|CWIS|

Sanitation Data Ecosystem Profile

Trichy City - 2021

Executive Summary

 This report reviews the sanitation data ecosystem in the city of Trichy in 2021, and consists of two sections: 1) an overview review of service level data across the sanitation value chain, and an analysis of some key factors that influence the availability and sustainability of data, including reporting structures, the regulatory environment, and funding sources; and 2) availability of sanitation financial data, and what affects availability. This report provides a foundation for Trichy stakeholders to develop a strategy with action points to bridge data gaps, improve data usage, and **facilitate data-driven decision-making in sanitation.** This report does not cover data reliability and data quality, although we note that these are important issues that must be tackled in any strategy to improve accountability structures for sanitation service delivery.

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Report Highlights

#1
Toilet access data is primarily collected through national programs and the census.

Like most cities in India, Trichy relies on the Census of India (which happens every ten years) for citywide representative data on access and containment. Since 2014/15, the national Swachh Bharat Mission (SBM) has captured data on the construction of new individual household latrines (IHHLs) and Public and Community Toilets (PT/CTs) across the country. However, toilets constructed between 2011 to 2014 and outside of the scheme (due to ineligibility) are not known. Data on access to IHHLs and PT/CTs is hence incomplete until the next census takes place. As national programs are developed and implemented around evolving goals, continued data update also depends on the priorities and continuity of the SBM.

#2
Containment data are limited to a binary classification ("closed" vs. "open" systems) and are not disaggregated by containment type.

SBM and the annual Swachh Survekshan (SS) cleanliness survey both set standards for containment: the toilets constructed under the SBM and for the related SS indicator whether they connect to sewerage, septic tank, twin pit, etc. However, the categorization of toilets by containment type is not directly captured. The SBM MIS does not include any data field on the containment type of new toilets, and the SS indicator on containment (collected since 2019) focuses on a binary classification of containment units into "closed" vs. "open" systems. As SBM 2.0 is being rolled out and the Mission shifts its focus from toilet access to the safe management of sanitation along the service chain, there is an opportunity to include additional fields covering all main containment types (beyond just sewers and septic tanks).

#3
A significant data gap surrounds emptying. No mechanism currently exists to collect emptying data at any level—national, state or city.

The logbooks at Trichy's three decanting stations are the only way to track data on the disposal of Fecal Sludge (FS). This data source is inadequate owing to limited coverage and lack of consistent collation—entries for the trucks that use the treatment plant are manually recorded in paper-based logbooks without further details on the emptying services themselves or those conducted by emptiers that do not use the STP.

#4
Treatment data from the publicly owned and operated treatment plant is collected monthly, as per state level requirements.

Tests are conducted on treated effluent against the standard parameters (BOD, TSS, pH, fecal coliform, COD) required by the Central Pollution Control Board (CPCB) and the Tamil Nadu state PCB and reported annually. This ensures higher data availability and frequency of update for treatment data in Trichy, as compared to other cities with grant-funded treatment plants, which are only required to conduct testing and obtain certificates for continued operation every five years. This highlights the need for national and state level authorities across the country (CPCB and state PCBs) to tighten reporting requirements for non-publicly operated treatment plants, to improve treatment data availability.

#5

A national mechanism exists to collect data on reuse; nevertheless, commercial reuse is yet to start and no data is being recorded for reuse.

SS 2020 included an indicator on reuse/recycle of treated wastewater, which was expanded in SS 2021 to include the commercialization of reused wastewater. Currently, all treated effluent from the Trichy STP is being discharged and the treated biosolids are given to farmers for free. While commercial reuse is influenced by many factors including (but not limited to) national standards and cultural perception, this indicator could serve as an incentive for Trichy to speed up commercialization, if is carried over into subsequent rounds of SS.

#6

Financial data on sanitation revenue and capital expenditure is available, but O&M costs may require special reports.

Financial data is available for sanitation revenue and capital expenditure, due to state requirements for municipal budgeting and expenditure records for public assets. However, information about the Operations and Maintenance (O&M) costs of these assets cannot be deduced from public sources. O&M costs are likely not available by asset category unless special reports are requested as part of managing their financial sustainability.

