

## CHAPTER-IV

### URBAN DEVELOPMENT AND HOUSING DEPARTMENT

#### 4.1 Performance audit on Management of Water Supply, Sanitation and Solid Waste Management Services by ULBs

##### Executive Summary

Urban Local Bodies (ULBs) are responsible for several activities in town planning and maintenance such as water supply, sanitation, up-gradation of slums and maintenance of other infrastructure. According to the 2011 census, 24 *per cent* of people in Jharkhand live in urban areas. Though the state has lesser urbanisation than the national average (31 *per cent*), it has witnessed rapid growth in its urban population in the last decade (32.3 *per cent*). But in comparison to urbanisation, basic infrastructure and services related initiatives such as water supply, sanitation, solid waste management etc. have not kept pace resulting in inadequate facilities to the inhabitants. Some major audit findings are discussed below:

Service Level Benchmarks fixed by Ministry of Urban Development, Government of India for Water Supply, Solid Waste Management (SWM) and Sewage could not be achieved by the test checked ULBs as four water supply projects in four test checked ULBs targeted to create 306 million litres per day (MLD) capacity could not be completed despite spending ₹ 583.47 crore while SWM projects worth ₹ 146.29 crore were stopped midway after incurring an expenditure of ₹ 28.47 crore in the absence of land in four test checked ULBs. Further, none of the test checked ULBs constructed sewage network while 60 *per cent* drains in nine of the 10 test checked ULBs were uncovered and beset with garbage.

##### (Paragraphs 4.1.6.5, 4.1.8, 4.1.10.2 and 4.1.11.1)

Failure to complete the water supply projects in four test checked ULBs affected water supply to atleast 22.67 lakh inhabitants. In the test checked ULBs, only 29 *per cent* of the total HHs had access to piped water while shortages in supply of water ranged between nine and 99 *per cent* of requirement. Further, the per capita supply of water in seven out of 10 test checked ULBs ranged between 10 and 110 litres per capita daily (lpcd) against standard of 135 lpcd. Seven out of 10 test checked ULBs did not install meters for residential water connections. The duration of water supply ranged from one hour per week to 12 hours a day against the requirement of 24 hours per day.

##### (Paragraphs 4.1.6.5, 4.1.8, 4.1.9.1, 4.1.9.2 and 4.1.9.3)

In the approved Master Plan of Ranchi, water supply in the Capital district is claimed to have been eased by interconnecting Hatia, Gonda and Rukka dams. However, instead of interconnectivity of dams, Rukka reservoir was connected with catchment areas of other two dams. As a result, rationing of water from Hatia dam continued unabated besides erratic supply of water in many parts of the city especially under the catchment area of Hatia dam.

##### (Paragraph 4.1.8.1)

Although Operation and Maintenance (O&M) costs for water supply was to be met from water user charges, four test checked ULBs failed to recover outstanding water user charges worth ₹ 37.22 crore due to which only 29 per cent of O&M cost could be met. The State Government lost ₹ 10.50 crore per year on 'Non-revenue water' beyond the benchmark limit of 20 per cent.

**(Paragraph 4.1.9.5 and 4.1.9.6)**

None of the test checked ULBs have sewage network. In the absence of underground or piped sewer system, 175.09 MLD of untreated waste water were being discharged into open drains polluting nearby water bodies. In test checked ULBs, only 23 per cent to 72 per cent HHs have toilet facility against the benchmark of 100 per cent.

**(Paragraph 4.1.6.5 and 4.1.10.2)**

Scientific collection, treatment and safe disposal of solid waste in the test checked ULBs were deficient as SWM projects to address these were not completed. HHs in eight out of 10 test checked ULBs were not covered under solid waste management services while coverage of waste collection in six test checked ULBs ranged between 39 and 90 per cent. Landfill sites in nine sampled ULBs were not available and waste was dumped in close proximity to residential areas and river side.

**(Paragraph 4.1.6.5, 4.1.11.2 and 4.1.11.5)**

In test checked ULBs, shortage of manpower ranged between 21 per cent and 90 per cent in supervisory/sweeper cadre. Garbage disposal vehicles were available to the extent of 0.43 per cent to 5.81 per cent of the requirement only as prescribed in the SWM manual which affected the cleanliness of cities and posed a threat to environment and health of residents.

**(Paragraph 4.1.12)**

#### **4.1.1 Introduction**

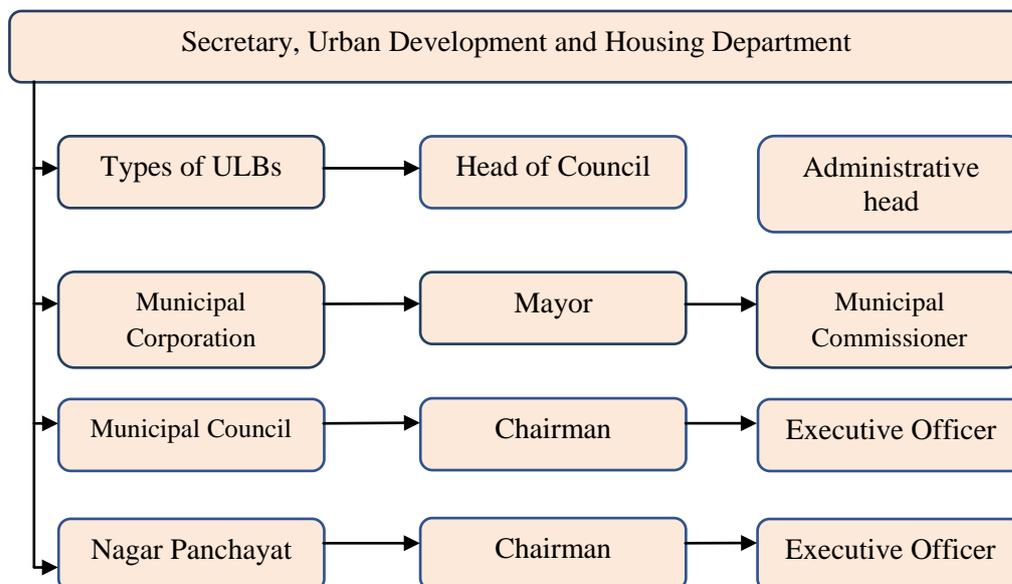
The 74<sup>th</sup> Constitutional Amendment Act (CAA) broadened the range of functions to be performed by elected urban local bodies (ULBs). The Constitution envisages ULBs as being totally responsible for all aspects of civic services, development and environment in the cities, thereby going far beyond the traditional role. Provision of basic amenities such as water supply, sanitation, solid waste management (SWM) are among the core activities of the ULBs. The efficient performance of these responsibilities requires proper institutional structure, decentralisation of powers, adequacy of resources, support of the State Government and a concerted effort to build capabilities in the various sections of the ULBs machinery.

#### **4.1.2 Organisational setup**

The Urban Development and Housing Department (UD&HD), Government of Jharkhand (GoJ) is responsible to oversee and facilitate planned development of cities, towns and smaller urban settlements in the state. The department exercises administrative control over the ULBs and development authorities in the state.

The Municipal Corporations, Municipalities and Notified Area Committees (NACs) are administered by an Administrator and Special Officer while the legislative setup of ULBs consists of Mayor/Chairman, Deputy Mayor/Vice-Chairman assisted by Standing Committees as indicated in **Chart-4.1.1**.

**Chart-4.1.1: Types of Local Self Government**



### 4.1.3 Audit objectives

The main objectives of the Performance audit were to assess whether:

- ULBs were performing water supply, sanitation and solid waste management functions as institutions of self-governance;
- ULBs were meeting the Service Level Benchmarks (SLBs) as prescribed by the Ministry of Urban Development (MoUD), Government of India (GoI);
- Water supply, sanitation and solid waste management projects were completed on time to meet the SLBs ; and
- Proper arrangements were made for levy, collection and accountal of user charges for water supply, sanitation and solid waste management.

### 4.1.4 Audit criteria

The audit criteria were derived from the following sources:

- Jharkhand Municipal (JM) Act 2011, Jharkhand Municipal Accounts Manual (JMAM), 2012 and provisions thereunder;
- Circulars, Notifications, Resolutions, Bye-laws and other instructions issued by Government of Jharkhand (GoJ) and GoI;
- The Central Public Health and Environmental Engineering Organisation (CPHEEO) Manual of Water Supply, Solid Waste Management and Sewage and Drainage System; and
- Municipal Solid Waste (Management and Handling) Rules, 2000

#### 4.1.5 Audit scope and methodology

The Performance Audit of Management of Water Supply, Sanitation and Solid Waste Management Services by ULBs was conducted between April 2016 and August 2016 covering the period 2011-16. Audit scrutinised the records of UD&HD and 10 sampled ULBs<sup>1</sup> selected on the basis of Probability Proportional to Size without Replacement. Besides, records of Jharkhand Urban Infrastructure Development Company (JUIDCO) and Drinking Water and Sanitation Divisions under Drinking Water and Sanitation Department (DW&SD) in the districts of concerned ULBs were also examined.

To get a feedback on effectiveness of water supply and other civic services of sanitation in the city, audit also conducted a beneficiary survey of the residents or users in test checked ULBs. Feedback of residents was received through interviews, pamphlets distributed through newspaper and questionnaire uploaded on our official website. In all, 741<sup>2</sup> households (HHs) units responded which have been included in the Report.

An entry conference was held with the Principal Secretary of Urban Development and Housing Department, Jharkhand on 22 April 2016 to discuss the audit objectives, scope, methodology and criteria. An exit conference was held on 2 March 2017 with the Joint Secretary of the department to discuss the audit findings. The replies given by the department have been suitably incorporated in the Report.

