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List of Abbreviations

CPCB	Central Pollution Control Board
CSP	City Sanitation Plan
DPR	Detailed Project Reports
GoMP	Government of Madhya Pradesh
IEC	Information Education and Communication
IUSP	Integrated Urban Sanitation Program
JNNURM	Jawaharlal Nehru National urban Renewal Mission
MLD	Million Litres per Day
MoUD	Ministry of Urban Development
MPSV	Madhya Pradesh State Sanitation Vision
NRCP	National River Conservation Program
O&M	Operation and Maintenance
PMU	Project Management Unit
PPP	Public Private Partnership
SLB	Service Level benchmarking
SSC	State Sanitation Committee
STP	Sewage Treatment Plant
TA	Technical Assistance
UADD	Urban Administration and Development Department
UISDDMT	Urban Infrastructure Development for Small and Medium Towns
ULB	Urban Local Body
WSP	Water and Sanitation Program

Executive Summary

This synthesis report details the process, outputs and intermediate outcomes of the World Bank's Water and Sanitation Program (WSP) Technical Assistance (TA) to pilot and operationalize city sanitation plans (CSPs) towards outcome oriented sector investments (P131967).

Traditional approaches to sanitation investments have involved piece-meal asset creation which focused on partial infrastructure provisioning, often with very little focus on service delivery. As a result, several urban projects in water supply and sanitation have often not rendered the envisaged service delivery benefits. Centrally sponsored schemes have only supported network systems in sanitation and these have been limited to a few cities. Further, the projects proposed and implemented under these schemes have not been city wide and have only addressed a section of the city and network. As a result, only 200 out of the 7900 cities in the country have partial sewerage network and treatment (Ministry of Urban Development, 2010).

It is in this context, that this TA sought to address issues of ad hoc planning through CSPs that are holistic, intended for city-wide implementation and address the full cycle of sanitation. However, prior to preparation and operationalization of CSPs, it was recognized that this needed to be anchored in a state-wide sanitation program. The statewide sanitation program needed to:

- estimate and provide for the capital requirements to address the gaps in sanitation infrastructure across the sanitation service delivery chain (collection, treatment and disposal)
- estimate the operation and maintenance (O&M) requirements
- set out the framework for prioritization of cities, and attendant institutional frameworks

The TA primarily aimed at providing assistance to two low-income states towards improving the institutional and regulatory framework to strengthen state and local government capacity for efficient and sustainable service delivery. Progress on CSPs at the states was constrained by the lack of accessible funding channels for ensuring access to sanitation facilities. Building on the Integrated Urban Sanitation Program (the urban sanitation strategy of the Government of Madhya Pradesh), the Madhya Pradesh State Sanitation Vision 2025 (MPSV), a state wide sanitation program addressing the full cycle of sanitation, detailing capital, operation and maintenance estimates, prioritization and institutional framework was developed with support of WSP. While the MPSV had set targets for the entire service delivery chain (access, collection, treatment and disposal), on account of delays in the formulation of new centrally sponsored schemes and with the expectation that there would be investment envelopes provided for capital infrastructure investments in these, GoMP has allocated resources for construction of individual / community toilets. Assistance was provided to the Government of Tripura (where an approved State Sanitation Strategy was already in place) in development of the State Septage Management Strategy for Urban Centres, which was approved and adopted by the State in 2014.

Since funds were only available for household sanitation, plans for improving the full cycle of sanitation could not be addressed. It may be noted that the key personnel in Urban Local Bodies (ULBs) in the state

are from administrative cadres at the state level, and hence, engaging at the state level had a direct bearing on city-level capacities to plan and implement the Vision. Therefore, this TA was focused on the development of state sanitation strategies in the two states and a state-wide sanitation program with investment, targets, prioritization and institutional frameworks with the ultimate objective of influencing CSPs and sanitation service delivery.

Objectives of the Technical Assistance

This TA aimed at piloting and operationalization of CSPs towards outcome oriented sector investments, by supporting (i) select state and local governments with technical assistance to operationalize city sanitation plans by targeting outcome oriented investments, and (ii) improving the institutional and regulatory framework and strengthening state and local government capacity for efficient and sustainable delivery of Govt. of India or World Bank or other development partner funded programs.

The TA was delivered through a mix of strategies, exposure study tours, analytical support and discussions / consultations with various stakeholders relevant to the sanitation service in the states. Elements of another TA which supported the implementation of the National Urban Sanitation Policy, 2008 (NUSP), especially septage management and cost recovery principles that provide the building blocks for sustainable sanitation are being adopted and implemented through this TA in two states. The outputs have been developed in close consultation and involvement of the various stakeholders.

Specifically, this TA contributed to the following:

- (a) *Support the development of state sanitation strategies in two states* - The TA supported the development of state sanitation strategy for Madhya Pradesh and the septage management strategy for the state of Tripura. Both these states are low-income states, and the state strategies developed incorporated key elements focused on servicing the under-served population and urban poor. The strategies were developed to identify the regulatory, institutional, financing, implementation and monitoring frameworks for sanitation service delivery in the states. Having developed an integrated urban sanitation program, the Government of Madhya Pradesh prepared a state sanitation vision estimating the capital and O&M estimates and has committed INR 4,080 million (US \$ 66 million) for construction of individual, community and public toilets. A total of 187,511 individual toilets and 607 community toilets have been sanctioned of which a total of 50,000 individual toilets and 253 community toilets have been constructed.

The state of Tripura has developed and adopted the State septage management strategy, which is a first in India. The Tripura septage strategy for urban centres details investment requirements and institutional frameworks for implementation. The Government of Tripura has identified clusters of towns that can be serviced through various regional septage treatment facilities. The strategy envisages a capital investment of about INR 230 million (~USD 3.7 million) for the setting up of four regional treatment facilities and select additional individual facilities (where clustering is not possible due to large distance) along with the procurement of equipment and transport for operationalizing septage management in the twenty statutory urban centres of Tripura. The cost of operations and maintenance is proposed to be charged under the strategy to the resident households who avail of the services. The state has also developed the detailed project report for a pilot demonstration facility which has been approved for funding by the Government of India. The

pilot project encompasses all the aspects included in the state septage strategy and is seen as the learning ground for the state Urban Development Department (UDD) for identifying the key requirements of technology management, contracting procedures, partnership building (with private sector) required for septage management. The experience and knowledge gained from implementation of the Bishalgarh pilot project could provide valuable learnings to other states, and the Central Government.

- (b) *Strengthened the capacity of interested state governments* for adoption of improved service delivery arrangements, through *knowledge exchange* – with high dependence of on-site sanitation (septic tanks) in urban India (38%), an exposure visit to Malaysia, a country recognized for having made considerable progress in on-site sanitation, was organized for participants from the national (Ministry of Urban Development, Planning Commission, Ministry of Finance) and State (Madhya Pradesh, Tripura and Kerala) governments. The visit provided an overview for the participants (including national, state and city level representatives) to understand the policy, technical, and institutional frameworks that have contributed to a successful septage management program. The exposure visit helped the national government to develop and release an advisory on septage management and the state governments of Madhya Pradesh and Tripura to consider and plan septage management as an option to improve sanitation.
- (c) *Estimating and developing an investment program to improve sanitation* – A model was developed to estimate the investment requirements to address inadequacies in infrastructure across the sanitation service delivery chain in the State of Madhya Pradesh. Capital and O&M requirements were also estimated. A prioritization framework and timelines to achieve improvements in sanitation were also included as part of the investment estimates. These were discussed through consultations with GoMP, and this subsequently became a part of the MPSV. In addition, analysis was undertaken and recommendations made in regard to institutional strengthening of the ULBs, including re-defining business processes, staffing, competencies and training of personnel for the institutions in the delivery of sanitation services.

While awaiting the formulation of new centrally sponsored schemes from Gol, the state has committed resources and commenced implementation of the state sanitation vision through the construction of individual and community toilets. The newly launched Swachh Bharat Mission, support from development partners (KfW and EU) and recommendations of the 14th Finance Commission that has allocated funds for septage management, provide a fillip to implementation of the state sanitation vision. The proposed centrally sponsored schemes (Smart Cities, New Urban Development Mission and National River Conservation Program) will further boost investments and help the state move forward towards realizing the sanitation vision. With a state sanitation vision, and a prioritization framework in place supported with investments from different agencies, the state can begin to test different approaches (network, non-network or mixed) to improve sanitation.

- (d) *Coordinating with development partners*– the sanitation vision document for Madhya Pradesh was presented and discussed with the development partners including KfW, GiZ, ADB, World Bank, EU, DfID and IFC which have resulted in KfW and EU committing INR 3,620 million (USD 58 million) to support sanitation improvements in the state.

To summarize, this TA contributed to the following:

<i>Intermediate Outcomes</i>	<i>Indicators</i>	<i>Results</i>
Urban WSS policy agreed by stakeholders and approved by state cabinets	Development of state sanitation strategies in at least two lagging states by 2014.	Achieved. Sanitation and septage management strategies developed for the states of Madhya Pradesh and Tripura. These strategies have been formally adopted by the respective State Governments.
Government agency with a clear mandate to lead and coordinate the policy development and planning of the urban WSS sector at the state level	The Urban Development Department (UDD) in states is vested with the responsibility for policy and planning of sanitation services. WSP TA is building the capacity of UDD for effective policy and planning. Capacities of at least 5 state governments (of which two will be in low income states) strengthened by 2014 through training, knowledge exchanges, peer to peer learning etc.	Partially Achieved. Capacity building for representatives from 3 States (Madhya Pradesh, Tripura and Kerala) and 3 National Ministries / agencies (MoUD, Planning Commission and Ministry of Finance).
A multi-year investment program for urban WSS based on a target-based needs assessment that is published and agreed, including plans for serving the urban poor, developed at utility or local government level	A sanitation investment program that addresses the full cycle of sanitation (access, collection, treatment and disposal) with clearly defined targets and consistent with the directives of the national urban sanitation policy and the state sanitation strategy, developed and operationalized in a state by 2014.	Achieved. A multi-year investment program for urban sanitation developed and agreed by GoMP.
Formal programmatic urban water and sanitation coordinating mechanism with the government that involves all development partners	Development partner coordination will be undertaken for specific interventions at the state level to support the operationalization of the state strategy and the city sanitation plan.	Achieved. Development partners (KfW and EU) commit resources to GoMP to support the state sanitation vision.