Summary Table: Availability and Sustainability of Key Datasets Across the Sanitation Service Chain

Sanitation service chain	Dataset area	Data collected?		Data is representative of the entire city (for access) / covers all service providers (for emptying & conveyance)?	Periodically updated?
Access & containment	Access: Individual Household Latrines (IHHL)	●	Y*	Y	Updated every 10 years (last updated in 2011)
		●	Y	N	Updated annually
		●	Y	Y	Updated annually
	Access: Public and Community Toilets (PT & CT)	●	Y	N	Updated annually
		●	Y	Y	Updated annually
		●	Y	Y	One-off in 2017-18
	Access: Educational Institutions	●	Y	N	Updated annually (since 2013)
		●	Y	Y	One off in 2019-20
	Access: Healthcare Facilities	●	Y	Y	Updated every 10 years (last updated in 2011)
		●	Y	Y	One off in 2019-20
	Access/ Containment: Sewer Connection	●	Y	Y	Updated every 10 years (last updated in 2011)
		●	Y	Y	Updated annually (since 2019)
	Containment: Non-sewered Sanitation (NSS)	●	Y	Y	Updated every 10 years (last updated in 2011)
		●	Y	N	One off in 2019-20
Emptying & conveyance	Emptying (NSS)		N	N/A	N/A
	Disposal at Treatment Plants (NSS)/ Decanting stations	●	Y	N	Collected daily, updated monthly
Treatment	Treatment Quality	●	Y	N/A	Collected monthly, updated annually
Reuse	Reuse: Treated Effluent		N	N/A	N/A
	Reuse: Treated Biosolids		N	N/A	N/A

Legend:

- ▢ Institutionalized reporting
- ▢ National/State programmatic reporting
- ▢ Own activity
- ▢ Donor/ IFI program reporting
- ● National/State transfer
- ● Own revenue
- ● IFI/donor funding; Corporate Social Responsibility (CSR)
- ● Private sector; self-sustainable CBO activities

*In this summary table, references and sources have been removed to aid readability; however, full references and sources are provided in tables in the main body of the report

Data Across the Sanitation Service Chain

Achieving the Sustainable Development Goal (SDG) of ensuring safely managed sanitation for all will require accurate and up-to-date sanitation data at the city level to facilitate appropriate planning, management and decision making. This should encompass not only the typology and extent of sanitation access throughout the city, but also the management of waste from containment to emptying, transport, and treatment. However, for many cities including Trichy, obtaining and maintaining sanitation data can be a significant challenge, resulting in gaps in data availability.

This section outlines two key data dimensions: the generation of datasets across the sanitation service chain which are critical for Trichy City Corporation's (TCC) planning and decision-making; and the continued update of these datasets.

Overview of Data Availability and Gaps in Trichy

Table 1 summarizes the availability of datasets in Trichy mapped to the key data areas across the sanitation service chain, the coverage of each dataset, and the frequencies of update. In cases where more than one data source is available for the same indicator data point, each dataset is presented in a separate row.

Table 1: Overview of data availability and data sustainability across the sanitation service chain

Sanitation service chain	Dataset area	Data collected?	Data is representative of the entire city (for access) / covers all service providers (for emptying & conveyance)?	Periodically updated?
Access & containment	Access: Individual Household Latrines (IHHL)	Y[1]	Y	Updated every 10 years (last updated in 2011)
		Y[2]	N[3]	Updated annually[4]
		Y[5]	Y	Updated annually
	Access: Public and Community Toilets (PT & CT)	Y[2]	N	Updated annually
		Y[5]	Y	Updated annually
		Y[6]	Y	One-off in 2017-18
	Access: Educational Institutions	Y[7]	N[8]	Updated annually (since 2013)
		Y[9]	Y	One off in 2019-20
	Access: Healthcare Facilities	Y[1]	Y	Updated every 10 years (last updated in 2011)
		Y[9]	Y	One off in 2019-20
	Access/ Containment: Sewer Connection	Y[1]	Y	Updated every 10 years (last updated in 2011)
		Y[5]	Y	Updated annually (since 2019)
	Containment: Non-sewered Sanitation (NSS)	Y[1]	Y	Updated every 10 years (last updated in 2011)
		Y[10]	N[11]	One off in 2019-20
Emptying & conveyance	Emptying (NSS)	N	N/A	N/A
	Disposal at Treatment Plants (NSS)/ Decanting stations	Y[12]	N[13]	Collected daily, updated monthly
Treatment	Treatment Quality	Y[14]	N/A	Collected monthly,updated annually
Reuse	Reuse: Treated Effluent	N	N/A	N/A
	Reuse: Treated Biosolids	N	N/A	N/A

The biggest data gaps in Trichy are around emptying and reuse, where no data is generated. However, the nature of these two data gaps are quite different. As of the 2020 round of the national Swachh Survekshan (SS, the annual cleanliness survey), an indicator tracks the percentage of treated wastewater that is reused/ recycled, to reduce the burden on freshwater. This indicator was further expanded in the 2021 SS to include the commercialization of reuse. However, treated effluent in Trichy is discharged directly and treated biosolids are distributed to farmers free of charge. There are no national standards on the safe reuse of treated biosolids, only for treated effluent. Nevertheless, as the sanitation ecosystem in Trichy matures and accompanying standards are developed, data collection for reuse will be relatively easy to initiate, especially if the SS indicator on reuse is kept in the future surveys.