#### Audit Findings

#### 4.1.6 Planning

Section 329 (1) of JM Act, 2011 provides that the municipality shall, either by itself or through any other agency, undertake functions for supply of safe water, low cost sanitation, environmentally sound solid waste management, toxic waste collection and disposal, waste recycling and recovery etc.

Further, section 380 (2) (b) of JM Act, 2011 mandates the ULBs to prepare plans for infrastructure development including water supply, drainage and sewage and Solid Waste Management (SWM).

Audit observed that the required plans were not prepared by the test checked ULBs as discussed below:

##### 4.1.6.1 Absence of proper planning

The public services such as drinking water, sewage and solid waste management are to be provided by the ULBs which must be accessible to one and all to achieve the Service Level Benchmarks (SLBs) set out by the Ministry of Urban Development (MoUD) in 2008-09. A concerted plan should be put in action to achieve the SLBs.

Annual Development plan and five year perspective plans were not prepared by the test checked ULBs

<sup>1</sup> Chas Municipal Corporation, Deoghar Municipal Corporation, Dhanbad Municipal Corporation, Garhwa Municipal Council, Jamshepur NAC, Mango NAC, Madhupur Municipal Council, Medininagar Municipal Council, Ranchi Municipal Corporation, Sahibganj Municipal Council

<sup>2</sup> 590 HHs through interviews, 140 through pamphlets and 11 through official website

Further, as per JM Act, 2011, the ULBs are required to prepare an annual development plan (ADP) for the municipal area for the next year by consolidating the development plans submitted by the Ward Committees. The ADP thus prepared shall be submitted to District Planning Committee (DPC). Further, the ULBs are also required to prepare a perspective five year plan for submission to the DPC.

Audit noticed that eight<sup>3</sup> out of 10 test checked ULBs did not constitute Ward Committees and as such development plans at ward level was not prepared. Resultantly, the concerned ULBs did not prepare ADPs as well as perspective five year plans. Thus, the requirement of resources for providing public services could not be assessed by the test checked ULBs.

In the absence of planning, works for providing water supply, sanitation and SWM were being recommended by the UD&HD without the involvement of stakeholders such as Civil Society, Councillors and end users of the proposed services.

In the exit conference (2 March 2017), the Joint Secretary, UD&HD accepted the audit observation and stated that due to shortage of man power in the ULBs, plans could not be prepared.

#### 4.1.6.2 Preparation of Master Plan

As per section 404 of JM Act, 2011 every municipality has to prepare a Master Plan consisting of the localities, wards, streets and portions of streets reserved for residential, commercial, industrial, public and agricultural purposes.

Audit noticed that except Ranchi<sup>4</sup>, eight test checked ULBs have not finalised their respective Master Plans till February 2017. However, an amount of ₹ 1.97 crore was spent by six<sup>5</sup> test checked ULBs between March 2007 and August 2013 for preparation of Master Plan. Further, the Master Plan of Chas was disapproved by UD&HD as the consultant failed to prepare it according to terms of agreement. As such ₹ 1.26 crore spent for preparation of the Master Plan of Chas become infructuous.

Thus, the benefits of having a Master Plan to regulate development of cities conceptually and operationally in a planned manner could not be achieved.

In the exit conference (2 March 2017), the Joint Secretary, UD&HD stated that Master Plans of 14 cities have been approved by the Municipal Board and rest cities were preparing their Master Plans.

#### 4.1.6.3 Sanitation Plan

As per National Urban Sanitation Policy (NUSP) 2008, UD&HD is responsible to prepare sanitation strategies and cities are required to prepare city sanitation plan (CSP) to address universal access to safe and hygienic sanitation, facilitate arrangement of toilets for all urban population and to arrange safe collection, treatment and disposal of 100 *per cent* liquid and solid waste in a scientific manner. Further, the State Sanitation Strategy makes the

**Neither UD&HD prepared a state sanitation strategy nor the test- checked ULBs prepared CSPs**

<sup>3</sup> Election was not held in Jamshedpur and Mango

<sup>4</sup> Approved in November 2015

<sup>5</sup> Deoghar-₹ 66.87 lakh, Garhwa-₹ 2.45 lakh, Jamshedpur-₹ 1.20 crore Madhupur-₹ 2.32 lakh, Medininagar-₹ 3.86 lakh and Sahibganj-₹ 1.85 lakh

ULBs responsible to plan and finance public infrastructure, environment outcomes, set service delivery standards, provide minimum levels of sanitation to urban dweller etc.

Audit noticed that neither UD&HD prepared State Sanitation Strategy nor the test checked ULBs prepared CSPs till February 2017. As a result, the test checked ULBs did not provide sewage network in municipal areas, implement SWM services and disposal of municipal solid waste (MSW) and provide toilet facilities to 23 to 72 *per cent* households (**Appendix 4.1.1**).

Further, a survey report<sup>6</sup> (February 2016) of the sanitation scenario in 73 major cities of India, ranked Jamshedpur at 66, Ranchi at 62 and Dhanbad at 73 in providing sanitation facilities to their citizen corroborating the prevailing situation.

Thus, in absence of CSP, the issue of providing better public health and environment remained largely unaddressed in test checked ULBs.

In the exit conference (2 March 2017), the Joint Secretary, UD&HD stated that CSPs and State Sanitation Strategy were being prepared under Swachh Bharat Mission (SBM).

#### **4.1.6.4 Implementation of SWM project**

The Municipal Solid Waste (Management & Handling) Rules, 2000 fixed 31 December 2003 as deadline for development of infrastructure for collection, storage, segregation, transportation, processing and disposal of MSW in a scientific manner.

However, after lapse of more than three years of deadline (December 2003) for implementation of SWM project, the State Government appointed (February 2007) Regional Centre for Urban and Environmental Studies, Lucknow for preparing Detail Project Report (DPR) of four<sup>7</sup> test checked ULBs under state plan while in remaining five<sup>8</sup> test checked ULBs, DPRs were prepared under Jawaharlal Nehru National Urban Renewal Mission (JnNURM).

Audit noticed that DPRs in four test checked ULBs were not finalised as of February 2017 whereas in rest five ULBs, DPRs prepared under JnNURM were approved between 2007 and 2010 by GoI. However, none of the test checked ULBs could develop infrastructure for SWM as the ULBs failed in providing land for disposal and treatment of waste as of February 2017.

In the exit conference (2 March 2017), the Joint Secretary, UD&HD accepted the audit observations and stated that 39 acre land had been acquired from Bharat Coking Coal Limited (BCCL) by Municipal Corporation Dhanbad and acquisition of land in other ULBs was under process. Fact remains that the SWM, though mandated to be established by December 2003, could not be ensured till February 2017.

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<sup>6</sup> Conducted by MoUD, GoI

<sup>7</sup> Deoghar, Garhwa, Madhupur, Sahibganj

<sup>8</sup> Chas, Dhanbad, Jamshedpur (including Mango NAC), Medininagar and Ranchi

#### 4.1.6.5 Service Level Benchmarks

The MoUD, GoI, developed SLBs for basic urban services such as Water Supply, SWM, Sewage and Storm Water Drainage to provide a standardised framework for performance monitoring of these services, which would enable State and ULBs to initiate a process of performance monitoring and evaluation against agreed targets. Further, the thirteenth Finance Commission recommended that by the end of every fiscal year (31 March), State Government shall notify or cause all the ULBs to notify the service standards for these service sectors proposed to be achieved by them by the end of the succeeding fiscal year.

However, the State Government notified the service standards only for three years during 2011-14 and thereafter it was not notified either by the state government or by test checked ULBs. Thus, failure to notify the standards affected the delivery of services and consequently the SLBs could not be achieved (**Appendix- 4.1.1**).

In the exit conference (2 March 2017), the Joint Secretary, UD&HD accepted the audit observations and stated that SLBs for the year 2017-18 had been fixed and notified in February 2017.

### 4.1.7 Financial Management

#### 4.1.7.1 Poor allocation of funds for Water Supply, Sanitation and SWM

Urban water supply, sanitation, sewage and drainage and SWM are important basic needs for improvement of quality of life and enhancement of productive efficiency of the people.

Audit noticed that UD&HD released ₹ 3017.13 crore to the ULBs in the state under Plan Head and ₹ 847.32 crore under Non-Plan Head (salaries etc.) during 2011-16. Of this, ₹ 755.97 crore (25 per cent) was released for water supply, sanitation and SWM under Plan Head while ₹ 37.91 crore (4.47 per cent) under Non-plan head was allotted for water supply and sanitation as shown in **Table-4.1.1**:

**Table-4.1.1: Allotment of fund to ULBs in the State for Water Supply, Sanitation, Sewage-Drainage and SWM**

Sl. No	Services	Fund allotted during 2011-16 (₹ in crore)		Percentage of allocation	
		Plan Head	Non-Plan Head	Plan Head	Non-Plan Head
1	Water Supply	495.47	37.91	17	4.47
2	Sanitation	42.00		1	
3	Sewage and Drainage	156.00	Nil	5	-
4	SWM	62.50	Nil	2	-
<b>Total</b>		<b>755.97</b>	<b>37.91</b>	<b>25</b>	<b>4.47</b>

(Source: Data provided by UD&HD)

It could be seen from **table-4.1.1** that 17 per cent of total allotted fund under Plan Head were provided for Water Supply during 2011-16 while only six per cent funds were provided for Sanitation including Sewage and Drainage during the same period. For SWM services, the allotment was only two

per cent of total plan outlay. Insufficient allocation of fund by the department adversely affected the civic services provided by the ULBs to the citizen which is evident from the fact that in none of the 10 test checked ULBs sewage network was constructed while in eight out of 10 test checked ULBs SWM services were not available. Further, expenditure incurred by ULBs on delivery of these services was not available with the department.

