

**GOVERNMENT OF ANDHRA PRADESH  
MUNICIPAL ADMINISTRATION DEPARTMENT**

**O/o. the Director of Municipal Admn.,  
Andhra Pradesh, Guntur.**

**Endt. No.2708/2015-M3,**

**Dated: 28-11-2016.**

Communicated the GO Rt.No. 625, MA&UD (B2) Dept., dated 25-10-2016 along with the AP State Sanitation Strategy finalized by the State Level Sanitation Committee to go through and implement the same in the State.

**Sd/ K. Venkata Rami Reddy,  
for Director.**

**To**

**The Commissioners of all the Urban Local Bodies in the State.  
All the Regional Director-cum-Appellate Commissioners of Municipal  
Administration in the State to pursue the matter.**

**Copy submitted to the Principal Secretary to Govt., MA&UD Department, AP  
Secretariat, Velagapudi, for favour information.**

**Copy to the Managing Director, Swachh Andhra Corporation, Vijayawada, for  
information.**

  
for Director of Municipal Admn.  
29/11/16

GOVERNMENT OF ANDHRA PRADESH  
ABSTRACT

Municipal Administration and Urban Development Department - National Urban Sanitation Policy - State Level Sanitation Committee Constituted - A.P. State Sanitation Strategy - Permission accorded - Orders - Issued.

MUNICIPAL ADMINISTRATION AND URBAN DEVELOPMENT (B2) DEPARTMENT

G.O.Rt.No.625,

Dated:25.10.2016.  
Read the following:



1. G.O.Rt.No.3, MA&UD Dept. (W2), Dt.01.01.2013.
2. G.O.Rt.No.765, MA&UD Dept. (W2), Dt.14.05.2013.
3. G.O.Rt.No.366, MA&UD Dept. (B2), Dt.30.05.2015.
4. From the MD, SAC, note in F.No.77(1)/SAC/COO(S)2016 along with A.P. State Sanitation Strategy,  
\* \* \*

In the G.O.s 1<sup>st</sup> to 3<sup>rd</sup> read above, orders were issued constituting the State Level Sanitation Committee (SLSC) as per the National Urban Sanitation Policy for finalization of A.P. State Sanitation Strategy.

2. The State Level Sanitation Committee (SLSC) finalized the A.P. State Sanitation Strategy with the technical support of Gesellschaft fuer Internationally Zusammenarbeit (GIZ) and Commissioner & Director of Municipal Administration, Swachh Andhra Corporation.

3. The Government here by accord permission to the Director of Municipal Administration to communicate the A.P. State Sanitation Strategy / Guidelines to all the Municipal Commissioners to implement the same in the State.

4. The Director of Municipal Administration shall take further necessary action in the matter.

(BY ORDER AND IN THE NAME OF THE GOVERNOR OF ANDHRA PRADESH)

R. KARIKAL VALAVEN,  
PRINCIPAL SECRETARY TO GOVERNMENT.

To  
The Director of Municipal Administration,  
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The Managing Director,  
Swachh Andhra Corporation,  
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Gunadhala, Vijayawada, A.P.  
All the Members of State Level Sanitation Committee  
through DMA, A.P. Gorantla.

Copy to:  
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Ministry of Urban Development,  
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The P.S to Prl. Secretary to C.M.  
The P.S to Minister, MA&UD.  
The P.S to Prl. Secretary/Secretary MA&UD.  
Sc/Sf.

// FORWARDED:: BY ORDER //

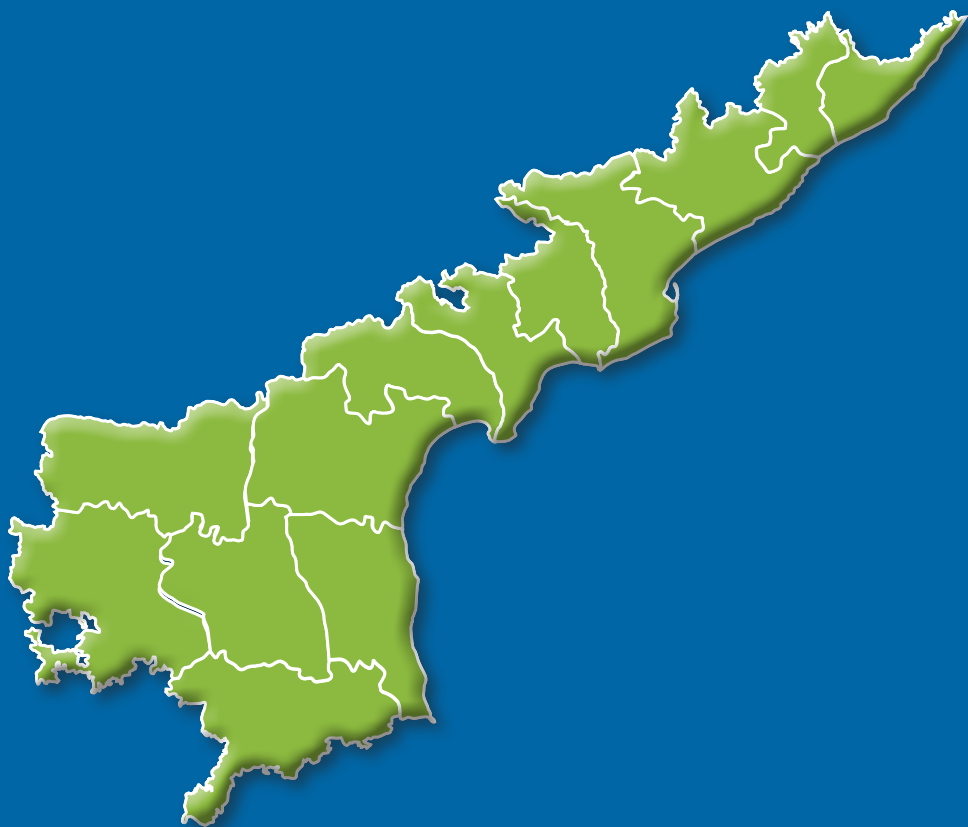
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TOWARDS CITY WIDE SANITATION



# Andhra Pradesh State Sanitation Strategy

## ANDHRA PRADESH STATE SANITATION STRATEGY

### *Developed by*

State Level Sanitation Committee (SLSC)  
Commissioner & Director of Municipal Administration Department,  
Guntur, Andhra Pradesh.

### *In technical collaboration with*

GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit)  
Project – Support to National Urban Sanitation Policy

### *Published By*

Commissioner & Director of Municipal Administration Department,  
Government of Andhra Pradesh

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September 2016

Not for Sale

# Andhra Pradesh State Sanitation Strategy

Under National Urban Sanitation Policy, 2008



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TOWARDS CITY WIDE SANITATION





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**FOREWORD**

Andhra Pradesh is poised to become one of the first states in India to declare itself as 'Open Defecation Free' by October 2, 2016. The state is determined to achieve this vision and commitment towards sanitation despite several challenges. Andhra Pradesh is a fast growing state, both in terms of development and urbanization.

This rapid urbanization is putting tremendous pressure on the Urban Local Bodies to provide adequate and better quality of basic services to an ever increasing population. In addition, being home to religious and tourist cities like Tirupathi, Vijayawada amongst others, the state has to be prepared to provide services for the floating population visiting the cities. Therefore developing a comprehensive and effective model for provision of sanitation infrastructure and services would be a challenging task. But, the state is determined to fulfil its commitment for ODF status. Therefore, the Government of Andhra Pradesh has planned and is undertaking several initiatives which will lead to improvements in the sanitation sector across the urban areas in the state.

One of the key initiatives undertaken by the state is the development of a State Sanitation Strategy (SSS) with support from the Commissioner & Director of Municipal Administration Department (C&DMA), Swachh Andhra Corporation (SAC), MA & UD and GIZ. The SSS is a guiding document for steering the state's sanitation agenda and support in the planning for sanitation infrastructure and services. The state is determined to take steps in leaps and bound towards achieving improved sanitation outcomes, which will showcase the state as leader in the country in terms of being healthier, safer and cleaner.

The state of Andhra Pradesh by taking on the task of declaring itself ODF by 2016 has already demonstrated its sincere commitment towards providing improved sanitation services to its citizen thereby enabling Mahatma Gandhi's vision of a 'Swachh Bharat.'

In this regard, I would like to congratulate the State Level Sanitation Committee (SLSC) which was formulated for the preparation of SSS at the state level. I would also like to acknowledge the appreciable efforts of all the team members and support extended by GIZ in the process of preparation of SSS by providing technical inputs.

  
(R. KARIKAL VALAVEN)



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# Abbreviations

|                  |                                                                    |
|------------------|--------------------------------------------------------------------|
| <b>AMRUT</b>     | Atal Mission for Rejuvenation and Urban Transformation             |
| <b>APTSIDCO</b>  | Andhra Pradesh Township and Infrastructure Development Corporation |
| <b>APSRTC</b>    | Andhra Pradesh State Road and Transport Corporation                |
| <b>ASCI</b>      | Administrative Staff College of India                              |
| <b>ATI</b>       | Administrative Training Institute                                  |
| <b>CSP</b>       | City Sanitation Plan                                               |
| <b>CSTF</b>      | City Sanitation Task Force                                         |
| <b>CDP</b>       | City Development Plan                                              |
| <b>C&amp;DMA</b> | Commissioner & Director of Municipal Administration                |
| <b>CPCB</b>      | Central Pollution Control Board                                    |
| <b>CPHEEO</b>    | Central Public Health and Environmental Engineering Organization   |
| <b>DEWATS</b>    | Decentralized Waste Water System                                   |
| <b>DWSM</b>      | District Water & Sanitation Mission                                |
| <b>ESA</b>       | External Support Agency                                            |
| <b>GIZ</b>       | Deutsche Gesellschaft für Internationale Zusammenarbeit            |
| <b>G.O.</b>      | Government Order                                                   |
| <b>HHs</b>       | Households                                                         |
| <b>HoDs</b>      | Head of Departments                                                |
| <b>IMR</b>       | Infant Mortality Rate                                              |
| <b>IPHC</b>      | Inter Personal Hygiene Communication                               |
| <b>ILCS</b>      | Integrated Low Cost Sanitation                                     |
| <b>IHHTs</b>     | Individual Household Toilets                                       |
| <b>IUIS</b>      | Integral Urban Information System                                  |
| <b>MFI</b>       | Micro Finance Institution                                          |
| <b>MIS</b>       | Management Information System                                      |
| <b>MoUD</b>      | Ministry of Urban Development                                      |
| <b>MT</b>        | Metric Tonnes                                                      |
| <b>MA&amp;UD</b> | Municipal Administration & Urban Development                       |
| <b>MCRHRD</b>    | (Dr.) Marri Channa Reddy Human Resource Development Institute      |

|                |                                                                  |
|----------------|------------------------------------------------------------------|
| <b>MEPMA</b>   | Mission for Elimination of Poverty in Municipal Areas            |
| <b>MLD</b>     | Million Liters per day                                           |
| <b>NAPCC</b>   | National Action Plan on Climate Change                           |
| <b>NGO</b>     | Non-Governmental Organization                                    |
| <b>NIUM</b>    | National Institute of Urban Management                           |
| <b>NRCDD</b>   | National River Conservation Directorate                          |
| <b>NUSP</b>    | National Urban Sanitation Policy                                 |
| <b>O&amp;M</b> | Operation & Maintenance                                          |
| <b>ODF</b>     | Open Defecation Free                                             |
| <b>PHMED</b>   | Public Health & Municipal Engineering Department                 |
| <b>RCUES</b>   | Regional Centre for Urban & Environment Studies                  |
| <b>SAR</b>     | Sector Assessment Report                                         |
| <b>SBM</b>     | Swachh Bharat Mission                                            |
| <b>SHG</b>     | Self Help Group                                                  |
| <b>SIUD</b>    | State Institute of Urban Development                             |
| <b>SLB</b>     | Service Level Benchmarks                                         |
| <b>SGDP</b>    | State Gross Domestic Product                                     |
| <b>SWM</b>     | Solid Waste Management                                           |
| <b>SLSC</b>    | State Level Sanitation Committee                                 |
| <b>SNUS</b>    | State Level Nodal Agency on Urban Sanitation                     |
| <b>SSS</b>     | State Sanitation Strategy                                        |
| <b>UGD</b>     | Underground Drainage                                             |
| <b>ULB</b>     | Urban Local Body                                                 |
| <b>UIG</b>     | Urban Infrastructure & Governance                                |
| <b>UIDSSMT</b> | Urban Infrastructure Development Scheme for Small & Medium Towns |
| <b>USD</b>     | US Dollars                                                       |
| <b>WGSUH</b>   | Working Group on Sustainable Urban Habitat                       |
| <b>YASHADA</b> | Yashwantrao Chavan Academy of Development Administration         |



# 1. Introduction

Sanitation for the purpose of Andhra Pradesh State Sanitation Strategy (AP SSS) is defined as safe management of human excreta, including its safe confinement treatment, disposal and associated hygiene-related practices. The AP SSS recognizes primacy to integral solutions that covers sub sectors of solid waste, waste water (including septage), storm water drainage and drinking water. The aspect of sustainability is at the core of the strategy by looking at the dimensions of capacity enhancement, finance, technology, inclusiveness, climate change responsiveness, institutional and governance strengthening.

