INTRODUCTION

INTRODUCTION- WHAT IS SANITATION?

Sanitation refers to the provision of facilities and services for the safe disposal of human urine and faeces (WHO, 2018). However the term "sanitation" on a broader perspective also refers to the effective maintenance of hygienic conditions through city level services. It has been realized that integral and whole system sanitation solutions need to take an integrated approach, thereby addressing other sanitation sectors such as solidwaste management, stormwater management, water supply and access to toilets.

What is Sanitation

IMPACT OF INADEQUATE SANITATION

Approximately, 2.5 billion people lack access to improved sanitation globally, where out of this figure, 597 million people reside in India, translating into 40% of Indians lacking access to improved sanitation . This hinders the track towards sustainable development in four key areas:

Public Health • Lack of access to clean drinking water and inadequate sanitation have globally contributed to 88% deaths from diarrheal diseases. • In India, an estimate of 62 million children are stunted resulting from chronic malnutrition due to lack of access to improved sanitation. India is associated with the second highest death rate for children (under 5 years) due to poor sanitation.	**Gender Aspects** • Inequitable access to sanitation facilities for women and girls leading to health burdens and high crime rates. • High percentage of health disorders due to lack of and unclean toilet facilities, lack of privacy, open defecation and long waiting time. • In India, girls lose approximately 20% of school days due to sanitation related reasons such as lack of toilet facilities at their school or lack of awareness on how to deal with menstruation.
Environmental Impacts • Existing cities in India do not have sanitation infrastructure to cater to the waste being produced, leading to contamination of the environment • No existing system for safe disposal of waste • Reduced ecosystem services and depreciation of land value. • In all cities there is no system for conveyance and safe disposal of this • waste	**Economic Impacts** • India suffers from great economic impact, with US $106.7 billion (2015) in terms of total cost for inadequate sanitation. • According to Indian Ministy of Health and Family Welfare, an estimate of 12 billion IN is spent annually on poor sanitationOut of this, 70% of this is mostly health related costs.

NEED FOR CSP- URBAN SANITATION IN INDIA

Over the past few decades, India has been witnessing exceptional economic growthleading to intensive and unplanned urbanization of the country. As per 2011 census, 31.2% of national population dwells in urban centres . This puts severe pressure on urban local bodies to provide basic sanitation services (access to clean water, toilet, medical facilities, transportation and adequate & affordable housing) to all.

Further, the unscientific and inadequate disposal/ treatment of generated wastewater, human excreta and solid waste contaminate various environmental compartments, opens up transmission windows of various water and vector borne diseases, and consequently affects the health of the all dwellers. The poor service delivery, ineffective management of wastes coupled with poor sanitation and unhygienic practices exposes the vulnerable sections of population (urban poor, elderly citizen, women, and children) to multiplied health risks.

As per CPCB (2017), the disposal of domestic sewage from cities is increasing, where Class I and Class II generate an estimated 29129 MLD sewage (as per population in 2001 census). Against this, installed sewage treatment capacity is only 6190 MLD. There remains a gap of 22939 MLD between sewage generation and installed sewage treatment capacity. In percentage this gap is 78.7 %. Another 1742.6 MLD sewage treatment capacity is under planning or construction stage. If this is also added to existing capacity, even then there is a gap of 21196 MLD (equal to 72.7 %) in sewage treatment capacity.

NATIONAL URBAN SANITATION POLICY

In order to address the above challenges, Government of India announced the **National Urban Sanitation Policy** (NUSP) in 2008 with an overall goal to transform urban India into community-driven, totally sanitized, and healthy cities and towns. The NUSP aspires that, “All Indian cities and towns become totally sanitized, healthy and livable and ensure and sustain good public health and environmental outcomes for all their citizens with a special focus on hygienic and affordable sanitation facilities for the urban poor and women.”

The NUSP defines sanitation as safe management of human excreta (including its safe confinement, treatment, & disposal and associated hygiene-related practices). It further recognises that integral solutions are needed to take account of other elements of environmental sanitation, i.e. solid waste management (SWM); generation of industrial and other specialized / hazardous wastes; drainage and management of drinking water supply. The NUSP emphasises that a fully Sanitized City must achieve a wider set of positive sanitation outcomes including:

1) Elimination of Open Defecation
2) Elimination of manual scavenging and ensuring safety of sanitation workers
3) Safe management of municipal wastewater and storm water
4) Recycling of treated wastewater for non-potable applications
5) Full and safe collection and disposal of municipal solid waste

6) Inclusive, efficient and sustainable service delivery in all sanitation sectors
7) Improved Public Health Outcomes and Environmental Standards

