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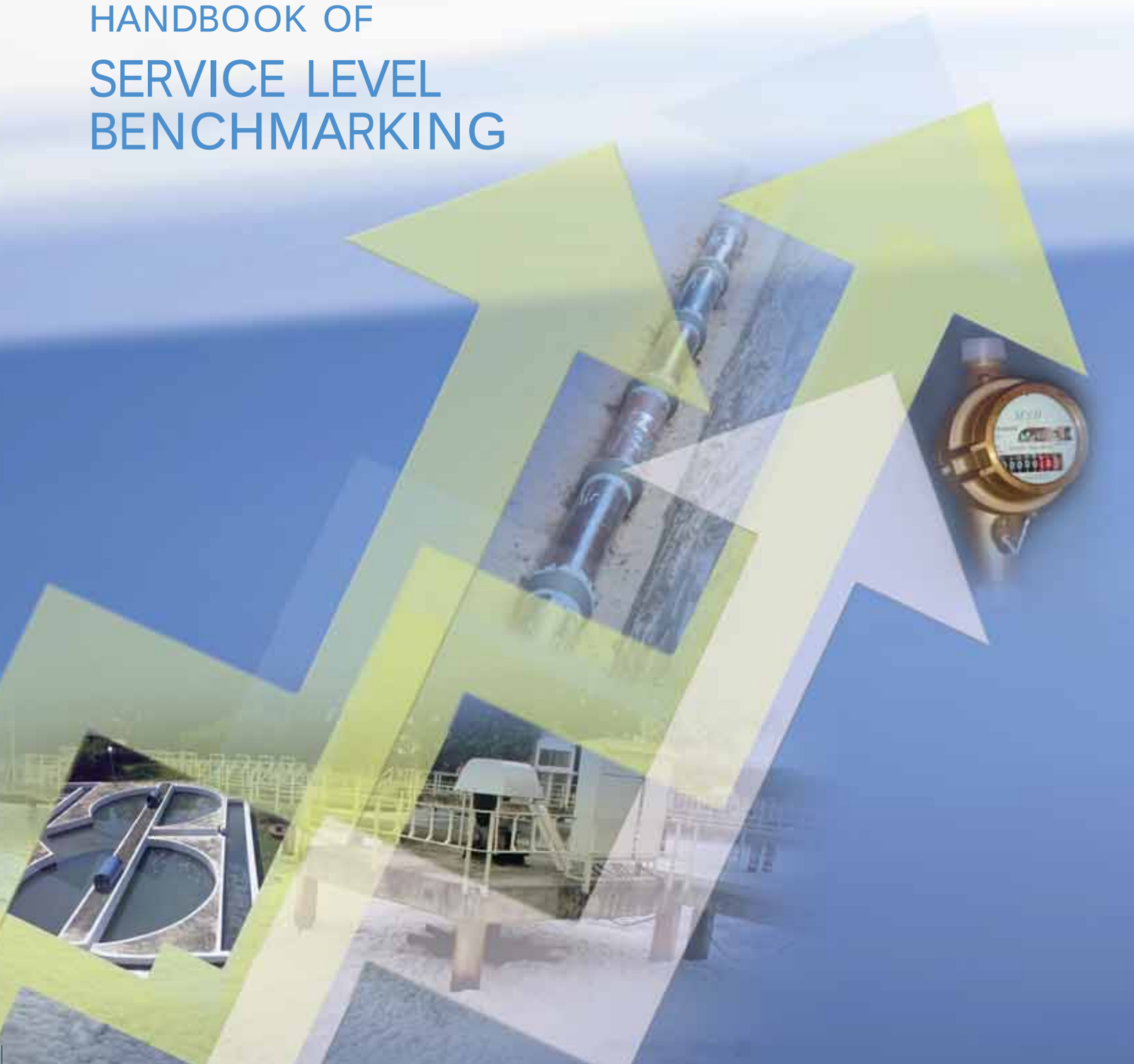
MINISTRY OF URBAN DEVELOPMENT
GOVERNMENT OF INDIA