There is no mechanism to collect any data on emptying in Trichy. The only relevant data is from disposal records kept on trucks at Trichy's three decanting stations, where private and Trichy City Corporation (TCC) desludging vehicles dispose of Fecal Sludge (FS) from households and institutional or commercial places. This dataset only includes the number of trucks that have visited the decanting stations and paid the tipping fee (flat Rs. 30 per truck), but no information on the emptying services themselves, including the location and type of the property from which the sludge was collected, the volume emptied, etc. The dataset also does not capture emptying services by manual emptiers or by private operators who do not use the decanting stations.

To fully understand emptying services in Trichy, data should be captured through household surveys or emptying market-linked interventions, which are potential areas for future planning and investments. Considering the substantial cost associated with both these options, if the national census (scheduled for 2021) were to include a few questions on emptying, this could be a cost-effective route for data collection. Nevertheless, the Census of India only happens every ten years and additional mechanisms will be needed for a more up-to-date understanding of the emptying situation between censuses.

Motivation for Data Collection / Collation

Understanding the underlying factors driving data collection provides critical context and insights that helps evaluate data reliability, identify stakeholders, and reveal why some data areas are prioritized or neglected. Decision makers can therefore make more informed choices about data-driven policies and programming. This section delves into Trichy's sanitation datasets and explores the motivations behind them.