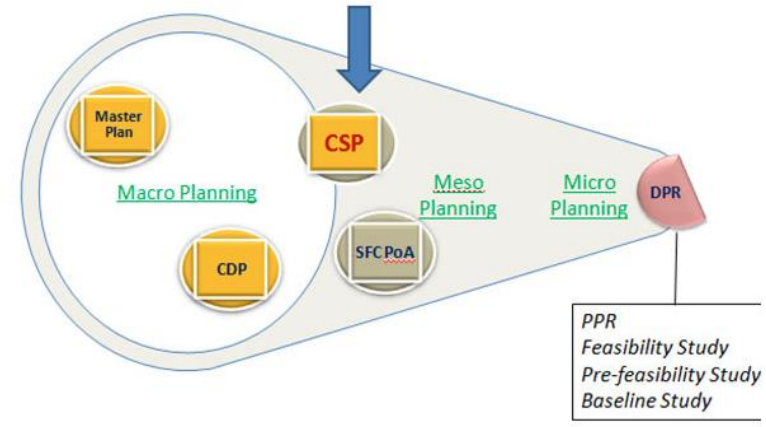
Therefore each state and city needs to formulate its own sanitation strategy and their respective city sanitation plan respectively in overall conformity to the National Policy.

2. What is a City Sanitation Plan?

A city Sanitation Plan is a vision document on sanitation which consists of strategic planning processes in order to achieve the objectives of citywide sanitation with a 25-30 year horizon. This document consists of key issues, goals and strategies of each sanitation sector. The purpose of this document is to support ULBs, and other relevant stakeholders (CBOs, NGOs, private agencies and citizens) to take effective and concrete steps to achieve 100% sanitation in their own cities.

HOW IS THE CSP INTEGRATED IN URBAN PLANNING

Macro Planning	Meso Planning	Micro Planning
• Covers overall city level planning. • Eg- Master plan	• Plans a specific sector within the area outlined in macro level documents. • Eg. CSP	• Relates to a specific project covering a selected area under the ULB. • Eg. DPR



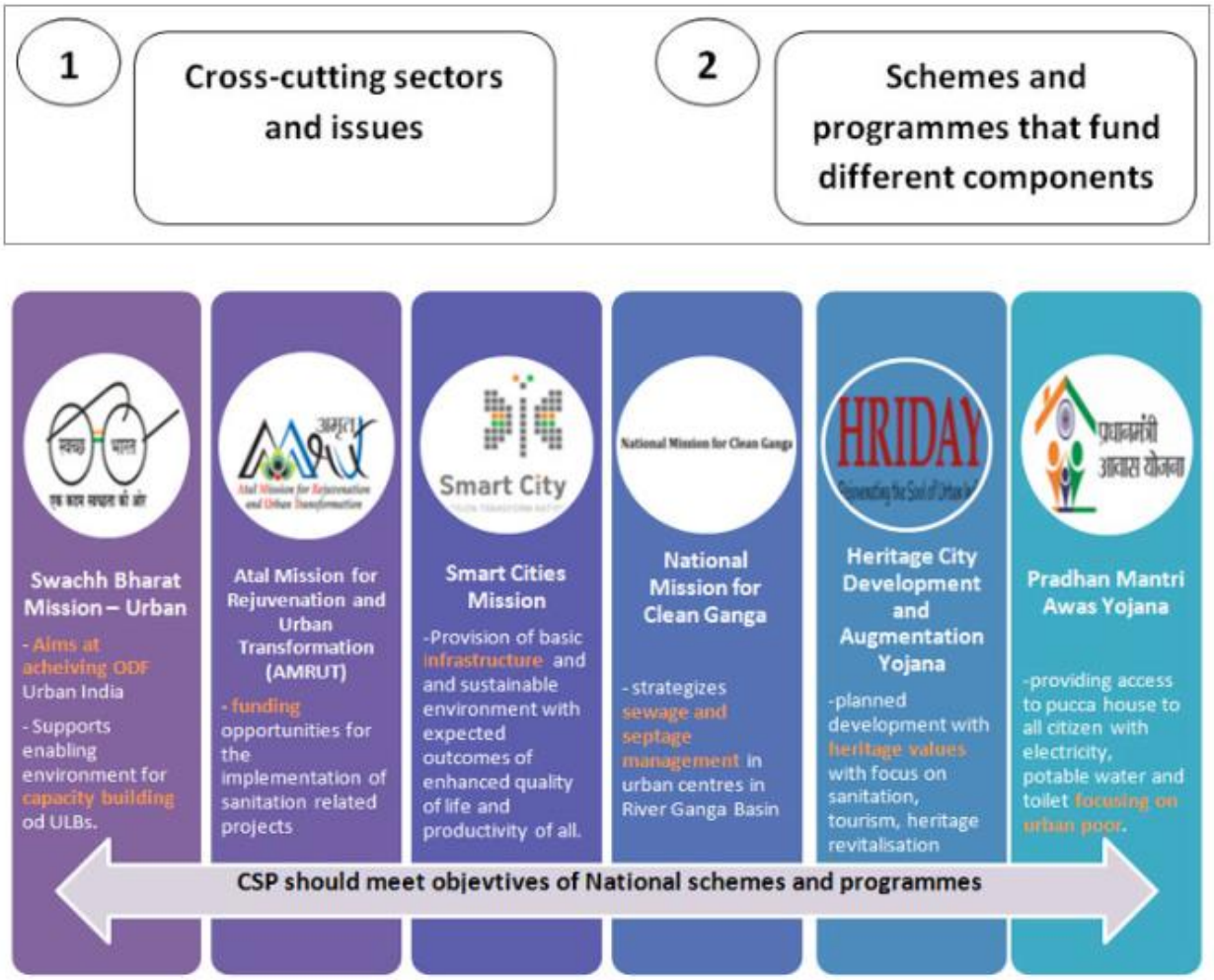
These plans address different sectors of urban development at different scales. Planning processes at all scales need to be aligned and well coordinated for the successful implementation of urban strategies.