HANDBOOK OF
SERVICE LEVEL BENCHMARKING



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CONTENTS

ABBREVIATIONS

BSUP	Basic Services to the Urban Poor
CPHEEO	Central Public Health and Environmental Engineering Organisation
DMA	District Metering Area
FY	Financial Year
GIS	Geographic Information System
ICAI	Institute of Chartered Accountants of India
ILCS	Integrated Low Cost Sanitation
JNNURM	Jawaharlal Nehru National Urban Renewal Mission
MoUD	Ministry of Urban Development
NRW	Non-Revenue Water
O&M	Operations and Maintenance
PROOF	Public Record of Operations and Finance
RWA	Resident Welfare Association
SLB	Service Level Benchmark
STP	Sewage Treatment Plant
SWM	Solid Waste Management
ULB	Urban Local Body

Units of Measure

lpcd	litres per capita per day
m	metre
km	kilometre

Conversions

Crore = 10,000,000

SECTION 2

SERVICE LEVEL BENCHMARKS

2.0 SERVICE LEVEL BENCHMARKS

Lists of SLBs have been chosen so as to reflect the multiple facets of service delivery performance. SLBs for which detailed data sheets are provided are:

- **2.1 Water Supply Services:** As water is a basic need, emphasis has been laid on performance related to reach and access to quality service, and prevalence and effectiveness of the systems to manage the water supply networks. As financial sustainability is critical for continued effectiveness in service delivery, performance is measured on this aspect too. Indicators selected are:

  2.1.1 Coverage of water supply connections

  2.1.2 Per capita supply of water

  2.1.3 Extent of metering of water connections

  2.1.4 Extent of non-revenue water (NRW)

  2.1.5 Continuity of water supply

  2.1.6 Quality of water supplied

  2.1.7 Efficiency in redressal of customer complaints

  2.1.8 Cost recovery in water supply services

  2.1.9 Efficiency in collection of water supply-related charges

- **2.2 Sewage Management (Sewerage and Sanitation):** For sewage management, performance related to reach and access of the service, effectiveness of the network and environmental sustainability have been emphasised, apart from financial sustainability of operations. Indicators selected are:

  2.2.1 Coverage of toilets

  2.2.2 Coverage of sewage network services

  2.2.3 Collection efficiency of sewage network

  2.2.4 Adequacy of sewage treatment capacity

  2.2.5 Quality of sewage treatment

  2.2.6 Extent of reuse and recycling of sewage

  2.2.7 Efficiency in redressal of customer complaints

  2.2.8 Extent of cost recovery in sewage management

  2.2.9 Efficiency in collection of sewage charges

- **2.3 Solid Waste Management:** Performance related to reach and access, effectiveness of network operations and environmental sustainability have been considered, apart from financial sustainability of operations. Indicators selected are:

  2.3.1 Household level coverage of solid waste management services

  2.3.2 Efficiency of collection of municipal solid waste

  2.3.3 Extent of segregation of municipal solid waste

  2.3.4 Extent of municipal solid waste recovered

  2.3.5 Extent of scientific disposal of municipal solid waste

2.2 SEWAGE MANAGEMENT (SEWERAGE AND SANITATION)

2.2.1 COVERAGE OF TOILETS

Performance Indicator		
Indicator	**Unit**	**Definition**
Coverage of toilets	%	This indicator denotes the extent to which citizens have access to a toilet (whether individual or community) in a service area. The toilets would include those in the category of residential, commercial, industrial and institutional properties. The service area implies a specific jurisdiction in which the service is required to be provided.
Data Requirements		
Data required for calculating the indicator	**Unit**	**Remarks**
a. Total number of properties with access to individual or community toilets within walking distance in the service area	Number	The total number of toilets (as against households) should be assessed. A property may have multiple tenants. A property is considered unique if it is recorded as a unique property in the municipal records. Municipal records should be up-to-date, and preferably backed up by a cadastre map.
b. Total number of properties without individual or community toilets within walking distance	Number	Only the total number of properties without access to individual or community toilets should be assessed.
Coverage of toilets	%	**Coverage of toilets = [a/a+b]*100**

Rationale for the Indicator
Last mile access to toilets is key to improvement in service levels of sanitation facilities. In many Indian cities, there is inadequate access to toilet facilities. Therefore, it is important to measure this parameter. The benchmark value for this indicator is 100 percent. Substantial investment in this area is being taken up under the Basic Services to the Urban Poor (BSUP) component of JNNURM as well as the Integrated Low Cost Sanitation (ILCS) scheme.