In the 10 test-checked ULBs, audit noticed that the percentage of expenditure on water supply, sanitation including sewage and drainage and SWM against total available fund was abysmal during 2011-16 as shown in **table-4.1.2** below:

**Table 4.1.2: Expenditure on Water supply, Sanitation and SWM against available fund in test checked ULBs**

(₹ in crore)

Period	OB <sup>9</sup>	Receipt	Available fund*	Expenditure (Per cent of expenditure against available fund)			
				Water supply	Sanitation	Sewage and Drainage	SWM
2011-12	270.50	237.22	507.72	38.30 (8)	14.68 (3)	1.34 (0.3)	0.62 (0.1)
2012-13	310.61	322.28	632.89	66.06 (10)	19.88 (3)	3.60 (0.6)	0.73 (0.1)
2013-14	397.42	314.76	712.18	34.26 (5)	7.06 (1)	4.31 (0.6)	7.00 (1)
2014-15	470.19	492.13	962.32	50.16 (5)	11.02 (1)	11.47(1.2)	0.48 (0.1)
2015-16	559.60	900.81	1460.41	84.07 (6)	36.24 (2)	3.71 (0.3)	Nil
<b>Total</b>		<b>2267.20</b>	<b>2537.70<sup>10</sup></b>	<b>272.85 (11)</b>	<b>88.88 (4)</b>	<b>24.43 (1)</b>	<b>8.83 (0.4)</b>

(Source: Data provided by ULBs)

\* Includes opening balance, grants, loans and own sources

It could be seen from **table-4.1.2** that the test-checked ULBs spent five per cent to 10 per cent on water supply, one per cent to three per cent on sanitation and below two per cent on sewage and drainage and SWM of available fund for providing civic services to urban population during 2011-16. No reasons were found on record for the abysmally low levels of expenditure on such vital civic infrastructure in the ULBs.

Further, Indian Urban Infrastructure and Services recommended (2011) per capita investment for capital works for water supply, sewage and drainage and SWM. The position of investments made across all ULBs in the state during 2011-16 is shown in **Table 4.1.3**:

**Table-4.1.3: Investment on Services by ULBs during 2011-16**

Sector	Per capita investment required (Amount in ₹)	Population of Urban area (as per census 2011)	Investment Required (₹ in crore)	Investments made (₹ in crore)			Per capita invested (per cent of norm) (Amount in ₹)
				JnNURM	State Plan	Total	
Water Supply	5099	5517839	2813.55	308.17	495.47	803.64	1456.44 (29)
Sewage	4704		2595.59	75.56	156.00	231.56	419.66 (9)
SWM	391		215.75	8.91	62.50	71.41	129.42 (33)
<b>Total</b>			<b>5624.89</b>	<b>392.64</b>	<b>713.97</b>	<b>1106.61</b>	

(Source: Data provided by GRDA and UD&HD)

<sup>9</sup> Opening Balance of fund

<sup>10</sup> Includes OB of ₹ 270.50 crore and total receipt of ₹ 2267.20 crore

It could be seen from **table-4.1.3** that per capita investment in capital works in basic services was much lower against the prescribed norm and ranged between nine *per cent* and 33 *per cent* resulting in failure to achieve the SLBs in the test checked ULBs as discussed in paragraph 4.1.6.5. Thus, more investment is required by central and state governments in these three service areas in order to meet the desired level of SLBs to the people.

In the exit conference (2 March 2017), the Joint Secretary, UD&HD accepted audit observations and stated that due care had been taken and sufficient funds were being released from 2016-17.

#### **4.1.7.2 Provision of funds for Basic Services to Urban Poor**

As per Section 105 (3) of JM Act, 2011, every ULB should earmark a minimum of 25 *per cent* of the funds within the municipality's budget for Basic Services to Urban Poor<sup>11</sup> (BSUP) including the inhabitants of slum areas.

Audit observed that the test-checked ULBs were to allocate ₹ 125.65 crore (25 *per cent* of total receipt valued ₹ 502.58 crore) for BSUP<sup>12</sup> during 2011-16. Against this, eight out of 10 test-checked ULBs did not allocate any fund for BSUP (**Appendix-4.1.2**) while Municipal Corporation Ranchi (RMC) allocated ₹ 20.97 lakh (0.34 *per cent*) against total fund of ₹ 61.96 crore. However, NAC Mango allocated ₹ 2.20 crore (84 *per cent*) against total fund of ₹ 2.62 crore.

Thus, failure of eight ULBs to allocate fund for BSUP and meager allocation of fund by one ULB deprived the urban poor in getting basic services from the municipality for their amenities.

In the exit conference (2 March 2017), the Joint Secretary, UD&HD accepted the audit observations and stated that ULBs were directed to create the fund for BSUP.

#### **4.1.8 Implementation of Water Supply Scheme**

DW&SD executes Water Supply projects in Jharkhand on the basis of funds transferred to DW&SD by UD&HD through ULBs. After constitution of Jharkhand Urban Infrastructure Development Company Limited (JUIDCO) in July 2013 by the State Government, all new water supply schemes, sewage and drainage system under Sanitation, SWM etc. were being implemented by it whereas the water supply projects sanctioned prior to 2013 were continued to be implemented by DW&SD. Water connections for domestic, industrial and commercial purposes were provided by the ULBs.

Audit noticed that DW&SD has taken up construction of eight water supply projects at a cost of ₹ 1018.59 crore between January 2006 and February 2013 to create capacity of 370.50 million litres per day (MLD) of water supply under eight out of 10 sampled ULBs. The projects were to be completed between July 2007 and October 2016. Against this, in four<sup>13</sup> test checked

<sup>11</sup> Basic Services includes expenditure on capital and revenue account directly incurred on Water supply, Drainage, Sewage, Construction of community toilets, SWM, etc.

<sup>12</sup> Municipality's own sources, allocation from central and state finance commission, etc.

<sup>13</sup> Chas, Deoghar, Jamshedpur and Mango

**Out of eight water supply projects, four projects were not completed while one project was not commenced in more than three years of its sanction**

ULBs, water supply schemes having capacity of 64.50 MLD were completed at a cost of ₹ 184.13 crore between December 2013 and June 2016 after a delay of more than six years from scheduled periods of completion of the projects. The delay in completion of these projects delayed the availability of water to atleast 4.78 lakh<sup>14</sup> residents.

Further, in four<sup>15</sup> other test-checked ULBs, four projects costing ₹ 827.41 crore and having capacity of 306 MLD taken up between March 2010 and February 2013 for completion between October 2013 and October 2016 could not be completed (February 2017) on grounds of failure to acquire land prior to start of work, negligence of contractors, shortage of fund and absence of Right of Use clearance by respective departments<sup>16</sup>. On these incomplete projects, expenditure of ₹ 583.47 crore was incurred.

Besides, in ULB Madhupur the water supply project sanctioned in September 2013 to create 48 MLD capacity could not be commenced as of February 2017 as DPR was not finalised till February 2017 (**Appendix- 4.1.3**).

Had these four water supply projects having capacity of 306 MLD been completed and made operational, atleast 22.67 lakh<sup>17</sup> inhabitants of municipal area would have benefited. Hence, dependency of people in own arrangements could not be minimised to reduce the exploitation of groundwater/aquifers as discussed in paragraph 4.1.9.2.

Further, in the survey conducted by audit to ascertain the availability of supply water, 91 per cent<sup>18</sup> HHs responded that the water supply facilities provided by the test checked ULBs were not satisfactory.

In the exit conference (2 March 2017), the Joint Secretary, UD&HD accepted and stated that all schemes of ULBs would be completed by March 2017 and other two ULBs will be asked to start the work at the earliest.

Audit also analysed three water supply projects in the test checked ULBs and noticed irregularities in their execution as discussed below:

### **Chas Water Supply Project**

Technical Sanction of Chas Water Supply Project valued ₹ 50.26 crore required construction of submersed weir estimated at ₹ 5.03 crore. However, DW&SD irregularly diverted ₹ 3.65 crore for making payment of extra items of works which were not included in the original estimate. As a result, water supply scheme was completed without construction of submersed weir, which is an inevitable part of water supply system to control upstream water levels, diversion of flow and measuring the discharge of water. Thus, Chas Water Supply project failed to adhere to the technical sanction and thus technically unsound. However, no responsibility against the officials involved was fixed.

In the exit conference (2 March 2017), the Joint Secretary, UD&HD accepted the audit observation and stated that action would be taken.

<sup>14</sup> calculated on the basis of service standards of 135 lpcd per person

<sup>15</sup> Dhanbad, Garhwa, Ranchi and Sahibganj

<sup>16</sup> National/State Highways, Railways, Ring Road, etc.

<sup>17</sup> calculated on the basis of service standards of 135 lpcd per person

<sup>18</sup> 489 out of 535 respondents

## Ranchi Water Supply Project

Ranchi Water Supply project worth ₹ 234.71 crore was initially awarded (March 2010) to a contractor for completion by September 2012. However, due to slow progress of work, the contract was rescinded in July 2013 after making payment of ₹ 106.63 crore. The work was again allotted (October 2014) to another contractor for ₹ 290.44 crore<sup>19</sup> to complete the work in 24 months. However, the work could not be completed as of February 2017. In this regard, following irregularities were noticed:



i) Electro-mechanical items (Transformers-22, Crane-three, Soft Starter-11) valued ₹ 4.71 crore purchased (between December 2012 and May 2013) by the previous contractor, remained idle as these were purchased without completion of construction works of Intake well, Water treatment Plant and filtration house. Of these, five starters worth ₹ 29.87 lakh were found faulty by the second contractor.

ii) As per Central Vigilance Commission guidelines<sup>20</sup>, payment of mobilisation advance should be interest bearing so that the contractor does not draw undue benefit. In disregard, DWS division, Ranchi irregularly paid interest free mobilisation advance of ₹ 29.04 crore to the contractor.

iii) Construction of Under Ground Reservoir (UGR) was taken up at Lalgutuwa. While work valued ₹ 28.66 lakh was constructed, a raiyati objected the construction work and demanded compensation claiming the site of work as his land. District Land Acquisition Officer Ranchi assessed ₹ 27.34 crore as compensation amount for the land.