The Twelfth Five Year Plan (2012-17) of the state of Andhra Pradesh targets to reduce the gap between the demand and supply of urban infrastructure services by increasing investments in urban infrastructure. The National Urban Sanitation Policy (NUSP) of the Government of India announced in 2008, entrusted state governments to prepare their State Sanitation Strategy (SSS) in line with constitutional provision. As per the Constitution, ‘water’ and ‘sanitation’ are classified as state subjects. ‘Water’ is included in Entry 17 under the List II i.e. the State List of Seventh Schedule, explained as:

- “Water, that is to say, water supplies, irrigation and canals, drainage and embankments, water storage and water power subject to the provisions of Entry 56 of List I”
- ‘Sanitation’ is a subject matter included in Entry 6 of the State List as established through Article 246 of the Constitution of India.
- India is committed to the Sustainable Development Goals (SDGs), Post Development Agenda 2030 which entails 17 Goals. Goal 6 is on Clean Water and Sanitation which says – “Ensure availability and sustainable management of Water and Sanitation for all”.
- The national five year plan for the period 2012 -17 has identified the urban sector as one of the eleven priorities in the country.

## 1.1 Need for State Sanitation Strategy for urban areas in Andhra Pradesh

Improved sanitation is one of the critical determinants of the quality of human life that largely impact on outcomes for public health, environment and dignity. The positive outcomes of the sanitation interventions contribute to the economic growth propelled by livable cities. Investments made in the sanitation sector for urban areas will not only yield higher human development indicators but will also contribute towards the achievement of 10 percent growth rate for state’s economic growth as envisioned in the Andhra Pradesh’s XII Five Year Plan.

The state of Andhra Pradesh has a huge dependence on the industrial and services sector. About 45.2<sup>1</sup> percent of the workforce is in non – agricultural sector in Andhra Pradesh.

The National Urban Sanitation Policy (2008) stipulates all Urban Local Bodies (ULBs) to develop their City Sanitation Plans (CSP) as a city level instrument for sanitation sector planning. AP SSS is a major fillip to guide the Municipal Authorities to prepare and operationalize the CSPs. The Service Level Benchmarks (SLBs) institutionalized by the Ministry of Urban Development (MoUD) is also one of the 3 conditions laid down by the Fourteenth Central Finance Commission.

As per Fourteenth Finance Commission, GoI have allocated an amount of nearly Rs.3635 Crore to Urban Local Bodies in the State of Andhra Pradesh. Out of which basic grant allocated to Urban Local Bodies is around Rs.2908 Crore (80 per cent) and performance grant is approximately Rs.727 crore (20 per cent) which are used to disburse grants to Urban Local Bodies (ULBs) based on their performance on 28 SLB indicators. The development of the AP SSS and its implementation will help to guide the ULBs to perform better on the SLB indicators.

In order to accelerate the efforts to achieve universal sanitation coverage and to put focus on sanitation, the Prime Minister of India launched the Swachh Bharat Mission (SBM) on 2<sup>nd</sup> October, 2014. SBM intends to make cities totally sanitized, healthy and livable by deriving public health and environmental outcomes for all citizens with focus on hygiene and affordable sanitation for urban poor and women. The primary objective of the mission is the elimination of open defecation, achieving 100 per cent collection and scientific processing, disposal, re-use and recycling of municipal solid waste. Swachha Andhra Corporation was created in the year 2015 in line with the launch of Swachh Bharat mission at the national level.

Thereafter, in June 2015 MoUD, GoI launched the Atal Mission for Rejuvenation and Urban Transformation (AMRUT) for urban renewal. The purpose of the mission is to provide basic infrastructure related to water supply, sewerage, urban transport and green spaces in the next 5 years. Under AMRUT, the Andhra Pradesh Government has proposed a plan for 31 cities and towns at an estimated cost of over Rs 28,756 crore.

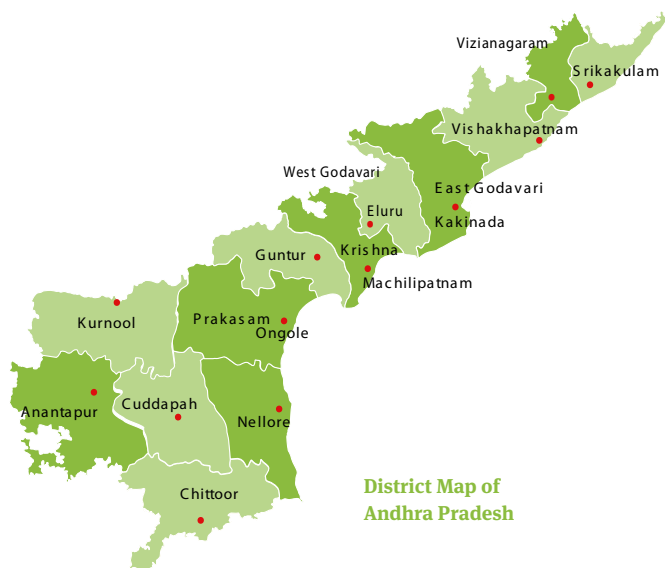
## 1.2 About Andhra Pradesh

With the enactment of the Andhra Pradesh Reorganization Act 2014, the state of A.P. was bifurcated into Andhra Pradesh and Telangana. This is one of the 29 states of India, situated on the southeastern coast of the country. The state is the eighth largest state in India covering an area of 160,205 km<sup>2</sup>. The state of Andhra Pradesh comprises 13 districts namely Anantapur, Chittoor, Guntur, East Godavari, Krishna, Kurnool, Nellore, Prakasam, Srikakulam, Vizianagaram, Vishakhapatnam, West Godavari and Y.S.R. Andhra Pradesh is now the tenth largest state in India with 49.38 million as total

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1 Approach to the 12th Five Year Plan of Andhra Pradesh, January 2013

population. The state has planned to develop “Amaravati” as its capital city. As per the Census 2011 the urban population of Andhra Pradesh was 14.63 million representing about 29.58 percent of total population.



Most of the net increase in the urban population is contributed by five districts in the state, viz: Vishakhapatnam (47.51 percent), Krishna (41.01 percent), Y.S.R (34.1 percent), Guntur (33.89 percent) and Chittoor (29.47 percent). Andhra Pradesh ranks tenth of all Indian States in the Human Development Index scores with a score of 0.416.

The urban population is spread across 110 Urban Local Bodies consisting of 14 Corporations, 71 Municipalities of all grades and 25 Nagar Panchayats. The net increase of urban population between 2001 and 2011 is approximately 5.4 percent. Vijayawada and Vishakhapatnam are major cities in the state. The urban areas contribute close to 65 percent of the economic growth in the state. The secondary sector contributed 24.72 percent to the State Gross Domestic Product (SGDP) while primary sector contributed about 21.51 percent in 2010-11. If the trends on the economic growth are to be maintained or increased, it is imperative to focus attention on the urban areas for their robust sanitation infrastructure.

### 1.3 Steering and stakeholder consultations

The Government of Andhra Pradesh established the State Level Sanitation Committee (SLSC) vide Government Order (GO) Rt No. 3 dated 01.01.2013 and the amended GO following the bifurcation of the erstwhile Andhra Pradesh G.O.RT.No. 366 Dated: 30.05.2015. The SLSC will provide strategic guidance for the preparation and operationalizing the State Sanitation Strategy with periodic evaluation of progress across the departments for better convergence and to achieve the goals envisaged in the SSS. The committee is headed by the Principal Secretary Municipal Administration and

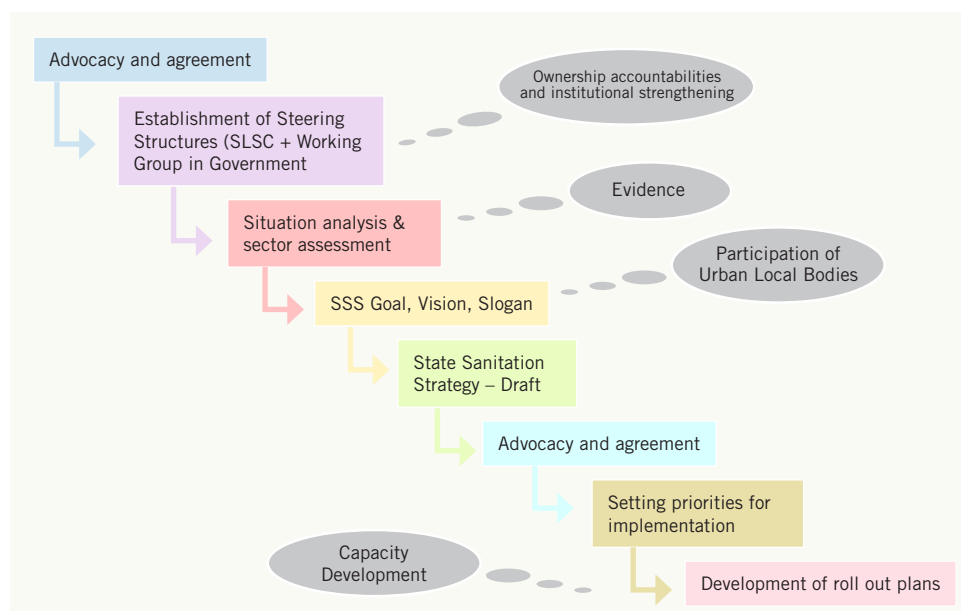
Urban Development (MA&UD) Department with Principal Secretaries and Head of the Departments (HoDs) from the following departments, namely

- Commissioner & Director of Municipal Administration (C&DMA)
- Swachha Andhra Corporation (SAC)
- Health Department
- School Education Department
- Finance Department
- Environment Department
- Mission Director – Mission for Elimination of Poverty in Municipal Areas (MEPMA)
- Guntur Municipal Corporation
- Andhra Pradesh State Pollution Control Board (APSPCB)
- Andhra Pradesh Urban Finance and Infrastructure Development Corporation (APUFIDC)
- Engineer in Chief - Public Health & Municipal Engineering Department (PHMED)
- Director Town and Country Planning (DT&CP)
- Andhra Pradesh State Road Transport Corporation (APSRTC)
- South Central Railways (SCR)
- Administrative staff College of India (ASCI) & GIZ as Special invitees

The Commissioner and Director of Municipal Administration (C&DMA), Government of Andhra Pradesh was designated as member convener and as nodal office for the purpose of steering the development of State Sanitation Strategy with support of the commensurate department represented in the Working Group chaired by the Commissioner and Director – C&DMA. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) was identified as technical partner for overall development of the Strategy.



An eight stage process was carried out to develop the SSS. Two significant steps followed included the preparation of the Urban Sanitation Sector Assessment Report (SAR) and holding consultations with the Urban Local Bodies (ULBs) in the state of Andhra Pradesh for delineation of vision and goals of the strategy.



The working group met the participating departments to finalize the Sector Assessment Report. Also, ULB consultation was carried out with the Commissioner and Director – C&DMA in Chair to share SAR and finalize the vision and goals of the strategy<sup>2</sup>.

## 1.4 Policy environment

The NUSP envisaged a key role for the state governments to develop their state sanitation strategies by recognizing the water and sanitation problems existing across urban local bodies in the state. There are various initiatives undertaken in the sector of water and sanitation in the state of Andhra Pradesh. Such projects have been facilitated and supported by C&DMA.

Under the Fourteenth Finance Commission (2015-16) out of total sanctioned grant of nearly Rs. 331 Crore the state government made special allocations to the sectors, viz; Water Supply (Rs75.11 Crore), Sanitation including Septage Management (Rs. 5.61 Crore), Sewerage and Solid Waste Management (Rs.1.40 Crore) Solid Waste Management( Rs. 1.13 Crore).

The department has initiated several innovative programs like Parichayam (Know Your Worker), regional meetings at solid waste dump yards, introduction of green caller

<sup>2</sup> Workshop on “Consultation with ULBs on Urban Sanitation Vision Setting for the State of Andhra Pradesh”, 5 July 2013, Hyderabad

tunes, IEC campaigns, Clean City Championship for strengthening the SWM services under the program known as 'Chetta Pai Kottha Samaram' (New Campaign on Waste), rain water harvesting and plantation drive. All these innovations have yielded positive result yet has scope for improvement.

There are external agencies such as the World Bank that are supporting Andhra Pradesh Municipal Development Project (APMDP) with the basic objective to improve urban infrastructure services at the ULBs and to enhance the state and local capacity to sustain the improvements. The four major components of this project are; (a) State level policy and institutional development support (b) capacity enhancement (c) urban infrastructure enhancement and (d) project management technical assistance.

The urban local bodies in Andhra Pradesh are largely steered by Andhra Pradesh Municipalities Act 1965 for the municipalities and Andhra Pradesh Municipal Corporations Act 1955 for Municipal Corporations.

The Andhra Pradesh Town Planning Act, 1920 provides for the preparation of town planning schemes in respect of all lands within the municipal area to ensure regulated development of towns to secure their present and future amenities and conditions.

