CHAPTER 10: PREPARATION OF CITY SANITATION PLAN

10.1 THE PLANNING PROCESS

Planning is a thinking process. In sewerage and sewage treatment, it aims at identifying how best the required infrastructure can be conceived in mind and given shape within the restrictions of available funds and satisfying the public as far as possible. For example, a twin pit latrine is a boon in remote hilly area, but totally unfit in a city. Thus, planning has to be above all “relevant to situation on hand”. The planning process is a systematic method of:

1. Understanding the existing needs
2. Identifying the limitations and restrictions of funds
3. Collecting and analyzing available records of these
4. Identifying the options of potential remedies
5. Suggesting a set of actions, which may change the situation and step-by-step eliminate the problems
6. Evolve a suitable strategy for implementation with respect to a time frame
7. Go through a consultative process with the stakeholders to evolve a complete acceptance of physical, financial and managerial aspects
8. Evaluation of the actions taken for their success or failure and documentation for posterity
9. Thus, planning is a continual process and not a one-time process adopting principles and technology which are environment friendly, economically viable and sustainable
10. It also includes the reuse of the reclaimed water from treated sewage and conditioned sludge for feasible purposes that are hygienically safe
11. It needs close collaboration with other planning agencies at local, state and national levels to ensure co-ordination in allocation of priorities and resources
12. All these must be aimed to be reached in a step-by-step manner so that the lessons of the earlier step will improve the efforts in the next step

10.2 THE CITY SANITATION PLAN (CSP)

A city sanitation plan (CSP) is a living document as a result of the planning process.

Every ULB should have a city sanitation plan and undertake to implement it for all its citizens in an economic, environmentally friendly and sustainable manner.

10.3 DESIGN PERIOD

The following design period could be considered:

i) Short-term plan up to 5 years from base year
ii) Medium-term plan up to 15 years
iii) Long-term plan 30 years

The base year for short term will start when the completed infrastructure is put to use. The years of medium term and long term will start from the year of planning

The planning process involves close collaboration with other planning agencies at local, state and national levels to ensure better coordination in allocation of priorities and resources. The collection, transportation, treatment and disposal aspects, facilities, augmentation and replacement of the equipment and sites, allocation of priorities and resources should invariably be decided keeping in view the design period of the CSP.

10.4 POPULATION FORECAST

The design population will have to be estimated considering the decadal growth pattern and factors impacting growth such as economy, social, etc. Special factors causing sudden emigration or influx of population should also be foreseen to the extent possible. Worked out examples for estimation of the future population are given in Appendix A.2.2.

10.5 BASIC PLANNING MODEL

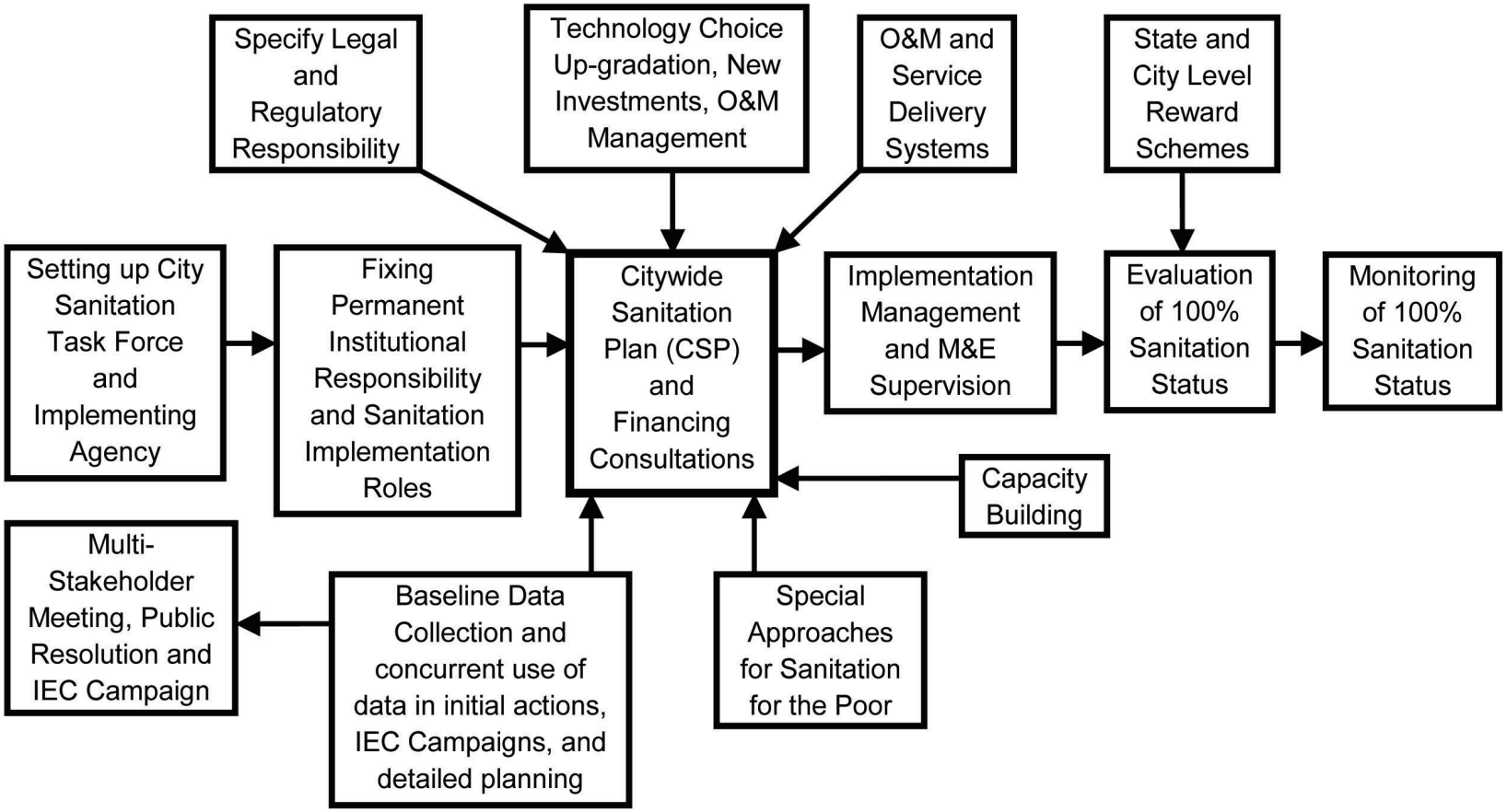
10.5.1 Draft Framework for a CSP under NUSP

10.5.1.1 Generic Elements of Planning

This shall be in accordance with the chart as contained in the National Urban Sanitation Policy (NUSP) and reproduced here as Figure 10.1 overleaf.