However, the Executive Engineer DWS division Ranchi planned (August 2016) to shift construction of UGR to a new place at Simalia. Thus, expenditure of ₹ 28.66 lakh incurred for the construction of UGR at Lalgutuwa became infructuous as construction of UGR was abandoned in 2012. As a result, the Project could not be completed (February 2017) and made operational.

In the exit conference (2 March 2017), the Joint Secretary, UD&HD accepted the audit observation and stated that action would be taken.

## Sahibganj Water Supply Project

Sahibganj Water Supply project estimated at ₹ 50.64 crore to supply 18 MLD water was allotted (September 2011) to a contractor at ₹ 38 crore for completion by March 2013. The project was aimed to provide water supply to

<sup>19</sup> The cost of project was increased to ₹ 373.06 crore from ₹ 288.39 crore due to enhancement of rate approval of ₹ 26.10 crore, change in quantity of ₹ 30.58 crore and addition of new items of ₹ 28 crore, which was to be borne by the State Government.

<sup>20</sup> vide OM No.NU/POL/19 dated 8 December 1997

all inhabitants of municipal area. However, the project could not be completed (February 2017) even after lapse of more than three years of scheduled completion deadline and expenditure of ₹ 30.42 crore. As a result, the inhabitants met their water requirement through own arrangements and water tankers of ULB Sahibganj.

As per the approved design, an Intake Jetty costing ₹ 4.27 crore along with a coffer dam was to be constructed at Ganga River. The Contractor constructed coffer dam and RCC pile for the Intake Jetty and received payment of ₹ 76.92 lakh<sup>21</sup>. However, rise in the water level of Ganga River breached (May 2014) the Cofferd Dam which stopped construction of Intake Jetty by the contractor.

Meanwhile, the Secretary, DW&SD decided (June 2015) to construct Floating Barge in place of Intake Jetty on the ground that construction of Intake Jetty due to change of river course would be of no use.

Thus, deficient planning, tardy implementation and failure to assess the requirement before granting technical sanction led to wasteful expenditure of ₹ 76.92 lakh on damaged Cofferd Dam and RCC pile work besides causing inordinate delays to complete the project.

#### 4.1.8.1 Water supply in the Capital

Water supply in Ranchi is made through three dams viz. Hatia, Gonda and Rukka having total water capacity of 246.83 MLD. The State Government planned to interconnect these dams to transfer water from one dam to another dam to facilitate supply of

water to whole city of Ranchi as availability of water in Hatia and Gonda dams was insufficient to meet the requirement of people. Government also introduced (October 2015) rationing of water supply by restricting supply to alternate days.

In November 2015, UD&HD notified approval

of the Master Plan of Ranchi by the State Government in which it is mentioned that all the three dams have been interconnected. However, Engineer-in-Chief (EIC), DW&SD stated (20 March 2017) that these dams



Rukka dam (Design Capacity-170.50 MLD) (14/03/2017)

<sup>21</sup> Cofferd Dam-₹ 25.64 lakh and RCC pile work-₹ 51.28 lakh



Kanke dam (Design Capacity-19.50 MLD) (19/03/2017)

have been interlinked as per their capacity and technical feasibility to the nearby population of other zone. EIC further stated that Rukka reservoir is linked with Hatia and Gonda areas as the live storage of Rukka reservoir can meet the partial demand of Hatia and Gonda areas.

The reply indicates that Rukka reservoir is linked with Hatia and Gonda areas and not upto the reservoirs of Hatia and Gonda as mentioned in the Master Plan.

Further, the interconnectivity of Gonda and Hatia reservoirs were not clarified by EIC.

Thus, the objective of interconnectivity of dams to ensure uninterrupted supply of water to the residents of Ranchi were partially met by connecting Rukka reservoir with catchment areas of other two dams while rationing of water from Hatia dam continued unabated besides having inadequate water supply, irregular supply of water without adequate pressure, etc. in many parts of the city especially under the catchment area of Hatia dam.



Hatia dam (Design capacity-56.83 MLD (14/03/2017)

Further, it is also noticed in audit that Government has not introduced automated technologies such as Supervisory Control and Data Analysis (SCADA) etc. for the Ranchi Urban Water Supply System (RUWSS) for online management of water supply. This would have provided better management insight to deal with the problems of inadequacy in water supply to the residents especially when interconnectivity of the dams is planned.

EIC stated (20 March 2017) that a pilot project of SCADA has been started in the Hatia area, and in coming days more areas will be covered under SCADA for online management and control of RUWSS. However, roadmap to do it for the entire RUWSS was not prepared (20 March 2017).

#### 4.1.9 Water Supply Services

SLBs developed by the MoUD, GoI enable systematic and sustained monitoring of services using standardised indicators against agreed targets and benchmarks. SLBs prescribe 100 *per cent* water supply connections to urban people and 135 lpcd water supply in municipal area.

SLBs could not be achieved by the test checked ULBs as less quantity of water is supplied against the requirement and all HHs were not connected with water pipe line

The UD&HD decided (June 2014) that water supply would be provided to every HH of municipal area under each ULBs by the year 2017 which was later extended to year 2019.

Audit observed in test checked ULBs that SLBs could not be achieved as less quantity of water is supplied against the requirement while all HHs were not connected with water pipe line as discussed in the succeeding paragraphs.

#### 4.1.9.1 Poor Outreach of Piped water supply

In test checked ULBs, there were 5.71 lakh HHs as of March 2016. Of this, only 1.66 lakh (29 *per cent*) HHs were connected with piped water supply (**Appendix-4.1.4**) while 4.05 lakh (71 *per cent*) of total HHs were dependent on ground water for their daily needs. The highest achievement in providing water supply through pipe line was 67 *per cent* in Deoghar while the lowest was nil in Sahibganj. This resulted in a shortfall between 33 *per cent* and 100 *per cent* of service provided in the test checked ULBs when compared with SLBs. Thus, the spread of piped water supply was not adequate and far behind the benchmarks fixed by the MoUD.

Further in Garhwa, new water connections could not be provided to HHs since July 2013 as water resources were not available.

In the exit conference (2 March 2017), the Joint Secretary, UD&HD accepted the fact and stated that after completion of water supply projects, all households will be connected through water pipe line.

#### 4.1.9.2 Inadequate supply of water

Water is the very basis of life and is the foundation for human survival and development. Municipal water supply systems include facilities for treatment, storage, transmission and distribution.

In order to meet the standards of SLB for water supply in 10 test checked ULBs, 508.27 MLD<sup>22</sup> water was required to be supplied to the inhabitants. However, DW&SD assessed the requirement at 371.22 MLD based on the connectivity provided through the pipeline. Against this, only 218.86 MLD water was being supplied to the inhabitants which resulted in short supply of 289.40 MLD (57 *per cent*) water to inhabitants assessed on the basis of population and 152.36 MLD (41 *per cent*) water against the projection by DW&SD (**Appendix-4.1.5**).

The short supply was a consequence of failure to complete four water supply projects having capacity of 306 MLD and take up one water supply project having capacity of 48 MLD till February 2017, although sanctioned in September 2013.

Further, audit conducted a survey among 535 inhabitants who have piped water connection in their premises. In the survey, 97 *per cent*<sup>23</sup> of residents responded that the duration of water supply was less than two hours in a day while 82 *per cent*<sup>24</sup> were not satisfied with the pressure of water supply.

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<sup>22</sup> Population-37,64,972 x 135 lpcd =508271220 litre=508.27 MLD

<sup>23</sup> 187 out of 192 respondents

<sup>24</sup> 438 out of 535 respondents

Further, 85 *per cent*<sup>25</sup> residents told that during summer season, sufficient water was not supplied.

Thus, failure to provide piped water supply and maintain service standards, where supply is provided through pipeline, nudged the people to extract ground water to meet their requirements which is fraught with the risk of depletion of urban aquifers as is seen in the case of Ranchi where 20 out of 55 wards are declared dry zone area by RMC.

To tap alternative source of water in the backdrop of the above failures, UD&HD notified (April 2016) Jharkhand Building Bye Laws 2016 in which water harvesting system was made mandatory for plots of 300 square meter and above. Also, as per Jharkhand Municipal Property Tax (Assessment, Collection and Recovery) Amendments Rules, 2015 mandating water harvesting system in every holding failing which penalty of one and half times of holding tax shall be imposed. However, none of the test checked ULBs have been imposing penalty against the dwellers for not installing water harvesting system in buildings/holdings. Thus, accumulation and storing of rainwater which may have served an alternative source for drinking, livestock, irrigation etc. before it reaches the aquifers could not be done.

In the exit conference (2 March 2017), the Joint Secretary, UD&HD accepted the audit observation and stated that necessary instructions in this regards would be issued. Fact remains that Government is unable to provide water to 57 *per cent* inhabitants and prevent their dependence on ground water.

#### 4.1.9.3 Unmetered Water Connections

A water meter is a scientific instrument for accurate measurement of quantity of water supplied to the consumers. It facilitates levy of appropriate tariffs and improve efficiency of water supply through proper monitoring of the water distributed. SLBs prescribe 100 *per cent* metering of water supply connections.