The Andhra Pradesh Urban Areas (Development) Act, 1975 has been enacted in the state that guides the planning of urban development through master plans or general town planning schemes, zonal development plans, area development plans and road development plans. The Municipal Corporations, Municipalities and Nagar Panchayats exercise the powers of development, control and enforcement delegated to them under the Andhra Pradesh Urban Areas (Development) Act, 1975.

Under the Pradhan Mantri Awas Yojana (PMAY), the Ministry of Housing and Urban Poverty Alleviation, Government of India and Andhra Pradesh Township and Infrastructure Development Corporation (APTSIDCO) are going to support 1,93,147 houses in the state of Andhra Pradesh. To start with 59 ULBs who have already prepared 110 DPRs covering 1,93,147 houses will be taken up in the first phase. The project envisages "Slum Free India" and provides shelter and basic civil and social services for all slum dwellers.

## 1.5 Sanitation – Facts and figures<sup>3</sup>

- As per the census 2011, 85.14 percent of urban Households (HHs) in Andhra Pradesh have access to toilets as compared to national figure of 81.4 percent.
- Open Defecation in urban households of Andhra Pradesh is 14.75 Percent which is higher than the national average of 12.6 percent. There are 5,38,802 urban households practicing open defecation out of 36,53,618 total urban households in state. Srikakulam 32.79 percent has highest percentage of Urban households practicing open defecation followed by Vizianagaram with 30.44 percent and Prakasham 21.49 percent
- 18.07 percent of Andhra Pradesh urban population is connected to Piped Sewerage networks (Under Ground Drainage). Only 8 cities have existing partial Underground Drainage facility. Sewerage facility in 3 towns (Guntur, Narasaraopet and Nellore) of Andhra Pradesh is under implementation
- Lack of formal mechanism and improper septage management is leading to disposal of sewage and septage into water bodies in and around the cities without any treatment in more than 100 ULBs of the state.
- Manual Scavenging: As per the Census 2011, approx. 0.02 percent of the urban households get night soil removed manually while 0.35 percent of HHs in A.P. accounts for that in the total. About 3,50,000 households have insanitary latrines in their premises
- ULBs in Andhra Pradesh on average generates about 6440 MT of waste per day and in terms of the per capita of waste generation in the ULBs ranges from 0.3-0.4 kg/ per day. The quantity of waste is growing at 5 percent annually and the collection efficiency is above 90 percent. Majority of the ULBs lack proper treatment and scientific disposal.
- Inadequate and improper maintenance of storm water drains with frequent flooding and choking of drains, leading to unhygienic environment\

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3 Source: As per 2011 census and APUFIDC Urban services data for AMRUT & Non-AMRUT cities, 2015-16

## 2. Vision of Andhra Pradesh State Sanitation Strategy

All cities and towns in Andhra Pradesh become totally clean, sanitized, healthy, livable, ensuring and sustaining good public health and environmental outcomes for all citizens, with a special focus on hygienic and affordable sanitation for the urban poor and women with specific focus on the diverse topography of the state and its implications.



### 3. Goal of Andhra Pradesh State Sanitation Strategy

The overall vision of Andhra Pradesh State Sanitation Strategy is to achieve a “Swachha Andhra” ensuring healthy and clean cities providing access to sanitation infrastructure to all citizens.

The specific goals are:

#### A. Ensuring 100 percent hygienically safe and sanitary treatment and disposal

- i) 100 percent of human excreta and liquid wastes from all sanitation facilities including toilets must be safely treated and disposed. In order to achieve this goal, the following activities shall be undertaken:
  - a) Promoting / encouraging safe and properly constructed on-site sanitation arrangements wherever cost efficient and sustainable;
  - b) In case of network-based sewerage systems, adequate connectivity of households and demonstrated financial viability for O&M would be required to ensure sustainability and proper functioning of the system;
  - c) Promoting proper collection, conveyance, treatment and disposal system and treatment of sludge from on-site installations (septic tanks, pit latrines etc.);
  - d) Ensuring that all the human wastes are collected safely, confined and disposed-off after treatment so as not to cause any hazard to public health or the environment;
  - e) Promoting recycle and reuse of treated waste water for non-potable applications wherever possible and also duly exploring options for PPP initiatives
  - f) Promotion of proper collection, segregation, transportation, treatment and disposal of solid waste

#### B. Achieving Open Defecation Free Cities

- i) Move towards a situation where all urban dwellers have access to and use safe and hygienic sanitation facilities and arrangements so that no one defecates in the open. In order to achieve this goal, the following activities shall be undertaken:
  - a) Promote access to households with safe sanitation facilities (including proper disposal arrangements);
  - b) Promoting community-planned and managed toilets in slums and underserved areas and wherever necessary, for groups of households who have constraints of space, tenure or economic constraints in gaining access to individual facilities;

- c) Adequate availability and 100 percent upkeep and management of public sanitation facilities, for migrant and floating population and community toilets for urban poor in all urban areas, to rid urban centers off open defecation and environmental hazards.

### **C. Improved institutional governance and enhanced human resource capacities for city-wide sanitation**

- i) Re-orienting institutions and mainstreaming sanitation
  - a) Mainstream thinking, planning and implementing measures related to sanitation in all sectors and departmental domains as a cross-cutting issue, especially all urban management endeavors;
  - b) Strengthening state, city and local institutions (public, private and community) to accord priority to sanitation provision, including planning, implementation and O&M management;
  - c) Extending access to proper sanitation facilities for poor communities and other un-served settlements;
- d) Strengthening the regulatory framework on sanitation service delivery
- ii) Strengthening ULBs to provide or cause to provide, financially sustainable sanitation services delivery.
- iii) Building and strengthening of human resources in the field of sanitation
- iv) Proper Operation & Maintenance of all Sanitary Installations
- v) Promoting proper usage, regular upkeep and maintenance of household, community and public sanitation facilities, sewage / septage treatment facilities and management of solid waste.

### **D. Enhanced awareness and sustained behavioral change**

- i) Generate enhanced awareness about sanitation and its linkages with public-environmental health and climate change recognizing different impacts on men and women amongst communities and institutions;
- ii) Promote mechanisms to bring about sanitary practices and hygiene behavioral changes

### **E. Technological efficiency and appropriateness**

- i) Guidelines on range of technology options that are energy efficient, ecologically and climatically suitable and financially sustainable
- ii) System capacities are built for a range of technological options and its management for comprehensive range of water and sanitation services

## 4. Policies and Priorities in Urban Water and Sanitation Services

### 4.1 Statutory status of urbanization

Out of total of 14.63 million urban population in the state of Andhra Pradesh reported by Census 2011, 12.47 million is covered by the urban centers designated with statutory status thus eligible for provisions of 74th CAA. While, about 2 million people are residing across 104 census towns that are morphologically and functionally of urban character but covered by policies and programmes of rural areas.

The trend and nature of urbanization in the state of Andhra Pradesh leads to the following conclusion;

- a) The urban growth is rapid as compared to other states and this will continue to pose a pressure on the sanitation infrastructure in the urban centers.
- b) Policy formulation for the rapidly urbanizing areas in the state.
- c) Urbanization has to be viewed differently in case of the state of Andhra Pradesh given its diverse topography including coastal areas, eastern ghats and plateau area that has varying environmental carrying capacity of the sanitation infrastructure and services.

Based on the foregoing rationale, it is imperative that the state's urban policy developed.

### 4.2 Open Defecation

There has been significant reduction in the prevalence of open defecation in the state of Andhra Pradesh largely contributed by acceleration in the implementation of Total Sanitation Campaign (TSC) in the rural areas of the state. However, cities and towns have not seen similar trends in reduction of open defecations. As per Census 2011 and APUFIDC Urban Services (AMRUT / Non-AMRUT cities) data 2015- 16, about 17.60 percent of households in the urban areas do not have access to a sanitary toilet in their residential premises in the urban Andhra Pradesh. Out of this about 14.75 percent defecate in open while remaining 2.85 percent use shared public sanitation facilities. In absolute terms about 5,38,802 households resort to open defecation while 37,346 households have insanitary toilets. And about 1,73,805 have pit latrines. Some of the studies undertaken suggest that 15.7<sup>4</sup> percent of urban households do not have a toilet in their homes due to poor economic capacities while another large set of households do not have adequate space in their home for construction of the toilet.

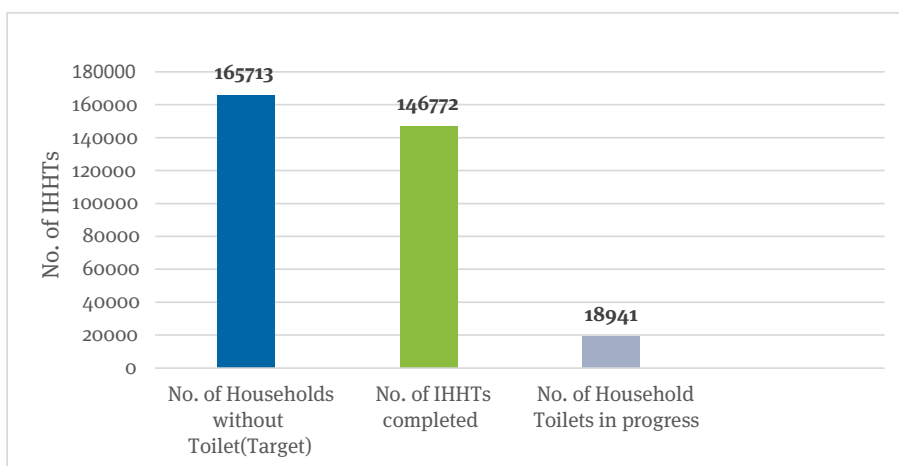
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4 District Level Household and Facility Survey 2007-08, Andhra Pradesh

## AP becomes ODF by October 2, 2016

Andhra Pradesh is set to become the first state in the country to make all of its urban areas 'Open Defecation Free' by October 2, 2016, marking the two years of the launch of 'Swachh Bharat' mission by Prime Minister Shri. Narendra Modi. As against the mission target of construction of 1, 65,713 individual household toilets in urban areas of Andhra Pradesh, construction of 1,46,772 toilets has already been completed. The state has already declared 2285 as ODF wards against the target of 3451 Wards.

(Source: <http://sac.ap.gov.in/sac/> (18.9. 2016))



### Status of IHHTs in AP (as on 18.09.2016)

The latent demand for toilets exists in most urban areas. However, efforts are needed to convert this to effective demand in order to accelerate the process of making our cities open defecation free. This will result in safe and clean toilet infrastructure that keeps pace with urban growth. Evidence suggests that this is possible with motivated state and local leadership.

Service Level Benchmark (SLBs) is to reach 100 percent coverage of the households with toilets. The SLB gazette notification<sup>5</sup> reports in the 31 ULBs (that are undertaking self-assessment) none of them have met target. The ambiguity on the data management for the coverage is emerging as an issue. It can be attributed to the migrant population and also data anomalies both on the end of ULBs and Census operations.

**District level analysis:** The districts reporting highest percentage of open defecation in urban areas are Srikakulam (25), Vizianagaram ( 20 ) and Prakasam (22) and also higher than the state's average of 14.76 percent. If we add districts of Prakasam and

5 Andhra Pradesh Gazette Notification, March 2014

Anantapur to the list than these five districts will constitute 38.50 percent of total households defecating in open across urban areas in the state of Andhra Pradesh<sup>6</sup>.

**ULB level analysis:** Out of total of 110 Urban Local Bodies (ULBs) in the state of Andhra Pradesh, Municipalities of different grades contributes to about 48.80 percent of the households that defecate in open in the state. The figure for Municipal Corporations is approximately 14 percent, while that in Nagar Panchyats is 3.51 percent.

Amongst *Municipalities*, the towns of Amadalavalassa (35), Ichchapuram (33) and Palasa Kasibugga (30) in the district of Srikakulam, Kalyandurgam (40) and Rayadurg (55) in Anantapur district and Salur (28) in the district of Vizianagaram have the highest prevalence of open defecation.

In *Nagar Panchayats*, the towns with highest percentage of households defecating in open are Palakonda (45) in Srikakulam district, Nandigama (55) in Krishna district Madakasira(60) in Anantapur district.t.

Amongst *Municipal Corporations* of the state, Srikakulam (10), Eluru (10) Kadapa (16), Nellore (20), Chittoor (19) and Kakinada (5) have highest percentage of households defecating in open.

### 4.3 Lack of Access to Sanitary Toilets

Over and above 5,38,802 households who defecate in open are another set of 6,42,952 households who do not have access to toilet at home or within the residential premises. They have to depend on shared facility. As per the WHO UNICEF JMP<sup>7</sup> definition, use of shared facilities by the household is not considered as access to sanitary toilet. It is therefore desired that these additional households should also be considered part of the target group for ensuring access to safe sanitation. In case of paucity of land within the residential premises, it should be desired that the toilet complex can be considered with individual household ownership rather than adopt community toilet or public toilets as means of ensuring their coverage by safe and hygiene sanitation.

All households remaining without an access to sanitary toilets can be reached with an estimated budget support of<sup>8</sup> Rs.964.43 crore. This will help ensure that all cities and towns are declared open defecation free. The target is achievable with the encouraging progress made for the rural areas in the state. It is suggested that the financial assistance is delivered directly to the households by cash transfer as an incentive. The use of the financial assistance can be used to also pay for the sewer connection fee / charges and / or water connection. There is a large body of evidence that suggests that the toilets are also not used in absence of water availability for washing.