CONTENTS OF A CSP

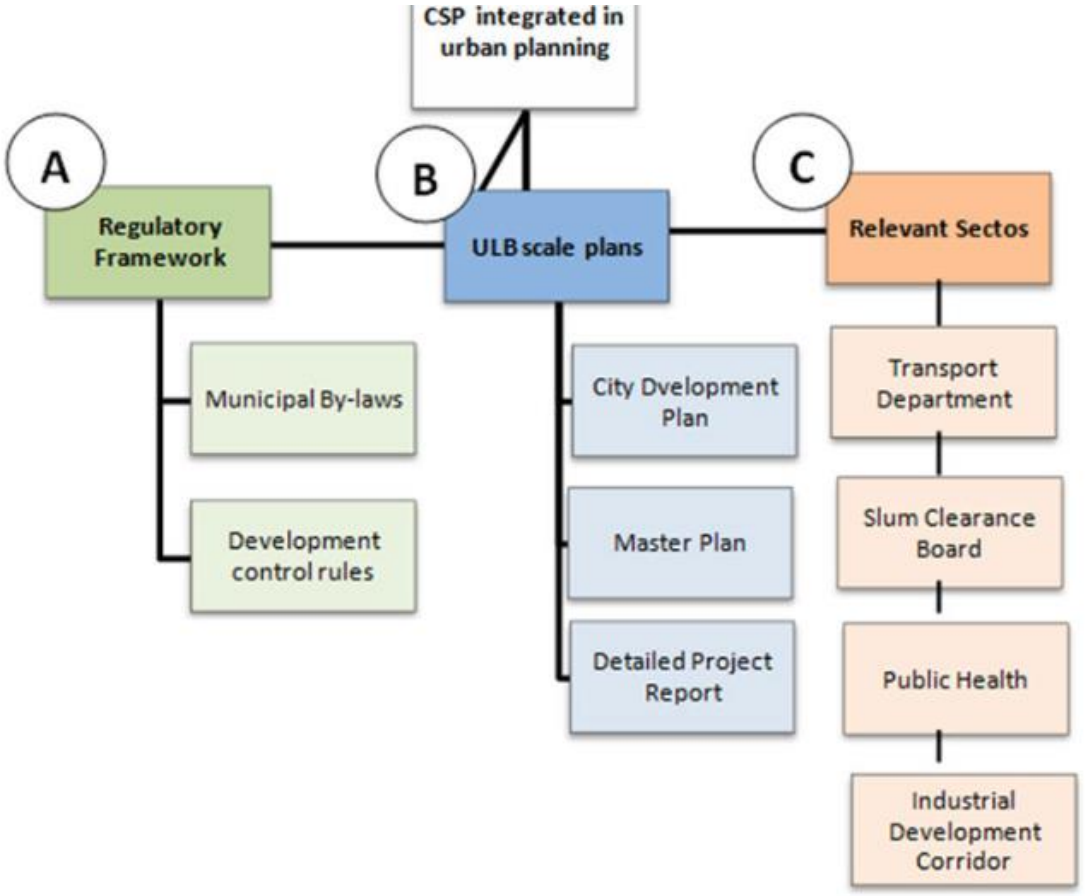
The document addresses both technical (wastewater, solidwaste, water supply, access to toilets, stormwater management) as well as non-technical (institutional capacities, governance, community participation and so on) aspects. Often, CSPs tend to primarily focus on technical aspects, however the non-technical aspects are essential as they act as forming the enabling environment for the successful implementation of the CSP- Therefore it should be noted that an integrated approach with regards to planning and preparing the document should be taken. The CSP should also be planned, based on a common set of principles, aligned to National flagship programmes.