The TA aimed at assistance to two states towards improving the institutional and regulatory framework to strengthen state and local government capacity for efficient and sustainable service delivery. Lack of accessible funding channels and an intervening election year constrained progress on CSPs. The Swachh Bharat (Urban) Mission announcement on October 2nd 2014 (with guidelines being issued in December 2014) and new urban development schemes are expected to provide impetus to progress in this front.

A follow on TA could support the development of CSPs which will plan to address the full cycle of sanitation and are city wide for network, non-network and mixed (network and non-network) and piloted in a few cities. The learnings from these pilots could be used to scale sanitation improvements in the state and elsewhere. Future TAs could build upon the current developments and harness the capacities and prioritization that has been achieved in these states. In future, these states and cities therein are likely to accelerate their progress in implementation of urban sanitation interventions, assisted by improved sanitation and wastewater management through septage management, recycling and reuse and implementation of national advisories in these realms. Implementation of sanitation interventions in these states could also provide best practice models for CSP implementation, and septage management systems for national advocacy.

1 Background

India's urban population is witnessing rapid growth with United Nation's (UN) projections of an urban population of 590 million by 2030 implying the addition of 10 million urban dwellers per year. While access to sanitation is high, the collection, treatment and disposal of wastewater / septage (from on-site sanitation solutions) is very poor and needs considerable improvement. Less than a third of the wastewater generated in urban India, is properly treated and disposed and treatment does not exist for the septage generated from on-site facilities in the country. This results in significant environment and health impacts which disproportionately affect the urban poor.

Various reform initiatives have been launched by central, state and local governments to address the service delivery shortfalls in urban water supply and sanitation. In 2005 an estimated 60 percent of the USD 20 billion under the Jawaharlal Nehru Urban Renewal Mission (JNNURM) was allocated to investments in urban water supply and sanitation services spread across 63 urban centres. Under this initiative, state and local governments were required to implement a set of reform conditions such as the decentralization of service delivery, ring fencing of accounts, recovery of operating costs and adoption of public private partnerships (PPPs) in service delivery to achieve universal access to services, financial sustainability, transparency and accountability in service delivery and management.

Recognizing the need to improve urban sanitation, the Ministry of Urban Development (MoUD) in 2008 approved and adopted a National Urban Sanitation Policy (NUSP) with a vision to make "urban India clean, healthy and liveable and ensure sustain public health and environmental outcomes for all their citizens with special focus on hygienic and affordable sanitation facilities for the urban poor and women." The specific goals of the policy are (i) awareness creation and behaviour change, (ii) open defecation free cities, (iii) integrated city wide planning. Since sanitation is a state subject, the policy also required states to develop state sanitation strategies and cities to develop city sanitation plans.

Traditional approaches to sanitation investments have involved piece-meal asset creation which focused on partial infrastructure provisioning, often with very little focus on service delivery. As a result, urban sanitation projects have often not rendered the envisaged service delivery benefits. Centrally sponsored schemes have only supported network systems in sanitation and these have been limited to a few cities. The number of cities eligible to receive financial assistance under the centrally sponsored schemes (JNNURM, Urban Infrastructure Development for Small and Medium Towns (UIDSSMT) and National River Conservation Program (NRCP)) is 923, which is about 12 percent of the total number of urban towns in the country. Further, the projects proposed and implemented under these schemes have often been piece-meal, addressing only a section of the city. As a result, only 200 out of the 7900 cities have partial sewerage coverage (Ministry of Urban Development, 2010). Further, according to the Central Pollution Control Board (CPCB, 2009), of the 38,254 million liters of wastewater generated each day (MLD), in class 1 and class 2 cities accounting for about 70 percent of the urban population, treatment capacities exist for only 11,787 MLD, or 30 percent of the requirement.

While JNNURM and other centrally sponsored schemes provided financial support to a few cities to improve sanitation, these were directed to sewerage systems and / or sewage treatment plants. There are no state wide programs to address improvements in urban sanitation. Consequently, there have

been little improvements in urban sanitation and the sector continues to suffer from lack of understanding, planning and service improvements.

In this context, this TA is supporting State Governments to increase their ability to implement sector reforms through:

- Development of State sanitation / septage strategies.
- Capacity building through knowledge exchange for improved service delivery arrangements, viz. study tour on septage management.
- Development of a multi-year investment program to improve urban sanitation.
- Coordinating with development partners for sanitation investments to support implementation of the state’s sanitation vision.

2 Overview of Technical Assistance

This technical assistance (TA) has sought to assist state governments by (i) supporting states to develop sanitation strategies, (ii) capacity building through knowledge exchange for improved service delivery, viz, study tours on septage management (ii) developing a state-wide multi-year investment program to improve urban sanitation and institutional strengthening of urban local bodies, and (iii) coordinating with development partners for sanitation investments.

2.1 Results Framework

Table 1 summarizes the intermediate outcomes, indicators, and achievements resulting from this TA.

Table 1: Results framework for the Technical Assistance

<i>Intermediate Outcomes</i>	<i>Indicators</i>	<i>Results</i>
Urban WSS policy agreed by stakeholders and approved by state cabinets	Development of state sanitation strategies in at least two lagging states by 2014.	Sanitation and septage management strategies developed for the states of Madhya Pradesh and Tripura. These strategies have been formally adopted by the respective State Governments.
Government agency with a clear mandate to lead and coordinate the policy development and planning of the urban WSS sector at the state level	The Urban Development Department (UDD) in the state is vested with the responsibility for policy and planning of sanitation services. WSP TA is building the capacity of UDD for effective policy and planning. Capacities of at least 5 state governments (of which two will be in low income states) strengthened	Study tour to Malaysia for National (Ministry of Urban Development, Planning Commission and Ministry of Finance) and State (Madhya Pradesh, Tripura and Kerala)

	by 2014 through training, knowledge exchanges, peer to peer learning etc.	
A multi-year investment program for urban WSS based on a target-based needs assessment that is published and agreed, including plans for serving the urban poor, developed at utility or local government level	A sanitation investment program that addresses the full cycle of sanitation (access, collection, treatment and disposal) with clearly defined targets and consistent with the directives of the national urban sanitation policy and the state sanitation strategy, developed and operationalized in a state by 2014.	A multi-year investment program for urban sanitation was developed for GoMP.
Formal programmatic urban water and sanitation coordinating mechanism with the government that involves all development partners	Development partner coordination will be undertaken for specific interventions at the state level to support the operationalization of the state strategy and the city sanitation plan.	Development partners (KfW and EU) commit resources to GoMP to support the state sanitation vision.

2.2 TA Delivery Process

Technical support has been extended to Government of Madhya Pradesh (GoMP) to inform and develop the capacity of decision makers on models and strategies for improved and inclusive service delivery arrangements. The nature of interventions included field assessments, study tours, investment estimates and prioritization frameworks. The outputs have been developed in close consultation and involvement of the various stakeholders.

Specifically, the assistance included the following:

Development of state sanitation strategies - which includes providing guidance and support to state governments for development of state sanitation strategies as envisioned under the NUSP. This was achieved through extensive interactions with the States and a mix of small, medium and large ULBs therein to develop a framework encompassing the policy, legislative, institutional and financing aspects for sanitation service delivery in the State. Relevant State Departments such as Urban Development, Public Health and Engineering were involved in the consultations.

Participation of national (Ministry of Urban Development, Planning Commission and Ministry of Finance), state and city level representatives from Madhya Pradesh, Tripura and Kerala in the study tour organized to Malaysia allowed these representatives to improve their understanding of on-site sanitation systems. Interacting with local officials in Malaysia and observing the actual activities in

realistic settings not very different from India contributed to substantial enhancement in the capacity of these officials to plan, design and implement similar schemes in their jurisdictions.

Strengthened capacity needs to be supported by a robust planning and implementation framework and this TA supported the development of the same through extensive consultations with the GoMP, including representatives from both State departments and a mix of representative Urban Local Bodies (ULBs) in the state. The Water and Sanitation Program (WSP) assisted in the development of a multi-year sanitation investment program, prioritization and institutional framework to guide the implementation and roll-out of the Madhya Pradesh State Sanitation Vision 2025 (MPSV) over the next several years.

The final support under this TA was targeted at operationalizing the MPSV and assisting the GoMP in securing support, including financial support, for the implementation and roll-out, in line with the investment estimates prepared for MPSV. This required preparation of a brief on MPSV for development partners, meetings and facilitating of discussions with various development partners.

3 Overview of Outputs

The intermediate outcomes were largely achieved through a range of different activities and outputs targeted towards the State Government and ULBs, and are discussed briefly in the following section. Various outputs have been developed during the course of this TA to support the objectives and intermediate outcomes discussed earlier. These are discussed in brief in the following sections, and the complete outputs are available in the Annex to this Synthesis Report.