6 Refer Annexure 1 for Map and SLB 2015-16 data of AP, CGG

7 WHO & UNICEF Joint Monitoring Programme (JMP)

8 939842 Households @ 15000 per unit as per SBM/GoAP

The promotion of adequate number of public and community toilets is required to be focused to cater to the needs of floating population of tourists and migrants.

The state government shall prepare a state plan of action for universal coverage of latrines targeting both toilet less households and the households with insanitary latrines in a time bound manner while recognizing different needs of men and women and poverty levels by adopting participatory approach.

The aspect of public sanitation, for both community needs and that of floating and tourist population shall be especially focused in the plan taking into account issues of women safety, dignity and well-being with appropriate design standards for provision of facilities. The plan shall be developed on basis of proper feasibility studies and social assessment with appropriate monitoring mechanism with stringent penalties for non-compliance for sustainability and to meet the service delivery standards. Mapping the access and quality of existing public sanitation facilities and hot spots understanding the nature of demand are imperative first steps to implementation that will address gaps in service delivery.

The operation and maintenance has been a major challenge in keeping models of public sanitation functional and therefore appropriate business / operator mechanisms be suitably designed with greater accountability on the service provider. Provide incentives to the private sector and community groups to participate in provision and O&M, and instituting these in policies and contractual instruments through appropriate management contracts.

#### **4.4 Urban Sanitation Hygiene and IEC**

The evidence from else-where suggests that the mission mode campaign style of programming may well help the state to reach an Open Defecation Free (ODF) status soon enough, but to maintain it would rather be difficult. There is always a risk of slippage from the ODF status unless the campaign is run in the demand responsive approach fully backed by an Inter Personal Hygiene Communication (IPHC) (especially hand washing and menstrual hygiene), mass media and IEC activities so as to achieve a stable and sustained status.

In line with a full-fledged flagship rural sanitation programme of Nirmal Bharat Abhiyan [erstwhile Total Sanitation Campaign (TSC)] for the village areas of the state, the central government recently launched the Swachh Bharat Mission with a dedicated urban component for construction of Individual Household Toilets (IHTs) and Public and Community Toilets. For IHTs, total of Rs. 15,000 ( Central Government contribution is Rs. 4000 and State Government contribution is Rs. 11000) is sanctioned and in the case of Community Toilets Rs. 98,000 (Central government contribution is Rs. 39,200 and State Government is Rs. 58,800). Public Toilets are planned under PPP mode in the state.

The Government of AP had sanctioned 1.65 lakh Individual Household Toilets (IHHTs) units across the state. The progress achieved in terms of construction of the units as a percentage of the sanctioned till mid September 2016 was 88 percent. While the construction of the IHTs units is one aspect, putting them to use/disuse has been a major concern. Due to lack, or insufficient quantity, of water availability and low levels of awareness many individual toilets in poor households remain unutilized.

It is therefore proposed that following the funding pattern of rural sanitation programme, the urban sanitation programme should have a ratio of 80 percent for support to toilet construction, 15 percent for IEC, Mass media, Hygiene IPC and Award schemes and remaining 5 percent for administrative and human resource/ expertise hiring. Under the recent flagship program Swachh Bharat Mission the AP state has submitted a proposal for approximately Rs. 20 Crore for the urban sanitation programme over a period of 5 years.

The Sanitation and Hygiene Advocacy and Communication Strategy Framework shall meet the following broad objectives:

- Increase mass awareness levels and make the identified audiences more conscious about issues related to the importance of sanitation and hygiene;
- To influence decision makers and opinion leaders to advocate for improved sanitation and hygiene standards, thus creating an overall positive environment; and
- Ensure that households especially women have knowledge of the linkages between sanitation, hygiene and health leading to increased public demand for quality sanitation services and adoption of hygiene practices.
- Orientations, competitions, rallies, recognition ceremonies are some of the events that can increase publicity and the media (TV, newspapers, radio,) shall need to be involved to timely and adequately over these events wherever possible

## 4.5 Septage Management

About 82.40 percent of the households in the urban areas of Andhra Pradesh state have a toilet within their residential premises. Almost 56.84 percent of them are connected to septic tanks, 4.76 percent to pit latrines while households having connection to the centralized sewer system are about 18.07 percent.

In divergence to the large proportion of on-site installations, limited attention has been accorded to proper construction, maintenance management and safe disposal of septage from septic tanks and pit latrines. The installations are subject to local practices and considerable variations are observed.

In ULBs septic tanks are often dramatically undersized and poorly constructed. Septic tanks are frequently installed underneath homes, driveways, or sidewalks due to small lot sizes, thus making access for inspecting or desludging difficult. In many instances, what

referred to as “septic tanks” are not septic tanks at all, but are instead seepage pits or cesspools. These unlined, earthen receptacles not only perform poorly at treating sewage, but frequently serve as direct conduits to aquifers, resulting in fecal contamination that can impact precious drinking water supplies.

Limited capacities and resources with ULBs and absence of regulation of maintenance and cleaning of septic tanks and pits are far from adequate. In many instances, septage is dumped in drains and open areas posing considerable health and environmental risks. Sanitary workers also work in hazardous conditions having to manually clean on-site pits and tanks without adequate protective gear and equipment. The new legislation prohibits hazardous manual cleaning of septic tanks and sewers, so as to ensure that health and safety of such workers is not compromised.

There is a general lack of awareness of septic tanks and how these should be planned, designed, installed, operated and maintained, especially among system owners and ULBs which resulted pollution of the ground and surface water bodies impacting the public health

**District level analysis:** The districts with highest percentage of households using septic tanks are West Godavari (74), East Godavari (70), Guntur (65), and Prakasam (64), Visakhapatnam (57) and Krishna (54). Together, the four districts (West Godavari, East Godavari, Guntur and Prakasam account for 38 percent of the total households using septic tanks in the state of Andhra Pradesh<sup>9</sup>.

**ULB level analysis:** About 50 percent of households both in Municipal Corporation and Municipalities use septic tanks for the purpose of fecal sludge management at the household level. Nagar Panchayats have only 1 percent of the households having septic tanks and remaining using pit latrines.

The *Municipalities* of Tadepalligudem (85), Narasaraopet (84) and Nuzvid (86) have more than 80 percent of households using septic tanks as the means of fecal sludge disposal. Whereas in the Municipal Corporations like Visakhapatnam (86) and Rajahmundry (83) is the only Municipal Corporation more than 80 percent of households are using septic tanks.

The SLB benchmark is to ensure that all households have access to sewerage connection so as to ensure that the fecal sludge is safely disposed and treated at the Sewerage Treatment Plant (STP)

This calls for an immediate set of policy and programme interventions on septage management by the Government and ULBs to mitigate public health risks. Another set of reasons cited for urgency in taking up septage management is the occupational hazards for emptying the septic tanks. The Prohibition of Employment as Manual Scavengers

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9 Census 2011 and APUFIDC Urban services data for AMRUT & Non-AMRUT cities, 2015-16 and SLB data of AP 2015-16, CGG

and their Rehabilitation Act, 2013<sup>10</sup> has expanded the definition of workers engaged in such sanitation works by including the practice of septic tank emptying and manual handling of such fecal sludge. This revised Manual Scavenging Act<sup>11</sup> will require the states to gear up the Municipal bodies in discharging their responsibilities effectively. A roll out strategy<sup>12</sup> is developed in due course of time upon notification of the referred act by the State Government.

There is growing intellectual capital that suggests that the energy and nutrient aspects of the septic tank fecal sludge should be kept in perspective while developing a strategy around septage management.

The comprehensive attention to the subject matter will be provided through a State Plan on Integrated Septage Management that takes in to account the entire value chain of the septage management and development of appropriate guidelines at the state level considering the dimensions of social, legislative, technical, institutional- governance and financial issues to be considered.

## 4.6 Water Supply

The Public Health and Municipal Engineering Department (PHED) in Andhra Pradesh (AP) is the nodal agency for planning, design and implementation of water supply and sanitation facilities in the urban local bodies (ULBs). The source of water supply in the state of Andhra Pradesh is primarily from surface water and groundwater. Surface water sources are primarily reservoirs / dams, rivers and canals and groundwater through bore wells. According to PHMED (<http://www.appublichealth.gov.in/18.9.2016>) the normal capacity of water supply at the state level is 1688.36 MLD (million liters per day) but however the present supply of all the ULBs put together is 1017.279 MLD with a deficit of 671.081 MLD (39.75%) .

The Central Public Health Environmental Engineering Organization (CPHEEO), Government of India, has prescribed the following norms for estimating the water demands for planning & design purposes based on the type of town/city. The water supply norms are 40 LPCD (Litres per capita per day) in case of public stand posts, 70 LPCD in case of towns without underground drainage and 135 LPCD in case of towns with underground sewerage system and 150 LPCD in case of metropolitan cities having population more than one million.

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10 Gazette published dated 19 September 2013

11 "As per 2013 Act, manual scavenger means "a person engaged or employed, at the commencement of this Act or at any time thereafter, by an individual or a local authority or an agency or a contractor, for manually cleaning, carrying, disposing of, or otherwise handling in any manner, human excreta in an insanitary latrine or in an open drain or pit into which the human excreta from the insanitary latrines is disposed of, or on a railway track or in such other spaces or premises, as the Central Government or a State Government may notify, before the excreta fully decomposes in such manner as may be prescribed, and the expression "manual scavenging" shall be construed accordingly.

12 As per 2013 Act, state governments are required to undertake the notification within three months of Gazette publication

The present water supplies in majority of urban local bodies in AP are far below the prescribed norms. Adequacy and equitable distribution are the major problems. In 43 ULBs, the supply is between 70 to 135 LPCD while 62 ULBS are supplying less than 70 LPCD and more than 135 LPCD is in 5 ULBs.

The state of Andhra Pradesh targets to cover 100 percent of the population under protected water supply schemes in the state.<sup>13</sup>

The state of Andhra Pradesh has 70.60 percent of households in urban areas having access to tap water from a treated source for drinking purpose. This is significantly higher in comparison to the total state average of 48.73 percent for both rural and urban areas combined together. Out of these 71.52 percent, 45.49 percent of the urban households have tap water (treated source) located within their premises while another 26.03 percent have the location of drinking water tap outside of premises.

As per APUFIDC 2015-16 data the cities of Rajahmundry (78.8 percent), Nagari (70 percent) and Atmakur (70 percent), Dharmavaram (69 percent) and Eluru (66 percent) are reporting slightly less than 100 percent coverage of households with water supply connection.

**District level analysis:** All 13 districts with urban population report less than 90 percent coverage of households with a tap drinking water from a treated source. The districts with highest percentage of household coverage are Kurnool (83.84), West Godavari (81.18), Krishna (78.09), East Godavari (76.42) and Vizianagaram (73.33). The district of Srikakulam has the lowest coverage with 48.54 percent.

**ULB level analysis:** None of the cities in the state of Andhra Pradesh has 100 percent of households having access to tap drinking water using treated source. Amongst *Nagar Panchayats*, Naidupeta (66), Puttaparthi (62) Rajampet (60) and Dhone (60) towns have highest percentage coverage of households with drinking tap water from a treated source in the state of Andhra Pradesh.

Across the *Municipalities* of Mangalagiri (65), Narasaraopeta (61.46) and Samalkot (60) are the ULBs with highest percentage coverage of households with tap drinking water from treated source.

In conclusion, key emerging challenges with regard to drinking water are:

*Inadequate Water Sources:* The available water sources have been tapped to the maximum extent possible. All water sources available nearby have been utilized and present water sources are inadequate. Therefore, there is need to explore and develop additional water sources to meet the current and future water demand.

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13 "Urban Water Supply and Sanitation in Andhra Pradesh", Wash Cost Project, January 2012, Centre for Economic and Social Studies, Hyderabad SLB data for 2015-16, CGG /APUFIDC Urban services data for AMRUT & Non-AMRUT cities, 2015-16, 2015-16

*Leakage of Water:* The average of Unaccounted for Water (UFW) Percent - (Non-Revenue Water) ranges from 20Percent (Nuzivedu) to 82.84 (Jangareddygudem) to 100 Percent (Pidugurallu) in the state.

District Level Analysis: Unaccounted for Water (UFW) Percent - (Non-Revenue Water) analysis has been done to see the situation in 13 districts of AP. Srikakulam accounts for (36.6Percent), Vizianagaram(39Percent), Vishakhapatnam(57.5Percent), East Godavari(40Percent) and followed by West Godavari(43Percent).

Water losses due to leakage, pilferage etc. is estimated to be of the order of 20-50 percent of the total flow in the systems.

*Poor service levels:* In terms of access to individual piped connections, coverage falls short. There are 2895505 house service connections. But, the duration of supply is low.

*Heavy subsidy on Water Supply:* The Municipal Corporation of Tirupati is able to recover its O&M cost of providing water to the consumers excluding the bulk water purchase cost. This leads to water wastage and poor financial health.