Trichy's Sanitation Related Administrative and Reporting Structure

Figure 1 below summarizes the mandate and key activities of various stakeholders involved in sanitation (both government and non-government) together with the reporting structure. A high-level overview of the city's governance structure with respect to sanitation mandate and accountability is also available in the Trichy CWIS Snapshot (link).
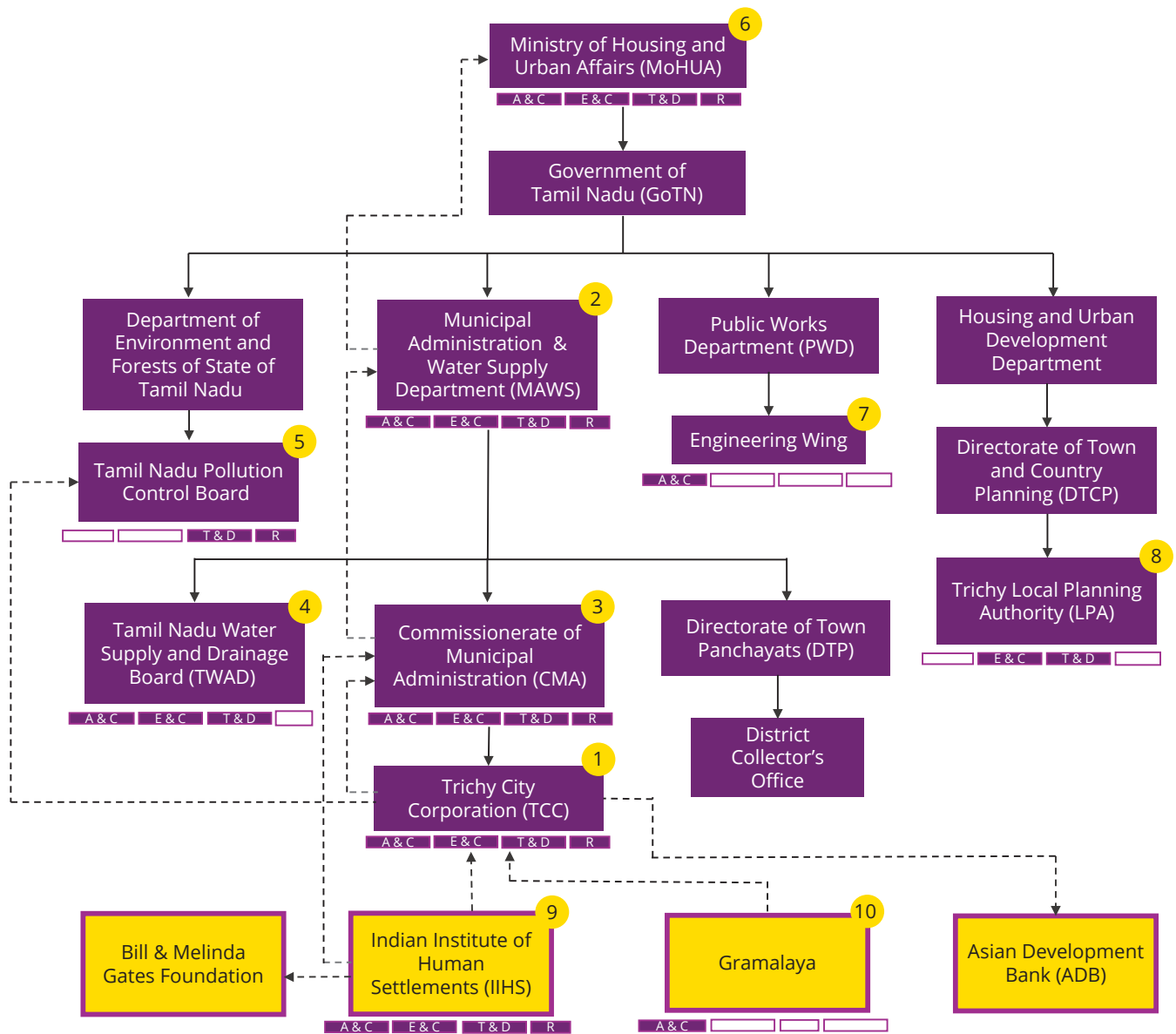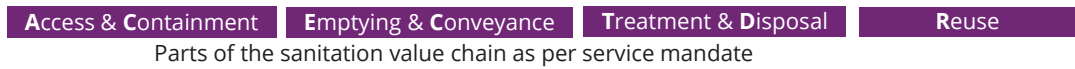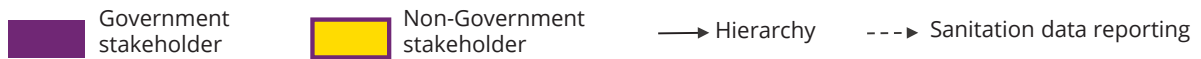
The Trichy City Corporation (TCC) is the local authority responsible for sanitation service provision in Trichy, and its mandate is defined by the Tamil Nadu District Municipalities Act of 1920. Figure 1 shows that TCC is the focal point for all sanitation-related data generation and exchange in the city. TCC submits most of its sanitation performance data to the Commissionerate of Municipal Administration (CMA), except for treatment quality data which is reported to the Tamil Nadu Pollution Control Board (TNPCB). CMA is a division under the Municipal Administration and Water Supply Department (MAWS) of the State of Tamil Nadu, and looks after the planning, design, funding, and execution of urban sanitation initiatives in all Urban Local Bodies (ULBs) across the state. At the state level, sanitation performance data across all ULBs is aggregated and reported to the Ministry of Housing and Urban Affairs (MoHUA). MoHUA designs sanitation related policies and programs to be implemented across all states and cities in India.

Programs funded by International Financial Institutions (IFIs) or donors are implemented by TCC directly or through its local support organizations. Sanitation data generation in Trichy is therefore a result of national/state requirements, municipal activities and needs, or IFI/donor-driven program requirements.

Figure 1. Sanitation related administrative and reporting structure in Lusaka

Legend

■ Government stakeholder ■ Non-Government stakeholder → Hierarchy ⇢ Sanitation data reporting

| Access & Containment | Emptying & Conveyance | Treatment & Disposal | Reuse |

Parts of the sanitation value chain as per service mandate

1. TCC is the primary stakeholder with the responsibility to implement sanitation activities in the city. TCC reports performance data to CMA, including on the SLBs, SBM, and Swachh Survekshan.

2. MAWS is the state level authority tasked with policy formulation. It includes various branches that are involved in different aspects of urban sanitation activities, such as ULB performance review, engineering, and pollution control.

3. CMA is the administrative branch of the MAWS department that looks after the planning, design, funding, and execution of water supply and sanitation initiatives in all ULBs in the state (except Chennai). IIHS also reports on its state-wide activities to CMA, on a regular basis.

4. TWAD Board has the mandate to prepare DPRs, build, operate, maintain, and transfer water supply and sewerage projects to the local government.

5. TNPCB is responsible for the compliance of treatment plants to environmental laws, and monitors treatment quality and discharge of treated effluent. TNPCB has a local office and a lab in Trichy, which conducts monthly tests on effluent quality and shares the result with TCC.