3.1 State sanitation strategies

Sanitation is a state subject in India and NUSP requires states to develop state sanitation strategies. State Sanitation Strategies provided the vision, goal and the framework for improving urban sanitation in the state. The strategy also provided the policy and legal framework for cities to plan and improve sanitation. The TA supported the development of State Sanitation Strategy in the states of Madhya Pradesh and septage management strategy for the state of Tripura.

Support was provided to the states of Madhya Pradesh and Tripura to develop sanitation and septage strategies, respectively. The sanitation and septage strategy of Madhya Pradesh (Integrated Urban Sanitation Program (ISUP)) and Tripura are appended as Annex 1 and 2 to this report. Assistance provided to these two strategies is envisioned to be transformational and result in improving the sanitation service delivery in these two states through adoption of new sanitation and septage management models that focus on asset creation as well as ensuring sustainability of any proposed sanitation arrangements. The two states are also low-income states and the strategies developed through assistance provided in this TA had specific and explicit provisions for reaching the un-served population and urban poor.

3.1.1 Integrated Urban Sanitation Program (Madhya Pradesh)

With 22.5 percent of urban households in the state of Madhya Pradesh not having access to individual household toilets, only 20 percent of the households on sewer systems and with no treatment to 50

percent of the households on septic tanks, the infrastructure inadequacies across the service delivery chain are a cause of concern as they endanger the health and environment.

A baseline situation assessment was undertaken to understand the prevailing sanitation levels in the state, the existing institutional arrangements and the roles and responsibilities of the different institutions in the delivery of sanitation services. Based on the the baseline assessment, an integrated urban sanitation program (IUSP) has been developed by Government of Madhya Pradesh (GoMP). The IUSP signaled the government's intent to eliminate open defecation and for safe collection, treatment and disposal of all human excreta and liquid wastes generated in the households. The salient features of IUSP are discussed in the following sections:

I. Access to household sanitation

- a) All urban dwellers will have access to safe and hygienic sanitation facility in household or community, so that no one defecates in the open.
- b) Adequate availability and satisfactory upkeep of public/common sanitation facilities in all urban spaces.

II. Safe collection and treatment

- (a) Sanitary and safe disposal of human excreta and liquid waste from all sanitation facilities in urban areas.
- (b) Establish appropriate systems of operations and maintenance of the disposal system, ensuring financial sustainability or adequate financial flows to operate system unhindered.

III. Institutional Mechanisms for Urban Sanitation

Two levels of institutional arrangements were proposed, one for facilitation and advocacy and the other for implementation.

IV. Facilitation and advocacy framework

The state level committee headed by the Principal Secretary, Urban Development Department will provide strategic guidance and undertake periodic review to monitor and evaluate the program, the district level committee headed by the Collector will review and provide guidance to plans prepared by the cities and the city level committees will be responsible for preparation of the plans.

V. Implementation framework

State and city level urban sanitation cell have been proposed to assist with the implementation of the program. The state level sanitation cell headed by the Commissioner, Urban Development Department, will be responsible for providing technical guidance and facilitating interdepartmental coordination for preparation and implementation of plans while the city level sanitation cell headed by the chief municipal officer will be responsible for preparing city level sanitation improvement plans.

Building on the IUSP, the Government of Madhya Pradesh has prepared the Madhya Pradesh State Sanitation Vision (MPSV) that articulates service delivery targets to achieve inclusive and affordable access to sanitation in urban areas in the state by 2025. Taking Census 2011 sanitation baseline as a starting point, the MPSV articulates state wide sanitation service targets, estimates investments

required to achieve these targets and details the institutional framework and financing mechanisms to drive implementation to enable achieve the goal of sustainable affordable and universal access to sanitation by 2025. The Government has committed INR 4,080 million (US \$ 66 million) for construction of individual, community and public toilets. A total of 187,511 individual toilets and 607 community toilets have been sanctioned of which a total of 50,000 individual toilets and 253 community toilets have been constructed.

3.1.2 State Septage Management Strategy for Urban Centres in Tripura

Urban sanitation in Tripura is characterized by:

- Large proportion of households (98 percent) having access to household sanitation facilities;
- Significant share of on-site sanitation arrangements amongst households with access to sanitation;
- Significant number of insanitary latrines
- Absence of arrangements for safe septage collection, conveyance treatment and disposal

Taking these into consideration, the Government of Tripura set out to develop a comprehensive strategy for the safe management of septage in urban Tripura.

I. Goals:

The priority goals would be:

- Identification of specific sites and situations where application of septage to land is allowed after due process, enabling treatment and disposal of septage at such approved facilities under adequate supervision and oversight;
- Creation of the infrastructure needed for effective liquid waste management from households and establishments through capital investment and institution building or through collaborative arrangements, both being accountable to the residents through the ULB;
- Achievement of a high level of compliance with requirements and practices that are clear, effective, achievable and enforceable;
- Ensuring financial and process sustainability of the elements of septage management; and
- Ensuring safety of households, septage workers and the general population.

II. Institutional arrangements:

The strategy defines the institutional arrangement to be instituted for septage management across the state comprising state level and ULB levels responsibilities with clearly defined roles and responsibilities.

III. Planning and financing arrangements:

This included development of a regional strategy focusing on cluster approach for project development, communication and outreach plan, and financing strategy including provisioning for capital expenditures and planning for tariff setting.

In preparation for the septage management strategy, the UDD carried out an estimation of the capital investments and operating costs of septage management facilities for the urban centres using available

data on households, population and the household sanitation arrangements in place. Considering the septage volumes arising from each urban centre, the management responsibilities of safe collection and conveyance and the oversight efforts required for management of the septage treatment facilities, and the reality of limited financial resources and staffing in the ULBs, a decentralized approach with regional septage treatment facilities servicing a cluster of urban centres (as detailed in Table 2) is felt appropriate for the implementation of the state strategy. It is anticipated that with increasing urbanization, the increased capacities at the ULB through the process of devolution and management experiences in implementing the current strategy, would set the stage for more dedicated facilities, if needed in future.

Table (2): Regionalisation of Septage Treatment Facilities: Clusters, Urban Centres and Population		
Regional Definition for Treatment facilities	Urban Centres	Total Population (Census 2011)
Cluster 1	Dharamnagar, Panisagar, Kailasahar, Kumarghat	89,713
Cluster 2	Teliamura, Khowai, Ambassa	56,095
Cluster 3	Udaipur, Sonamura, Amarpur, Melaghar, Santir bazar, Belonia	106,237
Cluster 4	Bishalgarh, Mohanpur, Jirania, Ranirbazar	63,238
Individual Towns	Agartala, Kamalpur and Sabroom	438,408; 10,868 and 7,235

Source: Population Status of ULBs, 2014

The current strategy envisages a capital investment of about **INR. 230 million (USD 3.70 million)** for the setting up of four regional treatment facilities and additional facilities in the three individual urban centres along with the procurement of equipment and transport for operationalizing septage management in the twenty statutory urban centres of Tripura. The cost of operations and maintenance will be charged to the resident households who avail of the services.

The operating costs of collection, conveyance, treatment and disposal are to be recovered in full through user charges levied on households whose septage is collected. The mechanism for this will be set up by the ULB and will provide clarity and transparency to householders on their responsibilities. Tariff-setting for septage services will seek to ensure that the septage management operations set in place is financially viable and technically sustainable. In case of any support to be provided to identified households (e.g. very poor households), the financial burden of this will need to be borne by the ULB (through own funds or designated grants from the state), have transparent and accountable mechanisms and be tendered in a timely manner to the service provider. In this matter, the State Sanitation Committee (SSC) will have oversight powers and will direct the ULBs as needed. The SSC will also direct the ULBs on the septic tank de-sludging frequency to be followed and communicated to households. As this is one of the first initiatives in comprehensive septage management for urban centres in the country, the optimal de-sludging frequency is expected to be arrived at over a few years of iteration and feedback.

The UDD will earmark a certain percentage of its annual budget over the next three succeeding financial years (from FY 2014-15 to FY 2016-17); towards soft components -behaviour change, communication, technical support and administrative cost, which is essential to set the strategy in place and implement action plans. The approximate fund requirement for implementing the strategy and making the institutional arrangements operational over the three year period is anticipated to be about INR 7.5 million (USD 120,000). In addition, the behavior change and communication initiatives and support systems for management at ULBs are anticipated to expend INR 10 million (USD 160,000) over the three year period.

IV. Implementation arrangement:

This included preparation of septage management plans, standard setting, service delivery, regulation, coordination, monitoring and evaluation and capacity building.

The State has adopted the Septage Management Strategy for Urban Centres in Tripura, and developed an implementation roadmap identifying town clusters to be serviced through a regional septage treatment facility. The state has further developed a detailed project report for a pilot septage management project in the town of Bishalgarh. The pilot project encompasses all the aspects included in the state septage strategy and will provide a roadmap for state-wide scale up. The project has been submitted to the Central Government for financial support, and has been given in-principle approval for implementation. The project is likely to be implemented over the next two years, with support from the Water and Sanitation Program (WSP) on the design, procurement and capacity building components. This is likely the first project in the country to plan, design and allocate finances for a specially designed septage management system, including a stand-alone septage treatment facility. The experience and knowledge gained from implementation of the Bishalgarh pilot project will also be shared with other states, and the Central Government.