*Lack of skilled manpower:* The technical capacities are rather weak to cope/deal with the advance technology in drinking water supply. The lack of skilled staff to manage this function adversely impacts service delivery. There has been no focused attention on strengthening staff skills and capacities in this context. The refresher courses for municipal plumbers have not been held for many years. There are best practices initiated by Community Polytechnics / vocational department in establishing course in plumbers training in collaboration with GIZ

Utmost importance has to be given to water saving, reduction of NRW and efficiency in O&M, as potential for additional augmentation of water sources is limited.

## 4.7 Waste Water Treatment and Disposal

Wastewater disposal and treatment is a major problem in cities in Andhra Pradesh. Most of towns and cities in the state do not have underground sewerage systems and sewage treatment services for disposal of the waste water. Only 18.07 percent of urban households in state are connected to underground drainage system and in most of the ULBs in the state the waste water from toilets is been disposed through septic tanks and soak pits and grey form of wastewater from kitchen and bathrooms is directly discharged into the sludge drains without any treatment. Out of the 1688 MLD of water supplied to the ULBs in the state about 1,086 MLD is released as waste water. The waste water treatment facilities are available in 8<sup>14</sup> cities (Visakhapatnam, Vijayawada, Tirupathi, Rajahmundry, Kadapa, Pulivendula, Puttaparthi, Tadipathri).

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14 Note on UGD/Sewerage by PHMED 2015-16

ULBs with a total capacity of the waste water treatment of 295 MLD and about 197 MLD capacity of waste water treatment plants are under construction in 4 (GVMC-Visakhapatnam, Vijayawada Municipal Corporation, Yemmiganur and Kadapa) ULBs. Thus, there is a large gap between generation and treatment of wastewater in the state. Even the treatment capacity existing is also not effectively utilized due to operation and maintenance problem. Operation and maintenance of existing plants and sewage pumping stations is not satisfactory. Discharge of untreated sewage is single most important cause for pollution of surface and ground water since there is a large gap between generation and treatment of domestic wastewater in Andhra Pradesh. The problem is not only of adequacy of treatment capacity but also operation and maintenance of treatment plants.

Rapid urbanization is also having a detrimental effect on water resources – both in terms of quality (pollution of rivers and groundwater) and quantity (as conflicting/competing demands for water increase). Thus even greater attention is now needed to collect and treat wastewater, and to manage finite water resources, both surface and ground water, more effectively.

Municipal wastewater collection, treatment, and disposal are still not a priority by the municipality/ state government as compared to water supply. In the absence of sewer lines, untreated wastewater is flowing into storm water drains and poses health hazards to the citizens inhabiting the areas near the drain. Moreover, recycle and reuse of wastewater has not received much attention by the policy-decision makers perhaps because of the lack of viable models with necessary research and technology support, strong policies and legal framework at the national and state levels and lack of sufficient professional manpower in the urban local bodies.

The future of urban water supply for potable uses will depend majorly on efficient wastewater treatment systems. It shall provide thrust to policies giving equal weightage to augmentation of supplied water as well as development of wastewater treatment facilities, use of appropriate and sustainable technologies especially for collection, treatment and recycling, awareness creation, citizen involvement, and institutional reform for improved service delivery.

UGD connections shall be made mandatory in ULBs with existing UGD systems to ensure proper flow and utilization of Infrastructure created.

Guidelines for decentralized waste water systems (DEWATS), locally in offices complexes, apartment complexes, layouts and institutions, for grey and black waste water thereby reducing the organic loading on the STP and treated wastewater is recycled / reused on site for irrigation, toilet flushes and cooling towers. Several cities already have incorporated recycling and reuse of wastewater in their building bye-laws (Delhi, Bengaluru, Rajkot, Chennai, and Chandigarh)

Promote recycling and reuse of grey water using simple techniques with suitable financial incentives/disincentives for industries, residential layouts, apartment complexes commercial establishments and similar other agencies to adopt/practice waste water reclamation, recycling and reuse. For example, the role of government assistance, especially economic incentives and non-commercial credit for obtaining appropriate technology, has shown good success in some countries like Japan.

Mandatory enforcement on industries, multi storied commercial establishments and apartment complexes and to meet at least to 20 percent of their known non-potable water requirements from reclaimed water. Similarly, for irrigating crops including horticulture, watering public lawns/gardens, flushing of sewers, firefighting etc., reclaimed water should be utilized.

## 4.8 School Sanitation

Andhra Pradesh has a total of 60, 462 schools with approximately 8,553 schools are in the urban areas, of which there are 2,116 municipal schools. Provision of sanitation in schools is one of the primary needs for the holistic development of a child during school education years. The sanitation facilities should be age-set and gender appropriate through development of such relevant norms. Children's participation in management of sanitation facilities with respect to design, siting, upkeep and maintenance requires constant encouragement. With this focus and objective in mind several initiatives at the state and national level on school sanitation are under implementation. The percentage of drinking water and toilet facilities in the schools in Andhra Pradesh is showing a good coverage.

Out of 8,553 schools 8,287 schools have toilet facilities and 7,964 schools have drinking water facilities, which is 97percent and 93percent respectively (source: C&DMA, August 2016). The figures in the state show a good coverage. However, there are certain issues that have an implication on the overall management of school sanitation from the perspective of facility access and use.

However, there are certain issues that have an implication on the overall management of school sanitation from the perspective of facility access and use in the state of Andhra Pradesh:

- Functional status of the toilets mainly with respect to girls.
- Operation and maintenance issues.
- Hygiene curriculum.
- Role clarity for urban schools and their administrations amongst municipal bodies, district board, education department (SSA), management of private schools.
- Design of school drinking water, sanitation, waste water and solid waste disposal require linkages with the urban nature of city infrastructure such as sewage connection

“Swachha Vidyalayalu” Programme was introduced by GoAP is to ensure that every school in Andhra Pradesh has a set of functioning and well maintained water, sanitation and hygiene facilities. Water, sanitation and hygiene in schools refers to a combination of technical and human development components that are necessary to produce a healthy school environment and to develop or support appropriate health and hygiene behaviors. The technical components include drinking water, handwashing, toilet and soap facilities in the school compound for use by children and teachers. The human development components are the activities that promote conditions within the school and the practices of children that help to prevent water, hygiene and sanitation related diseases.

A “State Action Plan on School Sanitation for Urban Areas” will be jointly developed by Education and Municipal Administration and Urban Development department.

## 4.9 Storm Water Drainage

The percentage share of Municipalities (62.70) with “no drainage” in the state of Andhra Pradesh is highest and decrease in Municipal Corporations (39.61) and Nagar Panchayats (3.40). Municipalities with the highest percentage of households with “no drainage” facilities are Kavali (3.89), Madakasira (5) and Pamidi (4<sup>15</sup>). Numerous factors account for inadequate and poor drainage system effects, viz. blockage of natural drainage systems by dumping of solid waste construction activities, indiscriminate land filling, and lack of comprehensive maintenance of natural watercourses due to land access problems leading to overflowing of sullage and storm water. As a result, in the rainy season the drains are unable to take the flow and spill over, flooding the roads. In many ULBs storm water drains have become a free access to dispose wastewater both grey and black water nearby habitation has converted them into sullage drains. The sullage is directly dumped into canals and water bodies in urban watershed without any treatment. The poor in slums are most vulnerable and disproportionately affected; they often reside in informal settlements located on marginal land – low-lying areas. In poorly drained areas with inadequate sanitation, urban runoff increase the risks to health, flooded septic tanks and leach pits, and blocked drains breeding grounds for vectors. Segregating sullage and effluents from open drains by sewerage system has to be accorded priority.

Government Andhra Pradesh has recently proposed Storm Water Drainage facilities in 20 ULBs for a distance of 3,754 kilometers.

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<sup>15</sup> Source: SLB data of AP 2015-16, CGG

## 4.10 Municipal Solid Waste

The total quantity of municipal solid waste generated in the state of Andhra Pradesh is 6,440 tonnes per day, out of which 5,796 tonnes per day is collected and 550 tonnes per day is treated as per the status report of C & DMA on time to time basis and on Municipal Solid Waste published by Central Pollution Control Board in 2012. However, there are different figures on estimated MSW in the state of Andhra Pradesh. EPTRI estimations are from 1999 – 2000 based on NEERI data of waste generation.

Therefore, there is a need for a scientific method for estimating the municipal solid waste that matches to the characteristics of the physiography of the state is urgently required as the state has huge influx of floating population and is also urbanizing rapidly.

The waste processing technologies reported in the country are; composting, vermin - composting, biogas plant, RDF –palletization. Some of these palletization plants are associated with power plants for generation of electricity. However, composting and bio-mechanization technologies are more popular in the state of Andhra Pradesh. 10 waste to energy projects have been approved by the Government of Andhra Pradesh covering 53 ULBs in across 10 districts namely; Vishakhapatnam (1), Vizianagaram (4 ULBs), Tadepalligudem (5 ULBs), Machalipatnam (6 ULBs), Guntur (2 ULBs), Nellore (7 ULBs), Tirupati (3 ULBs), Kadapa (10 ULBs), Anaparthi (9 ULBs) and Kurnool (8).

### Highlights of Municipal Solid Waste Management in AP:

- 10 Waste to Energy Plants (63 MW) covering 53 ULBs (4,471 TPD, 69%) are under construction.
- Waste to Compost/RDF projects covering 57 ULBs treating 1782 TPD will be established under PPP mode .
- Construction & Demolition waste processing plants in Greater Visakhapatnam Municipal Corporation (GVMC) & Vijayawada Municipal Corporation will be established for 300 TPD in 2017 .
- Operational guidelines for Micro Planning, work Rationalization and outsourcing of work packages, vide GO Ms No. 279 MA was issued in December 2015.

Source: (<http://sac.ap.gov.in/sac/>) (18.9.2016)

In Andhra Pradesh the urban local bodies spend around Rs 500 – 1500 per tonne per day as paid from municipal general funds. Out of this amount, 60 – 70 percent is spent on collection, 20 – 30 percent on transportation and less than 10 percent on processing and disposal activities<sup>16</sup>.

16 "Handbook on Sanitation and SWM in Andhra Pradesh – Key Learnings from German Cities", Oct 2012, C&DMA, GoAP

Government of Andhra Pradesh has taken concrete steps in improving the situation of municipal solid waste management in the urban local bodies.

Interventions at the urban local body level through programs such as *Clean City Championship and the 100 Day Action Plan* for all the urban local bodies include aspects of solid waste management planning, implementation, awareness generation through IEC, introduction of green caller tunes, community participation and monitoring, implementation of plastic waste management rules, etc.

Despite such initiatives there are major issues identified in the solid waste management sector.<sup>17</sup> Some are listed below:

- Lack of resources, systems and capacity for development and disposal of solid waste at ULB level.
- Lack of support in financial, technical, and project development at state level to ULBs in identifying right technologies, processes, structuring projects and implementation.
- Lack of awareness about the importance of good solid waste management practices.
- Lack of capacities with the urban local bodies with reference to the processing technologies and scientific landfills.
- Lack of substantial capital and O&M expenses without matching revenues.
- Land acquisition is a major issue in SWM projects and a major cause of delay.
- Lack of technical expertise and institutional arrangements

In accordance with the Solid Waste Management Rules, 2016<sup>18</sup> all the states should develop a comprehensive state level municipal solid waste management strategy

The state of Andhra Pradesh has formulated a strategy for solid waste management<sup>19</sup>. The strategy states that all urban local bodies will need to have capacities and preparedness to undertake source segregation of waste, door to door collection and transportation, to set up processing and treatment systems and dispose only the inerts in scientific landfills. The strategy looks at regional / district level facilities for treatment and scientific landfilling. The ULBs will need to take adequate measures to reduce, reuse and recycle (e.g. plastic waste management) in order to minimize the costs for waste management for each ULB as well as the land requirements for the regional facilities. Options of composting for organic waste; co-processing of dry fractions of municipal waste in cement/ power sectors and/ waste incineration for energy production would need to be explored as part of the strategy. Financial sustainability for the ULBs for the solid waste management sector through user charges and property tax are also included in the strategy. Adequate measures such as strengthening the legal provision and institutional structure of ULBs will lead to the development of an environmentally compliant and sustainable system for the ULBs in the state. The strategy also looks into

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17 "Integrated Municipal Solid Waste Management Strategy 2014", MA&UD, GoAP

18 SWM 2016 Rules as published vide Gazette as accessed on MoEF website

19 G.O.Ms.No.64 dated 13.02.2014 Formulation of Andhra

state level institutional arrangements and program support. The strategy will look into short and long term plans for urban local bodies to handle municipal solid waste.

## 5. Institutional Arrangements for Urban Sanitation

With established trends of growing proportion of population in the urban areas, it is imperative that the institutional structures for the delivery of urban sanitation services are streamlined. The urban sanitation sector can learn from counterpart rural area programming such as Total Sanitation Campaign (TSC), National Rural Health Mission (NRHM), *Sarva Shiksha Abhiyan* (SSA), Integrated Child Development Services (ICDS) in establishing such institutional structures with clearly laid out roles and responsibilities.