6. MoHUA is the federal ministry under the Government of India, with executive authority to issue policy guidelines relating to urban development. It reviews the sanitation performance of all ULBs, as submitted by the states.

7. The Engineering Wing of the PWD is responsible for the construction of CT/PTs and government school toilets across the state, including in Trichy.

8. Trichy LPA is a district level urban planning authority which takes key decisions related to sewer network and treatment infrastructure locations.

9. IIHS is the lead implementing partner and the CWIS grantee for Trichy, with a focus on capacity building, knowledge management. and dissemination. IIHS shares data on its work in the city and the studies conducted together with TCC based on requests.

10. Gramalaya is a Community Based Organization (CBO) which promotes WaSH activities through empowering women, children and marginalized communities. It shares data on CT/PT maintenance and capacity building with TCC, on request.

Reporting Requirements and Data Generation

To understand the influence of these various types of reporting requirements and needs, they have been classified them into four categories: 1) institutionalized reporting, which are inbuilt mechanisms of the overall government system and could include things such as the national census and routine regulatory reporting; 2) national/ state programmatic reporting, which are initiatives of the national/ state government with a fixed timespan; 3) own activity, which are collected entirely for the city's own operational purposes and needs and not reflected in other national/state/donor reporting processes; 4) IFI/ donor program reporting, which are collected and reported for IFI/ donor driven programs.

It is worth noting that even though type 2) programs may also receive financial support from IFIs/ donors, the agenda is mostly driven by the national/ state governments. On the other hand, some of the datasets collected under IFI/donor supported programs may receive support from the service authority and be used by the service authority for other purposes once they become available, but only the data collection initiated by the service authority itself would count towards type 3).

Using this classification, Table 2 below shows the reporting requirement of each dataset presented in Table 1.

Table 2. Data generation as linked to data reporting requirements

Sanitation service chain	Dataset area	Data collected?	Data is representative of the entire city (for access) / covers all service providers (for emptying & conveyance)?	Periodically updated?
Access & containment	Access—Individual Household Latrines (IHHL)	Y[1]	Y	Updated every 10 years (last updated in 2011)
		Y[2]	N[3]	Updated annually[4]
		Y[5]	Y	Updated annually
	Access—Public and Community Toilets (PT & CT)	Y[2]	N	Updated annually
		Y[5]	Y	Updated annually
		Y[6]	Y	One-off in 2017-18
	Access—Educational Institutions	Y[7]	N[8]	Updated annually (since 2013)
		Y[9]	Y	One off in 2019-20
	Access—Healthcare Facilities	Y[1]	Y	Updated every 10 years (last updated in 2011)
		Y[9]	Y	One off in 2019-20
	Access/ Containment —Sewer Connection	Y[1]	Y	Updated every 10 years (last updated in 2011)
		Y[5]	Y	Updated annually (since 2019)
	Containment—Non-sewered Sanitation (NSS)	Y[1]	Y	Updated every 10 years (last updated in 2011)
		Y[10]	N[11]	One off in 2019-20
Emptying & conveyance	Emptying (NSS)	N	N/A	N/A
	Disposal at Treatment Plants (NSS)/ Decanting stations	Y[12]	N[13]	Collected daily, updated monthly
Treatment	Treatment Quality	Y[14]	N/A	Collected monthly, updated annually
Reuse	Reuse—Treated Effluent	N	N/A	N/A
	Reuse—Treated Biosolids	N	N/A	N/A

■ Institutionalized reporting		■ Own activity	
■ National/State programmatic reporting		■ Donor/ IFI program reporting	

As in many other Indian cities, ongoing data generation on toilet access and containment in Trichy is largely driven by the Census of India and two national sanitation programs: the Swachh Bharat Mission (SBM) and the Swachh Survekshan (SS). Beginning in 2014 with the goal to make India Open Defecation Free (ODF), SBM subsidizes the construction of new IHHLs and Public and Community Toilets (PT/CTs), with an MIS tracking progress across states and cities towards their toilet targets. Launched in 2016 as part of the SBM, SS is an annual survey of cleanliness across cities in India. **Of these three data sources, only the national census collects citywide representative data on toilet access across most residential and institutional categories** (households, public/ community toilets-PT/CTs, and healthcare facilities) **and on different types of containment units.**

