance checks, safety measures (during monsoon time – specific check to avoid electrical related issues) and repair work which can be reviewed at will. A scheduled maintenance programme could help the schools to identify such problems well in advance before it becomes a costly repair.

The benefits of a long-term maintenance programme are manifested in happier, more focused students, better academic results, satisfied staff, an improved study and work environment and a budget less vulnerable to shocks.

2. Need to increase OM spending
 - a) Need to have a higher allocation of funds in order to implement TN state policy for children, 2021
 - b) Need to bring parity in OM spending between urban and rural areas
3. Reduce involvement of school teachers in O&M activities
 - Induction of Estate and Facility Management Organisation (EFMO) who can oversee either a single school or a cluster of schools (subject to geographical boundary or size of the school – student strength)
4. Earmarking of funds exclusively for school's O&M from SFC grant to LBs may enhance the upkeep of school infrastructure
5. Need to make the package for Facility Management Services (for upkeep of school infrastructure) more attractive for competent players to take part in the bidding process

Key advantages of Estate and Facility Management Organisation:

- **Monitoring** the operation and cleanliness of toilets could be substantially eased out
- **Liaisoning** with various external agencies such as PWD, TANGEDCO, Local bodies, private contractors, maintenance agencies, etc. could be effectively expedited
- **Security** of the students, staff and property by proper utilization of the services of Security Guards could be taken care of
- Electricity and water supply lines, fittings can **remain operational** for increased (nearly full time) time
- **Record** of repairs and follow up work to be diligently kept by EFMO.

10 Study Limitations

- Challenging study period on account of Chennai floods (including Diwali holidays)
- Covid and its impact on interactions with stakeholders
- Availability of data
- Estimation is based on data collected/ made available
- Number of assumptions have been used for the estimation purpose and any change in such assumption could impact the numbers

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12 Annexure-1

Benefits of well thought through O&M program for schools

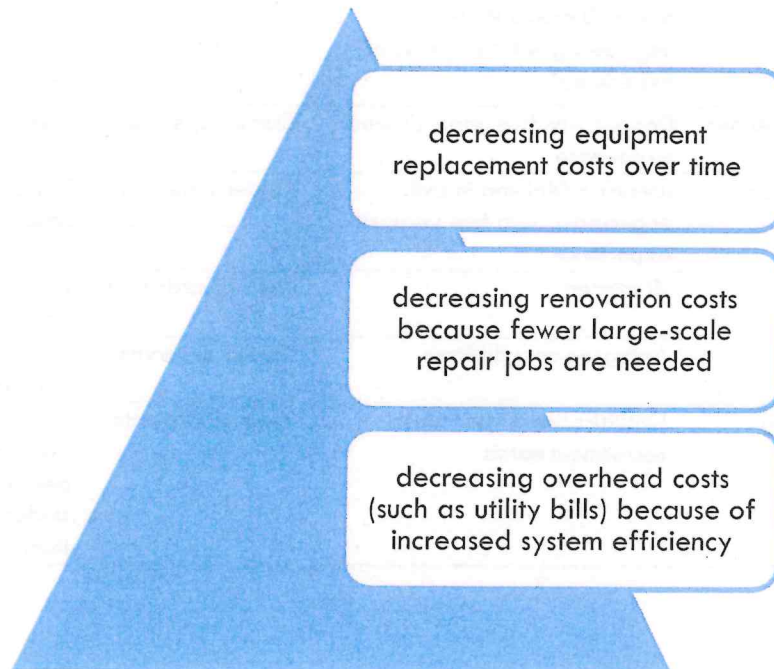
Operation and maintenance of a school, is not only about building and equipment, but also student and staff well-being. School facilities maintenance is about providing clean and safe environments for children and teachers. It is also about creating a physical setting that is appropriate and adequate for learning. **A classroom with broken windows and leaking roofs doesn't foster effective student learning.**

School facilities maintenance affects the physical, educational, and financial foundation of the school organization and should, therefore, be a focus of both its **day-to-day operations and long-range management priorities.**

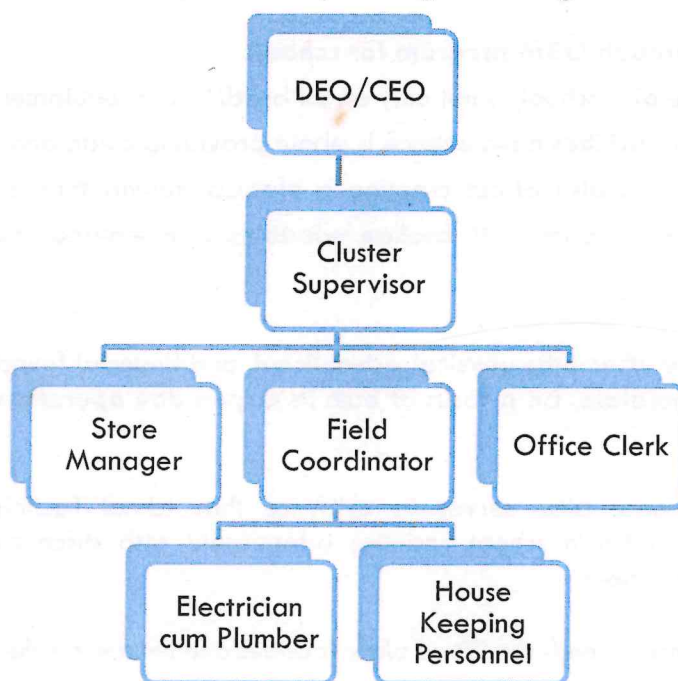
A sound facilities maintenance plan serves as evidence that school facilities are cared for appropriately. Failing to maintain school facilities adequately also discourages future public investment in the education system.

Effective facilities maintenance extends the life of older facilities and maximizes the useful life of newer facilities

Good facilities maintenance costs money but unlike many other investments, the return on the expenditure may not result in increased revenues. Instead, facilities maintenance produces savings by:



A simple organization structure for facility management is given below:



The details are given below:

S No	Position	Qualification	Reporting to	No of positions
1.	Cluster supervisor	Ideally a civil engineer with 5 years of experience (OR, atleast Diploma in civil engineering with ten years of experience)	DEO or CEO	1 person per every education district area
2.	Office clerk / Admin Assistant ¹⁰	Degree with five years of work experience	Cluster supervisor	1 person per Block panchayat area
3.	Field co-ordinator	Ideally a Diploma in civil engineering with five years of experience	Cluster supervisor	2 or 3 persons per education district
4.	Electrician cum Plumber	ITI trained	Field co-ordinator	2 persons per Block panchayat area
5.	Store keeper	A degree or a diploma	Cluster supervisor	1 person per Block panchayat area
6.	House-keeping personnel ¹¹	Qualification as per Govt recruitment norms	Field co-ordinator	1 person per every 30 students. Atleast 1 person even if the student strength is less than 30

¹⁰ This is for carrying out non-teaching work for schools. This person will work for a cluster of schools and will physical be available at every school on a scheduled day

¹¹ This person will be cleaning the class rooms, cleaning the toilets / urinals and provide housekeeping support to the noon-meal scheme area