Audit noticed that seven out of 10 test checked ULBs did not install water meters to 0.21 lakh HHs to whom piped water connections were provided while balance three ULBs (except Dhanbad) partially installed water meters to 0.35 lakh HHs out of 1.46 lakh HHs having piped connections. Thus, 1.32 lakh HHs (79 *per cent* of connected HHs) out of total 1.67 lakh HHs having piped water connections were not installed water meters (**Appendix-4.1.6**).

Audit further noticed that ULBs Mango and Ranchi installed water meters to only four to eight *per cent* HHs whereas ULB Dhanbad reportedly installed water meters to 100 *per cent* of HHs having piped water connection. However, ULB Dhanbad realised user charges at fixed rates instead of consumption as per the installed meters for which no reasons were on record. Thus, installation of the meters in Dhanbad served no purpose.

This fact was also established in the survey conducted by audit with 500 end users of the water supply service in which 81 *per cent*<sup>26</sup> HHs responded that

<sup>25</sup> 445 out of 524 respondents

<sup>26</sup> 407 out of 500 respondents

water meter was not installed and 62 *per cent*<sup>27</sup> said that water meter was not functioning properly while 86 *per cent*<sup>28</sup> responded that meter reading was not taken at regular intervals.

Therefore, in the absence of meters or metered bills where meters were installed, billing for water consumed is estimated, either on average basis or on a flat rate, as the case may be. This prevented the ULBs to monitor and curb unaccounted usage of water resulting in loss of revenue.

In the exit conference (2 March 2017), the Joint Secretary, UD&HD accepted the audit observation and stated that necessary instructions in this regard would be issued. Fact remains that 79 *per cent* HHs having piped water connections were yet to be installed water meters and their water usage is only estimated.

#### 4.1.9.4 Quality of water

The UD&HD directed (May 2015) all ULBs and DW&SD to conduct water quality test for presence of Arsenic in water but none of the test checked ULBs conducted quality test of water.

Audit noticed that in Medininagar, untreated water was being supplied to HHs situated in Ward number six (Shiwalaghat and Kasai mohalla). Further, 4.05 lakh HHs (**Appendix-4.1.6**) under the test checked ULBs were using groundwater for their daily needs. However, the ULBs did not take any effort to check its suitability for human consumption.

Thus, the sampled ULBs failed to test the quality of supplied water or ground water though mandated.

In the exit conference (2 March 2017), the Joint Secretary, UD&HD accepted the audit observation and stated that action will be taken.

#### 4.1.9.5 Cost Recovery and financial sustainability of Water Charges

Pricing of water should ensure its efficient use and reward conservation. As per section 197 (2) of JM Act, 2011, ULBs have to ensure that water charges for various uses shall be fixed in such a way and recovered accordingly that they cover at least the cost of operation and maintenance (O&M) of providing the services.

Audit noticed that four out of 10 sampled ULBs raised a demand of ₹ 49.88 crore as user charges from the water users during 2011-16. During the same period, DW&SD incurred a total O&M cost of ₹ 43.99 crore for water supply.

Against the demand, only ₹ 12.66 crore (29 *per cent* of O&M cost) could be collected during 2011-16 by the four test-checked ULBs (**Appendix-4.1.7**) as several users did not pay their dues. This resulted in short collection of user charges worth ₹ 37.22 crore.

Further, three (Garhwa, Madhupur and Sahibganj) test checked ULBs did not impose user charges while remaining three (Chas, Deoghar and Ranchi) did not provide data of O&M cost, outstanding user charges and recovery of user

Against  
₹ 49.88 crore of  
recoverable water  
user charges, only  
₹ 12.66 crore  
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by the test-  
checked ULBs  
during  
2011-16

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<sup>27</sup> 137 out of 222 respondents  
<sup>28</sup> 403 out of 469 respondents

charges to audit. It was also seen in audit that four test checked ULBs (Dhanbad, Jamsshedpur, Mango and Medininagar) did not fix user charges according to O&M costs while eight (except Ranchi and Dhanbad) out of 10 test checked ULBs did not maintain comprehensive database of water supply connections accorded in respect of domestic, industrial and commercial category. In the absence of this, there is no assurance about the completeness and correctness of the assessment of demand and collections of water charges. Further, in Dhanbad and Ranchi, DW&SD realises water user charges from 12000 HHs situated at HEC, RAILWAYS, MECON, JAIL, ISM etc. instead of ULBs.

Thus, failure to fix and impose user charges appropriate to meet O&M costs besides inefficient collection of the dues resulted in unsustainable water supply services.

In the exit conference (2 March 2017), the Joint Secretary, UD&HD accepted audit observation and stated that after completion of water supply projects, water user charges will be fixed accordingly.

However, State Government did not give any reason for not effecting recovery of outstanding user charges.

#### 4.1.9.6 Non-revenue water

Non-revenue water (NRW) is water that has been produced and is lost before it reaches the customer. Losses can be through leakage in transmission and distribution networks, theft or metering inaccuracies etc. High incidences of leakage cause intermittent supply and therefore pose a significant public health risk. The SLB developed by the MoUD, GoI, fixed 20 *per cent* benchmark for NRW.

Audit noticed that in four (Chas, Dhanbad, Madhupur and Ranchi) out of 10 test-checked ULBs, NRW ranged between 33 *per cent* and 70 *per cent*. The quantity of water which did not fetch any revenue beyond the benchmark limit of 20 *per cent* resulted in loss of revenue worth ₹ 10.50 crore per year as shown in table below:

**Table-4.1.4: Revenue loss from Non-revenue water per year**

(₹ in crore)					
Name of ULBs	Water Supplied (MLD)	NRW (MLD)	NRW Limit (MLD)	NRW beyond limit (MLD)	Revenue Loss <sup>29</sup>
Chas	7.70	5.39	1.54	3.85	0.84
Dhanbad	118.00	53.10	23.60	29.50	6.46
Madhupur	4.50	1.49	0.90	0.59	0.13
Ranchi	70.02	28.01	14.00	14.01	3.07
<b>Total</b>	<b>200.22</b>	<b>87.99</b>	<b>40.04</b>	<b>47.95</b>	<b>10.50</b>

(Source: Data provided by DWS divisions and ULBs)

Thus, failure to maintain the NRW within benchmark limits is detrimental to the financial viability of water utilities besides limiting the availability of water and coverage of HHs.

<sup>29</sup> At the rate of ₹ 6 per 1000 litre charged by RMC

The UD&HD accepted the fact that in Jharkhand Water User Charge Policy, 2016, NRW management had not been made effective.

#### 4.1.9.7 Misuse of Government Revenue

The State Government directed (March 2015) the ULBs to realise ₹ 4000 as water connection fee from above poverty line (APL) HHs and the amount so realised was required to be deposited in Revenue Account of State Government.

Audit noticed that in six<sup>30</sup> out of 10 test checked ULBs, an amount of ₹ 2.12 crore realised as water connection fee from the APL HHs seeking water connections during 2015-16 were irregularly kept in Municipal funds as the State Government had not provided proper head of Revenue Account. Further, four ULBs diverted ₹ 91.84 lakh<sup>31</sup> out of the amount realised on repair of hand pumps, payment of office expenses, retirement benefits etc.

In the exit conference (2 March 2017), the Joint Secretary, UD&HD accepted and stated that action will be taken. Fact remains that no accountability was fixed for unauthorised diversion of fund.

#### 4.1.10 Sanitation

Sanitation is a basic civic service to be provided by the ULBs to evacuate the sewage that gets generated from HHs and other commercial establishments. It is considered to be an important service as it benefits whole city through cleanliness, hygiene and disease prevention. In test checked ULBs, sanitation was delivered mostly in the form of open and closed drains that carry the sewage water, which also serve as storm water drains during monsoon.

##### 4.1.10.1 Implementation of SBM

GoI launched (December 2014) SBM with objectives to eliminate open defecation, eradicate manual scavenging, introduce modern and scientific municipal solid waste (MSW) management system etc. SBM has six components which included Household toilets, Community toilets, Public toilets, SWM, Information, Education and Communication (IEC) and Public Awareness and Capacity building and Administrative and Office Expenses.

Further, ULBs are required to carry out a house to house survey on the basis of Census 2011 data or any recent survey available to them to facilitate State Government to submit a Concept Note on State Urban Sanitation Strategy.

Audit revealed that none of the test checked ULBs conducted any survey and resultantly, the concept note on state sanitation strategy was not prepared. Hence, targets for construction of individual toilets could not be fixed as per census 2011.

However, State Government fixed target for construction of 2,79,487 individual toilets in all 41 ULBs of Jharkhand on the basis of Census 2011. Against this, only 9,006 toilets (three *per cent* of target) were constructed

<sup>30</sup> Chas-₹ 53.71 lakh, Deoghar-₹ 40.01 lakh, Dhanbad-35.56 lakh, Jamshedpur NAC-₹ 11.77 lakh, Mango NAC-₹ 47.21 lakh and Medininagar-₹ 23.37 lakh

<sup>31</sup> Chas-₹ 8.60 lakh, Deoghar-₹ 43.66 lakh, Dhanbad-₹ 23.45 lakh and Medininagar-₹ 16.13 lakh

under SBM. This facilitated 12 *per cent* (97 out of 800) wards to become Open Defecation Free (ODF) till July 2016.

In test checked ULBs, 11,611 (nine *per cent*) individual toilets could only be completed (August 2016) against the target of 1,27,786 fixed for 2015-17 while 61 *per cent* (319 out of 521) wards became ODF till February 2017.

Thus, the project implementation was tardy while the sanitation drive through SBM remained to be realised to its projected potential.

In the exit conference (2 March 2017), the Joint Secretary, UD&HD accepted the audit observation and stated that target would be achieved by September 2017.