While both SBM and SS require that toilets connect to sewers, septic tanks (with or without soak pits), or twin pits to be considered "sanitary", data on toilets connected to each type of containment is either only partially captured

or not collected at all. The SBM MIS into which all cities report does not include data fields on the containment type of newly constructed toilets. SS has included an indicator on containment since the 2019 survey, but it focuses on a binary classification of containment units into "closed" (sewers, septic tanks, twin pits) vs. "open" (all other) systems. Moreover, the SS data portal for city self-reporting only asks for the number of households/ commercial establishments/ CT&PTs connected to sewers and the number connected to septic tanks to arrive at an aggregate number used to calculate the indicator 'score'. **As national programs don't require containment data, there is limited motivation for cities to generate data on onsite containment beyond septic tanks, or even to disaggregate between septic tanks with or without soak pits.**

For educational institutions, the national Unified District Information on School Education Plus (UDISE+) captures school sanitation details annually, including the number of separate toilets for boys and girls, availability of water in the toilets, and presence of a handwashing facility with soap. It is worth noting that the dataset does not yet cover all schools in the country, although it aims to gradually achieve total coverage. While details about each school are available and accessible to the public through the ministry's website, the reports are aggregated at the state level and city governments do not have direct access to compiled data for their cities. **If data collected from schools could be collated at the city level and made available to the local governments, this could facilitate city-level planning and coordination**, reduce duplication of data collection initiatives, and maximize the use of the data collected.

Regarding healthcare institutions, the National Health Mission collected data for government health institutions annually from 2012 to 2020, with data collection discontinued thereafter. This leaves the census as the only dataset that is representative of all healthcare institutions, apart from a one-off study conducted as part of a donor-funded program. It is also worth noting that there are no national/state level requirements, whether institutionalized or programmatic, which are related to the reporting of data on the emptying of onsite containment units or on the reuse of treated biosolids or effluent. Besides the factors discussed above, this is likely another reason that Trichy does not yet collect data on emptying and reuse. As the next phase of SBM is rolled out and Mission 2.0 gradually shifts focus towards the safe management of waste along the sanitation service chain, there is huge potential for the program to also start collecting data on emptying and reuse.

Despite the data gaps around containment, toilet access in institutions, emptying, and reuse, data on treatment in Trichy is frequently collected and reported. The Sewage Treatment Plant (STP) in Trichy is publicly owned and operated, and is hence required by state regulations to conduct monthly tests of treated wastewater samples and report results to TNPCB, the state environmental regulator.

Influence of Funding Sources on Data Sustainability

Sustaining sanitation datasets requires regular and frequent updating of sources, potentially causing significant strain to already stretched resources for city governments and utilities. Understanding the viability of sanitation data ecosystems requires consideration of funding sustainability and the impact that inevitable political, administrative, and fiscal changes might have on ongoing data collection and maintenance efforts. The following section seeks to overview the resourcing landscape for sanitation in Trichy, and consider its impact on data sustainability and future viability.

Trichy's Funding Sources for Sanitation

Trichy has multiple sources of finance for sanitation: own revenue (sewage connection charges, water charges, property tax, vacant land tax, other user charges etc.); state-approved annual budget, grants (planned transfers from state and central governments, under various projects, programs and schemes); and borrowings (loans). Table 3 provides a quick glimpse of the characteristics associated with each of Trichy's funding sources for sanitation.

Table 3. Sources of sanitation finance in Khulna

	MoHUA (National level)	CMA (State level)	TCC (City level, own revenue)	BMGF (Donor, through IIHS as a TSU)	ADB (IFI)
CAPEX or OPEX	Both	Both	Both	Both	CAPEX
Grants or loans	Grants	Grants	-	Grants	Loan
Infrastructure or soft interventions	Both	Infrastructure	Both	Both	Infrastructure
Recurring or program-linked	Program-linked	Both	Both	Program-linked	Program-linked
Sewered sanitation (SS) or non-sewered sanitation (NSS)	Both	Both	Both	NSS	SS
Part of the sanitation value chain addressed	Access and treatment	Conveyance and treatment	All parts of the value chain	All parts of the value chain	Conveyance and treatment

Influence of Funding Sources on Sanitation Data

The sanitation funding sources presented above can be broadly classified four categories: **1) national/ state transfers,** all of which are classified as grants; **2) city's own revenue; 3) IFI/ donor funding,** which can be grants or loans but are external sources and always linked to specific programs; **4) private sector or self-sustainable Community Based Organization (CBO) activities,** which operate on a business model. Data collection in a city may be funded through several of these sources but not necessarily all of them. To understand how these funding sources affect sanitation data in Trichy in different ways and their implications for the continued update of datasets, Table 4 below further overlays Table 2 with funding sources.