10.5.1.2 Purpose

The purpose of this framework is to assist ULBs, NGOs, community based organizations, citizens and private sector agencies through a series of steps towards the development of a plan for achieving the goal of 100% sanitation in their cities. The focus is the approach and “how to go about” the process to develop a comprehensive, wholesome citywide sanitation plan. Since each city will make choices based on demand and need, local context, availability of financial and human resources, and the opportunity for innovations, this chapter does not prescribe the options to choose. The framework may be adapted to suit the state’s urban sanitation strategy and used for its cities. To assist in thinking through the challenge, some core building blocks are outlined in Figure 10.1. Though apparently linear, the process needs to be iterative.



Source: MoUD, 2008

Figure 10.1 Generic elements of planning, implementation and monitoring and evaluation of citywide sanitation

The states will need to determine time-frames and deadlines to achieve the goals mentioned in the NUSP and will need to spell out a detailed road map, including the incremental targets for achievement of goals. For example, to achieve the goal of open defecation free (ODF) by the year 2013, a detailed plan for extending access will need to be formulated and implemented in a time-bound manner. The steps towards achieving universal access through individual, community or public toilets, the capital and operation and maintenance costs and the management arrangements needs to be detailed and made operational under the CSP. While some of the activities in the sanitation plan may be possible to complete with little financial resources e.g., better utilization of existing facilities, improved management systems for septage cleaning, awareness generation, etc.; others e.g. reconditioning or laying new sewers, may be more resource-intensive. The CSP will need to be prepared keeping in view the city's current sanitation arrangement and their technical and financial capability. It will be prudent to improve the effectiveness of existing facilities before embarking on new projects. Further, comprehensive and citywide solutions, and not just some piecemeal solution, will be necessary to achieve the goals in a comprehensive and systematic manner.

10.5.2 Steps for Achieving 100% Sanitation

10.5.2.1 Key Principles

The NUSP identified the following core principles that need to be addressed. These must be used as a guide by the cities:

- Institutional roles and responsibilities
- Awareness generation for changing mind-sets
- Citywide Approach
- Technology choice
- Reaching the un-served and poor
- Client focus and generation of demand
- Sustained improvements

10.5.2.2 Preparatory Actions

10.5.2.2.1 City Sanitation Task Force

Mobilize Stakeholders: The first step in making the cities 100% sanitized is to create awareness on the need to improve sanitation in the mind of municipal agencies, civil society and most importantly, amongst the people of the city. These can be done by the following approaches.

a) Constitute a multi-stakeholder City Sanitation Task Force comprising representatives from

- Agencies directly responsible for sanitation including on-site sanitation, sewerage, water supply, solid waste, drainage, etc., including the different divisions and departments of the Urban Local Bodies (ULB), Public Health Engineering Department (PHED), etc.,

- Agencies indirectly involved in or impacted by sanitation conditions including representatives from the civil society, colonies, slum areas, apartment buildings, etc.,
- Eminent persons and practitioners in civic affairs, health, urban poverty,
- Representatives from shops and establishments,
- Representatives of other large institutions in the city (e.g. Cantonment Boards, Government of India or State Government. Enterprise campuses, etc.),
- NGOs working on water and sanitation, urban development and slums, health and environment,
- Representatives of unions of safai karamcharis, sewerage sanitary workers, recycling agents / kabaris, etc.,
- Representatives from private firms/contractors formally or informally working in the sanitation sector (e.g. garbage collectors, septic tank desludging firms, technology providers for sewage and sludge treatment, etc.),
- Representatives from educational and cultural institutions,
- Elected members from the State Assembly and City Councils,
- Any other significant or interested stakeholders.

The Task Force should be headed by the Mayor with the executive head (e.g., Municipal Commissioner) as the Convener. Cities can also choose to appoint, as a part of the Task Force, City Sanitation Ambassadors chosen from eminent people, who enjoy outstanding credibility and influence amongst the city's leadership and population. Political leadership from all political parties and persuasions must be involved in the planning process so that the sanitation campaign has their full support and no opposition from any group.

One of the things to be considered by the Task Force is to organize a multi-stakeholder, multi-party meeting in the preparatory stage, and take a formal resolution to make the city 100% sanitized, and publicize the same and disclosing with all signatories.

b) The City Sanitation Task Force will be responsible for:

- Launching the City 100% Sanitation Campaign
- Generating awareness amongst the city's citizens and stakeholders
- Approving materials and progress reports provided by the implementing agency, other public agencies, as well as NGOs and private parties contracted by the Implementing Agency, for different aspects of implementation
- Approving the CSP for the city prepared by the Sanitation Implementation Agency after consultations with citizens
- Undertaking field visits from time to time to supervise progress

- Issue briefings to the press/media and state government about progress
- Providing overall guidance to the Implementation Agency
- Recommend to the ULB fixing of responsibilities for citywide sanitation on a permanent basis

The Task Force should meet formally frequently (at least once in two months) in the initial stages to monitor and guide the process of planning and implementation. At a later stage, meetings and field visits can be on an as-needed basis. In some cities, the City Sanitation Task Force may divide up roles and responsibilities amongst smaller sub-committees to focus on different aspects closely while keeping the overall character of the Task Force intact.

c) The Task Force should appoint one of the key agencies, preferably the ULB, as the Implementing Agency, which will be responsible for the implementation of the CSP for the city.

This agency will be responsible for day-to-day coordination, management and implementation of the sanitation programmes on a citywide basis. The agency will coordinate with and agree on joint actions 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 Information, Education and Communication (IEC), conducting baseline surveys and stakeholder consultations, maintaining a comprehensive GIS-based database, implementing physical works, letting out and supervising O&M management contracts, etc.

The ULB should formally notify and publicize the appointment of the City Sanitation Task Force and Implementing Agency.

d) Assign Institutional Responsibilities:

One of the key gaps in urban sanitation is lack of clear and complementary institutional responsibilities. This comprises two aspects: a) roles and responsibilities institutionalized on a permanent basis; and b) roles and responsibilities for the immediate campaign, planning and implementation of the City's Sanitation Plan - based on which the former can be outlined, experimented with, and finally institutionalized.

The Sanitation Task Force will recommend the assigning of permanent responsibilities for citywide sanitation to the ULB or other agencies including the following aspects:

- The ULB to have final overall responsibility for citywide sanitation, including devolving power, functions, functionaries and funds to them
- Planning and Financing including State Government and Government of India schemes
- Asset creation including improvement and augmentation
- Operations and Management (O&M) arrangements for all networks, on-site, community and public sanitation facilities and systems (including transportation up to final treatment and disposal of wastes)

- Fixing tariffs and revenue collections in order to make O&M sustainable
- Improving access and instituting special O&M arrangements for the urban poor and un-served populations in slum areas and in mixed areas
- Adopting standards for:
  - Environment Outcomes (e.g. State Pollution Control Board standards on effluent parameters),
  - Public Health Outcomes (e.g. State Health Departments),
  - Processes (e.g. safe disposal of on-site septage) and
  - Infrastructure (e.g. design standards) (PHEDs/Parastatals), and
  - Service Delivery standards (e.g. by Urban Development Departments)
- Adoption of Regulatory roles including environmental standards (e.g. State Pollution Control Boards), health outcomes (e.g. Health Departments).
- Measures in case specific stakeholders do not discharge their responsibilities properly
- Training and Capacity Building of implementing agency and related personnel
- Monitoring of 100% Sanitation involving multiple stakeholders

While the responsibilities for each of the above roles may temporarily be vested in one or the other stakeholders, for reasons of efficiency and effectiveness during the campaign period, the Task Force will recognize that these roles must be permanently institutionalized in the ULB and amongst other stakeholders. Therefore, the recommendation of later permanent roles may be different from those in the Campaign Period.