The role of state level agencies should be of a facilitator, regulator and handholding ULBs through technical assistance, capacity building and finances from its own budgetary resources or from GoI, External Support Agencies (ESA) and innovative mechanisms. Until ULBs develop their robust capacities, it is desired that the technical support is extended in planning, designing, implementation and O&M of urban sanitation services. Active involvement of local NGOs, community organizations, self-help groups of women will be ensured through awareness creation and community mobilization for increased ownership of the overall sanitation agenda at the local level. Promotion of active support to *Area Sabhas* at the Ward level with primary focus in eliciting women participation will be paramount to the achievement of the goals of the State Sanitation Strategy.

In line with the letter and the spirit of the 74th CAA, there will be four tier institutional structures.

### 5.1 State Level

- a) **State Mission on Urban Sanitation:** comprising of a i) Governing Body headed by the honorable Chief Minister with membership of relevant Ministers of the corresponding line departments. The governing body is providing overall guidance and policy direction to urban sanitation initiatives in the state, and overseeing the planning and implementation of the state strategy so as to achieve the goals and outcomes envisaged in the State Sanitation Strategy / Action Plan. ii) Executive Committee headed by Chief Secretary with membership of relevant Secretaries of the line department may be constituted. DMA, MD SAC and the E-in-C / CE (PH) should be the ex-officio members of the Executive Committee this will create ownership and continuity. State shall ensure an effective coordination mechanism amongst various departments. Currently, SAC is acting as state Mission and it should even continue beyond the SBM Mission.
- b) **State level Nodal Agency on Urban Sanitation (SNUS):** led by C&DMA and supported by a dedicated Urban Sanitation Cell in the department to be headed by an Additional Director. The C&DMA to function as the Nodal Agency to support the operationalize the different components of the sanitation under the guidance of the SLSC and the sate sanitation cell led by the Executive Director to provide

technical, managerial and professional support in planning and implementation of state sanitation strategy

## 5.2 Regional Level

- c) **Regional Urban Sanitation Committee** headed by such mechanism at the RDMA level and supported by four Regional Cells respectively located in the RDMA office for divisions of Ananthapur, Guntur, , Rajahmundry, and Viskhapatnam The committee shall review the progress of sanitation activities, supervise and provide guidance.

## 5.3 District Level

- d) District Sanitation Mission: headed by District Collector/Magistrate under *Nirmal Bharat Abhiyan* (NBA) to be restructured by bringing in the urban sector in the purview and expanding the membership to the Mission and district level Executive Committee.

## 5.4 Urban Local Body Level

- e) City Sanitation Task Force: A multi stakeholder comprising of representatives from shops and establishments, sanitary workers unions, educational institutions, women groups, contractors, NGO's, line departments, political and eminent personalities to be led by the Mayor along with the Executive head of the ULB shall be constituted . The City Sanitation task force shall be duly supported by a City Sanitation Cell (CSC) that is staffed with relevant human resources. The cell shall be responsible for preparation and implementation of the city sanitation plan. The City Sanitation Task Force will be mainly responsible:

- Launching the City 100 percent Sanitation Campaign
- Generating awareness amongst the city's citizens and stakeholders
- Approving materials and progress reports provided by the implementing agency, other public agencies, as well as NGOs and private parties contracted by the Implementing Agency, for different aspects of implementation
- Approving the City Sanitation Plan for the city prepared after consultations with citizens
- Undertaking field visits from time to time to supervise progress,
  - a. Setting targets and milestones, and monitoring and review of the same periodically
  - b. Coordinating and ensuring convergence and synergy among the stakeholders
  - c. Inviting CSR / PPP initiatives including recycling and reuse of waste water
  - d. Annual assessment of outcomes of CSP implementation through social audit involving NGOs etc.

- Issue briefings to the press/ media and state government about progress
- Providing overall guidance to the Implementation Agency

**f) Area Sabha Sanitation Committee:** to be led by the concerned Ward Councilor and membership of a representative from the Urban Health, Nutrition and Sanitation Committee (set up under Urban Health Mission), women SHGs and Ward / Zone level Officials responsible for provisioning of water and sanitation services.

The above mentioned institutional structure will strengthen the urban development department for the purpose of functioning as a Sanitation Nodal Agency with a dedicated Sanitation Cell. The Cell shall function as part of the MA&UD organization set up with the responsibility to draft terms of reference of various tiers proposed here including roles and responsibilities.

The ULBs will be responsible in 'letter' and 'spirit' for implementation of all the functions delegated as per the relevant Municipal Acts namely, A.P Municipal Corporations Act, 1955, Municipalities Act, 1965 including (i) water supply (ii) sewerage, (iii) solid waste management and (iv) community health and (v) protection of the environment. ULBs will be responsible for planning, execution and operation and maintenance of all works related to water supply, sewerage, solid waste management and sanitation works.

*Water & Sanitation Utilities:* Clause 243-W and 243-X of the 74th CAA provides for the transfer of responsibilities and powers of providing water supply and sanitation services in urban areas to the respective urban local bodies.

GIZ's advisory<sup>20</sup> on Indian Water & Sanitation Utility (IWSU) has recognized that the importance of building innate institutional capacities with the ULBs for effective and efficient delivery of water and sanitation services. This requires the creation and ring fencing of a utility within the ambit of ULBs that is built on the core principles of autonomy, accountability, transparency and financial sustainability.

The overall responsibility for service provision remains with the ULB even where parastatals and other state level agencies are involved in service delivery. Departments and parastatals currently discharging these responsibilities will be accountable to the respective ULBs (including for example, receiving payments on certification by the ULBs).

As ULBs have the final responsibility for ensuring service delivery and to achieve sanitary and environmental outcomes it is important that effective monitoring mechanisms will have to be put in place.

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20 Technical Advisory Committee (TAC) headed by Dr. N.C. Saxena

## 6. Planning for Urban Sanitation

The urban planning deficit in the water and sanitation services in the country is widely recognized leading to urban infrastructure in the cities that are ad hoc, disjointed and lacks a long term perspective focus . The High Power Expert Committee report (March 2011) was the first such attempt at the national level to provide a long terms perspective to urban infrastructure in the country. It is desired that on similar pattern a state level high power committee is constituted to prepare a state level business / investment perspective plan for urban water and sanitation.

This State Sanitation Strategy (SSS) and State Sanitation Action Plan (SSAP) with goals / targets with milestones and outcome for the state of Andhra Pradesh will be operationalized through an implementation framework led by State Level Nodal Agency on Urban Sanitation (SNUS) that develop a state level implementation plan, specifying clear responsibilities, resources, time frame, finances, operational components and guideline-sets. Recently Swachh Andhra Corporation has been established by the state to ensure safe disposal of solid and liquid waste.

- Prepare City Sanitation Plans at each ULB with short, medium and long-term actions for sanitation that will address current back-log and future demand. The CSP would be the primary documents for providing road-map to achievement of the sanitation goals in accordance with Sanitation Strategy.
- SNUS will consolidate the CSP requirements into a state level CSP implementation plan specifying the time frame, finances, operational components and guideline-sets for these components, to enable the state to earmark resources.
- Undertake Proper feasibility studies for projects including improved and comprehensive DPR system are available for sanitation projects that are based on community involvement where ever possible and address issues such as demographics, geotechnical, social, capacities, financial, institutional, technology choice, governance (local) mechanisms, operation and maintenance.
- Priority should be given to slums in addressing the issue of open defecation through individual and community toilets
- Special emphasis will need to be given to urban centres that attract floating population seasonally (tourism) or sporadically (religious/cultural occasions) for planning.
- Primacy should be given to zero – low cost interventions of the CSPs so as to improve the sanitary environment of the urban areas. Also, appropriate environment-friendly solutions would need to be incorporated for these locations.

## 7. Data and information management

The state shall build urban information and database baselines in line with the guidelines recommended under the National Urban Information System (MoUD 2006). This guideline is based on common denominators and Survey of India (SoI) standards and shall be applied (utilized) uniformly across all urban sector programmes and schemes. City officials are trained to make available latest state of art SoI maps of adequate resolution (1:10,000 and better) and uses WGS84 (World Geodetic System 1984) as the datum for all their spatial information. Such an information system shall make best use of the GIS and MIS platforms that are rapid to access and retrievable for use in planning for urban infrastructure, creates compatible data formats and transforms MIS information (e.g for property mapping, census etc.) into spatial geo-referenced GIS files for further analysis and interpretation for all the important sectors (e.g. water, waste water, solid waste, storm water)

The normative environment of the water and sanitation sector is defined by plethora of design, specifications and standards as issued time to time by CPHEEO, BIS, CPCB, MoEF, MoUD etc.. SNUS will initiate a study of the water and sanitation sector normative environment available through repository of such documents and upon analytical assessment prepare technical guidelines that are relevant, appropriate and suitable for the topography of urban areas of the state.

Since ULBs have the final responsibility for ensuring all service delivery achieves sanitary and environmental outcomes therefore it is necessary that the state is refining and complementing existing national standards wherever adaption to the regional settings is required if and when required. The state shall provide proper training to the technical staff of the Municipal Authorities and in those technical guidelines that specifically cater to the needs of the state of Andhra Pradesh. It would also require greater coordination with parastatals such as PHED and other state level agencies which are involved in service delivery.

Benchmarking of service levels based on 28 indicators as identified by MoUD serve as the basis of gazette notification by the state government on Service level Benchmark (SLBs). Benchmarking involves identifying industry best practices, measuring and comparing one's own performance against others, identifying key areas for improvement and upgrading to match the best. The self-reported status on performance on water and sanitation services has proved to be a useful tool to incentivize the Municipal Authorities in self-awareness and setting baselines for financial grants from national finance commission and state finance commission. The potential of SLBs for use in the public discourse has not been fully tapped. DWSMs (District Water and Sanitation Mission) will monitor the regular dissemination of the SLB performance. SLBs and its data management particularly on the improvement of the reliability scoring have not been given adequate attention. SNUS in cooperation with Regional Cell will help Municipal Authorities in preparing management plans for strengthening city level data base to improve the reliability scores for SLBs

## 8. Financing of Urban Sanitation Investments

A higher dependence on State Government for revenue income and the quantum of income which is uncertain poses financial management challenges to the local governments. The timing of the income and uncertainty of the quantum will not facilitate ULBs and / or service providers to do any kind of multi-year budgeting for meeting expenditure obligations. All financial planning will tend to be very short-term based and constrained by limited visibility in the revenue income.

The current urban financing framework relies significantly on the idea of resource transfers from the State Government to local Government Institutions by way of grants to fill the gap between the expenditure demand and the revenues demand. This takes away the advantage of buoyancy in revenues.

The local government revenue mix will need to have greater share of own-share income. It is observed that the powers of taxation of the local governments as defined by the respective acts have several constraints and limitations. These have also been major contributors in restraining the revenue bases of the ULBs. There is a need for a greater degree of freedom to allow the ULBs to raise taxes and duties and existing statutes may be amended to provide such powers.

The enhancement of their own revenue income needs to be achieved by optimizing income from existing assigned sources and adding new sources of income added such as a consumption-linked income source like a local body tax. A revenue-income base for which local governments are more responsible for rather than being considerably dependent on the State Government for fiscal transfers is desired in the long-run. Following are some of the revenue income streams that could be explored by the state and local governments.

- i. A dedicated State Urban Sanitation Fund (SUSF) may be set up under the budget of MA&UD with outlay from the state budget, supplemented by any provisions from MoUD, GoI. The proposed SUSF will be utilized for urban sanitation, and will focus on assisting the ULBs in the management – planning, communication, monitoring, etc. - aspects of urban sanitation. Guidelines for access and use of this fund would be framed and the SNUS will advise the department on the approval and sanction of ULB proposals. It will be mandatory for ULBs to commit to prepare the CSP for accessing this fund, and subsequent fund flows will be conditional with the implementation of the CSP.
- ii. The consolidation of ULB City Sanitation Plans (anticipated over the 2014-2018 period) at the state level would indicate financing requirements for implementing total sanitation in the urban areas of the state.
- iii. A portfolio of funding sources - funds available through schemes like AMRUT, SBM, Smart City, Housing for all and PMAY; funds committed through externally

aided projects, PPP options with private or corporate sector – and possibilities of partnerships with NGOs, private sector, CSR and other sanitation sector participants would be explored by the SNUS and clear guidelines issued to the ULB on the nature and modalities for accessing these.

- iv. The MA&UD will earmark a certain percentage of its annual budget over three succeeding financial years (from FY 2015-16 to FY 2018-19); towards soft components- behavior change communication, technical support and administrative cost, which is essential to set the strategy in place and implement action plans.
- v. The ULBs concerned will earmark a certain percentage of their own resources to be spent on creating and maintaining vital sanitation infrastructures in the city on sustainable basis; with objectively verifiable results thereof. This will be adjudged as an initiative towards ODF status.
- vi. Providing access of households to a variety of micro-credit options through self-help groups (SHGs), microfinance institutions (MFIs), credit cooperative societies or the new housing finance companies being set up with a focus on small loans
- vii. Greater focus is needed on mobilizing local resources, as well as evolving innovative ways such as results-based funding and grants, and creating avenues for funding by CSR and social investors through new instruments.