3.2 Capacity building through knowledge exchange

The NUSP has accorded high importance for the safe collection, treatment and disposal of septage from on-site installations. With 38 percent of urban Indian households dependent on septic tanks and with limited knowledge on septage management in the country, there was a request from the National and State Governments of Madhya Pradesh, Tripura and Kerala for a study tour to learn from countries where systems are in place to effectively address the various challenges of septage management. Accordingly, a study tour to Malaysia was organized as they had implemented septage management at scale and are also recognized as pioneers in septage management. Specific objectives of the study tour were to:

- Learn the process, outcomes and challenges faced while implementing the septage management program in Malaysia.
- Understand the policy framework, institutional arrangements, monitoring and regulatory frameworks for septage management in Malaysia.
- Study the various technology options adopted, their strengths and limitations.
- Undertake field visits to septage treatment and disposal facilities to expose the participants to systems in operation.

The study tour included a mix of in-class training and site visits to operating treatment and disposal facilities. The participants were provided with an overview of septage management focusing on the evolution, governance, technology, regulatory and monitoring requirements. They also had an opportunity to understand the technology selection process, management information systems and advocacy campaigns for septage management.

Field visits to observe septage collection at households and processing in non-mechanical, mechanical and centralized septage treatment facilities were also organized.

For the participants the key learning areas were:

- Understanding the process of approval of design and construction of septic tanks and ensuring that water, electricity and other utility connections are contingent on production of certificate of proper design and construction of septic tank.
- The role of a centralized government agency vested with powers for water and sanitation being given responsibility for delivery of septage collection and treatment process in the cities.
- The shift from “on demand” to “regular desludging” and how this change was brought about.
- The management information system to notify household and to track the emptying, transport, treatment and disposal of septage
- Communication and outreach campaigns to promote septage management

Following the visit, the following actions were implemented:

- a) The Ministry of Urban Development, Govt. of India developed and released an advisory on septage management.
- b) The Govt. of Tripura developed a septage management strategy and a plan to pilot septage treatment facility in a small town in the state.
- c) The Govt. of Madhya Pradesh has decided on adopting septage management as the option for improving sanitation in all towns with population lower than 100,000. This was used as a basis while estimating the investment needs to improve sanitation in the state.

3.3 Developing a multiyear investment program

This TA supported the GoMP in developing a multiyear investment program to address the infrastructure gaps (access, collection, treatment and disposal), prioritization framework and timelines for implementation.

The findings of Census 2011 on urban sanitation in Madhya Pradesh (MP), with 22 percent prevalence of open defecation and less than 20 percent population having access to sewer connection highlights the journey that needs to be traversed to achieve universal urban sanitation. The GoMP, in recognition of this situation, had earlier in 2009, formulated guidelines of the Integrated Urban Sanitation Program (IUSP) (following the launch of the NUSP in 2008) with the goal of achieving totally sanitized, healthy and liveable cities and to enhance living standards of communities with special emphasis on the urban poor.

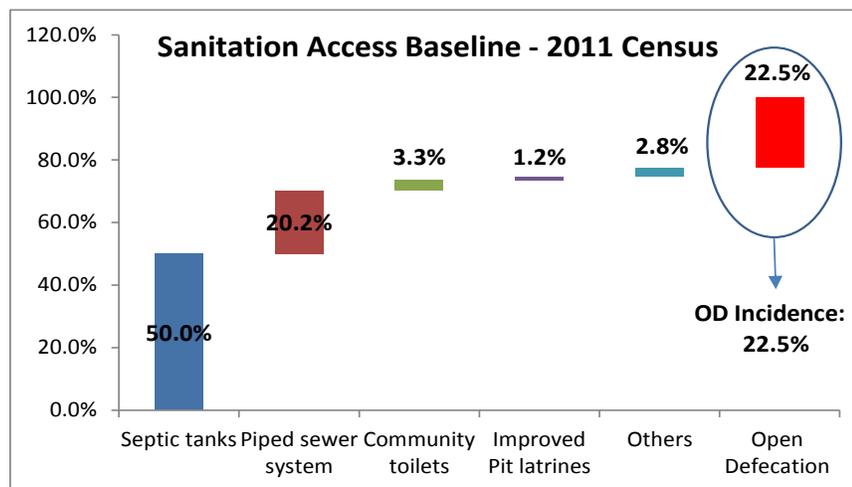
Building on the intent expressed in the IUSP guidelines, the GoMP developed a state sanitation vision document that articulates service delivery targets to achieve inclusive and affordable access to

sanitation in urban areas in the state by 2025. Adopting Census 2011 sanitation data as the baseline, the MPSV articulates state wide sanitation service targets, estimates investments required to achieve these targets and details the institutional framework and financing mechanisms to drive implementation to achieve the goal of sustainable affordable and universal access to sanitation by 2025. The MPSV also details the operation and maintenance estimates, options for capital financing and implementation arrangements.

In order to support the implementation of the investment program, institutional strengthening of ULBs was undertaken with a view to understand and recommend changes to the process for planning, implementing and monitoring projects. The institutional strengthening also included manpower review and staffing requirements, their competencies and training needs for delivery of MPSV.

Sanitation investment estimates - Following the launch of the NUSP in 2008, the GoMP initiated the IUSP in 2009 with the goal of achieving totally sanitized, healthy and liveable cities and towns and to enhance living standards of the communities with special emphasis on the urban poor. The findings of Census 2011 (Exhibit 1) reinforce the need for escalated policy attention to address the challenge of achieving universal and affordable sanitation for all. While prevalence of open defecation is high at 22 percent, only about 20 percent of the urban population has access to a sewer connection.

Exhibit 1 Access to sanitation in urban areas in MP: Census 2011



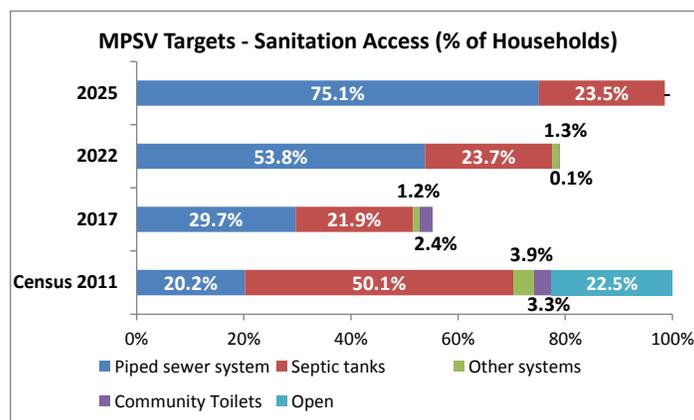
It is in this context that GoMP is launching the MPSV 2025. MPSV 2025 builds on the intent of the IUSP guidelines and articulates service delivery targets to achieve inclusive and affordable access to sanitation in urban areas in MP by 2025.

Targeted outcomes: MPSV 2025 aims to make all urban areas in MP fully sanitized by 2025 and attempts to bring a comprehensive service delivery orientation to its implementation by setting identifiable and monitorable targets. Exhibit 2 presents the targets under MPSV 2025 (along with the Census 2011 baseline). Among other things, MPSV 2025 aims to:

- Make urban areas in MP open defecation free by 2017.

- Facilitate toilet access initially with community toilets provision and migration to 99.8% individual toilet coverage by 2025.
- Achieve 100% safe disposal of waste-water generated by 2025 through a combination of sewerage systems (75% coverage), on-site systems (23.5% septic tanks + 1.5% pit latrines)

Exhibit 2 Targeted outcomes under MPSV 2025



The targets for elimination of open defecation applies to the 20 percent urban households only which will be provided with toilets. This target is to be achieved in a four-year period (commencing in 2013). This has already translated in 30 cities in the state becoming open defecation free. The state Government has already committed financial resources to achieve this target, in addition to that available from the central schemes. The impetus to achieve these objectives will also come from the support, including financial support, committed by the Central Government through schemes such as the Swachh Bharat Mission (SBM).

The target relating to proving access to piped sewerage to 75 percent population has been developed based on the program guidelines adopted to determine eligibility of cities for piped sewerage systems (limited to cities with population above 100,000, cities along river banks, and cities of religious significance). This is consistent with the thinking of MoUD, which plans to improve sanitation in the country covering 70 percent population through network and 30 percent through non-network solutions.

Investment outlay, phasing and financing mix: Traditional approaches to sanitation investments have involved piece-meal asset creation focused on infrastructure provisioning, often with very little focus on service delivery. As a result, several urban projects in water and sanitation have often not rendered the envisaged service delivery benefits. Further, resource constrained planning meant that sanitation service delivery ended up being under-funded.