In many cases, Acts, rules and regulations exist, but these are not enforced. This may be a good entry point to start on roles and responsibilities. The roles and responsibilities for the Sanitation Plan implementation are outlined in the next section - this will also be the task of the City Sanitation Task Force.

10.5.2.3 Baseline Data Collection for Database / GIS

In parallel with the preparatory steps, the ULB / implementing Agency will collate the information on the current sanitation situation that exists in the city. This will include demographic, institutional, technical, social and financial information. In addition, it will commission a private agency or an NGO or both to carry out primary data collection on the missing items – the surveys will use a mix of structured and participatory techniques. All the data collected must be amenable to linking to an existing or proposed Geographic Information Systems (GIS) for the city. (If this does not exist, it is recommended that a GIS for water, sanitation and solid waste management be set up at the earliest). The baseline will be overlaid on plans for development of new areas and colonization, based on the Master Plan of the City. If a Master Plan does not exist, appropriate projections will be made after consulting real estate development public authorities as well as private agencies.

The combined database from the above exercise will form the basis for planning and implementing the campaign. Since such data collection can be time-consuming, ULBs must start very early on this activity and start using data as and when it starts becoming available.

One of the methods to make data collation and database preparation process efficient and adaptive to planning and implementation actions, is to break it down into simplified components like:

Stage I Data: use for initial preparatory actions

- ULB, and utility/service provider data on institutional parameters (organizational structure, investments and assets, personnel, O&M systems and finances),
- Census 2011 data on households, JnNURM / Urban infrastructure development scheme for small and medium towns (UIDSSMT) or other scheme's data compiled for poor households
- ULB and utility/service provider data on public sanitation and available crude data on conveyance and treatment.

Stage II Data: use for IEC Campaign and planning to achieve universal access to sanitation on a citywide basis.

- Refined secondary data on existing conditions of disposal and conveyance (sewers, on-site pits, availability and use of suction machines, etc.) and treatment systems (landfill sites, recycling, etc.)
- Baseline primary data on household arrangements for sanitation and waste disposal, and hygiene behaviour and perceptions about service providers
- Baseline primary data on citizen's demands and perceptions about sanitation arrangements, outcomes, health and environmental linkages

Stage III Data: Use for planning and implementing institutional changes, social mobilization and upgradation, improvements and new investments in assets and systems of O&M, monitoring and evaluation, etc.

- Primary data based on sample condition assessment surveys (see parameters above) of arrangements, disposal and treatment systems.
- Institutional Assessment detailed information on existing and required skills and capacities, systems and procedures, financial position
- Social – personal hygiene and public health behaviour and practices
- Economic – Surveys on willingness to pay for different options
- Financial – Costs of O&M, Revenue and tariffs, systems of community management of community and neighbourhood level systems

Usually, a baseline study needs to be completed in about three to four months (Class II and above), depending on the size of the city and complexities involved. About two months is adequate to complete baseline in cities of Class III and below. Combining participatory approaches with institutional and other stakeholders, with observation and community and household interactions using checklists, schedules, etc., makes the data collection efficient and economical. It may be noted that the baseline is not a census of all properties and households/units. It is rather an assessment, usually using sampling to cover all representative types of situations prevailing in the city, in order that progress can be measured at later points comparing with the baseline. Most immediately, baseline studies are required for planning the citywide sanitation plan. It is advisable to cover all aspects during the baseline: technical, institutional, social, economic, financial, urban poor, etc., and be cautious that none of the aspects are left out. Even if the baseline studies are completed in a short period – this is necessary so that planning processes are not kept on hold for long – further data collection and updating of records must continue later on too, and become a part of the ULB/ Implementation Agency's implementation management system.

10.5.2.4 Awareness Generation and Launch of 100% Sanitation Campaign

After a reasonable amount of data has been collated from secondary and primary sources, and the Task Force is in place, the first task will be launching a citywide 100% Sanitation Campaign. This will be ideally timed with GOI national media campaign, and a state wide campaign that the state government may choose to launch. If required, a professional media agency to work closely with the Task Force and Implementing Agency to package the messages and direct them effectively to different stakeholder groups in the city. NGOs may be commissioned to do group messaging and door-to-door campaigns with special stakeholders like slum-dwellers etc. Schools and Colleges can play a special role in propagating the messages in their institutions as well as in their families.

At the city level, it will be advisable to launch the campaign as a time-bound programme that all stakeholders need to work towards. Appropriate media like Newspapers, TV and city and ward/ neighbourhood level programmes (sweeping streets, health camps, tree-planting, etc.) may be engaged. There should be an intensive first round followed by successive rounds that may be focused on specific aspects and/or special type of stakeholders, or neighbourhoods. One of the methods that some cities or neighbourhoods may try out is to declare Clean City Week every year or half-year. The Task Force should enlist the participation of leaders and eminent persons to lead the campaigns. The messages and media/campaign strategy for each of the successive rounds must be planned carefully. There are a number of other programmes (e.g. health, education, HIV/AIDS, etc.) that have media campaigns. The 100% Sanitation campaign should be coordinated with such agencies so that maximum multipliers can be gained by collaborative and calibrated working of these initiatives. Wherever possible, messages should be put in other campaigns to reinforce the impact.

10.5.2.5 Specifying Legal and Regulatory Institutional Responsibilities

Even though there are municipal laws with regard to sanitation responsibilities of households and ULB, etc., these are neither clearly laid out nor comprehensive. The Implementing Agency will examine the law and rules in this regard and make recommendations regarding:

- Safe sanitary arrangements at unit level (household, establishment)
- Designs and systems for safe collection
- Norms for transport/conveyance
- Treatment and final disposal

The recommended standards and guidelines are available from the CPHEEO and the Environment Acts. These will need to be formally adopted including laying down the monitoring and regulatory responsibilities, and incentives and disincentives for doing so. This must include the system of user charges/fees, fines and community pressure mechanisms to help people move to desirable public health behaviour. Actions to be taken in case of institutional failure will also be specified clearly.