ALIGNING THE CSP WITH OTHER DEVELOPMENT SCHEMES

The ongoing national and state level programmes for urban transformation recognize and integrate one or the other aspect of city wide sanitation in the vision and implementation strategies. There is a need for the convergence between different policies and regulations present in the sanitation discourse by considering:



Furthermore, a CSP can be utilized as a planning tool which needs to be integrated with other urban plans and schemes at different scales of urban governance. Beyond the CSP, there are various exiting tools for urban planning as follows:



In the end, a CSP should not only be a comprehensive planning document, but also a planning tool with strategies that achieve an informed decision that can be easily explained to relevant stakeholders, council and the City sanitation task force.

Initiating the CSP: Forming the City Sanitation Task Force

WHAT IS THE CITY SANITATION TASK FORCE?

The NUSP identifies the constitution of a **multi-stakeholder task force** as one the principal activities to be taken up to start the city sanitation planning process.

♣ City Sanitation Task Force (CSTF) is a multi stakeholder task force formed for achieving city wide sanitation through CSP

♣ It is a **non-statutory body**, however formalized with council resolution recognizing the CSTF as a body involved in achieving the goals of NUSP in the respective city.

Need for CSTF

♣ A designated Institution at the city level to achieve the goals of NUSP
♣ For mobilizing and coordinating actions from different public and non-government agencies
♣ To plan, guide and monitor the achievement of city-wide sanitation

Activities:
• Conducting a stakeholder analysis
• Understanding the roles and responsibilities of a CSTF
• Standard operating procedures for CSTF

Conducting a Stakeholder Analysis

STEP 1- IDENTIFYING STAKEHOLDERS

Brainstorm and prepare a detailed list of relevant stakeholders working in the sanitation sector of your city. To ensure that cross-cutting stakeholders are identified, the below set of potential guiding questions can be referred to:

1. Which stakeholder / groups might be negatively affected by inadequate sanitation? - e.g. urban poor, slum dwellers, women etc.
2. Who are the stakeholders that should be involved due to their formal position? (e.g. governmental bodies, social outreach)
3. Which stakeholders have access to relevant information and resources? (e.g. environmental NGOs, technical consultants, financial resources, access to social groups etc)

Tool 2.1- Enlist the identified stakeholders in just the first column of Table 1.

Step 2 – Identifying importance of role within CSTF

Now that the list of potential stakeholders has been indentified, the following question needs to be answered for each actor:

1. What is current role of the stakeholder in the city? How is he/she concerned?

Tool 2.1- Fill out the current role of the stakeholder in the second column of Table 1.

2. Taking account of the stakeholder's current profile, what role of the actor would be most suitable within the CSTF?

Tool 2.1- Refer to Figure 1- "Stakeholder participation matrix" and get acquainted with the various roles of stakeholders. Fill out the third column of Table 1.

TOOL FOR STAKEHOLDER ANALYSIS

Entrusting the Roles and Responsibilities of the CSTF

Now that the stakeholders have been identified, the CSTF can be constituted. As mentioned previously, the CSTF is a non-statutory body, however it is recommended that a "council resolution" be passed which recognizes the CSTF as a body which has been formed to achieve the goals of the NUSP.

An example of a council resolution
In addition, a nodal officer must be appointed within the CSTF, who will be responsible for:
Step 2 – Identifying importance of role within CSTF
Now that the list of potential stakeholders has been indentified, the following question needs to be answered for each actor:

• Day-to-day coordination, management and implementation of the sanitation programs on a city-wide basis.
• coordinating with other public agencies, and contract in and supervise the services of NGOs (through Memorandum of Understanding) and private parties (through contracts) for preparing and disseminating materials for IEC, conducting baseline surveys and stakeholder consultations.