#### 4.1.10.2 Drainage and Sewage system

As per census 2011, 75 *per cent* of HHs of urban areas in Jharkhand were either not connected with drainage or had open drainage system. It is the primary responsibility of ULBs to establish sewage treatment and disposal facilities. While urbanisation and growth in population contributed to increased sewage generation, sewage facility was not well managed by the test checked ULBs as discussed below.

##### Lack of drainage system

As per CPHEEO Guidelines on Sewage and Drainage system, 80 *per cent* supplied water becomes waste water. Accordingly, the test checked ULBs generated 175.09 MLD (80 *per cent* of 218.86 MLD supplied water) waste water. However, these ULBs have not constructed underground or piped sewer system to process and utilise waste water for purposes such as irrigation to reduce demand for fresh water for irrigation.

Audit further observed that 60 *per cent* (567.12 KM out of 939.55 KM) drains in nine (except Dhanbad) test checked ULBs remained uncovered. Open drainage beset with problem of garbage being dumped into drains apart from silt, necessitates daily removal of these materials to ensure uninterrupted flow. In absence of sewage system, all waste water generated from the HHs flow through open or covered drains that are also used as storm water drains.

The figure below shows the condition of drains blocked with garbage.

**Due to lack of piped sewer system, waste water generated in test checked ULBs could not be processed and utilised**



**Open drain choked by garbage at Bhuiyandih, Jamshedpur**



**Silt deposited in drain, near Railway Station, Sahibganj**

Thus, absence of adequate drainage and sewage treatment system prevented disposal of domestic sewage in test checked ULBs.

In the exit conference (2 March 2017), the Joint Secretary, UD&HD accepted the audit observation and stated that matter would be examined.

### **Infructuous expenditure on preparation of DPR**

Under JnNURM, DPR for Sewage and Drainage System for Dhanbad and Jamshedpur Urban Agglomeration (Adityapur, Jamshedpur, Jugsalai and Mango) was prepared (2010) by a consultant for which ₹ 2.91 crore<sup>32</sup> was paid as consultancy fee. However, the DPR was not approved by the MoUD, GoI, as neither the ULBs nor the State Government provided details of land for construction of Sewage Treatment Plant.

Further, UD&HD appointed (September 2014) another consultant for preparing DPR for Integrated Sewage and Storm Water Drainage systems in Dhanbad, Jamshedpur and Mango NAC.

Thus, DPR prepared by the previous consultant in 2010 become redundant as the DPR was not finalised for want of land and expenditure incurred on payment of consultancy fee of ₹ 2.91 crore became infructuous.

In the exit conference (2 March 2017), the Joint Secretary, UD&HD accepted the audit observation and stated that the matter would be examined.

#### **4.1.10.3 Cleaning of roads and drains**

The ULBs are required to take measures for securing surface cleaning of all streets and drains in the city besides removal of waste generated in the city on a regular basis. According to Manual of SWM prepared by Central Public Health and Environmental Engineering Organisation (CPHEEO), a drain cleaner shall be assigned cleaning of upto 500 metres of drain per day while a sweeper engaged for street sweeping shall be assigned cleaning of 500 metres of road length on an average per day.

Audit revealed that none of the test checked ULBs evolved any system for assigning of length of road or drain to be swept or cleaned daily by sweepers. It was noticed that the 10 sampled ULBs have 1821 KMs road and 918 KMs drain and to clean these, 5478 sanitation workers were required as per CPHEEO yardstick. Against this, only 2892 (53 *per cent*) sanitation workers were deployed for sweeping, cleaning, desilting etc, in test checked ULBs without assessing the length of road and drain. As a result, cleaning of roads and drains on regular basis as per CPHEEO standards could not be ensured.

This was also confirmed in the survey conducted by audit where 75 *per cent*<sup>33</sup> residents reported to audit that they were not satisfied with the sanitation facilities provided by the test checked ULBs.

In the exit conference (2 March 2017), the Joint Secretary, UD&HD accepted the audit observation and stated that action would be taken to fill the gap.

#### **4.1.10.4 Functioning of illegal slaughter houses**

The Supreme Court of India directed (March 2014) to construct licensed slaughter house in every urban area and to abolish slaughter houses in municipal area which did not have license to operate. In compliance, the State Government directed (April 2014) the ULBs to send proposal for purchase/acquisition of land and estimated cost of construction of slaughter houses.

**Less deployment  
of staff affected  
cleanliness of  
cities**

<sup>32</sup> Dhanbad-₹ 1.23 crore and Jamshedpur Urban Agglomeration- ₹ 1.68 crore

<sup>33</sup> 529 out of 707 respondents

Audit noticed that six (except Dhanbad, Madhupur, Medininagar and Ranchi) out of 10 test checked ULBs did not send requisite proposals of construction of slaughter houses as no survey for this was conducted by these ULBs. Hence, slaughter houses were not constructed by these ULBs. Further, slaughter house at Dhanbad could not be commenced for want of land despite availability of fund while the slaughter house at Ranchi was incomplete for more than three years despite an expenditure of ₹ 7.98 crore on the project. Likewise, slaughter houses constructed at a cost of ₹ 9.27 lakh in Madhupur and Medininagar remained unutilised since their construction (February 2002).

In the absence of licensed slaughter houses, illegal slaughter houses were established in the municipal areas which resorted to open slaughtering activities causing potential health hazards besides environmental pollution.

In the exit conference (2 March 2017), the Joint Secretary, UD&HD accepted the audit observation and stated that all ULBs had now submitted proposal for constructing slaughter house.

#### **4.1.10.5 Rehabilitation of Manual Scavengers**

The GoJ declared the state as manual scavenger free in the year 2007. However, 34 Manual Scavengers were reported in existence in Dhanbad municipal area. ULB Dhanbad demanded (February 2015) ₹ 1.02 crore for their rehabilitation, but only ₹ 59.32 lakh was released (March 2015) by the UD&HD which also remain unutilised till February 2017 without any reasons on record.

Further, Municipal Council Sahibganj reported (July 2013) to UD&HD that there were no manual scavengers in municipal area. However, State Government *suo motu* released ₹ 3.95 lakh during 2014-15 for rehabilitation of six Manual Scavengers, which was irregularly spent for renovation of quarters of Municipal Sweepers.

In the exit conference (2 March 2017), the Joint Secretary, UD&HD accepted the audit observation and stated that the matter will be examined.

#### **4.1.10.6 Idle sanitary equipment**

Scrutiny revealed that the following sanitary equipment purchased by the ULBs were not utilised:

- In Medininagar a Drain Cleaner purchased at a cost of ₹ 7.70 lakh in 2009-10 remained idle since its purchase. On being enquired the Executive Officer stated that manual cleaning was more convenient than Drain Cleaner Machine. Thus, the ULB procured the machine without assessing its need.
- Fogging Machines purchased (between January 2004 and April 2007) for ₹ 9.60 lakh<sup>34</sup> by ULBs Madhupur and Medininagar remained idle since May 2013 and April 2015 respectively for want of fund to purchase chemical oil for the machine.

#### **4.1.10.7 Utilisation of fund for Sanitation**

- In Medininagar, ₹ 3.42 crore released (March 2002) by UD&HD for construction of Sewage and Drainage system was refunded (March 2014) on

<sup>34</sup> Madhupur-₹ 4.80 lakh and Medininagar-₹ 4.80 lakh

the direction of Finance Department, GoJ due to failure to utilise the fund by Municipal Council, Medininagar for 12 years. This was on the ground that Deputy Commissioner, Medininagar forbade Municipal Council to make payment of consultancy fee (₹ 4.97 lakh) to a consultant who submitted DPR of the work with project cost ten times more than the sanctioned amount.

In the exit conference (2 March 2017), the Joint Secretary, UD&HD accepted the audit observation and assured to take corrective measure.

- State Government released ₹ 39.83 crore between 2003 and 2015 to five<sup>35</sup> test checked ULBs for construction of Community Toilets at public places and individual HHs toilets.

However, only 60 per cent (₹ 23.90 crore) of total funds could be utilised as of March 2016 to complete 3306 individual and 96 community toilets against the target of 3509 individual and 118 community toilets leaving unspent balances of ₹ 15.93 crore. Further, ULBs Ranchi and Dhanbad, did not take up construction of community and individual toilets during 2012-13 to 2014-15 without any reasons on record.

In the exit conference (2 March 2017), the Joint Secretary, UD&HD accepted the audit observation and stated that matter would be examined and ULBs would be asked to complete the toilets at the earliest.

#### **4.1.10.8 Other irregularities**

##### **Irregular advance to Ward Councillors**

The State prohibited (October 2012) allotment of funds to Ward Councillors for execution of any scheme in their wards. In disregard, Municipal Corporation Chas paid ₹ 1.89 crore as advances during 2012-16 to Ward Councillors for execution of sanitation works in their wards. However, adjustment vouchers against advances were not submitted by Ward Councillors. Thus, advances valued ₹ 1.89 crore remained unadjusted (February 2017).

In the exit conference (2 March 2017), the Joint Secretary, UD&HD accepted the audit observation and stated that action would be taken.

##### **Irregular advance to Non-Governmental Organisation (NGO)**

Under Rajiv Awas Yojana, Municipal Corporation Dhanbad awarded (October 2014) construction of 1983 units of Septic tanks worth ₹ 87.65 crore to an NGO<sup>36</sup>.

Audit noticed that the Municipal Commissioner paid ₹ 5.50 crore to the contractor against work executed for ₹ 2.65 crore treating the difference amount of ₹ 2.85 crore as advance which was lying unadjusted (February 2017) since August 2014 as no work was executed by the contractor after March 2015.

Thus, payment in excess of work done resulted in ₹ 2.85 crore remaining unrecovered.