All the above recommendations will be considered by the Task Force and recommended to the ULB for appropriate action. Executive changes may be implemented immediately, whereas legal matters may be referred to the State Government if not within the ambit of the ULB. Expert advisors on the Sanitation Task Force will be the resources to utilize for this task – matters may be discussed with national or state level agencies if standards are not clear, or need to be further detailed. Interim and working standards may suffice in many cases to immediately adopt and implement, whereas the codification and detailing may be undertaken in parallel. In all cases, the Task Force will strive to make standards based on the goals of 100% Sanitation, as much as possible, simple and easy for ULBs and public to understand and adhere to.

10.5.2.6 Planning and Financing

The task of planning and finding sources of funding will be under the oversight of the Task Force, but carried out by the Implementing Agency. The Agency will take assistance from consultants, etc., to help prepare plans for the city for different aspects including institutional, social, technical, financial, etc. At all stages, the plans must be comprehensive and cover the whole of the city, and not just one part or aspect. Therefore, a number of innovative measures may have to be used.

The Government of India's Jawaharlal Nehru National Urban Renewal Mission (JNNURM), Basic Services to Urban Poor (BSUP), and Thirteenth Finance Commission (TFC) are the key programmes to source funding (others being special programmes for the North-East and satellite towns schemes, etc.), apart from State Government's own resources. Planning should be aligned to the above funding sources (as well as what customers are willing to pay by way of connection fees, user charges, etc.), and seek to derive maximum benefits from these sources for achieving 100% sanitation. The City and States will also need to explore other sources of finance to fund their sanitation plans since Government of India scheme resources may not be enough to fulfill all requirements. In this context, it may also be noted that investments will need to be financially sustainable and hence, cities may lay down options (different levels of infrastructure and service levels) depending on what they can afford in the medium term, and what will prevent them from getting trapped in high loan repayment liabilities, or O&M management expenditure bubble at a later point in time. The CSP must be prepared and presented by the Implementing Agency and presented to the Task Force for approval. While the exact contents of the CSP may vary depending on the local situation, the aspects mentioned overleaf must be covered:

- Plan for Development of Institutions/Organizations responsible for sanitation, and their roles and responsibilities
- Plan for ensuring 100% Sanitation Access to different socio-economic groups, and related O&M systems (including improving existing systems, supplementary facilities, O&M Management contracts using PPP and community management, etc.)
- Costs and tariffs for service provision'
- The issue of collection of dues needs to be emphasized as a means of ensuring accountability as well as financial sustainability.
- Investments and O&M systems for new development areas/market and public places, and residential and other habitations
- Plan for safe collection, conveyance and treatment of household wastes
- Plan for Monitoring and Evaluation of implementation, and of achieving and sustaining 100% Sanitation (including use of community monitoring, etc.)
- Issues such as diminishing water resources, impact of climate change, use of low energy intensive on-site/decentralized sewage treatment technologies, distributed utilities, etc.
- Manpower issues such as adequate remuneration, hazardous nature of work, employment on transparent terms and conditions, use of modern and safe technology, provision of adequate safety equipment such as gloves, boots, masks, regular health check-ups, medical and accident insurance cover, etc.
- Plans for other locally significant aspects.

Some of the bigger cities may choose to prepare the plans on a regional/district or ward-wise basis. This may be a good way to mobilize stakeholders of the respective wards/regions and generate competition. However, at all times, it must be emphasized that such divisions are only limited to convenience in execution and monitoring, and sanitation must be a citywide achievement. Hence, the Task Force will have a special role in ensuring the integration of all the regional or functional components of the CSP as outlined above.

In order to promote wide ownership reflecting the collective and collaborative spirit of the sanitation endeavour, the CSP should be presented to the public for feedback at different stages of its development. Notwithstanding the inclusive and representative character of the City Sanitation Task Force, it is to the city's benefit if all or significant number of city stakeholders is able to contribute to the Plan. Holding of at least one, preferably two (draft and final stages) public meetings, needs to be considered by the Task Force.

10.5.2.7 Technical Options

Technology choice poses a major problem in Indian cities not only because of lack of information on what exists at present, but also because of the constraints of land, tenure, and low budgetary priority accorded to sanitation historically.

This leads to estimations of investments using conventional technologies that are mind-boggling and paralyze any incremental action.

The key issues about the technical options are:

- Technologies come with attendant capital and O&M costs, and management systems that may or may not be appropriate to a city's situation at a given time. Very often we can fall into the trap of planning systems that are difficult to finance, institutions are not ready and geared to operate and maintain them, and people are not ready or willing to adopt these and pay for service provision. Also, technology is linked to a whole set of environmental, behavioural and cultural parameters that need be taken into account. A holistic approach is required for technology choice.
- Approach to difficult existing situations (e.g. dense on-site systems draining into nallahs) is to think about upgradation and retrofitting options to make the systems sanitary and safe and also perform to their existing capacity.
- Technologies need to be incremental – for instance, even if sewers are ideal for dense settlements, they may not be feasible to immediately execute. In such cases, interim (e.g. on-site, or community septic tanks, improved septic tanks, Japanese Johkasou, or latrines if space is a constraint) systems may be planned with a view to later upgrade these to more sophisticated system (e.g. sewerage). Refer to Chapter 9 On-site Sanitation for details.
- Technologies and attendant systems for new development areas can be planned in advance. This results in early investments leading to cheaper and more sustainable systems in future.
- Technologies are only a means and not an end. They are to enable sanitary and safe confinement and disposal and hence, the approach to design must be keeping these ends in view.
- Technologies that promote recycle and reuse of treated sewage should be encouraged.

There is considerable information available on existing options as also the experience with some new systems and processes. These need to be reviewed by the Implementing Agency and where needed, specialist advice sought from state and national level agencies, and the private and community sectors. Exposure visits and training programmes will be required to take an informed decision. Finally, customers are at the heart of such systems – households and establishments must be consulted on expressing their preference after being made aware of the pros and cons of each of the systems under consideration. Technology choice again should address the citywide nature of the challenge – a mix of options must add up to addressing the issue completely, not just in bits.

Finally, technologies need to be planned for the full cycle of arrangements at the unit level, conveyance/transport, and final treatment and disposal into the environment. Any combination of systems that does not lead to the output of 100% safe collection, conveyance, treatment, and disposal will not serve the purpose of achieving 100% sanitation for the city.

Situation Analysis: Studies show that the bulk of decision-making and unit level investments are made by households and establishments – with more focus on sanitation arrangements, and less attention to collection, treatment and disposal. Public agencies are concerned with collection, treatment and disposal, but boundaries of roles and responsibilities are not clear.

In many if not most of the cases, public agencies are also unable to accord much attention to the public infrastructure and systems for collection, treatment, and disposal (e.g. sewerage systems, sewage treatment plants), or leave it for the households to resolve their problems (e.g. cleaning of septage). Thus, issues of O&M and sustainability need to be kept in view when planning for technology options.

10.5.2.8 Reaching the Un-served Populations and Urban Poor

Experiences from many Indian cities show that a differentiated approach is necessary to extend good quality sanitation services to the poor – the group that suffers the most in terms of adverse impacts on health and lost earnings.