Table 4: Overview of datasets as linked to funding sources

Sanitation service chain	Dataset area	Data collected?		Data is representative of the entire city (for access) / covers all service providers (for emptying & conveyance)?	Periodically updated?
Access & containment	Access: Individual Household Latrines (IHHL)	●	Y[1]	Y	Updated every 10 years (last updated in 2011)
		●	Y[2]	N[3]	Updated annually[4]
		●	Y[5]	Y	Updated annually
	Access: Public and Community Toilets (PT & CT)	●	Y[2]	N	Updated annually
		●	Y[5]	Y	Updated annually
		●	Y[6]	Y	One-off in 2017-18
	Access: Educational Institutions	●	Y[7]	N[8]	Updated annually (since 2013)
		●	Y[9]	Y	One off in 2019-20
	Access: Healthcare Facilities	●	Y[1]	Y	Updated every 10 years (last updated in 2011)
		●	Y[9]	Y	One off in 2019-20
	Access/ Containment: Sewer Connection	●	Y[1]	Y	Updated every 10 years (last updated in 2011)
		●	Y[5]	Y	Updated annually (since 2019)
	Containment: Non-sewered Sanitation (NSS)	●	Y[1]	Y	Updated every 10 years (last updated in 2011)
		●	Y[10]	N[11]	One off in 2019-20
Emptying & conveyance	Emptying (NSS)		N	N/A	N/A
	Disposal at Treatment Plants (NSS)/ Decanting stations	●	Y[12]	N	Collected daily, updated monthly
Treatment	Treatment Quality	●	Y[14]	N/A	Collected monthly, updated annually
Reuse	Reuse: Treated Effluent		N	N/A	N/A
	Reuse: Treated Biosolids		N	N/A	N/A

▨	Institutionalized reporting	●	National/State transfer
▨	National/State programmatic reporting	●	Own revenue
▨	Own activity	●	IFI/donor funding; Corporate Social Responsibility (CSR)
▨	Donor/ IFI program reporting	●	Private sector; self-sustainable CBO activities

This layering reveals further nuances associated with sanitation data availability and its sustainability. The SS dataset covers the entire city and is seemingly more comprehensive than SBM MIS data, which only captures new toilets constructed under the scheme since 2014. In reality, however, the lack of central funding for city self-reported data under SS means that new data collection is limited. As cities must rely on their own revenue to generate and report the data each year, data collection rarely happens every year. Most cities across the country resort to using a combination of existing data sources—for toilet access data, for example, this means that cities usually use the Census 2011 data as a basis and add the increment captured under SBM to obtain overall access. The data points tend to leave out toilets constructed between 2011-2014 and those constructed outside of SBM.

On the other hand, SBM is funded by program-linked transfers from the national and state governments, with a contribution from the city as well. While the state and city shares of the subsidy contribution are entirely reserved for the CAPEX of the new toilets, funds allocated by the national government also covers city-level administrative costs (disbursed to the state, which then disburses the amount to the city), including those associated with data collection. As the first phase of the scheme came to an end in 2020, the continued update of SBM data will be influenced by the continuity of national funding allocated under SBM 2.0.

While SBM 2.0 is expected to last for another five years, the sustainability of data beyond 2026 will be a major issue if neither the program requirements nor the funding is there.

For datasets generated from donor-funded programs, sustainability will be an even bigger challenge when the programs end and funding is no longer available—the city would either need to find alternative sources of finance or discontinue the data collection.

Considering both reporting requirements and funding sources for datasets across the sanitation service chain, **the datasets that will most certainly continue to be generated and updated are only the census data** (access for households and in healthcare facilities, containment), **UDISE+ data** (number of toilets in registered schools) **and treatment quality data.**

Data on Sanitation Finance

The generation and continued update of data across the sanitation service chain assists the service authority and accountability authorities to track progress, and plan programs and interventions for service improvement. Data on city-level finance for sanitation helps shed light on the cost-effectiveness and financial sustainability of current sanitation service provision. However, sanitation finance data is often patchy or unavailable. Table 5 below summarizes the data available in Trichy in key financial data areas.