Reliability of Measurement	
Reliability scale	**Description of method**
Lowest level of reliability (D)	Estimation based on the geographical area of the ULB covered with and without toilet facilities as a percentage of the total ULB area, as an indicator of service coverage.
Intermediate level (C)	Estimation based on the total number of properties with toilets on the premises or with access to a community toilet at walking distance and without such facilities as a percentage of the estimated number of properties, to arrive at the indicator of service coverage.
Intermediate level (B)	None.
Highest/preferred level of reliability (A)	Calculation based on the actual number of properties and the count of properties with or without toilet facilities, measured through a field survey. These data should be periodically updated on the basis of data regarding provision of toilet facilities and new properties being developed (from the building plan approval department). Field surveys throughout the city should be carried out at least once in five years.

Minimum frequency of measurement of performance indicator		Smallest geographical jurisdiction for measurement of performance	
Measurement	**Quarterly**	**Measurement**	**Ward level**

2.2.2 COVERAGE OF SEWAGE NETWORK SERVICES

Performance Indicator		
Indicator	**Unit**	**Definition**
Coverage of sewage network services	%	This indicator denotes the extent to which the underground sewage (or sewerage collection) network has reached out to individual properties across the service area. Properties include those in the categories of residential, commercial, industrial and institutional. The service area implies a specific jurisdiction in which service is required to be provided.
Data Requirements		
Data required for calculating the indicator	**Unit**	**Remarks**
a. Total number of properties in the service area	Number	The total number of properties (as against households) should be assessed. A property may have multiple tenants. A property is considered unique if it is recorded as a unique property in the municipal records. Municipal records should be up-to-date, and preferably backed up by a cadastre map.
b. Total number of properties with direct connection to the sewage network	Number	Only properties with access connection to the underground sewage network should be included. Properties that connect their sewerage outlet to storm water drains or open drainage systems should not be considered. However, this may include one or more properties with access to decentralised/ standalone underground sewage networks, which have treatment and safe effluent disposal facilities, which has been set up and operated according to laid down environmental standards.
Coverage of sewage network	%	**Coverage of sewage network services = [b/a]*100**

Rationale for the Indicator
Last mile access to sewage networks is key to improvement in service levels of sewage management. In many Indian cities, sewage also flows through open drains/storm water drains, posing serious public health hazards. Also, the coverage of sewage network services is very low across most Indian cities. With substantial investments in this area being taken up in programmes such as JNNURM, it would be important to monitor this indicator to observe the impact being made on the ground. Therefore, it is important to measure this parameter. Its benchmark value is 100 percent.

Reliability of Measurement	
Reliability scale	**Description of method**
Lowest level of reliability (D)	Estimation based on the geographical area of the ULB covered with the sewage pipeline network, as a percentage of the total ULB area, as an indicator of service coverage.
Intermediate level (C)	Estimation based on the road length in the city covered by the pipeline network, as a percentage of the total road length, as an indicator of service coverage.
Intermediate level (B)	Estimation based on the total number of connections as a percentage of the estimated number of properties, to arrive at the indicator of service coverage.
Highest/preferred level of reliability (A)	Calculation based on the actual number of properties and the count of properties with a direct connection, measured through a field survey. These data should be periodically updated on the basis of new sewage connections taken (from the sewage department), and new properties being developed (from the building plan approval department). Field surveys throughout the city should be carried out at least once in five years.

Minimum frequency of measurement of performance indicator		Smallest geographical jurisdiction for measurement of performance	
Measurement	**Quarterly**	**Measurement**	**Ward level**

2.2.3 COLLECTION EFFICIENCY OF THE SEWAGE NETWORK

Performance Indicator		
Indicator	**Unit**	**Definition**
Efficiency in collection of sewage	%	This indicator is measured as the quantum of wastewater collected as a percentage of normative sewage generation in the ULB. Wastewater generation is linked to the quantum of water supplied through piped systems, and other sources such as bore wells, when they are very extensively used. Data should be collected daily for an entire month, so as to measure the quantities per month. While daily variations may be normalised, monthly variations may exist on account of seasonal variations. Data should be aggregated from multiple points across the ULB.
Data Requirements		
Data required for calculating the indicator	**Unit**	**Remarks**
a. Total water supplied	million litres per day (or) month	Data on the total quantum of water supplied to consumers should be based on the water supplied to the distribution system (ex-treatment plant and including purchased water, if any), less physical losses of water in the transmission and distribution system through leakages. In case municipal water is supplied through decentralised distribution networks or sourcing water from deep bore wells, it should be included.
b. Estimated water use from other sources	million litres per day (or) month	An estimate of water drawn from other sources such as private bore wells. Data that will drive this estimate include the number of properties with access to bore wells or other sources of water, spatially spread across the city, and the quantity of water supplied in those areas. Alternately, data may also be collected from sample surveys.
c. Wastewater collected	million litres per day (or) month	The quantum of wastewater measured at the inlet of treatment plants. The quantum of untreated sewage at outfalls, leading into rivers, lakes or other water bodies should not be included in the quantum of sewage collected.
Wastewater collection efficiency	%	**Collection efficiency of sewage networks = [c/ ((a+b)*0.8)]x100**