Participatory approaches are needed to consult the poor settlements and involve them in the process of planning and management of sanitation arrangements. Many settlements may have the necessary conditions to support the provision of individual on-site sanitation arrangements (e.g. as tried out in some pockets in Ahmedabad, etc.) that are ideal, in many others, tenure and legal issues prevent provision of individual toilets and hence, community toilets (CTs) are the only way for immediate succour and access (e.g., as is the case with Mumbai, Pune, etc.). In some places, conventional and shallow sewers have also been tried out as alternative to on-site solutions in dense settlements. Examination of legal/tenurial, space and affordability issues in close consultation with communities becomes a key step in planning innovative means that are owned by users and will be sustainably managed by them.

NGOs can play an important role in mobilizing slum communities. Further, when community groups themselves take over the O&M of community facilities, then sustainable services become possible. This is also a way of reducing costs (compared to say, pay and use public toilets) and making services affordable to the poorest of families.

Another segment of population normally without sanitation is those who live in dispersed urban locations not being slums or in groups of houses that have legally not been notified as slums. Innovative approaches are required to extend services to these population groups too. It may be noted that public sanitation is for general public or floating populations, whereas CTs are those, where an identifiable core group of users exist, even if floating population may occasionally use these facilities.

The Implementing Agency will need to take stock of the legal and non-notified settlements in the city, and in partnership with NGOs and Community Based Organizations (CBOs), initiate a process of collaborative planning and delivery of services. Sanitation services also serve as an entry point for improved water supply, drainage improvements and community managed solid waste disposal systems – these areas should also be targeted while planning for sanitation is being undertaken.

At least 20% of the funds under the sanitation sector should be earmarked for the urban poor.

The issues of cross subsidization of the urban poor and their involvement in the collection of O&M charges should be addressed.

Finally and not least of all the obstacles, is the mind set of officers of ULBs and other citizens: bias and myths often hinder proper service provision to poor settlements. There must be a concerted effort to raise awareness amongst all stakeholders about the huge health and environmental costs that all have to bear if services are not comprehensively provided to all citizens.

Two steps are necessary to achieve this change in mind-sets: a) orientation programmes must be conducted for ULB functionaries; and b) setting up permanent systems in ULBs, complemented with agreements with NGOs and CBOs, to deliver services and monitor outcomes on an urgent basis to all poor households, as well as others, who are either un-served or have insanitary arrangements for defecation, collection or disposal.

10.5.2.9 O&M and Service Delivery Systems

Institutional systems for O&M are at the heart of any successful set of systems and procedures to achieve and sustain 100% sanitation. As outlined above, responsibilities for institutions are weakly defined and even if stipulated hardly followed properly.

Therefore, existing systems must be examined with the question: which agency or institution is responsible for operating and maintaining the system or a part thereof? If they do not discharge their responsibilities, what corrective action or recourse exists and who is responsible for this? For new investments similar questions need to be asked so that assets and services do not suffer from lack of proper O&M. A citywide perspective is necessary since O&M is required for all parts of the sanitation systems, whether it is excreta removal, or drainage or solid waste management. Assigning institutional responsibility also must go hand in hand with technology selection, design and implementation/creation of assets.

While sewerage systems have limited responsibility of households (from own property to nearest street connection), institutions responsible for the rest of the conveyance systems are faced with a number of personnel, finance and incentives related constraints. These need to be mapped and clearly addressed – even with little resources; innovations need to be made in the organization responsible (relevant ULB department or service provider unit) to seek immediate remedies while a more systematic planned set of steps to improve O&M may be implemented during the plan.

In most on-site systems, households are left to fend for themselves – often, there is no check on unhealthy and illegal practices such as draining wastes in to nallahs and drains. These also need to be brought under the remit of the respective public agency and properly dealt with. Septage clearance services are another area where quick action can be initiated and the necessary fees charged from households. In drainage and solid waste too, a number of steps can be initiated (some of these have been successfully tried out in solid waste management in many Indian cities) to ensure proper O&M and service delivery, in which consumer households also have a stake and roles built in.

Preparing O&M Protocol for each of the sanitation facilities in the city is a good step in this direction, and their adherence needs to be monitored by senior officers, elected representatives and community members.

O&M systems often suffer because customers do not recognize this as a service, and do not pay for the poor service levels. O&M is closely related to the financial sustainability of service provision, and hence, the Implementing Agency must take full stock of the financial implications of improving current and future service levels. These should lead to proposals to the City Task Force, as a part of the CSP, on how to recover or fund the costs of O&M.

Customer complaints and redressal systems is another major area needing attention. One of the important changes that need to be effective amongst the ULB, or service providing agency is to treat citizens as customers of services. Accordingly, complaints, redressal and feedback systems can be instituted for sustained improvements. Preparing proper customer records and taking structured feedback are ways already tried out in other sectors with satisfactory results in improving public services. Providing orientation and training programmes, implementing customer relationship systems, and linking O&M performance to personnel performance are ways to examine improved service delivery systems.

Finally, in many cases, households and communities may be in a better position to carry out O&M tasks or monitor performance thereof. This approach works specially when communities have incentives to work together and/or there are considerable externalities of a particular behaviour (individual actions affecting others easily).

Maintenance management of CTs, maintaining cleanliness in neighbourhoods, keeping drains and nallahs clean, street sweeping, etc., are examples where community groups can easily monitor the performance of service providers. In case of poorer neighbourhoods and slums, some of these tasks may be formally entrusted to local groups too.

10.5.2.10 Capacity Building and Training

The role of capacity building and training is crucial in achieving and sustaining 100% sanitation. Because of the historical neglect, the know-how of sanitation is limited to a minuscule group of personnel in ULBs/service providing agencies – even these skills run down over time due to little scope for application and sometimes the narrow nature of the specific job. Therefore, two broad kinds of interventions are necessary:

a) Orientation, building of skills and aptitude for carrying out different types of activities in respect of total sanitation

b) Designing and implementing working systems in ULBs or service providing agencies to provide the right kind of structures, linkages and organizational systems and environments that utilize the skills and perspectives imparted above.

The task of building capacities is huge – this is compounded by the generally low levels of synthesis and dissemination of existing knowledge and experiences of working with different kind of technologies, management regimes, organizational systems and processes and institutional relationships. Therefore, there is a dual agenda of consolidating and applying existing and new knowledge in a learning-by-doing framework, and building capacities thereon in an adaptive manner that is able to accommodate a range of personnel with different kind of backgrounds.

The National and State level Resource Organizations including NGOs, need to be brought in by the City Task Forces, to assist in this huge agenda that needs to be woven closely with the sanitation campaign, planning, implementation, and monitoring and evaluation. Similarly, experts need to be deployed early with assistance of the Union and State Governments, so that the knowledge development on technologies and management regimes is quickly made available for the city to adapt. The role of NGOs will be valuable in training and capacity building for participatory methods and consultation techniques to be used with the urban poor and un-served households.