MPSV 2025 aims to correct this legacy by modelling and estimating the state-wide investment requirements based on prevailing gaps in sanitation indicators, proposed targets set under MPSV 2025. The estimation has been done on a normative basis and based on a phased transition and migration of

households from the Census 2011 baseline to desired sanitation standards across toilet access and waste water management components of the sanitation value chain in line with the phasing of service delivery targets outlined under MPSV 2025. Key assumptions and prioritization approach underlying this investment assessment are summarized below:

- **Toilet Access:** Investment needs for toilet access component has been modelled based on a household transition across 5 categories namely, *Individual toilets with sewer connection / septic tanks, pit latrines, community toilets, others and none*, with Census 2011 baseline as a starting point based on a transition matrix as given below:
 - ‘None/OD’ to toilets with Sewer connection / ‘Septic Tanks’ or ‘Community Toilets’ in the ratio of 50:50 by 2017 making MP urban areas Open Defecation Free
 - All ‘Community toilets’ will have 100 percent septic tank coverage by 2025; 30 percent of existing households dependent on ‘community toilet’ access will shift to ‘individual toilets with sewer connection / septic tanks’ by 2017 and remaining 70 percent households will also migrate to individual household toilets by 2025
 - 15 percent of houses with access to ‘other’ types of sanitation will shift to ‘individual toilets with sewer connection / septic tank’ facility by 2017 and 40 percent of ‘others’ will shift to ‘pit latrines’; rest will continue in ‘others’ category till by 2017. By 2025, ‘others’ will shift to ‘individual toilets with sewer connection / septic tanks or pit latrines in the ratio of 40:60
 - By 2025, 90 percent of new households will be provided with ‘individual toilets with sewer connection / septic tanks’.
- **Waste-water management:** Access to septage / waste-water collection and treatment is envisaged through a combination of sewerage systems and on-site systems.
 - **Sewerage System:** A prioritized roll-out of sewerage systems is envisaged under the MPSV covering a) Municipal Corporations, b) ULBs with over one lakh population and c) Cities / Towns on river banks and of religious / tourism importance. 97 cities (translating to about 75 percent of urban population) qualify for sewerage systems based on prioritization. Within these, cities with the following characteristics would be preferred:
 - District headquarters and cities with partial sewerage coverage
 - Cities which are densely populated
 - Cities where land is readily available for construction of sewage facilities
 - Councils willing to implement reforms and user charge framework
 - **Septage Management systems:** On-site systems (septic tanks and pit latrines) are proposed in all other cities not proposed to be covered by sewerage systems as well as uncovered areas within cities provided with sewerage network provision. GoMP would also issue septage management guidelines based on which ULBs will oversee implementation of septage collection, treatment and disposal at the household level.

Exhibit 3 summarises the investment outlay and break up across the different sanitation components, phasing across plan periods and financing mix to implement MPSV 2025¹.

Exhibit 3 MP Sanitation Vision 2025: Investment outlay, phasing and financing mix

Area of Investment	In Million Rs.	In Million US \$
Flush/Pour Flush connected to 'Sewer /Septic tank'	2,7688.7	446.6
Pour Flush connected to Pit Latrine	1,0147.2	163.7
Migrate - 'Other' to 'Sewer / Septic Tank'	2.5	0.04
Migrate - 'Other' to 'Pit latrine'	0.9	0.015
HH investments	37839.3	610.3
Community toilet blocks	1742	28.1
Septage treatment facility	1424	22.97
Waste water treatment assets	92704.4	1495.2
Investment by State agencies	95870.3	1546.3
Community based assets	287.4	4.6
Treatment assets	1140.1	18.4
Replacement of Assets	1427.5	23.0
IEC Activities	4556.8	73.5
Investment by State	101854.6	1642.8
TOTAL INVESTMENT UNDER IUSP	139693.9	2253.1

¹ The investment estimates for MP have been prepared based on assumptions on unit cost of providing sanitation services to individual households (to address the full cycle of sanitation). The unit costs used to develop the models account for experience from the field, and are higher than those included in the HPEC estimation to develop investment estimates for urban infrastructure services including sanitation for the entire country.

Phasing Details	2012-17	2018-23	2023-25
TOTAL INVESTMENT			
In Million Rs	57170	55910	26600
In Million US \$	922.1	901.8	429.0
Cumulative			
In Million Rs	57170	113080	139690
In Million US \$	922.1	1823.9	2253.1
BY GoMP			
Each Plan period			
In Million Rs	20240	18300	8530
In Million US \$	326.5	295.2	137.6
Cumulative			
In Million Rs	20240	38540	47070
In Million US \$	326.5	621.6	759.2
SHARE OF GOMP			
Each Plan period	35%	33%	32%
Cumulative	35%	34%	34%

Financing mix: The large outlay required for achieving the targets of MPSV 2025 calls for innovative approaches to financing beyond just budgetary outlays. Further the nature of capital investment requirement under each component of investment namely (i) Individual assets; (ii) Community assets; (iii) Septage assets; and (iv) Waste water assets vary and therefore require different structuring and funding sources. The rationale underlying each category is explained below:

Capital costs

1. Household assets

Below poverty level households will be provided with 90 percent of the resources required for the construction of household toilets by the government (80 percent state and 10 percent urban local body) and the balance contributed by the beneficiary. For above poverty level households, beneficiary will be 80 percent and government contribution 20 percent (10 percent state and 10 percent urban local body).

2. Community assets

Community assets are proposed to be funded predominantly by 'Local area Grants' like the Member of Parliament (MP) / Member of Legislative Assembly (MLA) grants to an extent of 70 percent, with the state and urban local bodies contributing 20 percent and 10 percent, respectively.

3. Septage treatment assets

The investments required for septage collection, treatment and disposal would be met through private sector while the government would fund the treatment and disposal facility.

4. Sewerage network and treatment assets

Waste water investments are capital intensive and are envisaged to be funded through a combination of GoMP/ Government of India (GoI) funding, borrowings and user financing. While the Sewage Treatment Plants (STP) investments are proposed to be implemented through public private partnerships on a build operate model², the network assets will be largely funded with central / state government funds. For modeling investment, capital cost of STP is assumed at 25 percent of the total cost the sewerage system with return of 20 percent assumed for investments made by the private sector.

The current five-year budget outlay by the State for sanitation (2012-2017) is INR 4590 million (~USD 75 million). The fund allocations by the State in the last two years (2013-14 and 2014-15) on sanitation have averaged to USD 13.5 million. Investments proposed under the MPSV will require a about a five-fold increase in the State fund allocation for the sector. This increase will provide the necessary funds to address the sanitation service delivery for the entire state.

The investments proposed for sanitation under the MPSV are about half the investments committed to and allocated by the state government for improving water supply service delivery in the state. The Government committed funds for the water sector amounting to about INR 10,000 million each year (~USD 160 million per year), which are comparable about double to the investments required under the MPSV.

Given that the Government has made comparable significant financial commitments for improvements in the water sector, the investments proposed for the sanitation sector under MPSV appear to be realistic.

Implications of operation and maintenance costs at a household level

The operation and maintenance (O&M) cost obligations of the investments made are expected to be largely met by the households through a comprehensive user charge framework that takes into account affordability considerations (through a cross subsidy framework) and the need to achieve cost recovery objectives. MPSV 2025 envisages that apart from meeting the O&M cost obligations, it is also feasible to recover the debt servicing component of capital expenditure through user charges

² The state has developed a comprehensive PPP framework, approved by the state Government. GoMP has already initiated PPP projects on municipal solid waste in the State. The State has adopted a systematic approach for the implementation of MSW projects in all ULBs in the State with the State cabinet approving implementation of Municipal Solid Waste Management of all 378 ULBs through “Cluster based Regional Landfill site approach involving Private Operator”. The state has developed a PPP model for this identifying the financial model and concession terms. A similar approach is envisaged under the MPSV.

Use of graded user charges:

The average O&M costs at a household level translate to Rs 130 per month per household (US \$ 2.1). A flat rate across ULBs would result in a negative impact on the lower income households. Therefore, a graded user charges would benefit all stakeholders. For this purpose, the user charges would be fixed on a differentiated structure to ensure that the lower income households do not bear this high burden. Through an iterative analysis using with graded user charge levels across income categories (Refer Exhibit 4 below) based on available state wide category wise household income information³, it seems possible to have a user charge structure where households belonging to the lowest income category have equitable access to sanitation services at as low as Rs 10 per household per month (US \$ 0.16).

Exhibit 4 Impact of Differentiated user charges

Income data for Madhya Pradesh	Household income category				
Annual household income ¹ Rs	<75,000	75,000-150,000	150,000-300,000	>300,000	
US \$	< 1210	1210 – 2420	2420 – 4840	>4840	
% of HH under various categories	20%	19%	40%	21%	
Average household O&M cost(Rs. month / household)					130
Average Household O&M cost (US \$ month/household)					2.09
With graded user charges (Rs. month/household)	10	70	150	260	
With graded user charges (US \$ month/household)	0.16	1.12	2.4	4.19	
% contribution to O&M	1.5%	10.2%	46.6%	41.6%	

Considering O&M and full cost recovery

³ Source: Market Skyline of India, Indicus Analytics, 2006

While the above user charge cater to 100 percent O&M cost recovery, full cost recovery (100 percent O&M and debt servicing) would mean an increase in the 'user charges' from Rs. 130 per month per household (US \$ 2.09) to Rs. 177 per month per household (US \$ 2.85), with an annual increase of Rs. 15 per year (US \$ 0.24).

User charges under PPP option

As PPP is also an option for the construction, operation and maintenance of the STPs in the state⁴, the user charges for this option have also been computed. Two options have been considered, namely 100 percent cost recovery + profit margin on private sector investments and 100 percent cost recovery + profit margin on private sector investments + debt servicing for the sewer network.

User charge impact to meet 100% O&M Cost recovery + profit margin

The first year of PPP operation would require a user charge of Rs. 142 per month per household (US \$ 2.29), if it has to meet 100 percent O&M including PPP margin. It goes up by Rs. 10 (US \$ 0.16) every year on average, i.e., the user charges reaches INR 180 (US \$ 2.90) at the end of 5 years, if a city has to recover 100 percent O&M from user charges. This translates to a year-on-year increase of Rs. 10 (US \$ 0.16) per month per household or Rs 50 (US \$ 0.80) at the end of every 5 years.

User charge impact to meet 100 percent O&M + profit margin + debt servicing (sewer network)

If a city has to meet the full O&M and debt servicing cost including the profit margin of the private operator, the user charge will go up to Rs. 188 (US \$ 3.0) in the first year of PPP operation. An annual increase of Rs 22 (US \$ 0.35) per month per household is required.