Rationale for the Indicator
While the performance indicator for coverage provides an idea of infrastructure available for access to sewage networks, the effectiveness of the system in capturing the sewage may not be adequate. Therefore, the performance indicator related to collection efficiency signifies the effectiveness of the network in capturing and conveying it to the treatment plants. Thus, it is not just adequate to have an effective network that collects sewage, but also one that treats the sewage at the end of the network. The benchmark value for this indicator is 100 percent.

Reliability of Measurement	
Reliability scale	**Description of method**
Lowest level of reliability (D)	Water production is based on 'D' category systems for measuring NRW. There are no meters at sewage treatment plants (STPs), intake is estimated on the basis of flow or treatment plant capacity. No estimates are available for water consumed from other sources.
Intermediate level (C)	Water production is based on 'C' category systems for measuring NRW. Sewage intake is estimated on the basis of flow or treatment plant capacity. No estimates are available for water consumed from other sources.
Intermediate level (B)	Water production is based on 'B' category systems for measuring NRW. Periodic measurement of wastewater collection is based on flow assessment methods at the STPs. There are no estimates for water consumed from other sources.
Highest/preferred level of reliability (A)	Water production is based on 'A' category measurement systems for measuring NRW. Estimates are available for water consumed from other sources. Measurement of wastewater collection occurs at all inlets of STPs by flow assessment methods. Process control automation provides accurate data, for both water production and distribution and for sewage intake and treatment.

Minimum frequency of measurement of performance indicator		Smallest geographical jurisdiction for measurement of performance	
Measurement	**Monthly**	**Measurement**	**ULB level**

2.2.4 ADEQUACY OF SEWAGE TREATMENT CAPACITY

Performance Indicator		
Indicator	**Unit**	**Definition**
Adequacy of capacity for treatment of sewage	%	Adequacy is expressed as secondary treatment (that is, removing oxygen demand as well as solids, normally biological) capacity available as a percentage of normative wastewater generation, for the same time period
Data Requirements		
Data required for calculating the indicator	**Unit**	**Remarks**
a. Total water consumed	million litres per day (or) month	Data on the total quantum of water supplied to consumers should be based on the water supplied to the distribution system (ex-treatment plant and including purchased water, if any), less physical losses of water in the transmission and distribution system through leakages. In case municipal water is supplied through decentralised distribution networks or sourcing water from deep bore wells, it should be included.
b. Total number of properties with direct connection to the sewage network	million litres per day (or) month	An estimate of water drawn from other sources such as private bore wells. Data that will drive this estimate include the number of properties with access to bore wells or other sources of water, spatially spread across the city, and the quantity of water supplied in those areas. Alternately, data may also be collected from sample surveys.
c. Treatment plant capacity	million litres per day (or) month	Total functional capacity of all wastewater treatment plants that can meet secondary treatment standards.
Wastewater treatment capacity	%	**Adequacy of treatment capacity = [c/ ((a+b)*0.8)]x100**