The council resolution must consist of:
1. Date of CSTF formation
2. List of CSTF members along with their designation and contact details (Phone no and email)
3. Responsibilities of the CSTF members
4. Procedure of meetings to be followed

Indicative Responsibilities of the CSTF

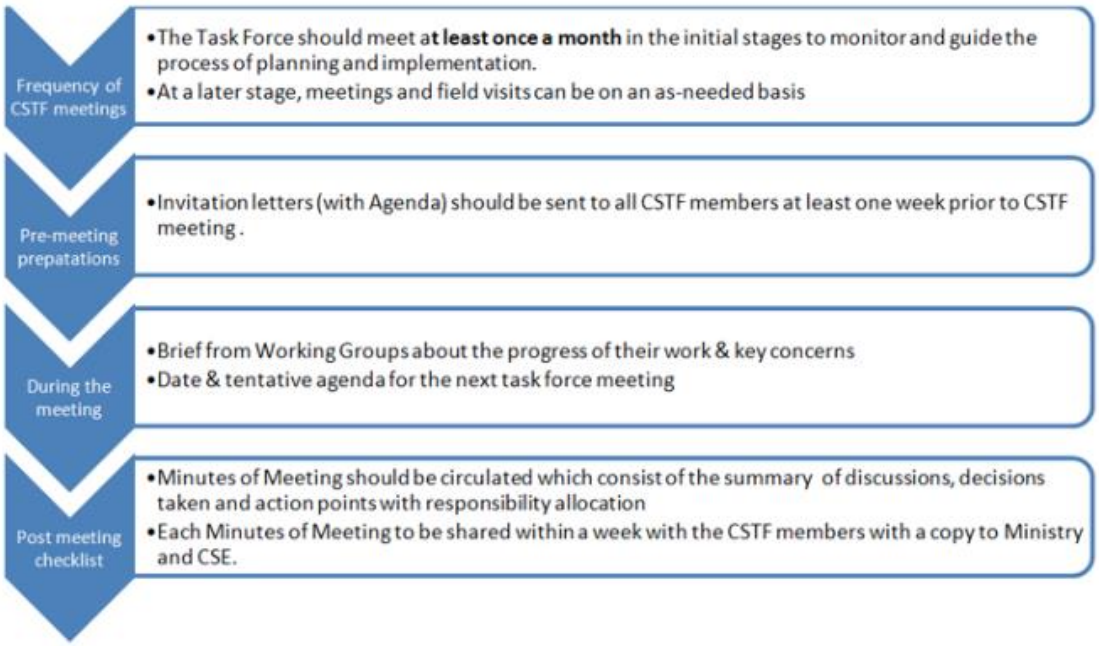
Guiding and Approving

• Progress reports provided by the ULB CSP (prepared by ULB) after consultation with citizens Supervise progress regularly
• Issue briefing about the progress to media & state government Generating awareness amongst city's citizens and stakeholders
• Recommend to the ULB fixing of responsibilities for city-wide sanitation on a permanent basis

Review and implement

• Execution of all Action plan for all sectors • Review and make recommendations to ULB on requirements for change in rules & regulations related to Sanitation/ Solid Waste Management

STANDARD OPERATING PROCEDURE FOR CSTF MEETINGS

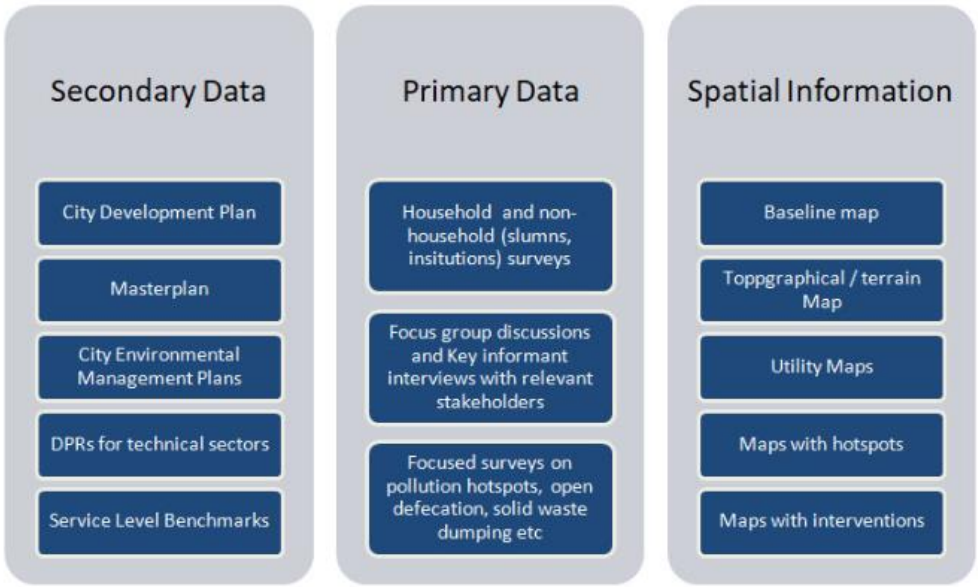


First CSTF meeting	**Second CSTF meeting**	**Third CSTF meeting**	**Fourth CSTF meeting**
Introduction of all CSTF members with attendance being taken	Attendance of all members being recorded	Attendance of all members being recorded	Attendance of all members being recorded
Announcement of passing council resolution for CSTF	Presentation of status reports and data gaps (if any) and next steps forward for analysis	Presentation of status Assessment report and next steps forward for analysis	Discussion on technical options and proposed action plan
Presentation on CSP and its importance		Discussion on key issues being identified	Review of final CSP report
Presentation of steps of preparing CSP			Timelines for finalizing the CSP
Discussion on data required to be collected for status report- Stage 3. Media Brief of event with group photo	Media Brief of event with group photo	Media Brief of event with group photo	Media Brief of event with group photo