Financing GoMP's contribution

Borrowings

- The total share of GoMP contribution of investment works out to INR 47700 million (USD 769 million). The model assumes that GoMP would be able to finance 70 percent of this requirement through long-term borrowings sourced from development agencies such as World Bank, ADB, JICA and KfW. The borrowings are assumed to be in the form of concessional long term lines of credit (with 20 year tenure and 5 year moratorium).
- It is assumed that the repayment obligations on account of the borrowings will be met from GoMP and ULB contribution in the ratio 75: 25.
- The total ULB contribution required from all ULBs is in the order of INR 10000 million (USD 161 million) over a 13 year period. Modeling under MPSV 2025 reveals that the debt servicing can be largely met by ULBs from Thirteenth Finance commission devolution from GoI. The model indicates

⁴ Under the MPSV, PPP has been proposed as an option for the construction, operation and maintenance of the STPs in the state. The Government intent will be to try and structure the STP investments through public private partnerships on a build operate model as far as possible, which will need to be validated at the implementation stage for individual projects.

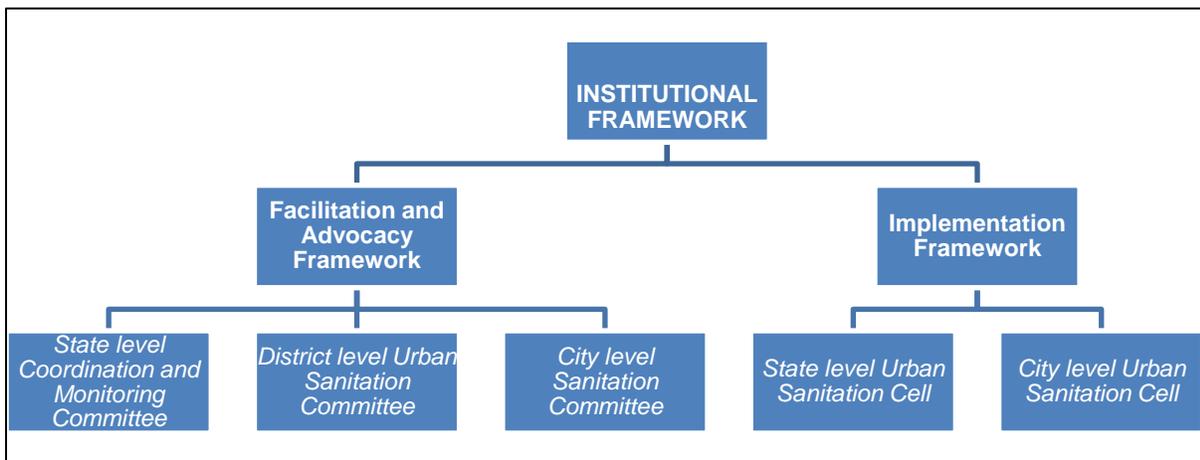
that 25 percent of Thirteenth Finance Commission grants due for the next five years are adequate to meet the ULB’s share of contribution. Expecting 100 percent efficiency in collection of user charge from the first year would be ambitious and unrealistic. Therefore, the model attempted an option of phased recovery of user charges (starting at 50 percent and reaching 100 percent over a 5 year time horizon), and estimated that the state government would need to provide a grant of INR 780 million to meet the shortfall while adopting a phased approach to 100 percent collection of user charges.

Institutional Framework

The emphasis of MPSV 2025 is to create an implementation framework that would facilitate service delivery focused on implementation through holistic planning and prioritisation, ring-fenced funding and project development with focus on service delivery outcomes rather than asset creation targets. GoMP has already articulated the contours of the Institutional framework for IUSP implementation which shall be further strengthened on the lines described below

- The MPSV shall be implemented under the oversight of the Urban Administration and Development Department (UADD). The Institutional framework (refer Exhibit 5) for implementation of MPSV was envisaged at two levels namely:
 - **Facilitation and Advocacy Framework:** To make the MPSV a community centric program, effective leadership and willingness is necessary. Additionally, to achieve a good quality output and effective operation and maintenance, regular monitoring, reviews at various levels are a necessary condition. To enable effective facilitation and advocacy at various levels, a state level, district level and city level committees have been proposed.
 - **Implementation framework:** The Implementation framework has been proposed at two levels to implement and coordinate the program and involved the State level Urban Sanitation Cell and City level Urban Sanitation Cell.

Exhibit 5 Proposed Institutional framework for IUSP



To strengthen the implementation framework at the state level, a dedicated Project Management Unit (PMU) with requisite skill sets and funding would be set up to work under the oversight of the UADD and the State level Urban Sanitation cell envisaged under the IUSP guidelines.

The role of the PMU shall include:

- **Project Development:** through creation of bankable projects through preparatory activities including preparation of City Sanitation Plans (CSP), feasibility studies and Detailed Project Reports (DPR).
- **Project Appraisal and Financing:** covering evaluation of possible financing approaches, project structuring and finalization of financing mix and hand-holding ULBs to achieve financing closure
- **Support to Project Bidding and contracting:** develop standard bidding guidelines and documents in compliance with GoMP's procurement practices and hand-holding ULBs in project bidding
- **Reform implementation:** The PMU shall be responsible for developing a reform agenda for the program in consultation with various stakeholders and for monitoring implementation of the same at the project level.
- **Project monitoring and impact assessment:** The PMU shall be responsible for project monitoring to ensure achievement of service delivery outcomes and for disseminating information on progress of the IUSP. In case of projects where there is debt financing involved, the PMU would work with the UADD to ensure timely repayment and adherence to debt conditionalities and obligations.
- Adequate capacity and capabilities **at the ULB level** shall be created as part of the on-going implementation of Urban Cadre in the state. The role of ULBs in the MPSV would cover a) Project Bidding and Contracting, b) Project Implementation and Monitoring c) Project Operations and Maintenance d) Service Delivery and ensuring compliance to service delivery targets envisaged e) Cost recovery and Collection efficiency (where applicable) f) Reporting of project outcomes to PMU/PDC and UADD and g) Meeting loan and interest repayment obligations for any loans taken. The PMU / PDC will hand-hold ULBs in project development, procurement, implementation and monitoring

Institutional strengthening

In order to successfully implement MPSV 2025, it is imperative to understand and strengthen the institutions engaged in the delivery of sanitation services. This required mapping the institutions presently engaged in the delivery of urban sanitation services, understanding their roles and responsibilities, key challenges and recommendation to overcome these challenges in sanitation service delivery. The institutional strengthening also included review of the 'as-is' process for planning, implementation and monitoring and the proposed changes to the process to improve the implementation of MPSV. Finally, the review also included the staffing, competencies and training needs of the institutions to support and deliver MPSV was also determined.

Institutional arrangements for urban sanitation

The Urban Administration and Development Department (UADD) is the nodal state department responsible for policy, strategic planning, financing and monitoring body for all urban infrastructure

projects in the state. UADD is headed by the Principal Secretary and supported by the Commissioner who is responsible for day to day operations. A team of technical and financial personnel assist the commissioner in the planning and implementation of urban projects.

UADD has seven division offices, each of which is responsible for a cluster of districts (and the ULBs in that district). The Division Offices execute administrative and engineering functions. The Divisions are headed by a Deputy Director (Administrative head) and an Executive Engineer (Engineering functions) and provide administrative and engineering support to the urban local bodies.

District Urban Development Agency (DUDA) headed by the Collector is responsible for planning and monitoring of all projects in the district.

The urban local bodies (ULB's) are administratively attached to a Division Office (only Municipal Councils and Nagar Panchayats; Municipal Corporations report to the Commissioner directly). The ULBs are headed by a Chief Municipal Officer (CMO) or Commissioner for corporations. The ULBs are responsible for local planning and implementation of projects.

As part of the MPSV 2025, the Govt. of Madhya Pradesh had committed resources for the construction of individual and community toilets. The roles of the various institutions were therefore studied in the context of the planning, implementation and monitoring of these projects.

The institutions involved and their roles in the stated context are as shown below:

Institutions	Key Mandate / Functions related to Sanitation	Role across Project Value Chain		
		Planning & Finalization	Sanction & Bid Process	Execution & Monitoring
UADD Head Office (HO) & Division Offices	<ul style="list-style-type: none"> Nodal body for development of urban sector in the state. Role: Policy formulation, monitoring and evaluation of programs, management of municipal administration, government & funding agency liaison. 	<p style="text-align: center;">✓</p> <p>(State Level Planning)</p>	<p style="text-align: center;">✓</p> <p>(Sanction)</p>	<p style="text-align: center;">✓</p> <p>(Monitoring)</p>
DUDA & District Committees	<ul style="list-style-type: none"> District level body under the Collector to facilitate urban development (Planning and Monitoring) This was proposed in the MPSV 2025 	<p style="text-align: center;">✓</p> <p>(District Level Planning)</p>	<p style="text-align: center;">✓</p> <p>(Sanction)</p>	<p style="text-align: center;">✓</p> <p>(Monitoring)</p>

Institutions	Key Mandate / Functions related to Sanitation	Role across Project Value Chain		
		Planning & Finalization	Sanction & Bid Process	Execution & Monitoring
Urban Local Bodies	<ul style="list-style-type: none"> Responsible for implementation of programs / schemes including in sanitation (as per 74th Amendment) 	✓ (Local Planning)	✓ (Bid Process)	✓ (Execution)
MPUIF (proposed)	<ul style="list-style-type: none"> Identification of bankable projects for the MP Urban Infrastructure Fund This was proposed by the GoMP as part of the MPSV 2025 	✓	✓	

The 'as-is' process in the planning, implementation and monitoring of projects were then studied to identify key challenges and recommendations to address these challenges are detailed in the table below:

Sanitation linked processes	Key Challenges	Proposed Solution	Envisaged Benefits
Project Planning & Finalization	<ul style="list-style-type: none"> The sanitation projects in the ULBs are identified by the ULBs based on requests from the public, elected representatives or requirements of the ULB with no guidance from Division or Head Office. Also, these projects are identified and approved in an adhoc manner without 	<ul style="list-style-type: none"> Need to link the planning process to the overall objectives of the MPSV 2025 Projects to be approved only on the basis of a feasibility study <i>Finalization and prioritization of the projects to be undertaken by a District Planning Committee (a committee included in the IUSP and chaired by the District Collector) on the basis of the feasibility report and budget availability⁵.</i> 	<ul style="list-style-type: none"> Overall execution of projects in line with MPSV objectives Only feasible projects are approved Greater ownership at the ULB levels for developing the city sanitation plans as they would define the

⁵ Since the role of the District Planning Committee was subsequently diluted, the projects at the ULB level are being sanctioned centrally by the UADD, based on a DPR prepared at the ULB level. The DPR includes a field level survey of the households that require an individual toilet and a survey of community areas that require a Community toilet.