Rationale for the Indicator	
Most Indian cities have inadequate capacity for treatment of sewage that is generated in their cities. Significant investments are under way in creating such capacities through programmes such as JNNURM. This indicator will highlight the adequacy of available and operational sewage treatment capacity. The benchmark value for this indicator is 100 percent.	
Reliability of Measurement	
Reliability scale	**Description of method**
Lowest level of reliability (D)	Water consumption is based on 'D' category systems for measuring NRW. There is no estimate of wastewater treatment capacity that is actually functional and in operation, nor for water consumed from other sources.
Intermediate level (C)	Water consumption is based on 'C' category systems for NRW. There is no estimate of wastewater treatment capacity that is actually functional and in operation, nor for water consumed from other sources.
Intermediate level (B)	Water consumption is based on 'B' category systems for NRW. Sound engineering estimates of functional wastewater treatment capacity are available, on the basis of reliable operational data that are maintained. There are no estimates for water consumed from other sources.
Highest/preferred level of reliability (A)	Water consumption is based on 'A' category measurement systems for NRW. Reliable estimates are available for the quantity of water consumed from non-municipal sources. STP system capacity is assessed through rigorous testing and commissioning procedures (after which there have been no modifications to the plant). In case any modifications to the STP have been carried out, system capacity is reassessed through measuring peak throughput.

Minimum frequency of measurement of performance indicator		Smallest geographical jurisdiction for measurement of performance	
Measurement	**Annually**	**Measurement**	**ULB level**

2.2.5 QUALITY OF SEWAGE TREATMENT

Performance Indicator		
Indicator	**Unit**	**Definition**
Quality of treatment	%	Quality of treatment is measured as a percentage of wastewater samples that pass the specified secondary treatment standards, that is, treated water samples from the outlet of STPs are equal to or better than the standards laid down by the Government of India agencies for secondary treatment of sewage. While the samples are collected at the STP outlet and results should be computed per STP, this indicator should be reported at city/ULB level.
Data Requirements		
Data required for calculating the indicator	**Unit**	**Remarks**
a. Total number of wastewater samples tested in a month	Number per month	Sampling (quantity, periodicity, point of sample collection, etc.) should be taken as per good industry practices and laid down norms by environmental agencies, such as pollution control boards of respective States.
b. Number of samples that pass the specified secondary treatment standards	Number per month	Within the total valid samples, the number of samples that pass the specified secondary treatment standards, along all key parameters.
Quality of treatment	%	**Quality of treatment capacity = [(b/a)*100]**

Rationale for the Indicator
For sustainable sewage management, it is not just enough to have the infrastructure to collect and convey the sewage, or the installed capacity to treat it. It is important that the treated water that is discharged back into water bodies, or used for other purposes such as irrigation, meets the laid down environmental standards. It is therefore important to monitor this indicator. Its benchmark value is 100 percent.

Reliability of Measurement	
Reliability scale	**Description of method**
Lowest level of reliability (D)	There is an absence of a sampling regimen and of required laboratory equipment. Irregular tests are carried out. Not all parameters are tested.
Intermediate level (C)	Not applicable.
Intermediate level (B)	The sampling regimen is well documented and practiced on most occasions. The ULB/utility has its own laboratory equipment or easy and regular access to accredited testing centres. Only a few key parameters are assessed.
Highest/preferred level of reliability (A)	The sampling regimen is well documented and practiced completely. The ULB/utility has its own laboratory equipment or easy and regular access to accredited testing centres. There is periodic independent audit of wastewater quality. All parameters are assessed.

Minimum frequency of measurement of performance indicator		Smallest geographical jurisdiction for measurement of performance	
Measurement	**Monthly**	**Measurement**	**ULB level**

2.2.6 EXTENT OF REUSE AND RECYCLING OF SEWAGE

Performance Indicator		
Indicator	**Unit**	**Definition**
Extent of recycling or reuse of sewage	%	The percentage of wastewater received at the treatment plant that is recycled or reused after appropriate treatment for various purposes. This should only consider water that is directly conveyed for recycling or reuse, such as use in gardens and parks, use for irrigation, etc. Water that is discharged into water bodies, which is subsequently used for a variety of purposes, should not be included in this quantum. While measurements are done at STP inlets and outlets, the indicator should be reported at the city/ULB level as a whole.
Data Requirements		
Data required for calculating the indicator	**Unit**	**Remarks**
a. Wastewater received at STPs	million litres per day (or) month	This should be based on the actual flow measurement, the quantum for which should be measured daily. Daily quantities should be aggregated to arrive at monthly quantum.
b. Wastewater recycled or reused after appropriate treatment	million litres per day (or) month	This should be based on the actual flow measurement by functional flow meters, the quantum for which should be measured daily. Daily quantities should be aggregated to arrive at the monthly quantum.
Wastewater recycled or reused	%	**Extent of sewage recycled or reused = [(b/a)*100]**

Rationale for the Indicator
For sustainable water management, it is desirable that sewage is recycled or reused after appropriate treatment. Effluent water can be directly reused in a number of areas such as used in parks and gardens, supplied for irrigation purposes for farmland on the city periphery, etc. To maximise this reuse, it is important that this indicator is measured and monitored. Its benchmark could be 20 percent.