**The investment (US \$ 6406 M) requirement for Sanitation across 110 ULBs is grouped under the sectors**

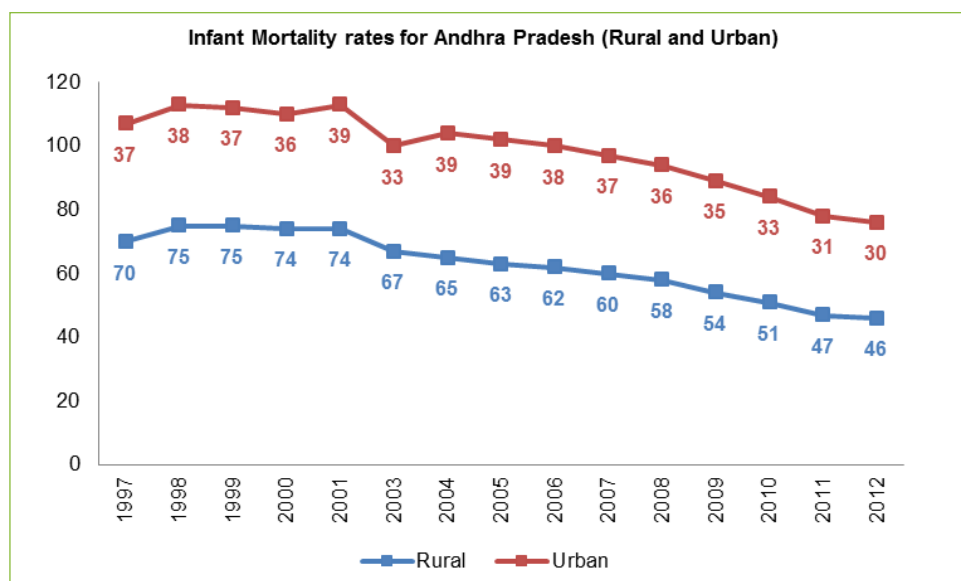
- Sewerage and Septage management( US \$ 2230 M)
- Storm Water drains(US \$ 2041 M)
- Water Supply(US \$ 2135 M)

Source: MA & UD-Investment opportunities in Urban Infrastructure in AP -2016

## 9. Human Development Outcomes for Sanitation Investments

Investment in safe water supply and access to improved sanitation has multiple economic returns. For every 1 US Dollar invested, there is a projected USD 3 to 34 benefit gained. The benefits range from time savings and productivity gains, to budget savings on health-care. Per capita gains for the developing world population could reach at least USD 15 per capita per year.<sup>21</sup>

It is well established that aspects of women safety, dignity and well-being are intrinsically linked to improved availability, access and use of sanitation and drinking water facilities.



### 9.1 Health Outcomes

Infant Mortality Rate (IMR) is considered to be the single most significant indicator of public health outcomes for which safe water and sanitation is one of the important determinants. The urban parts of Andhra Pradesh are reporting a decline in the IMR from 37<sup>22</sup> in 1997 to 29 in 2014 according to SRS Bulletin 2014. It still has substantial scope for reduction if the poor and vulnerable communities improve their access and utilization of WASH facilities. The sanitation sector investment will help the state in achievement of its XII FYP target to reduce IMR from 41 to much lower than 29 by end of the current five year plan in 2017.

21 Hutton, Guy, and Laurance Haller (2004), Evaluation of the Costs and Benefits of Water and Sanitation Improvements at the Global Level, World Health Organization, Geneva

22 IMR measured in children per 1000

The urban areas are performing better than the rural areas in terms of key indicators of human development. The Infant Mortality Rate (IMR) is 16 percent point lower in urban areas at 30 per 1000 as compared to 44 per 1000 in the rural areas. It is yet substantially higher when compared to the state of Kerala wherein it is 9 per 1000 for the urban areas. There are cases reported related to diarrhea and gastroenteritis in Ananthapur (41,693).

## 9.2 Environmental Outcomes

To define the environmental outcomes, it is imperative to establish the benchmarks and the targets that maintain sensitive ecosystems such as water bodies especially in the coastal areas. The parameter needs to fall in line with nationally available standards and regulations for water quality monitoring. The water body classification of CPCB and water quality norms for discharge of effluents (EPR, Pollution Control Law Series, PCLS/4/2000-2001) are important pre-requisite. The surface water monitoring undertaken by AP State Pollution Control Board (AP PCB) suggests that the pollution load is quite high in the water bodies primarily contributed by the direct disposal of the municipal sewerage.

### 9.2.1 Environmental Challenges

Urbanization is usually accompanied with environmental problems such as water and air pollution due to increased solid and liquid wastes adversely impacting public health and quality of life. The environmental decline due to urbanization also contributes to climate change. The risk of environmental disasters is also increasing resulting in loss of property and human lives. It is important for cities to protect the environment, prepare to address environmental problems and meet disasters without loss of life, property and resources. Cities should focus on making them resilient from disasters in a planned and phased manner. The quality of physical environment focusing on water, air and soil needs to be preserved and protected. Cities are increasingly becoming vulnerable to disasters like fire, industrial accidents, earth quakes, floods, cyclones etc. Almost all districts and major cities and towns in the state are located along the coastal corridor and are extremely vulnerable. The recent Hudhud storm has devastated north coastal districts and cities like Srikakulam, Vizianagaram and Visakhapatnam. There is need for disaster preparedness and for making cities and towns disaster resilient..

## 9.3 Gender and Inclusive Sanitation outcomes

The literacy gender gap, with male literacy rates of 75.56 percent vis a vis female literacy rate of 59.74 percent in the state Andhra Pradesh can be better bridged with adequate focus on school sanitation especially for girl students. In the schools of urban areas, the enrollment rates for boys and girls up to elementary school are 51 and 48.99 percent respectively. The evidence suggests that while the enrollment remains high but the drop out happens sharply with increase in age-set for the girls due to lack of adequate

hygienically operated sanitation facilities. The school drop-out rates for girls is presently reported as 3.25 at Primary Level (I-V), 18.95 at Elementary Level (I-VIII) and 27.48 at Secondary Level (I-X).<sup>23</sup>

The poverty level in the state of Andhra Pradesh is 6 percent at the poverty line of Rs. 1009 monthly per capita. This translates to about 1.7 Million persons below poverty line in absolute numbers.<sup>24</sup> About 36 percent of the urban population dwells in slum areas. The aspects of public sanitation from point of women safety, dignity and well-being are critically important in the state of Andhra Pradesh.

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23 Andhra Pradesh State Elementary Education Statistics, 2013-14

24 Planning Commission (July 2013) Poverty Estimates in India based on data of 2011-12

## 10. Sector Regulation - monitoring and incentives

Sanitation ratings and ranking as suggested under NUSP and Swachh Survekshan covers 110 ULBs in the state of Andhra Pradesh during last sanitation ranking. This will be extended to cover all the ULBs in the state of Andhra Pradesh and they will be used to establish reward scheme. The participation of primary stakeholders i.e. users of services will be encouraged. Also, a Clean School Campaign that is used for establishment of annual award schemes will be set up.

There is a need to institutionalize incentives schemes that encourage the Municipal bodies to prioritize sanitation on the pattern similar to Nirmal Bharat Abhiyan (NBA) for the rural areas under the recently launched Swachh Bharat Mission (Urban).

The state needs to provide a regulatory role in promotion of the 74<sup>TH</sup> CAA while undertaking the monitoring functions. The state will need to enforce achievement of the defined benchmarks and can use this tool for monitoring performance by linking funding with progress towards achieving service level benchmarks. ULBs are encouraged to participate in 'third party assessments' that will help in bringing about required modifications in approach to service delivery for holistic outcomes. Therefore, the state will have to introduce citizens' report cards, citizens' monitoring committees, self-assessment system, inter-city competitions, concurrent evaluation and third party assessments as monitoring tool for improving urban governance of water and sanitation services

## 11. Capacity Building and Training

In the context of this strategy, it is recognized that there is a need to improve the efficiency of the state departments and the ULBs across the state through a systematic approach, of which training is an important component. It is understood that capacity development is a long-term process that requires systematic and continuous effort at state as well as ULB level, both from the demand and supply perspective of service delivery.

Currently, Dr. Marri Channa Reddy Human Resource Development Institute of Andhra Pradesh (MCRHRD) is the apex training institute at the state level offering training on a wide range of subjects for various government programmes and departments. The other training institutes include the RCUES, ASCI and NIUM. However, it does not have a dedicated center for the urban sector as in the other ATIs such as YASHADA, ATI Mysore etc. To support the implementation of SSS in Andhra Pradesh it is necessary to have a dedicated Centre with adequate domain expertise to address the training needs of the state department as well as 110 ULBs across the state. The state will therefore tap funding opportunities that are being offered by MoUD to the maximum possible to establish State Institute of Urban Development (SIUD).

The provisions for training and capacity building with appropriate state training policies for the sanitation sector and Annual Action Plans for MA&UD, PHED and ULBs will be defined. Further training should be linked to development of competencies of individuals and to career progression as well as suitable amendment of service rules etc. The ULBs may be strengthened through adequate staffing ensuring all relevant posts in the various departments are filled. A dedicated training cell with a training manager may be created within SNUS and the municipal corporations within the state. Dedicated funds for training and capacity building activities may be provided. As recommended by National Training Policy 2012 (NTP), MA&UD and the ULBs will set aside at least 2.5 percent of their salary budget for training.

*Municipal Cadre:* The total number of workers engaged in across urban local bodies in the state of Andhra Pradesh is approximately 21,000

On the other hand, ULBs hire daily waged and contractual staff over and above the sanctioned staff. As ULBs have final responsibility for ensuring all service delivery achieves sanitary and environmental outcomes, it is therefore prudent to establish innate capacities within the ULB. Since urban local bodies are required to provide better urban services to the citizens and also to ensure planned development of the urban areas, there is a need to have a dedicated municipal cadre to meet the requirement of functional domain of the urban local bodies. Significant increase in urban population as well as financial transactions of ULB and implementation of urban reforms along with centrally sponsored/externally aided projects are added responsibilities of ULBs. These challenges necessitate separate municipal cadres in administrative, accounts, engineering and other technical services. Creation of municipal cadre will help in improving the performance of the urban local bodies and attract qualified people to

the services. A cadre will facilitate career opportunities for the persons working in the municipalities and sharing of experiences across cities. A scoping study on establishment of the municipal cadre will be required to build strong foundation for the Municipalities.

The sanitation has experienced significant skills flight and now has a lack of capacity at all levels. Lack of skilled staff to manage this function adversely impacts the service delivery. Recognizing limitation in finding quality technical human resources, a long term view to the challenge is through gearing our technical institutes of higher education as well as vocational training to tailor courses of global standards.

The actions shall include:

- Creation of municipal cadre will help in improving the performance of the urban local bodies and attract qualified people to the services. A cadre will facilitate career opportunities for the persons working in the municipalities and sharing of experiences across cities. A scoping study on establishment of the municipal cadre will be required to build strong foundation for the Municipalities.
- Establish sufficient capacities in higher education that enables state and city departments to execute sanitation obligations in the field of environmental management, environmental engineering, water Resource management and other related fields.
- Establish sufficient capacities in vocational training that enables state and city departments to execute sanitation obligations in the field of household plumbing, network plumbing and any other related skills for sanitation operation.
- Develop a sector capacity development framework, clarify the scope and nature of capacity needs through a comprehensive sector capacity needs assessment.
- Refresher courses and long term courses such as the post graduate diploma in sanitation, operator training programs.
- Professional skills strengthening through short targeted courses and regular refresher courses for the staff in sanitation.
- Review of training curriculum against the needs of the water supply and sanitation sector on conducting a Training Needs Assessment

Capacity building programs will also need to target artisans (builders, pump mechanics, well sinkers, masons, plumbers, tap inspectors, line men, , planners, community mobilizers, hygiene promoters, and community leaders. Guidance on good business practices will be needed for local entrepreneurs, NGO and private sector institutions involved in component supply chains..

## 12. Climate change and WASH services

Climate change is recognized as one of the defining challenges for the 21st century. More frequent and intense extreme weather events experienced through droughts, floods and less predictable rainfall and water flows, to name a few. These will place established water and sanitation services – and future gains in access and service quality – at real risk. Water supply and sanitation are affected by climate change and have an impact on climate change. The carbon footprint of water supply and sanitation such as energy used in pumping can be significant. The effects of climate impacts on sanitation may be direct – where water is an essential part of the technology process (e.g. sewerage) – or indirect – where the capacity of the environment to absorb or reduce the adverse effects of wastes is changed.

Climate change, manifested in floods, pose a potential threat to the sanitation and hygiene sector. Extreme events such as floods can damage septic tanks, waste processing facilities and sewerage systems, resulting in contamination of groundwater and increasing public health risks. Similarly, in dry environments, conventional sewerage systems, with relatively high water requirements are difficult to operate and maintain. Increasing urbanization results in issues of discharge of untreated sewage and solid waste will increase, thereby compounding the problem arising from climate change.

While there is evidence to generalize which technologies is more and less likely to be climate change resilient in a given region, we lack tools to assess the climate change resilience of a technology in a given specific location. Developing such tools is a priority. Also, building knowledge to review programming and operations to assess and increase the achievement of resilience of climate change will be pursued.