Sanitation linked processes	Key Challenges	Proposed Solution	Envisaged Benefits
	any alignment to a larger Sanitation strategy of the state.		need for asset creation
Sanction & Bid Process	<ul style="list-style-type: none"> • Lack of uniformity in the Detailed project Report (DPR) and Bid preparation owing to decentralization of the process to the ULB Level • Non-standard practices followed across the state in bid process 	<ul style="list-style-type: none"> • Development of standard DPRs and Bid documents (with clauses defined based on best practices) by the UADD for use by the ULBs • Standardized process flow across the state proposed • Proposed that the Divisions play an advisory role and support the ULBs 	<ul style="list-style-type: none"> • Uniform implementation of contracts, processes and timelines across the state • Better contracts for managing 3rd party entities in terms of accountability and risk mitigation • Easier tracking centrally
Monitoring & Control	<ul style="list-style-type: none"> • No clear definition of milestones for projects being executed - reporting of project progress is subjective • No correlation of physical progress and financial payment to contractor • No checks and balances at the Divisional or HO level and thereby no accountability at these levels for project progress 	<ul style="list-style-type: none"> • Clear milestones for various types of projects defined • Milestone linked payments built into the contracts (which can be developed at the UADD and used by the ULBs) • Project Monitoring Framework for clear accountability of execution and monitoring defined. • Provisions made for third party inspection / monitoring to ensure independent data flow to the Head Office – serves to validate data flowing through internal channels 	<ul style="list-style-type: none"> • Stringent implementation of contract clauses • Independent monitoring ensures data accuracy

In the table above certain process changes have been proposed. However, mere modification of processes will not improve the execution on the ground. This has to be accompanied by other enabling provisions, such as strengthening the institutions with personnel with required skill sets. These required

an assessment of personnel and competencies of the personnel for the different institutions. Job descriptions, training and development program for the personnel was also developed. These have been discussed below:

Alignment of people to strengthen institutions

The overall organization structures of the UADD, the Divisions and of the ULBs were reviewed. To ensure alignment of the structures to the proposed process changes, some changes were required to be implemented. These changes in the structures are as follows:

UADD Head Office: In the Head Office, the Sanitation cell was strengthened to include a Head - Project Monitoring, a Head – Finance Monitoring, a Head – Design and Engineering and a Head – O&M and MIS. This, it was believed, would ensure consolidated planning and execution of sanitation projects in the state of MP. Key to this transformation was the creation of a Project Monitoring Team under the Commissioner, to whom the Head – Project Monitoring and the Head – Finance Monitoring would be reporting.

UADD Division Office: In this office, there was a need to increase the level of the Head of the Division. This was to provide greater delegation of powers and also to ensure more robust project monitoring. A separate post for project monitoring was also created at the Division office.

ULBs: The staffing needs and the job descriptions of the staff at ULB's to deliver sanitation services was determined. It is to be noted that in proposing these numbers, the ULBs were clustered into logical groups based on population and manpower numbers were proposed accordingly. An illustration of the manpower norms proposed for ULBs is provided below:

Sl.	Name of Post	Proposed Manpower	Proposed Job Description
1	Chief Municipal Officer	1	Oversee the monthly review meeting, approve bills for release of payments to contractors
2	Asst. Director (Finance)	1	Tracking overall payment status to contractors (project wise / budget), approval for issue of payment to contractors
3	Accounts Officer		
4	Asst. Account Officer		
5	Accountant	1	Initial checking of terms and conditions of tender documents against bills submitted, bid security, EMD
6	Asst. Gr. I	1	Assist AE / Sub Engineer in bid process; Assist Accountant in verification of bills etc.
7	Asst. Gr. II		
8	Asst. Gr. III		

Sl.	Name of Post	Proposed	Proposed Job Description
9	Executive Engineer	1 ⁶	Bid process management
10	Assistant Engineer (Civil)	1	Projects: Inputs on sanitation plans, check Feasibility Report; DPR, contract process, review template, conduct site inspections; fill measurement book, update USMIS
11	Sub Engineer (Civil)		
12	Assistant Engineer (O&M)	1	O&M: Maintain asset register, O&M of assets, track utilization of asset
13	Sub Engineer (O&M)	0	

Competency Development of Resources

With the processes, structures, job descriptions and manpower defined, it was necessary to also define the competencies that incumbents involved in sanitation need to display. Both, technical and behavioural competencies were defined for all job holders. Technical competencies were derived from the job descriptions while the behavioural competencies were articulated for the institution as a whole.

Subsequently, technical and behavioral competencies were identified for the sanitation department of UADD. These competencies were defined at three levels: Level 1 - Aware, Level 2 - Apply and Level 3 - Expert. An illustration of these definitions is provided below:

Competency Name	Definition – Level 1	Definition – Level 2	Definition – Level 3
Tendering	Understand the procurement process; standard clauses to be included in the bid documents; nature of inputs that are required to prepare a bid document; variation in clauses with types of bids (turnkey, rate contract); evaluation of bids;	Ability to draft a contract for standard projects; modify clauses as required to suit the project (within defined guidelines); obtain necessary inputs to prepare the bid document; ability to evaluate bids;	Ability to draft a contract for standard and complicated projects; ability to draft model contracts with provisions for modification to suit various kinds of projects; standardize the bidding procedure and associated timelines

These were then mapped to individual job holders. While this mapping will vary for different technical competencies, it shall be largely standardized for the behavioural competencies. The competency

⁶Depending on cost of works to be executed in the ULB

mapping (shown below) denotes the level at which an incumbent is expected to display a certain competency.

Competency		UADD								ULB	
Cluster	Name	Head – Sanitation Cell	JD – Project Mtrg.	AE – Project Mtrg.	JD – Finance Mtrg.	AC Officer	SE – Design & Engg.	JD – O&M and MIS	AE – O&M and MIS	CMO	AE
Tendering	Tendering Process	2	2	2	1	1	1			2	2

Based on job descriptions and competencies, the training course outlines were developed. These include details such as batch size, module duration, name of trainers, competencies to be developed through the programmes and training methods.

A sample training program is as shown:

Name of Module	Course for Chief Municipal Officers
Participants	Chief Municipal Officers
Batch Size	30 in each course
Module Duration	7 Days (tentative)
Competencies to be developed	1. Knowledge of sanitary or hygienic practices and public health
	2. Knowledge of Sanitation Equipment / Assets
	3. Knowledge of Govt. Schemes relating to Sanitation
	4. Knowledge of Tendering Processes
	5. Planning Knowledge – Sanitation Requirements of States / District / ULBs
	6. Knowledge of Project Processes
	7. Knowledge of Financial Monitoring
Training Method	1. Open Discussions
	2. Lectures
	3. Visit to District / Field Offices, Dumping Sites, Toilets
	4. Practical Demonstrations and Case Studies

Others

- Funding for projects under the MPSV would be linked to a comprehensive reform agenda which would be finalized by UADD. Key reforms envisaged under the MPSV 2025 shall include a) Preparation of holistic and comprehensive **CSPs** b) Improving Information baseline for **reporting** on

Service Level benchmarking (SLB) indicators, City Sanitation Rating and tracking requirements of urban poor, c) Specification of service delivery targets in CSP /DPRs, d) Implementation of a **user charge framework and cost recovery guidelines** that facilitate shift to O&M cost recovery initially and progressively towards recovery of debt servicing and part of capital costs, e) linking sanitation user charges fixation/revision to water supply user charges, f) formulation and implementation of guidelines for Community Participation and g) Implementation of Consumer management and grievance redress mechanisms.