Reliability of Measurement	
Reliability scale	**Description of method**
Lowest level of reliability (D)	There are no meters at STP inlets or points of supply of recycled water. Estimates are based on observation and STP capacity.
Intermediate level (C)	Not applicable.
Intermediate level (B)	Not applicable.
Highest/preferred level of reliability (A)	Based on data from flow measurement at STP inlets and outlets (that is, points of supply of recycled water). Data should be measured daily, and aggregated for monthly totals.

Minimum frequency of measurement of performance indicator		Smallest geographical jurisdiction for measurement of performance	
Measurement	**Annually**	**Measurement**	**ULB level**

2.2.7 EFFICIENCY IN REDRESSAL OF CUSTOMER COMPLAINTS

Performance Indicator		
Indicator	**Unit**	**Definition**
Efficiency in redressal of customer complaints	%	The total number of sewage-related complaints redressed within 24 hours of receipt of complaints, as a percentage of the total number of sewage-related complaints received in the given time period.
Data Requirements		
Data required for calculating the indicator	**Unit**	**Remarks**
a. Total number of sewage-related complaints received per month	Number per month	The total number of all sewage-related complaints from consumers received during the month. Systems for receiving and logging in complaints should be effective and easily accessible to the citizens. Points of customer contact will include common phone numbers, written complaints at ward offices, collection centres, drop boxes, online complaints on the website, etc.
b. Total number of complaints redressed within the month	Number per month	The total number of sewage-related complaints that are satisfactorily redressed within 24 hours or the next working day, within that particular month. Satisfactory resolution of the complaint should be endorsed by the person making the complaint in writing, as part of any format/proforma that is used to track complaints.
Efficiency in redressal of complaints	%	**Efficiency in redressal of complaints = [(b/a)*100]**

Rationale for the Indicator
It is important that in essential services such as sewage, the utility has effective systems to capture customer complaints/grievances, escalate them internally for remedial action and resolve them. While many ULBs/utilities have put in place systems to capture complaints, much more work needs to be done to put in place back-end systems for satisfactorily resolving those complaints on time. As sewage treatment is an essential service, the benchmark time for redressal is 24 hours or the next working day. It is therefore important to monitor this indicator. The benchmark value for this indicator will depend on a number of factors such as the size of the city, age of the network, etc. The benchmark value for this indicator may be set at 80 percent.

Reliability of Measurement	
Reliability scale	**Description of method**
Lowest level of reliability (D)	Complaints data are not maintained either at ward or city level.
Intermediate level (C)	There are multiple mechanisms/means by which consumers can register their complaints such as by telephone, in person or by writing or e-mail. All complaints received are assumed to be resolved quickly.
Intermediate level (B)	There are multiple mechanisms/means by which consumers can register their complaints such as by telephone, in person or by writing or e-mail. However, systems do not exist for aggregating, sorting and tracking the complaints. Data available for some months have been used as a trend to report the figures for some other months.
Highest/preferred level of reliability (A)	There are multiple mechanisms by which consumers can register their complaints such as by telephone, in person or by writing or e-mail. Complaints are segregated into different categories, and are collated through a computer network or other systems, and tracked on a daily basis. The status of redressal of complaints is maintained. Consumers endorse complaints being addressed on the municipal proforma.

Minimum frequency of measurement of performance indicator		Smallest geographical jurisdiction for measurement of performance	
Measurement	**Monthly**	**Measurement**	**Zone/DMA level**

2.2.8 EXTENT OF COST RECOVERY IN SEWAGE MANAGEMENT

Performance Indicator		
Indicator	**Unit**	**Definition**
Extent of cost recovery in sewage management	%	The extent of cost recovery is expressed as wastewater revenues as a percentage of wastewater expenses, for the corresponding time period.
Data Requirements		
Data required for calculating the indicator	**Unit**	**Remarks**
a. Total annual operating expenses	Rs crore	Should include all operating expenses (for the year) such as electricity, chemicals, staff and other establishment costs, outsourced operations/staff related to wastewater collection and treatment, and O&M expenses. Should exclude interest payments and principal repayments.
b. Total annual operating revenues	Rs crore	Should include all wastewater-related revenues billed for the year including taxes/cess/surcharges, user charges, connection charges, sale of sludge, sale of recycled water, etc.
Cost recovery in sewage management	%	**Cost recovery = [(b/a)*100]**