Baseline Data Collection

IMPORTANCE OF BASELINE DATA

The CSP primarily makes an effort to present the sanitation sector of a city through a detailed documentation and analysis of existing baseline information. This data acts as a "base" or platform for further analysis, planning and forecasting of services required by the city.



In order to start collecting baseline data for the CSP, various data sources must be drawn from different departments and sectors. Procuring high quality and credible data/information is crucial for the successful implementation of the CSP.

Data Credibility Checklist

1. Data is up-to-date (past 5 years)- compatible with financial year, calendar year etc
2. Data is endorsed by the Government of India
3. It is required that all information cited will refer to the reliable source of information (official documents, reports published by reliable institutions, etc.)

Activities:

- Identify sources of credible data
- Conduct data collection for acquiring baseline status of sanitation sector through secondary sources of data
- Identify gaps in secondary data

INITIATING BASELINE DATA COLLECTION

Data Credibility Checklist

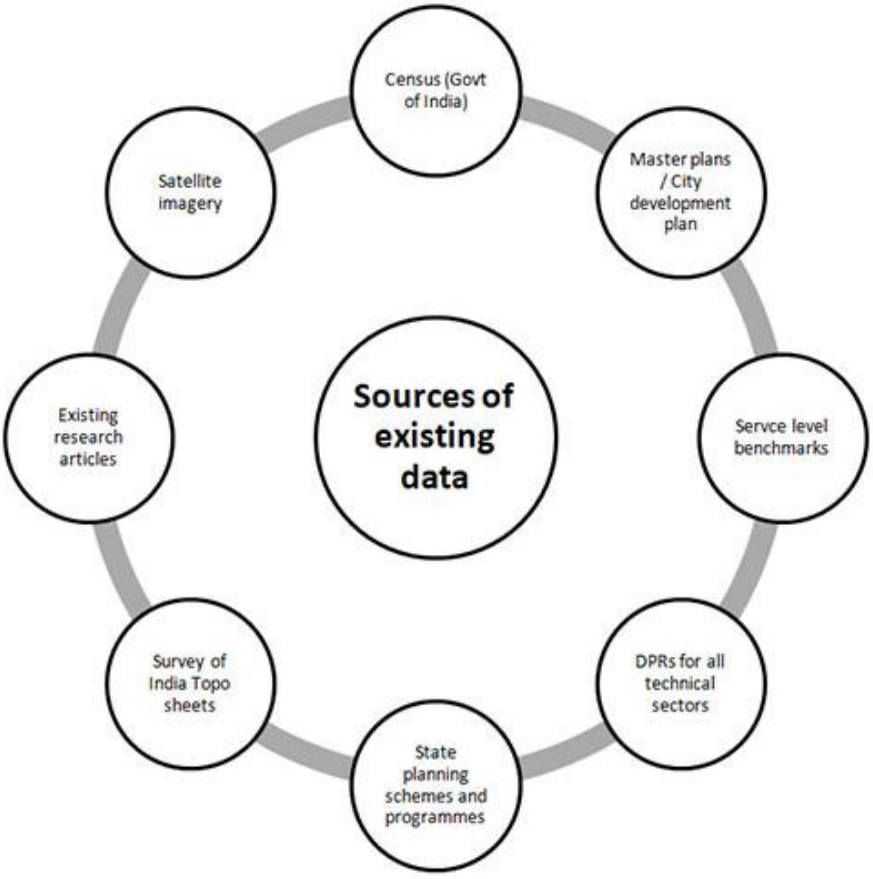
1. Identifying credible sources and contacts (departments, officers etc) to collect the information

2. Designate an officer from the ULB who takes part and coordinates data collection and documentation.

3. Consult with the CSTF at each state of data collection and presentation

Collecting data:

The ULB must tap into current reserves of "existing data" which could range from the following:

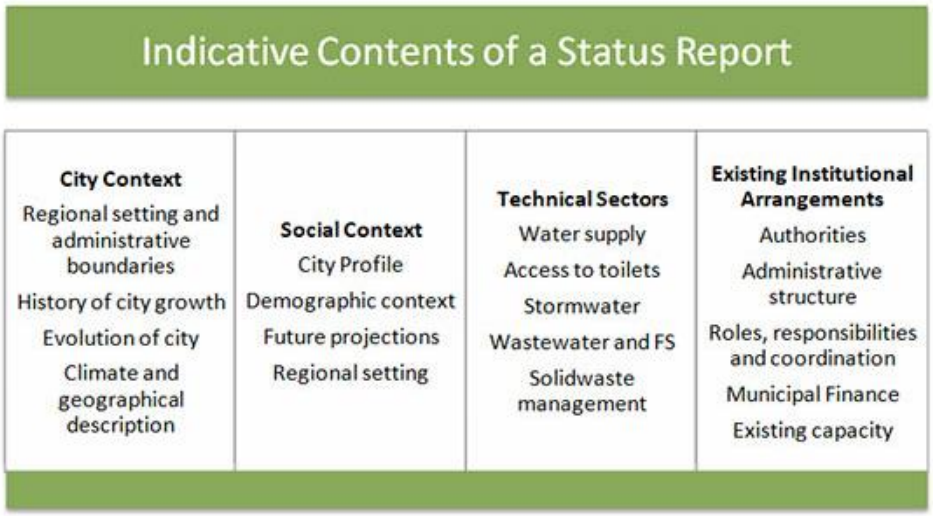


Which data to collect?

Under the NUSP, an indicative checklist has been provided for guidance in terms of data collection for all sectors. In addition to the NUSP checklist, a few more additions

have been made in order to conduct a more detailed analysis. These sector-wise data checklists can be accessed from module 3.2 onwards.

This data is then presented as per format in the form of a “Status report” (Tool 3.1) which would later serve as a tool for data analysis. Note- If there is any existing data gaps, then this data would need to be noted down and will have to be collected during primary surveys. This report will hence contain the information on:



3.3. WATER SUPPLY

This chapters mainly includes information regarding data collection for water related infrastructure facilities, their current performance in the city and future service demands.

Note: When collecting data do keep in note the municipal boundary as per the latest expansion proposal. This is crucial as expanding the municipal boundaries will demand additional efforts and resources to extend public services to the “expansion area”.

Water Supply

1. Refer to Checklist on Water Supply and fill in available data along with data sources and evidence of credibility in the excel sheet (Column C to F). In Column G, kindly note the data which is not available so that it can be collected in primary surveys.

2. Kindly check other tabs on the excel sheet and fill in tables accordingly with relevant data. Kindly highlight data which is not available at the moment. These tables will later form a part of the status report.

3. Save the excel sheet for later reference

3.4. ACCESS TO TOILETS

This chapter to include detailed information on data required for access to toilets comprising individual toilets, shared toilets (if any), community toilets and public toilets & their current performance and future demands in the sector

Note: When collecting data do keep in note the municipal boundary as per the latest expansion proposal. This is crucial as expanding the municipal boundaries will demand additional efforts and resources to extend public services to the "expansion area".

Next steps as follows:

Access to Toilets 

1. Refer to Checklist on Access to Toilets and fill in available data along with data sources and evidence of credibility in the excel sheet (Column C to F). In Column G, kindly note the data which is not available so that it can be collected in primary surveys.

2. Kindly check other tabs on the excel sheet and fill in tables accordingly with relevant data. Kindly highlight data which is not available at the moment. These tables will later form a part of the status report.

3. Save the excel sheet for later reference

3.5 WASTEWATER AND FAECAL SLUDGE

This chapters includes information on data required for sanitation related infrastructure facilities and their current performance for wastewater and faecal sludge.

Faecal Sludge Management (FSM) is often neglected in the sanitation sector. One of the primary reasons is not having accurate or no data at all regarding on-site sanitation (OSS) facilities . Such sanitation facilities often fall out of the purview of Municipal Corporation's responsibility, consequently, households with such OSS rely on private de-sludgers. Desludging of these on-site sanitation facilities is usually carried out manually, in absence of suitable technologies. However, ignorance about when and how frequently to desludge their OSS facility, maintenance and operational conditions often result in accumulation of organic sludge, reduction in effective volume and hydraulic overloading, which ultimately causes system failure and release of partially treated or untreated septage from the septic tank / pits. Private operators often do not transport and dispose-off septage far away from human settlements; also, they resist going to the existing STPs to dislodge their collected sludge; 'instead, they dump it in drains, waterways, open land and agricultural fields' (WaterAid, 2016).

With this problem in view,two types of tools have been made to help city officials plan for faecal sludge management in their city.

1)Shit Flow Diagram (SFD) - The SFD gives a clear picture of how wastewater and faecal sludge management services are delivered in a city. Primarily it provides technical and non-technical stakeholders with an easy-understood advocacy tool that can be used to support decision-making on urban sanitation planning and programming.