Table 5. Financial data availability for Trichy

Financial Data	Dataset Area	Data Collected? (Yes, No, Not Applicable, Unknown*)
Revenue	Total annual sewerage/ sanitation fees (collected on water bills) for the city	Y
	Disaggregation of sewerage/ sanitation fees (on water bills) for sewered vs. non-sewered households, if the city has sewers	N
	Sanitation surcharge (on water bills) for sanitation improvement interventions	N/A
	Sanitation tax as part of property tax/ water bills/ independently for service provision	N/A
	Total annual revenue generated from PT & CTs owned and operated by the service authority, if user fees are charged	Y
	Total desludging revenue to service authority from HHs and/or institutions (for services directly provided by vehicles owned and operated by the service authority)	Y
	Total annual tipping fees from desludging operators	Y
	Fees from private players contracted to operate PT & CTs / treatment plants, including license fees	N/A
	Fines and penalties (for illegal sewer connections and drains, FS leakage/ spillage, etc.)	Y
	Sales of treated effluent and biosolids	Y
Expenditure	CAPEX for treatment plant	Y
	Annual O&M cost for treatment plant	U*
	CAPEX for the sewer network	Y
	Annual O&M cost for the sewer network	U*
	CAPEX for PT/CTs owned by the service authority	Y
	Annual O&M cost for PT/CTs owned by the service authority	U*
	CAPEX for desludging vehicles	Y
	Annual O&M cost for desludging vehicles	U*
	CAPEX for transfer/ decanting stations (incl. mobile transfer stations)	Y
	Annual O&M cost for transfer/ decanting stations (incl. mobile transfer stations)	U*
	CAPEX for any other assets owned by the service authority	N/A[15]
	Annual O&M cost for any other assets owned by the service authority	N/A
Direct Subsidies	Direct HH subsidies provided by the service authority for toilet & containment	Y
	Direct HH subsidies provided by the service authority for emptying	N/A

* Cannot be deduced from publicly accessible sources.

Trichy has a relatively high level of financial data available, likely due to the quality of the state's data infrastructure. Revenue data is collected across all the main sanitation revenue sources, as this is required for municipal budgeting purposes. In terms of expenditure, CAPEX data for the various infrastructure categories is also available from state budget expenditure records, municipal budget records, or public records of IFI/donor funding.

On the other hand, the costs of Operations and Maintenance (O&M) of each of the sanitation infrastructure categories cannot be deduced from public sources. Their availability will depend to a large extent on the accounting practices followed: for example, if the salaries of STP staff are combined with those of all other municipal employees for general reporting, and if the fuel costs of TCC's desludging trucks are combined with those of other city government vehicles, then O&M data cannot be categorized per asset. However, if special reports are prepared for managing the financial sustainability of these assets, such data could be compiled by relevant municipal staff.

Notes

[1] Collected under the Census of India. The data collection and update are funded by the national government.

[2] Collected by cities and reported through the Swachh Bharat Mission (SBM) MIS. This data is collected for the national SBM programmatic reporting. Data collection and update are funded through the mission itself.

[3] SBM started in 2014/15 and only tracks new toilets that have been constructed under the scheme.

[4] SBM specifies all cities to follow a monthly online update; however, this is not consistently followed by all cities. A strict annual update is done at the end of each year, before submitting to the higher (state-level) authorities.

[5] Collected under the Swachh Survekshan (an annual national cleanliness survey). The SS data contains a component of ULB self-reported data, which is funded by the ULB's own revenue; and components of independent third-party validation and citizen feedback, which are funded by the national government. The ULB self-reported component is the main source of data, whereas the other components only serve validation purposes.

[6] Collected by IIHS for a one-time study funded by the Bill & Melinda Gates Foundation (BMGF). The data was collected in two phases – the first in August and September 2017 and the second in January 2018. Data collected was documented and reported to the funding agency.

[7] Collected under the Unified District Information on School Education Plus (UDISE+). All registered schools input information into a portal designed for data reporting. The data collection and update are funded by the national government.

[8] Though UDISE+ has the mandate to collect data from all formal schools, data is available only for those that are registered and have internet access.

[9] Collected under the 'Bulk Generators' study, which was conducted by IIHS with funding from BMGF.

[10] Collected as part of the slum sanitation survey by IIHS, with support from BMGF. This covers information on type of on-site sanitation system used in all slum households and information on percentage of CT dependent population.

[11] The study covers only the slum households.

[12] This data is documented in the logbooks at the three decanting stations connected to the Sewage Treatment Plant (STP), for TCC's own use. Data collection is funded using the city's own revenue.

[13] The logbooks only record the operators that dispose of at the decanting stations. Manual emptiers and those that dump illegally are not captured.

[14] TCC uses the lab testing service offered by the TNPCB local office in Trichy. The local TNPCB staff collects the samples and submits the testing results to TCC, who pays for the service. TCC then reports the data to TNPCB on an annual basis. There is no direct data reporting from the TNPCB staff stationed on the ground to the TNPCB head office.

[15] TCC does not own any other sanitation related assets besides the STP, the decanting stations, and the desludging vehicles.

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