Rationale for the Indicator
Financial sustainability is a critical factor for all basic urban services. In services such as sewerage management, some benefits are received directly by the consumers, and some benefits accrue indirectly through a sustainable environment and public health benefits. Therefore, through a combination of user charges, fees and taxes, all operating costs may be recovered. Therefore, the indicator is critical for measuring overall cost recovery, the benchmark value for which is 100 percent.

Reliability of Measurement	
Reliability scale	**Description of method**
Lowest level of reliability (D)	There is no segregation of budget heads related to wastewater from the rest of the functions of the agency. A cash-based accounting system is practiced. There are no clear systems for reporting unpaid expenditure. Disclosures and reporting are not timely. Audits have a time lag and are not regular.
Intermediate level (C)	Not applicable.
Intermediate level (B)	Budget heads related to wastewater are segregated. Key costs related to wastewater are identifiable, although complete segregation is not practiced. Key income and expenditure are recognised, based on accrual principles. Disclosures are complete and on time.
Highest/preferred level of reliability (A)	In case of multi-function agencies such as municipal corporations, the budget heads related to wastewater are clearly separated. Cost allocation standards for common costs are in place. An accrual-based double entry accounting system is practiced. Accounting standards comparable to commercial accounting standards with clear guidelines for recognition of income and expenditure are followed. Accounting and budgeting manuals are in place and are adhered to. Financial statements have full disclosure and are audited regularly and on time.

Minimum frequency of measurement of performance indicator		Smallest geographical jurisdiction for measurement of performance	
Measurement	**Annually**	**Measurement**	**ULB level**

2.2.9 EFFICIENCY IN COLLECTION OF SEWAGE CHARGES

Performance Indicator		
Indicator	**Unit**	**Definition**
Efficiency in collection of sewage charges	%	Efficiency in collection is defined as current year revenues collected, expressed as a percentage of the total operating revenues, for the corresponding time period.
Data Requirements		
Data required for calculating the indicator	**Unit**	**Remarks**
a. Current revenues collected in the given year	Rs crore per annum	Revenues collected for bills raised during the year. This should exclude collection of arrears as inclusion of arrears will skew the performance reflected. Collection efficiency is in fact an indicator of how many arrears are being built up, and therefore only current revenues should be considered.
b. Total operating revenues billed during the given year	Rs crore per annum	The total quantum of revenues related to sewage services that are billed during the year. This should include revenues from all sources related to sewage such as taxes, charges, cess, surcharges, etc.
Collection efficiency	%	**Collection efficiency = [(a/b)*100]**

Rationale for the Indicator
For a utility, it is not just enough to have an appropriate tariff structure that enables cost recovery objectives, but also efficient collection of revenues that are due to the utility. It is also important that the revenues are collected in the same financial year, without allowing for dues to get accumulated as arrears. It is therefore critical to monitor this indicator. The benchmark value for collection efficiency may be considered at 90 percent, since it is possible that about 10 percent of the dues may be delayed to the next year.

Reliability of Measurement	
Reliability scale	**Description of method**
Lowest level of reliability (D)	There is no segregation of arrears versus current year revenue collection. A cash basis of accounting is followed. The accounting code structure does not enable clear segregation of water revenues.
Intermediate level (C)	Not applicable.
Intermediate level (B)	There is a clear segregation of current year revenues collection versus arrears collection. However, revenue collection is not matched against the specific bill issued. Overall accrual principles of accounting are followed, and therefore deposits and advances are not included in income and expenditure, respectively.
Highest/preferred level of reliability (A)	Collection records are maintained for each billing cycle. Collections are clearly identified against the specific bill which has been issued. Overall accrual principles of accounting are followed, and therefore deposits and advances are not included in income and expenditure, respectively. The accounting code structure also enables monitoring of billing and collections for each ward within the ULB.

Minimum frequency of measurement of performance indicator		Smallest geographical jurisdiction for measurement of performance	
Measurement	**Annually**	**Measurement**	**Zone/DMA level**