- **PPPs** would be actively evaluated and implemented under the MPSV in line with the PPP policy articulated by GoMP. Possible areas where PPPs in sanitation would be evaluated include a) Management of Community Toilets, b) Septage collection, conveyance and treatment, c) Development and operation of STPs and d) Sewage recycling and re-use for non-potable applications. In addition, the scope for increased outsourcing of O&M of sanitation assets using service delivery linked contracting approaches will also be evaluated and implemented to enable sustainable performance and quality related outcomes.
- A **regulatory framework** would be set up to guide ULBs to fix cost recovery targets, tariff fixation /revision approach and manage PPPs. GoMP is considering setting up of a Regulator for water and would evaluate expanding its scope to cover sanitation services. The regulatory framework would be reviewed periodically to keep it consistent with MPSV objectives and changes to GoMP's PPP policy.
- GoMP would develop specific guidelines for **community participation** under the MPSV to provide for adequate consultations at the pre-project stage and ownership /participation during project implementation and delivery. All projects developed under MPSV will conform to community participation guidelines. GoMP would also evolve mechanisms to support Information Education and Communication (IEC) activities commensurate with the scale and scope of projects implemented.
- Following the launch of MPSV, the government decided to focus on provision of individual and community toilets and has committed Rs. 4,080 million (US \$ 65.8) for the period 2012 - 2017. A total of 187,511 individual toilets and 607 community toilets have been sanctioned of which a total of 50,000 individual toilets and 253 community toilets have been constructed. The government is also in the process of getting approval from the cabinet for creation of an urban cadre in the state. Further, KfW and EU have committed Rs 3,620 million (US \$ 58.38) for urban sanitation infrastructure and DfiD is working to setup an urban infrastructure fund in the state, which will support the implementation of urban water supply and sanitation projects.

3.4 Coordination with development partners

The MPSV was shared in a meeting with development partners and discussed in individual meeting with the partners. These and subsequent meetings have resulted in KfW and EU committing INR 3,620 million (US \$ 58 million) to improve urban sanitation in the state. DfiD is working with the government to setup an urban infrastructure fund which will support the implementation of urban water supply and sanitation projects.

The GoMP shared the state sanitation vision with development partners at a workshop in Bhopal on 8th February 2013. They detailed the state sanitation vision, investment estimates and the reforms proposed under the state sanitation vision are:

- Preparation of CSPs and identification of Projects.
- Guidelines for DPRs preparation covering mandatory specification of service outcomes targeted from project interventions and mandatory requirement of community consultations during DPR preparation
- Improvement of information baseline and reporting on SLB indicators, City Sanitation Rating and tracking requirements of urban poor
- Implementation of user charge framework while addressing affordability considerations and needs of urban poor) and progressively move to user financing. Cost recovery to cover O&M initially and progressively to cover Debt servicing and O&M.
- Linkage of (fixation and revision of) user charge for sewerage to water supply user charges;
- Implementation of Consumer management and grievance redressal systems.

They sought to actively promote PPPs as they recognized them as means to address capacity and financing gaps in the water and sanitation sector and as a means to usher in a strong service delivery orientation. GoMP intends to build on its own experience in the water sector and lessons from other initiatives in sanitation sector. It will adopt a programmatic approach to develop bankable PPP projects with sustainable financing structures to enable efficient project development and to provide visibility for reputed private sector players to participate in the process.

GoMP would build requisite internal capacities to develop PPPs to bring rigor in project development, structuring and appraisal. It would also incorporate appropriate mechanisms (including viability gap funding, cross-subsidisation, transition support funding) to address viability/affordability considerations. Extensive public consultations would be an integral part of development of PPP projects which would be subject to rigorous oversight and monitoring by UADD and respective ULBs, which would continue to hold the final accountability for service provision. Possible areas for PPPs that are being envisaged in sanitation include a) Management of Community Toilets, b) Septage collection, conveyance and treatment, c) Development and operation of Sewerage Treatment Plants and d) Sewage recycling and re-use for non-potable applications. In addition, outsourcing of O&M of sanitation assets will also be explored to achieve service delivery standards.

Support expected from Multi-lateral and Bi-lateral agencies

GoMP recognizes that implementation of MPSV 2025 calls for developing a range of structural, administrative and financing capacities and it is in this regard GoMP is looking to the multi-lateral and bi-lateral agencies for support to the program. In particular, GoMP is seeking support from multi-lateral and bi-lateral agencies with regard to the following:

1. Technical Assistance
 - a. Program design and Scoping

- b. Creation of institutional framework including the proposed Madhya Pradesh Urban Infrastructure Fund (MPUIF) and a PMU
 - c. Project Development, Structuring and Appraisal.
2. Financial assistance
- a. Concessional long term Lines of Credit / Lending support to MPSV 2025.

Following the workshop and meetings, KfW and EU have committed Rs. 3,620 million (US \$ 58.38) to support the state sanitation vision. DfiD is working with the government to setup an urban infrastructure fund which will support the implementation of urban water supply and sanitation projects.

3. Summary and learning

The TA aimed at assistance to two states towards operationalizing pro-poor CSPs, and improving the institutional and regulatory framework to strengthen state and local government capacity for efficient and sustainable service delivery. Progress on City Sanitation Plans at the states was constrained by the lack of accessible funding channels for ensuring access to sanitation facilities. With an intervening election year, the financing provision issue remained as-is, till the announcement of Swachh Bharat (Urban) Mission on October 2nd 2014 (with guidelines being issued in December 2014). Thus, the focus of the TA was on improving the institutional and regulatory framework to strengthen state and local government capacity for efficient and sustainable service delivery. The TA contributed to the development of the urban sanitation sector in the two states of Madhya Pradesh (LIS) and Tripura (LIS).

Madhya Pradesh: In Madhya Pradesh the TA assisted in the development of the state sanitation strategy. Building on the sanitation strategy, the Govt. of Madhya Pradesh developed a state sanitation vision, a multiyear statewide sanitation program with detailed estimates of investment requirements for asset-building (capital expenditure) and investments for operation and maintenance (O&M) over the entire service delivery chain, prioritization and institutional frameworks for delivery of services. In order to strengthen and build capacities of the institutions for service delivery the Urban Development Department (GoMP) has proposed the restructuring of the department cadre in the ULBs (UDD is in the process of obtaining cabinet approval) for the establishment of an institutional framework staffed by cadre with required skill sets for efficient delivery of sanitation services. While awaiting the formulation of new centrally sponsored schemes from Gol, the state has committed resources and commenced implementation of the state sanitation vision taking up provisioning for the urban poor through the construction of individual and community toilets. The newly launched Swachh Bharat Mission which aims to make the country open defecation free will further strengthen the government's sanitation initiative. Support from development partners (KfW and EU) through firm investment commitments and the recommendations of the 14th Finance Commission that have devolved a enhanced share of national revenues to the states, highlighting septage management as an area for grants to ULBs, provide a fillip to implementation of the state sanitation vision. The roll out of new centrally sponsored schemes (Smart Cities, New Urban Development Mission and National River Conservation Program) will further boost investments and help the state move forward towards realizing the sanitation vision. With a state sanitation vision, program and a prioritization framework in place supported with investments from

different agencies, the state can begin to test different approaches (network, non-network or mixed) to improve sanitation.

As follow on TA could support the development of city sanitation plans which are plans to address the full cycle of sanitation and are city wide for network, non-network and mixed (network and non-network) and piloted in a few cities. The learnings from these pilots could be used to scale sanitation improvements in the state.

Tripura: In Tripura, the TA assisted the State in the development and adoption of the Septage Management Strategy for Urban Centres. This strategy developed an implementation roadmap identifying clusters of towns to be serviced through a regional septage treatment facility with the estimates of investment requirements to realise Tripura's urban sanitation goal. Following up on this, the state developed a detailed project report for a pilot septage management project in the town of Bishalgarh. The pilot project encompasses all the aspects included in the state septage strategy and is seen as the learning ground for the state Urban Development Department (UDD) for identifying the key requirements of technology management, contracting procedures, partnership building (with private sector) required for septage management and prepare the basis for institutional strengthening through capacity building of its urban cadre and further refine the roadmap for state-wide scale up enunciated in the strategy. The project has been submitted to the Central Government for financial support, and has been given in-principle approval for implementation. The project is likely to be implemented over the next two years and a follow on TA could support the design, procurement and capacity building components. This is likely the first project in the country to plan, design and allocate finances for a specially designed septage management system, including a stand-alone septage treatment facility. The experience and knowledge gained from implementation of the Bishalgarh pilot project will also be shared with other states, and the Central Government.

Learning: The TA went into both the states predicated on the availability of financial resources from the Govt. of India schemes (JNNURM and North East 10% lumpsum scheme) and state Governments' own resources. However, delays in the formulation of the revised JNNURM constrained the availability of funds. Thus, the TA was constrained to focus on putting the necessary building blocks for strengthening the institutional and regulatory aspects, but these remain untested on the ground. However, the said period also provided space for the TA to engage with the state governments in highlighting the need for septage management and getting their priority and buy-in for this novel approach. The limited financing flows over the last year and the experience with capital intensive conveyance and treatment solutions or the lack of suitability of these in Tripura's small towns, have also aided the effort of the TA, in seeking alternate approaches. In Madhya Pradesh, this has meant working with the state and development partners resources and focusing on the implementation of the state sanitation vision to improving individual and community access to sanitation, while awaiting new centrally sponsored schemes to address other aspects of sanitation, namely collection, treatment and disposal of wastewater / septage. However with the state sanitation vision, an investment program and a prioritization framework in place, the state can begin to test different approaches (network, non-network or mixed) to improve sanitation in a holistic manner, as and when new centrally sponsored schemes become effective. Further, a key lesson of working in a remote state like Tripura was that considerable traction on policy implementation can be gained by working at multiple levels, viz state and city level institutions. The

training workshops and surveys have helped build capacities and prepared the state and the town of Bishalgarh for piloting septage management.

Future TAs could build upon the current achievements in terms of priority being accorded to sanitation, and develop on capacities built in these states. In future, these states and cities therein are likely to accelerate their progress in implementation of urban sanitation interventions, assisted by improved sanitation and wastewater management through septage management, recycling and reuse and implementation of national advisories in these realms. Implementation of sanitation interventions in these states could also provide best practice models for CSP implementation, and septage management systems for national advocacy.