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<sup>35</sup> Deoghar, Dhanbad, Jamshedpur, Mango and Ranchi

<sup>36</sup> Adarsh Gram Vikash Sansthan, Murhi

In the exit conference (2 March 2017), the Joint Secretary, UD&HD accepted the audit observation and stated that action would be taken.

### **Excess payment of Mobilisation advance**

Para 4.8.6 (h) of JMAM 2012, envisages payment of five *per cent* mobilisation advance. In disregard, RMC entered into an agreement with an agency to pay 15 *per cent* mobilisation advance of agreed cost for construction of Sewage and Drainage system worth ₹ 359.25 crore at Ranchi.

Audit noticed that RMC paid ₹ 53.89 crore<sup>37</sup> (15 *per cent* of ₹ 359.25 crore) mobilisation advance against the admissible amount of ₹ 17.96 crore. This led to excess payment of mobilisation advances worth ₹ 35.93 crore on which undue benefit of ₹ 1.73 crore (**Appendix 4.1.8**) was provided in the form of interest calculated at savings bank rate of four *per cent* per annum till February 2017.

In the exit conference (2 March 2017), the Joint Secretary, UD&HD accepted the audit observation and stated that action would be taken.

## **4.1.11 Solid Waste Management**

SWM is a basic civic service to be provided by ULBs to ensure that the waste generated is collected and disposed-off properly. The provisioning of it (like sanitation) benefits not only individual HHs but also whole city through cleanliness, hygiene and disease prevention.

### **4.1.11.1 Implementation of SWM**

The Municipal Solid Waste (Management & Handling) (MSW) Rules, 2000 fixed 31 December 2003 as deadline for development of infrastructure for collection, storage, segregation, transportation, processing and disposal of MSW in a scientific manner.

Audit noticed that the test checked ULBs failed to achieve the deadline. In four test checked ULBs<sup>38</sup>, SWM projects worth ₹ 146.29 crore taken up under JnNURM were stopped midway after incurring expenditure of ₹ 28.47 crore as land for construction of processing and disposal of waste were not available. In the remaining six test-checked ULBs no steps had been taken to initiate implementation of SWM projects.

In the exit conference (2 March 2017), the Joint Secretary, UD&HD accepted the audit observation and stated that DPRs of SWM were being prepared.

Status of implementation of SWM in test checked ULBs is summarised in **Appendix- 4.1.9**.

Further, the impact of failure to implement the SWM projects in Ranchi and Dhanbad was analysed as discussed below:

### **SWM services by Municipal Corporations Ranchi and Dhanbad**

The work of providing SWM services to Ranchi and Dhanbad was awarded to an agency and agreements were executed (June 2011 and February 2012) with

<sup>37</sup> ₹ 18.00 crore on 15 October 2015, ₹ 18.00 crore on 4 December 2015 and ₹ 17.89 crore on 31 December 2015

<sup>38</sup> Chas, Dhanbad, Jamshedpur and Ranchi

None of the test checked ULBs implemented SWM projects in prescribed deadline

the concessionaire for completion of treatment and disposal facilities in 365 and 300 days respectively from the dates of the agreement.

In this regard a performance audit on Implementation of Solid Waste Management project by Municipal Corporation Ranchi was conducted and findings were included in ATIR on Local Bodies for the period 2012-13. The findings in the report pointed out many irregularities but no remedial action has been taken till February 2017 by the municipal authorities (**Appendix-4.1.10**).

In the exit conference (2 March 2017), the Joint Secretary, UD&HD accepted the audit observation and stated that the matter would be examined.

The other irregularities in terms of delivery of services by concessionaire are discussed below:

#### **Failure of Concessionaire**

- i) Door to door services for collection of wastes were not provided to all HHs;
- ii) Less number of vehicles and manpower were deployed for sanitation;
- iii) Required number of dustbins were not installed/distributed;
- iv) The sanitation work was not being done properly by the agency as RMC always deployed its own sweepers and vehicles for lifting of garbage from the various parts of city;
- v) User charges worth ₹ 2.90 crore were not collected at Dhanbad by the Concessionaire.

Audit noticed that no action was taken against the service provider during the period of services (between June 2011 and June 2014) by the ULBs for failure to provide the mandated services to the HHs and other commercial establishments. However, contract was rescinded by RMC and DMC (between January 2014 and June 2014).

#### **Failure of Municipal Corporations Ranchi and Dhanbad**

- i) Concessionaire did not lift MSW for 30 days in November 2013 in Dhanbad yet no penalty was imposed by the DMC;
- ii) Both ULBs failed to invoke penalty for failure to process waste;
- iii) DMC diverted ₹ 2.60 crore from grant released under JnNURM for implementation of SWM on payment of tipping/professional fee although the same was to be paid from the user charges realised by the concessionaire;
- iv) RMC failed to recover ₹ 2.63 crore paid to the concessionaire for installation of treatment and disposal plant at landfill site as the concessionaire did not construct it;
- v) DMC paid (from October 2012 to April 2013) tipping fee of ₹ 66.84 lakh to Concessionaire without verifying weighbridge data;
- vi) Both ULBs did not establish Program Monitoring Mechanism which could have monitored the project deliverables; and

vii) Sanitary vehicles purchased (February 2013) by the firm for Dhanbad at a cost of ₹ 4.75 crore remained unutilised due to failure to transfer the vehicles to ULB Dhanbad.



**Waste disposal vehicles lying idle at Bus stand, Bartand, Dhanbad**

Further, ₹ 2.63 crore was paid to the concessionaire under SWM in Ranchi to construct a processing plant for disposal of waste into brick making, composting etc. at cost of ₹ 20.22 crore. However, the contract was rescinded (January 2014) and the processing plant was not constructed. Later on, RMC appointed (October 2015) another concessionaire to process waste into energy. However, the payment of ₹ 2.63 crore made to first concessionaire was not recovered which proved a loss to RMC.

Thus, improper functioning of the agency and lack of timely intervention by RMC and DMC led to termination of contracts. This necessitated the ULBs to deliver collection and transportation of waste services themselves.

Further, in the survey conducted in all test checked ULBs, 71 per cent<sup>39</sup> residents said that door to door waste collection was not done and only 11 per cent<sup>40</sup> residents told that dust bins were being cleaned daily.

In the exit conference (2 March 2017), the Joint Secretary, UD&HD stated that the matter would be examined.

#### **4.1.11.2 Assessment of waste generation**

The MSW Rules stipulate that all MSW generated shall be collected and no waste remains uncollected that poses risk to public health and environment. Further, all ULBs have to furnish details of quantity and composition of solid waste generated to the concerned District Collectors annually.

Audit noticed that none of the test checked ULBs maintained any records of the quantity and composition of the wastes generated and collected. Thus, assessment of waste generation was not done. However, the ULBs furnished to audit the figures of waste generated and collected based on mere approximation. In the absence of reliable data of waste generation, Audit adopted the study report of Indian Urban Infrastructure and Services, 2011. The mismatch between the figures furnished by the ULBs for 2015-16 and that worked out based on the study report is shown in **Appendix-4.1.11**.

It was further observed that the waste generated in municipal area of Garhwa, Madhupur and Medininagar were collected and lifted by concerned ULBs. In

<sup>39</sup> 523 out of 741 respondents.

<sup>40</sup> 53 out of 489 respondents

the remaining ULBs, collection of waste was in the range of 39 *per cent* to 90 *per cent* only due to shortage of vehicles, manpower and failure to implement the SWM projects. The uncollected waste poses risks to public health and environment.

In the exit conference (2 March 2017), the Joint Secretary, UD&HD accepted the audit observation and stated that ULBs would be directed to prepare the database of waste.

#### 4.1.11.3 Segregation and storage of waste

As per provisions in MSW Rules, 2000, house to house collection of MSW should be made on a daily basis and segregated at source into biodegradable waste, recyclable waste and hazardous waste by using separate coloured bins at HH level and collection centers. The container/containers of at least twice the capacity may be placed at such locations to prevent over flow of bins.

Audit observed that eight (except Dhanbad and Ranchi implemented door to door collection from April 2011 to February 2014) out of 10 test checked ULBs have not evolved any system for door to door collection of solid waste as SWM projects were not implemented. This resulted in littering in open spaces, road sides and drains treating it as receptacles of waste. Also, mixed waste collected during street sweeping was being dumped by the road side and this littering was aggravated by stray animals and rag pickers resulting in unhygienic conditions.

Evidently, waste was not being properly stored which was further compounded by failure to clear storage bins on a daily basis. This was also confirmed from our survey in which 89 *per cent*<sup>41</sup> residents stated that community waste bin was being cleaned after more than one day.

Further, as per manual of SWM, distance between two bins should not exceed 500 meters. However, in our survey 27 *per cent*<sup>42</sup> residents complained that distance between two dust bins were more than 500 meters and 53 *per cent*<sup>43</sup> residents threw their waste on roadside.

Audit also conducted physical verification of sites under the sampled ULBs and found that in many places MSW was dumped in open spaces on the roadside and even burnt openly as shown in the photos below:



Garbage littered from waste bin at Lalpur, Ranchi



Garbage kept in open beside the road at Peda Gali Deoghar



Garbage burnt beside the road at Masjid Chowk Deoghar

<sup>41</sup> 436 out of 489 respondents

<sup>42</sup> 94 out of 347 respondents

<sup>43</sup> 375 out of 708 respondents

Section 259 of JM Act, 2011 stipulates that whoever litters on any street or public place or deposits or throws or causes or permits to be deposited or throws any solid waste or building rubbish at any place shall be punished on the spot with a fine. On being enquired, all test checked ULBs (except Ranchi) informed that no action was taken by them to implement these provisions of the act.