Two strategies are worth considering in the capacity building agenda: a) bulk training for a range of municipal, NGO/CBO, private sector personnel – right from the start of the campaign in the city; b) Differentiated and specialized training on a demand-basis to personnel in and outside the government over the period of the Sanitation Plan implementation.

One of the common failures of training and capacity building is the lack of incentives and organizational environment to practice the learnt perspectives and skills. This highlights the need for the Task Force and implementing organizations to plan the training of their personnel in such a manner that their skills can be put to productive use.

Agencies from the private sector, public and NGO training and capacity building institutions must be involved in the campaign process to carry out the necessary assessments and help the Task Force plan and devise a strategy for Human Resource Development and capacity development through the implementation cycle, and institute appropriate practices within the institutional framework of the ULB and other stakeholders for the future.

10.5.2.11 Implementation, Management, Monitoring and Evaluation

10.5.2.11.1 Implementation Management

The task of implementation management can prove to be onerous if the planning stages are done in a hurry or are inadequate in taking account of ground reality (including current assets, finances, capacities and availability of suppliers and vendors, and other environmental conditions). While the Implementation Agency will be responsible for overall implementation, it is useful to think about plan implementation and delivery mechanisms for each of the components of the Plan.

The typical components indicate that there need to be either in-house resources deployed for these tasks (e.g. as in bigger ULBs) or private and NGO service providers need to be contracted or commissioned to carry out the implementation. The following types of skills and competencies are required in these implementation agents:

- Institutions/Organizations Development, and financial (capital and O&M costs, tariffs, ULB finances, etc.)
- Socio-economic and community management
- Urban planning
- Health and environmental linkages to sanitation

- Technical capacities to implement new assets and facilities and set up O&M systems for new development areas
- Monitoring and Evaluation (M&E)
- Capacities to address plans for other local aspects

Expert institutions, Consultants, NGOs, etc. who were involved in planning, may be considered for participating in and providing project management support to the Implementation Agency. In some of the larger cities, this may be an effective way to achieve efficient implementation of a large-scale sanitation plan for which the city may not have all expertise and management competencies within the ULB, or where many parallel activities are to be implemented leading to shortage of personnel during peak activities.

Contracts and their management are crucial in making sure that the implementation is without delays and adheres to appropriate quality standards. Two broad kinds of services are required: hardware related capacities that have to do with implementing physical works and software/process related capacities, e.g., social mobilization, institutional development, training, etc. Since the ULB may not have requisite capacities and systems to effectively deal with the challenges of contracting and supervision of contracts, innovations are needed: these include taking assistance from State level agencies in selection and procurement; appointing contractors and consultants on a cost-plus basis; lump-sum or unit-price contracts for other components and so on. Memoranda of Understanding (MoU) (e.g. with NGOs) to arrive at a common shared understanding of responsibilities and deliverables are another tool to address some of the components. Finally, training in contract management may be an area that core members of the Implementing Agency need to go through if, requisite capacities are deemed to be wanting.

The presence and guidance of the City Sanitation Task Force will be an assurance of quality procedures, fairness, and focus on deliverables. Supervision and M&E of implementation will provide other methods of mid-course correction.

10.5.2.11.2 Monitoring, Evaluation and Supervision of Progress

The City Sanitation Task Force and the Implementing Agency need to think about M&E of the implementation as an integral part of the CSP. The mechanisms to be used in monitoring implementation include:

- Administrative data from Implementing Agency Reports and from the implementing consultants, contractors
- Task Force field visits to different parts of the city
- NGOs working in different parts of the city, e.g. an NGO working in certain slum pockets may be able to monitor changes in the relevant settlements since they work there, visit and interact with people regularly. A Memorandum of Understanding or undertaking to provide additional expenses may be required from the ULB, whereas some NGOs, especially those working on health, may be collecting some of this data as a part of their own work;

- Community groups asked to provide structured feedback to the implementing agency and the task force on progress of implementation and the condition in their respective neighbourhoods
- Independent third party assessments
- Concurrent evaluations by a survey agency.

An important aspect of monitoring and evaluation is to make the findings and reports available to the public so that feedback and suggestions can be received from other stakeholders. Sharing key features in monthly task force meetings and press briefings are also another way of mobilizing city stakeholders and eliciting their cooperation.

10.5.3 Evaluation of 100% Sanitation Status

The mechanisms and systems used for M&E often determine the quality of assessments of results as well as to a large extent the responses of different stakeholders. The Ministry of Urban Development Rating of Cities lists M&E indicators in terms of output, process and outcome related parameters.

While the Task Force and Implementing Agency may use a combination of mechanisms suggested above for implementation, for evaluation of 100% Sanitation Milestone achievements, a number of tools can be considered:

- A mix of self-assessment by the city sanitation task force – based on implementation agency data, citizens' groups feedback, and primary field visits
- Independent report cards and evaluation missions commissioned by the City Task Force and/or mounted by the State Government
- Cross-city monitoring with participation of State level and other-city stakeholders
- Government of India rating of cities, service level benchmarks, monitoring missions and independent agencies

Experiences from other sectors shows that multi-stakeholder M&E systems, using simplified formats to assess objective indicators are likely to build a shared ownership, and economically produce reliable results. Therefore, the City Sanitation Task Force may consider publicizing, as a part of the initial awareness generation campaign, the key indicators that all stakeholders should monitor, and devise a simplified mechanism to collect data and report on.

Introduction of competitive reward schemes within cities are another way to improve the quality of monitoring and evaluation of 100% sanitation achievements.

10.5.4 Monitoring of 100% Sanitation Status

In order to ensure that after the city or parts thereof do not slip back after the achievement of the milestone, there need to be systems instituted to ensure that this is not a one-time achievement, rather a permanent change in behaviour, systems and practices.

Again, multiple stakeholders need to be involved in this process, while the ULB or the Task Force may take the lead in doing so. The mechanisms to institute sustenance of change include:

- ULB Roles in monitoring processes, outputs and outcomes: the ULB will need to assume leadership and institutionalize the means of monitoring the 100% sanitation status. This will be closely tied to new investments and O&M roles and responsibilities within the ULB divisions, but it is recommended that a unit separate from the above units is made responsible for the overall outcomes of the city's achievements and their sustenance. The ULB will also be able to do this more effectively if it involves other government agencies (Environment, Health related within and outside its own organization) NGOs, CBOs, the urban poor, etc.
- The role of Citizens' Groups in monitoring on a day-to-day basis is invaluable and should be mobilized especially for the protection of neighbourhoods, incremental improvements, as well as immediate reporting of any deviance that needs solutions. At the overall city level of course, the erstwhile monitoring of implementation will transform into adding the responsibilities related to sustained change at the ground level.
- The best method of sustaining change is to regularly collect formal data and informal information and feedback, and make it public so that there is pressure created equally on the public agencies, private service providers, as well as households and communities, to keep to sustained practices. Rewards again serve as triggers for sustenance and in many cases, also to make improvements that will earn credit to the city. As outlined in Section 10.5.5 below, there are a number of other indirect benefits that accrue to cities becoming 100% sanitized and making constant improvements.