2) Rapid Assessment Tool (RAT) - informing them about infrastructural and financial requirements based on their data pertaining to number of properties dependent on OSS and the quantity of sludge generation etc. A ward-wise report is generated by this tool, indicating the number of on-site facilities to be cleaned in the ward on monthly basis.

3.5.1. SHIT FLOW DIAGRAM – SFD

What is an SFD?</p>
An SFD presents a clear picture of how wastewater and faecal sludge management services are delivered in a city and the resulting challenges; these can then be linked to aspects of service delivery where improvements are needed.

An SFD for any city or town is in three parts:

1. a diagram which shows the pathways all excreta generated by a city's population takes from defecation to final fate - either unsafe discharge to the environment, or safe reuse/disposal;

2. a concise narrative report on the diagram and the service delivery context - including the enabling environment within which the services are being delivered; and

3. a complete record of all the data sources used in developing the diagram and report - the stakeholders consulted, documents reviewed and all validation and quality control exercises implemented.

For more information - http://sfd.susana.org/about/the-sfd
In order to prepare an SFD-

Step by Step guide:
The SFD Manual – Volume 1 and 2 – describes the process followed within the SFD Promotion Initiative (SFD PI) for the production of SFD Graphics and Reports, and includes guidance on how to use the SFD Graphic Generator. Volume 1 of this Manual is a guide for the data collection and analysis and should be read in conjunction with the accompanying Volume 2.

SFD Manual	**This manual provides:** - Guidance for data collection and analysis or SFD	Author: SFD Promotion Initiative Target Group City Planners

- Instructions for how to go through the SFD Graphic Generator		Type	SFD

Template for SFD report/p>
Congratulations on making your SFD! Now that you have an SFD, it is necessary to record any key observations/notes in a template report. Save this report for later use in the city sanitation plan.

Tool 3.3- Template for SFD Report

SFD Graphic Generator Now that we have the required data, we can insert this information in this software to generate an SFD

Tool 3.2- SFD Graphic Generator
1. Use tool 3.2 to produce an SFD Graphic in just three steps.
2. Input the data relevant to your city and, with a couple of clicks, the tool draws an SFD Graphic that you can download for use in reports and publications.
3. The SFD Promotion Initiative developed the tool and if you have any questions please contact the SFD Helpdesk who will be happy to help.

3.5.2 RAPID ASSESSMENT TOOL

After the data has been collected, one can now obtain the information on the infrastructural and financial requirements required for a sustainable sanitation chain. This can be calculated through the rapid assessment tool.

In order to operate the tool, a manual has been composed to provide a clear step-by-step procedure for filling up information on faecal sludge and septage, in the tool. The tool helps in calculating requirement of vehicles and for FSSM.

Manual on Faecal Sludge and Septage Management Tool	**This manual provides:** A clear step-by-step procedure for filling up information on faecal sludge and septage, in the tool.	Author: Target Group Type	 City Planners

Tool 3.4 – Rapid Assessment Tool 

he SFD Promotion Initiative developed the tool and if you have any questions please contact the SFD Helpdesk who will be happy to help.

3.6 SOLIDWASTE

This chapter to include detailed information on solidwaste, which discusses data required for planning for collection, management, treatment and safe handling of solidwaste.

Note: When collecting data do keep in note the municipal boundary as per the latest expansion proposal. This is crucial as expanding the municipal boundaries will demand additional efforts and resources to extend public services to the "expansion area".

Excel on solidwaste 

1. Refer to Checklist on solidwaste and fill in available data along with data sources and evidence of credibility in the excel sheet (Column C to F). In Column G, kindly note the data which is not available so that it can be collected in primary surveys.**This manual provides:**
2. Kindly check other tabs on the excel sheet and fill in tables accordingly with relevant data. Kindly highlight data which is not available at the moment. These tables will later form a part of the status report.

3. Save the excel sheet for later reference.

3.7 STORMWATER

This chapter to include detailed information on stormwater, which discusses data required to plan for separate and safe drainage and management of stormwater.

Note: When collecting data do keep in note the municipal boundary as per the latest expansion proposal. This is crucial as expanding the municipal boundaries will demand additional efforts and resources to extend public services to the "expansion area".

Next steps as follows:

Excel sheet on Stormwater 

1. Refer to Checklist on stormwater and fill in available data along with data sources and evidence of credibility in the excel sheet (Column C to F). In Column G, kindly note the data which is not available so that it can be collected in primary surveys.

2. Kindly check other tabs on the excel sheet and fill in tables accordingly with relevant data. Kindly highlight data which is not available at the moment. These tables will later form a part of the status report.

3. Save the excel sheet for later reference.