#### 4.1.11.4 Transportation of waste through open vehicle

The MSW Rule (Schedule II) specified activities to be undertaken by municipalities to ensure that transportation of MSW for processing/disposal takes place in a hygienic manner and does not cause littering of waste.



MSW carrying through open vehicle in Deoghar

Seven (except Dhanbad, Mango and Ranchi) out of 10 test checked ULBs stated that vehicles, carrying MSW, were never covered during transportation for disposal. Thus, usage of uncovered vehicles would cause scattering and not reaching properly to the destination point for disposal.

#### 4.1.11.5 Disposal of waste in unscientific manner

Landfilling is the disposal of residual solid waste on land which should be designed with protective measures against pollution of ground water, surface water, fugitive dust, bad odour etc. No landfill should be situated within 100 metres of a navigable river or stream and should be at least 500 metres away from a notified habited area.

Audit noticed that no landfill sites (except Ranchi) were available in any of the test checked ULBs. Waste was dumped in close proximity to residential areas as well as river side or river bed as shown in photographs below.

#### View of dumping yards



Open Landfill site at Dhanbad



MSW dumped beside the river at Sahibganj



MSW dumped beside the river at Medininagar

Thus, disposal of waste was being carried out in an unscientific and unhygienic manner in open or beside river thereby causing unsanitary conditions and pollution.

#### 4.1.11.6 Improper disposal of bio-medical waste

Bio-medical waste (BMW) comprises of infectious organic and pathological waste, needles and other sharp instruments, discarded medicines and toxic drugs generated during diagnosis, treatment, immunisation of human beings and animals or research activities.

Bio-medical waste generated by institutions such as hospitals, nursing homes, veterinary institutions, animal houses, clinical laboratories etc. should be disposed off as per provisions under BMW (Management and Handling) Rules, 1998.



Five<sup>44</sup> out of 10 test checked ULBs reported to audit that total untreated BMW was being mixed with MSW

Bio-medical waste near municipal office, Deoghar

without proper treatment while rest five sampled ULBs (Chas, Jamshedpur, Mango, Ranchi and Sahibganj) informed that waste generated by hospitals and clinics were disposed off through incinerators or laboratory and were not mixed up with MSW.

Thus, disposal of BMW by five ULBs defied BMW Rules, 1998 which may cause health risk to health care personnel, waste workers and inmates of the institutions as well as creating potential environmental hazard.

In the exit conference (2 March 2017), the Joint Secretary, UD&HD accepted the audit observations and stated that after implementation of SWM projects, problems would be sorted out.

#### 4.1.12 Shortage of Human Resources and Vehicles

An organisation's performance and resulting productivity are directly proportional to the quality and quantity of human resources. Shortage of staff adversely affects the working of an organisation.

##### Human Resources

The State Government passed (May 2010) a resolution for creation of public health wing in every ULB and Water Board in Dhanbad and Ranchi. However, in eight out of 10 sampled ULBs (except Dhanbad and Jamshedpur) shortages of staff varied from 21 *per cent* to 90 *per cent* in supervisory cadre and sweepers of sanitation wing which affected the supervision in cleanliness of cities (**Appendix-4.1.12**). Also, in Dhanbad neither Water Board was created nor any staff was posted for water supply system while in seven (except Chas, Deoghar and Ranchi) ULBs, technical/auxiliary staff was not available for water supply system.

Further, UD&HD passed (July 2012) a resolution for transfer of operation and maintenance (O&M) of water supply schemes and general administrative control of concerned offices/staff from DW&SD to ULBs. However, DW&SD did not transfer the officers/staff to ULBs except in Chas and Deoghar due to shortage of staff in DW&SD for executing their own works/functions as of February 2017. As a result, the scope of functions of the test checked ULBs were limited to providing water connections to the residents of municipal area.

The State Government also notified (July 2014) Jharkhand Nagarpalika Sewa Sanwarg Niyamawali, 2014 for appointment of staff in different cadre. But,

<sup>44</sup> Deoghar, Dhanbad, Garhwa, Madhupur and Medininagar

after passage of more than two years of notification, no effort for recruiting officials for different posts of ULBs was made. However, UD&HD constituted (March 2016) a committee to ascertain the requirement of staff and creation of post according to requirement in different ULBs. Findings are awaited (February 2017).

In the exit conference (2 March 2017), the Joint Secretary, UD&HD accepted the audit observations and stated that due to shortage of staff in DW&SD and paucity of fund for payment of pay and perks to the staff of DW&SD by the ULBs, transfer of staff to ULBs was not done.

### **Vehicles**

A garbage disposal vehicle is one of the important requirements to deliver the SWM services. Audit observed that the sampled ULBs possessed garbage disposal vehicles only to the extent of 0.43 *per cent* to 5.8 *per cent* of the requirement prescribed by the SWM manual (**Appendix-4.1.13**). Thus, shortages of garbage disposal vehicles curb discharge of functions by the ULBs. This was also confirmed during audit survey where 78 *per cent*<sup>45</sup> residents were not happy with the conditions of garbage disposal vehicles used for transporting garbage.

In the exit conference (2 March 2017), the Joint Secretary, UD&HD accepted the audit observation and stated that action would be taken.

#### **4.1.13 Citizen Charters**

A Citizen's Charter is an expression of understanding between citizens and the service provider about the nature of service that the latter is obliged to provide and the choices available for the consumer. To ensure that citizen's charter can be used as an effective tool for performance improvement and for ensuring accountability of service provider, it needs to be backed up with the provision of an effective Grievance Redressal Mechanism.

Audit observed that none of the test checked ULBs formulated Citizen's Charter while eight (except Mango and Ranchi) out of 10 test checked ULBs did not put in place Grievance Redressal Mechanism. Further, requisite Complaint Register was not maintained in any of the test checked ULBs. However, UD&HD notified (May 2016) preparation of Citizen Charter at department level.

Further in the survey conducted by audit, 51 *per cent*<sup>46</sup> residents reported to audit that their grievances for water supply were redressed after more than seven days while 22 *per cent*<sup>47</sup> stated that no action was taken for their grievances.

In the exit conference (2 March 2017), the Joint Secretary, UD&HD stated that Citizen Charters at State level has been notified in 2016 and Grievance redressal system had been formulated at ULBs level.

<sup>45</sup> 411 out of 530 respondents

<sup>46</sup> 155 out of 306 respondents

<sup>47</sup> 66 out of 306 respondents

#### 4.1.14 Conclusion

Service Level Benchmarks framed by MoUD, GoI for Water Supply, SWM and Sewage could not be achieved by the test checked ULBs as four water supply projects in four test checked ULBs targeted to create 306 MLD capacity could not be completed despite spending ₹ 583.47 crore while SWM projects worth ₹ 146.29 crore were stopped midway after incurring an expenditure of ₹ 28.47 crore. Further, none of the test checked ULBs constructed sewage network while 60 *per cent* drains in nine of the 10 test checked ULBs were uncovered and beset with garbage.

Incomplete water supply projects affected water supply to atleast 22.67 lakh inhabitants of municipal area. In test checked ULBs, only 29 *per cent* of the total HHs had access to piped water while shortages in supply of water ranged between nine and 99 *per cent* of requirement. Further, per capita supply of water in seven out of 10 test checked ULBs ranged between 10 and 110 litres per capita daily (lpcd) against standard of 135 lpcd while seven out of 10 test checked ULBs did not install meters for residential water connections.

Four test checked ULBs failed to recover outstanding water user charges worth ₹ 37.22 crore from the water users due to which only 29 *per cent* of Operation and Maintenance cost could be met from water user charges although mandated to be covered fully. The State Government lost ₹ 10.50 crore per year on Non-revenue water beyond the benchmark limit of 20 *per cent*.

Toilet facility was limited to 23 *per cent* to 72 *per cent* HHs in test checked ULBs against 100 *per cent* of benchmark while HHs in eight out of 10 test checked ULBs were not covered under solid waste management services. The coverage of waste collection in six sampled ULBs ranged between 39 and 90 *per cent*. No landfill sites (except Ranchi) were available in any of the test checked ULBs. Waste was dumped in close proximity to residential areas as well as river side.

Shortage of manpower to the extent of 90 *per cent* in supervisory/sweeper cadre and garbage disposal vehicles to the extent of 94 *per cent* in the test checked ULBs affected the cleanliness of cities and posed a threat to environment and health of residents.

In audit survey conducted with 741 households living within the service network of 10 test checked ULBs, 91 *per cent* HHs responded that water supply facilities provided by the test checked ULBs were not satisfactory and 85 *per cent* residents told that during summer season, sufficient water was not supplied. In respect of sanitation facilities, 75 *per cent* residents were not satisfied by the services provided by the test checked ULBs. Likewise, under SWM service, 71 *per cent* residents said that door to door waste collection was not done while 78 *per cent* residents reported that they were not happy with the conditions of vehicles used for transporting garbage.

#### 4.1.15 Recommendations

The State Government should sensitise the ULBs for meeting the demand for water supply, SWM, Sewage and Drainage as per the SLBs fixed by MoUD,

GoI. Government should facilitate in resolving the bottlenecks to complete the pending projects to achieve the SLBs.

The State Government should enforce good practices among the ULBs such as recording meter readings every month, raising timely demands, promoting online payments for collection of outstanding dues to reduce over dependence on human resources etc. Concerted efforts should be made to collect all the outstanding dues within a specific timeframe by issuing demand notice to the users.

Identification of land for setting up landfills should be done on a priority basis and stringent action should be taken against those involved in dumping waste in residential areas or river side.

Deployment of sufficient manpower and garbage disposal vehicles for cleaning and lifting of all garbage generated by the cities should be ensured.