10.5.5 City Reward Schemes

Cities can institute their own reward schemes to incentivise local stakeholders to participate in the process of improvements for reaching 100% sanitation. Rewards could be given following the national guidelines on an area basis. For example, the following could be units for rewards:

a) Municipal Wards
b) Colonies or Residents' Associations
c) Schools, colleges and other educational institutions
d) Market and Bazaar Committees
e) City-based institutions or localities, e.g., Railway stations, Bus Depot, Office Bhawans, etc.
f) Other locations and institutions that may be in the city.

The reward may contain a nominal amount of money for further upkeep and maintenance of sanitary systems, improvements in infrastructure targeted to better health and environment, as also special purposes like holding environment fairs, health camps, etc. A scroll of honour, public function to accord recognition, and rating of wards may also be considered as a part of rewards. While such rewards are being instituted, it must be emphasized that the responsibility of any group or locality is not over by just its own achievements. It must be a citywide enterprise and no one will be safe and benefit from a healthy life and environment unless everyone in the city and its surroundings adopts improved personal and community practices of 100% sanitation.

The leadership of municipal ward elected representatives, local community leaders, citizens' groups and community based organizations, will be crucial in achieving and sustaining 100% sanitized wards or localities. They must be mobilized to compete in a healthy manner in achieving sanitation. Therefore, the reward scheme should become important in local community civic affairs, politics, and valorize the local economy too.

10.5.6 Cities with Special Institutions and Characteristics

i) There may be cities that have special institutional arrangements: cities where ULBs are not in place or have responsibilities only for a part of the city (other parts coming under a cantonment or a development authority). In such cities, a multi-agency Task Force will need to be created that can plan, guide and monitor the 100% sanitation campaign. It will be crucial that no part of the city is left out and as convenient and efficient, the authorities implement similar measures in their respective jurisdictions.

ii) Cities where ULBs are only partially responsible for sanitation, other responsibilities are vested in parastatal agencies like PHED/PWD, Water Boards, etc. The City Sanitation Task Force must involve representatives from all agencies involved in sanitation. This will include all agencies responsible for household/unit level sanitation, sewerage, water supply, health and environment.

iii) Some cities have unique topographical, environmental features (e.g., hilly or coastal regions), and therefore may be vulnerable to natural phenomena like floods, landslides, earthquakes, etc. Specialist advice may be sought by such cities from relevant national and state level agencies, and private firms. Such specialists may be invited to become members in the City Sanitation Task Force, and contribute their specialist knowledge and advice to the process. In cities vulnerable to natural disasters, special measures for sanitation must be explicitly incorporated in their Disaster Preparedness and Mitigation Plan.

If such a plan does not exist, the Task Force must layout the steps to be taken for the city to cope with such disasters including:

a) Institutional roles and responsibilities for disaster preparedness

b) Incorporation of disaster preparedness in the design and O&M of sanitation arrangements and systems (at household/unit level, in transport and conveyance, and in sewage treatment / disposal)

c) Emergency measures and rehabilitation measures in the event of disasters

d) Building key points from above in public awareness generation campaigns.

10.6 COORDINATION BETWEEN CMP AND CSP

The essence of planning is coordination. Planning requires resolution of conflicting interests, allocation of available funds and other resources, inter and intra central and state government departmental cooperation, and establishment of priorities.

The City Master Plan (CMP) describes the vision for the city's future.

A comprehensive CMP guides development, conservation and capital improvement projects to improve the quality of life in the community. The plan must comply with the State's regulatory requirements, one of which is in review every 10 years.

Topics addressed in the CMP include the City's goals and objectives, land use plan, urban design, housing, infrastructure, parks, open space, transportation, economic development and preservation of historical monuments.

The CMP is constantly under revision as the needs of the community change and state or ULB requirements are incorporated into the document. Residents are welcome to share input on the CMP and are encouraged to get involved keeping in view of environmental and physical status of the city.

The planning period of CMP is a function of various developmental plans as stated above and should be fairly of a longer period for sustainability of other development plans.

In order to have sustainable CMP and other developmental plans, there is a need for inter and intra departmental coordination of central and state departments including parastatal agencies.

From the standpoint of the direction and overall needs of National Government, a CSP is one among several functional plans, such as those dealing with highways, natural resources, education, health, etc. CSP, therefore, should relate to, and not conflict with, other plans of the city.

It is essential that the city sanitation planning be included in the overall plan of the jurisdiction that will ultimately implement it. In this way, the agency responsible for sanitation services will be able to compete effectively for funds, personnel, and other resources and facilities.

10.7 CITY SANITATION PLAN OUTLINE

The basic planning model can be translated into an outline for reporting the established plan. Such a format communicates the logic inherent in the planning procedure. Planning initiative and innovation are desirable.

However, each civic body is expected to formulate its own systematic outline and report, taking into account its particular needs as indicated in the sample format, described later in this chapter, for the preparation of the CSP.

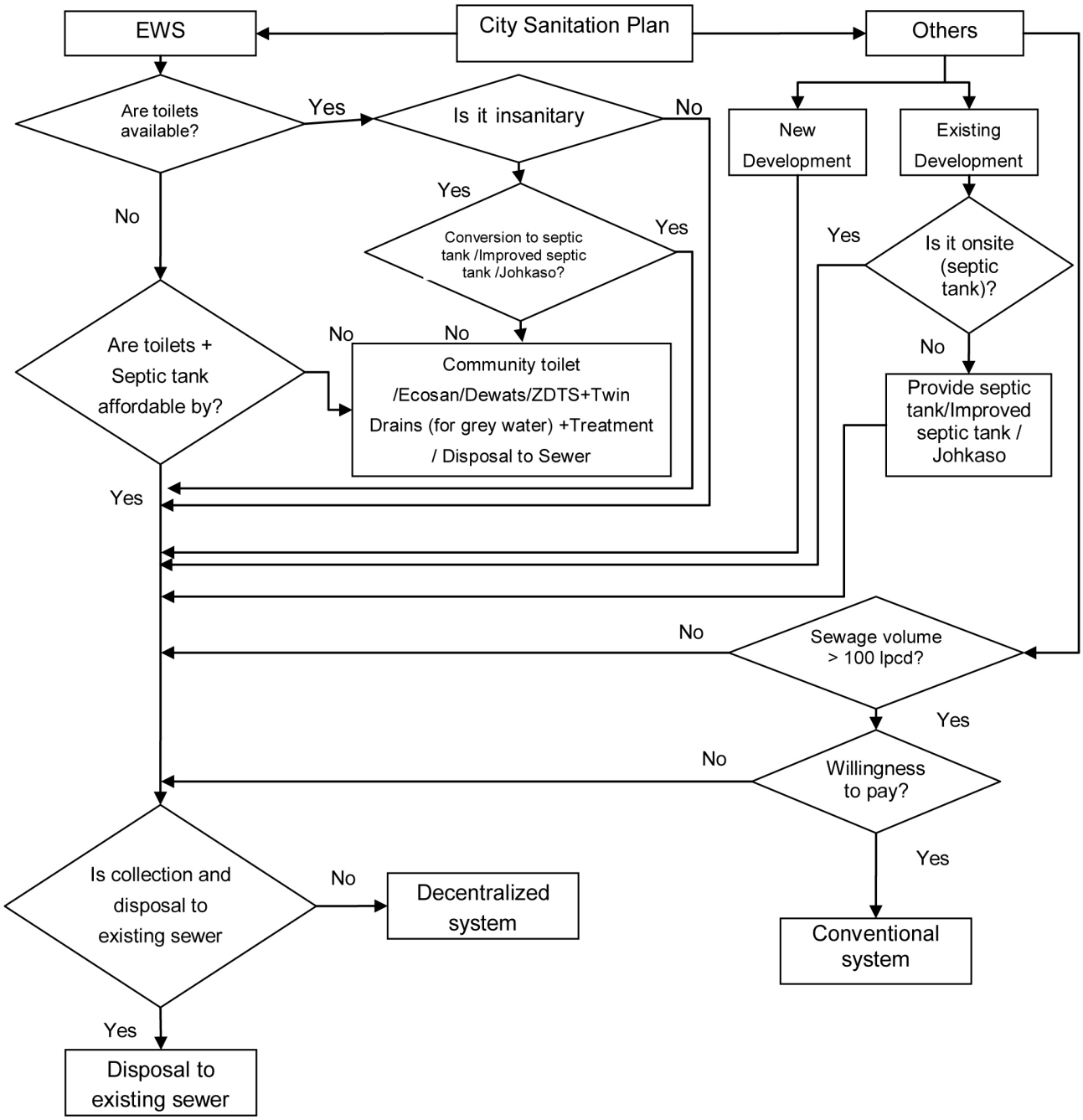
10.8 ALGORITHM FOR DECISION MAKING ON SEWERAGE OPTIONS

The algorithm is presented in Figure 10.2 overleaf.

10.9 REPORTING

The report shall be simple, easy to read as a running text including all calculations, charts and tabular columns in the Annexure for easy understanding of readers. This will help in a quick grasp for the management decisions.

The contents can be on the following sequence.



EWS: Economically Weaker Section

Bahao toilets are the toilets directly connected to stormwater drain

Non Conventional sewers: simplified sewers, settled sewers and twin drains

Figure 10.2 Decision Tree: Selecting the technical option (On-site, Decentralized or Conventional)

1) Introduction and Need – not to exceed one page
2) Executive summary – not to exceed one page
3) Physical setting of the study area
4) Existing sanitation arrangements
5) Socio-economic setting of the study area
6) Health statistics of the study area
7) Financial position of the local authority
8) Human resources of the local body
9) Recommended sanitation Plan
10) Ways and means to strengthen the resources of the local body
11) Optional models for project delivery mechanisms.

The sample format for preparing the city sanitation plan is mentioned in Table 10.1 (overleaf).

Table 10.1 Sample format for preparing City Sanitation Plan

Elements of the Report
Section I Introduction Purposes of the plan. **Section II Executive Summary** (Note: This section should be written last and may come at the beginning of the report) **Section III Background of the Planning Area** 1. Jurisdictions a. National b. State c. City/Town (Civic Authorities) d. Location Map e. Population (size and densities) f. Housing (types and locations) g. Land uses (residential, commercial, industrial, agricultural, extractive, recreational, and other relevant land uses) h. Transportation corridors **Section IV Existing Sanitation Conditions** 1. Arrange data according to specific needs of the planning agency. As far as possible all the information related to sanitation has to be collected. 2. Describe and analyse all existing conditions affecting management of sanitation. a. Storage and collection of sewage b. Quantities of sewage generated, collected, treated, reused and disposed of c. Reuse and disposal practices d. General management practices (e.g., utilization of manpower and equipment) e. Public awareness and knowledge about sanitation problems and willingness to pay for better services f. Expenditures for sanitation management **Section V Future Conditions and Problem Definition** 1. Relevancy for the future (from the analysis of the data of existing conditions accumulated in sections III and IV, determine which conditions will have a bearing on the future).

Continued

Elements of the Report

2. Future problems defined
    a. Types
    b. Locations
    c. Extent
    d. Persistence
    e. Others

3. All existing conditions and problems bearing upon the future should be forecast at this stage.

Section VI Objectives

Objectives should be clearly stated and based upon need to solve problems defined earlier. Civic authority might specify any of the following objectives to solve its sanitation problems:

1. Acceptable methods for storage
2. Acceptable methods for collection of sewage and septage
3. Acceptable sewage treatment practices
4. Acceptable sludge treatment practices
5. Acceptable method of recycle and reuse
6. Acceptable methods of disposal
7. Development of sanitation management organizational structure
8. Development of better trained personnel (operating and management levels)
9. Better informed public regarding sanitation problems and service requirements
10. Provision of sufficient financial support for sanitation
11. Others

Section VII Recommendations for Solution (The Plan)

1. This section should specify what the civic authority intends to accomplish in order to solve its sanitation problems. It should include designation of the following:

    a. System improvement
    b. Timing and priorities of intended action (consider short and long-term objectives)
    c. Who should act (i.e. agency, department)
    d. Estimated costs
    e. Problems that will be solved
    f. Others

2. It is suggested that the following aspects should be considered in the intended action plan. Proposals for this action should be accompanied by procedures for accomplishment and a schedule of initiation of this action.

    a. Establishment of sanitation operating departments and identifying its jurisdictions
    b. Recruitment, selection and hiring of operating personnel
    c. Human resources development programme

Continued

Elements of the Report
d. Technical assistance to operating units e. Provisions for inspection and enforcement f. Licensing of facilities g. Framing legislation, amendments to rules and regulations h. Development of budgeting procedures, financing, cost-effectiveness, special charge features and other operating management features i. Public information, education and communication programme/system j. Others **Section VIII Implementation (occurs outside the plan document but is guided by it)** Appendices This section of the report should include supporting materials and information used to develop the analyses, objectives, and plan. Content of this section might include: a. Charts b. Additional tables c. References d. Legislation and regulations e. Definition of terms f. Methodologies of research and analyses g. Others **Section IX Monitoring and Performance Evaluation of the Programme** This section of the report should include monitoring of various activities of sanitation services and also evaluation of the performance of all the related activities with reference to the objectives/targets envisaged, once the programme is implemented.

Source: MoUD, 2008

The text of the CSP for a city should explain in detail all the above elements that are to be contained in the plan report and conforming to the above outline.

सत्यमेव जयते

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