In line with National Action Plan on Climate Change (NAPCC), Government of Andhra Pradesh will make a commitment to address the “challenge of urbanization and Climate Change.

Even though climate change poses a threat to water supply and sanitation but not yet been integrated into regional and local level planning

- Sanitation needs to be factored into climate change responses at regional and local governmental levels as part of disaster management response.
- The state to act on climate change through facilitating the integration of climate change adaptation and mitigation into regional and local planning.

The state to develop action plan for a rapid response to climate change disasters like flooding, to reduce the impact on people, infrastructure, water and sanitation in coordination with the disaster management team at the district level.

The department of Municipal Administration and Urban Development will work on establishing a Working Group on Sustainable Urban Habitat (WGSUH) to prepare State Plan of Action on Urban habitat and Climate Change in line with the National Mission on Sustainable Urban Habitat.

## 13. Implementation framework of SSS

Based on forgoing analytical discussions anchored in best available evidence, and covering all above mentioned issues the implementation of the AP State Sanitation Strategy will be undertaken through an SSS Implementation Framework to be set up within 1 year around the following cornerstones, with an understanding that while each one of them are interdependent and yet stand alone on its own strength, merits, timelines and budgets:

- 13.1 (a)** State advisory on establishing effective, efficient and user responsive water and sanitation utilities for municipal authorities is issued through a government notification.
- 13.1 (b)** The institutional structures for delivery of urban sanitation in the state are established across tiers from state to area sabha. These area sabhas in next two years to be equipped with staff, budget and clear roles and responsibilities.
- 13.1 (c)** A Water and Sanitation Regulatory body/Commission is required at the state level to assist in regulating the issues of water generation, transmission and distribution, tariff fixation and capturing customer feedback and grievance redressal, and for recycling and reuse of waste water, and for fixing sewerage service tariff. The body/commission will also serve the purpose of expanding the water and sanitation services and for improved service delivery and customer satisfaction. The body/Commission is also expected to ensure equity, accessibility, reliability and affordability of the services to all.
- 13.2** State Urban Policy is developed that tackles the perspective planning for urbanization and urban growth and the challenges of climate change in the state including the aspect of urban definition in the context of the state of Andhra Pradesh within two years of AP SSS adoption. APUFIDC and other key departments should play a key role in preparation and finalization of the State Urban Policy.
- 13.3** Universal access to sanitary toilets in all urban areas of Andhra Pradesh is achieved within a year of SSS adoption and sustained for three years so as to be declared as having achieved status of Andhra Pradesh state as open defecation free.
- 13.4** All urban centers are equipped with City Sanitation Plans (CSPs) in one year with technical assistance from the institutional structures and financial assistance from the MA&UD.
- 13.5** Sanitation rating and ranking (Swachh Survekshan) is rolled out for all urban centers on pattern similar to national sanitation ranking and undertaken annually.
- 13.6** Annual Award Schemes are launched by the state government on the pattern of Nirmal Bharat Abhiyan (NBA) for urban areas.
- 13.7** State level Communication Plan for promotion of hygiene and sanitation in urban areas is prepared based on formative research and advanced research

methods. A wider dissemination of the AP SSS itself is also required amongst various stakeholders including the elected representatives of the Urban Local Bodies (ULBs) so as to ensure that the sector directions are coherent and directional for the state as a whole. The use of appropriate communication methods such as mass media, public contact programmes and advocacy campaigns will be used for popularizing the intent and purpose of the AP SSS.

**13.8** State government will harness the resources offered by MoUD in establishing State Institute of Urban Development (SIUD) that has a capacity development plan at the state level based on the training / capacity need assessment of the ULBs and stakeholders including the elected representatives.

**13.9** A state level action plan for promotion of universalizing gender sensitive urban sanitation in underserved areas, public spaces and institutions such as market, schools, religious centres, anganwadi centers, Petrol Bunks, Bus Stations, transition points, and health posts (under National Urban Health Mission) is prepared in next two years. Swachha Andhra Corporation is taking up the activities of construction of Individual Household Toilets, Community Toilets and Public Toilets to ensure sanitation services to all. State to develop guidelines to streamline construction, operation and maintenance of the public and community toilets across the state.

Provision of Public Toilets at APSRTC bus stations: APSRTC to plan and provide public toilets at every bus station on Pay and use model based on third party contacting for a period of 5 years.

**13.10** Citizens' report cards, citizens' monitoring committees, self-assessment system, inter-city competitions, concurrent evaluation and third party assessments as monitoring tool for improving urban governance of water and sanitation services are introduced. State needs to develop a comprehensive grievance redressal system to cater to the needs of the citizens which could be linked to mobile applications etc.

**13.11** An Integral Urban Information System (IUIS) is established in the MA&UD with data management protocol that is developed based on field level data and information need assessment with Municipal Authorities. The cutting edge technology is applied in making use of MIS and GIS for database archiving and retrieval functions.

**13.12** Technical guidelines are developed on comprehensive range of services in the water and sanitation sector matching the needs of the physical characteristics of urban centers in next two years. The guidelines will focus on establishing normative framework that exceeds national standards to promote outcomes on public health, environment and quality of human life.

- 13.13** State to develop comprehensive guidelines for Integrated Waste water and Septage Management. A detail action plan for Septage Management should be developed in the next one year that considers the multi-dimensional facet of the problems to guide the municipal authorities in preparation of waste water laws and its implementation.
- 13.14** State Strategy on Municipal Solid Waste to be updated in line with MSWM Rules 2016 and MSWM Manual 2016, as endorsed is disseminated in the state in next three months and used to formulate city action plans by the municipal authority as well as regional concepts that aim to meet the relevant service level bench mark for all urban local bodies in next five years.
- 13.15** Develop State level Master Plan for Universal access to Drinking Water in the state including the financial sustainability. To ensure the urban population have 100 percent access to piped water supply, mostly through individual connections.
- 13.16** Scope for improved management of storm water drainage is fully understood with the perspectives of recovery, recycling and reusing through a scientific study in select cities.
- 13.17** On the pattern of HPEC Report at the national level, state government will develop sector business / investment plan that use relevant normative regimes for urbanization for cost estimates. State could explore different financial models to strengthen Public Private Partnership in various sectors. A dedicated cell/ unit could be established for strengthening PPP in various sectors.
- 13.18 (a)** A State Urban Sanitation Fund (SUSF) to be established under the MA&UD Department and with a dedicated financial allocation for the budget year 2016-17 onwards.
- 13.18 (b)** A Committee shall be constituted for deliberations on alternate financing models and implementation mechanisms for various recommendations under SSS. The committee shall take up priority recommendations as suggested by SLSC for working out a detail financial model and budget requirements for the same.
- 13.19** A Working Group is established by the Government of AP on Sustainable Urban Habitat focusing on climate change challenges in urban areas including the aspects related to water and sanitation that prepare a State Action Plan on Cities and Climate Change in Andhra Pradesh.
- 13.20** A regular review of the AP SSS will be required for the purpose of reviewing & monitoring the progress towards the goal and vision that translates in concrete outcomes in the lives of people living in urban areas but also to undertake mid-course correction in light of better insight in to the field level feedback coming from the citizens and municipal authorities

## 14. Timeline and Action Plan

The above recommendations need to be prioritized by the state based on resources available in consultation with the SLSC. These recommendations can be broadly classified into short, medium and long term measures. Short term measures are measures which can be implemented in less than a year, medium term measures we can be implemented in 1-3 years and long term measures which shall take over 5 years for completion depending on the requirement. Various departments should be involved in the implementation of the SSS. An indicative implementation plan is attached as Annexure to the document.

## Annexure 1 : Draft Implementation Plan

### SSS Implementation Plan for Andhra Pradesh

# Annexures

| S.No. | Thematic Areas                                   | Broad Measures to be implemented from the AP-SSS (based on SISC discussions)          | Details of the Measures (as in the AP-SSS)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Implementation Timeline |                    |                 | State Departments Involved |                                  |         |                     |    | Prioritized for Action by SISC |
|-------|--------------------------------------------------|---------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|--------------------|-----------------|----------------------------|----------------------------------|---------|---------------------|----|--------------------------------|
|       |                                                  |                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Short (<1 year)         | Medium (1-3 years) | Long (>3 years) | MA&UD (C & DMA)            | Swachha Andhra Corporation (SAC) | Finance | Environment /Health | IT |                                |
| 1     |                                                  | State plan for universal access to sanitation and ODF                                 | Universal access to sanitary toilet in all urban areas of Andhra Pradesh is achieved within a year of SSS adoption and sustained for three years so as to be declared as having achieved status of Andhra Pradesh state as open defecation free.                                                                                                                                                                                                                                                                                                     | ✓                       |                    |                 | ●                          | ○                                |         |                     |    |                                |
|       | Universal Sanitation coverage                    | State level IEC plan for hygiene and sanitation solutions                             | State level Communication Plan for promotion of hygiene and sanitation in urban areas is prepared based on formative research and advanced research methods.                                                                                                                                                                                                                                                                                                                                                                                         |                         | ✓                  |                 | ●                          | ○                                |         | ●                   | ●  |                                |
|       |                                                  | State level action plan for gender sensitive urban sanitation solutions               | A state level action plan for promotion of universalizing gender sensitive urban sanitation in underserved areas, public spaces and institutions such as market, schools, anganwadi centers and health posts (under National Urban Health Mission) is prepared in next two years.                                                                                                                                                                                                                                                                    |                         | ✓                  |                 |                            | ○                                |         |                     |    |                                |
|       |                                                  | Development of technical guidelines for the Sanitation sector                         | Technical guidelines are developed on comprehensive range of services in the water and sanitation sector matching the needs of the physical characteristics of urban centres in next three years. The guidelines will focus on establishing normative framework that exceeds national standards to promote outcomes on public health, environment and quality of human life. The guidelines on various key areas like Public Toilets, Community Toilets, Integrated waste water management to be developed in line with the state sanitation agenda. | ✓                       |                    |                 | ●                          | ○                                |         |                     |    |                                |
| 2     | Sanitation for Health and Environmental Outcomes | Development of Guidelines of integrated waste water management and septage management | State Plan of Action for Septage Management is developed in next two years that considers the multi-dimensional facet of the problems to guide the municipal authorities in preparation of waste water laws and its implementation.                                                                                                                                                                                                                                                                                                                  | ✓                       |                    |                 | ●                          | ○                                |         |                     |    |                                |
|       |                                                  | Development of state strategy on Municipal Solid Waste                                | State Strategy on Municipal Solid Waste, as endorsed is disseminated in the state in next three months and used to formulate city action plans by the                                                                                                                                                                                                                                                                                                                                                                                                | ✓                       |                    |                 | ●                          | ○                                |         |                     |    |                                |
|       |                                                  | Preparation of state master plan for universalising state level water supply          | Develop State level Master Plan for Universal access to Drinking Water in the state including the financial sustainability. To ensure the urban population have 100 percent access to piped water supply, mostly through individual connections.                                                                                                                                                                                                                                                                                                     |                         |                    | ✓               | ●                          |                                  |         |                     |    | ○                              |
|       |                                                  | Storm water drainage management plan (recover/recycling/reuse)                        | municipal authority as well as regional concepts that aim to meet the relevant service level bench mark for all urban local bodies in next five years.                                                                                                                                                                                                                                                                                                                                                                                               |                         | ✓                  |                 | ●                          |                                  |         |                     |    | ○                              |

| S.No. | Thematic Areas                               | Broad Measures to be implemented from the AP-SSS (based on SLSC discussions)                   | Implementation Timeline |                    |                 | State Departments Involved |                                  |         |                     |    | Prioritized for Action by SLSC |                             |   |
|-------|----------------------------------------------|------------------------------------------------------------------------------------------------|-------------------------|--------------------|-----------------|----------------------------|----------------------------------|---------|---------------------|----|--------------------------------|-----------------------------|---|
|       |                                              |                                                                                                | Short (<1 year)         | Medium (1-3 years) | Long (>3 years) | MA&UD (C & DMA)            | Swachha Andhra Corporation (SAC) | Finance | Environment /Health | IT |                                | Engineering and Chief (ENC) |   |
| 3     | Sanitation Institution and capacity building | Creation of institutional structures across 3 tiers (staff+budget+ Roles & Responsibility)     |                         |                    | ✓               | ○                          | ●                                | ●       | ●                   |    | ●                              | ●                           |   |
|       |                                              | Devising and implementing Capacity building plan for the state                                 |                         | ✓                  |                 | ●                          | ○                                |         |                     |    |                                |                             |   |
|       |                                              | Strengthening of Sanitation Cell/ Sanitation Mission / Institutions                            | ✓                       | ✓                  |                 | ●                          | ○                                |         |                     |    |                                |                             |   |
|       |                                              | Development of state urban policy                                                              |                         | ✓                  |                 | ○                          |                                  |         |                     |    |                                |                             |   |
| 4     | Strengthened sector planning and governance  | All ULBs with CSPs                                                                             | ✓                       |                    |                 | ○                          | ●                                |         |                     |    |                                | ●                           |   |
|       |                                              | Sanitation Ranking/ rating for all ULBs                                                        | ✓                       |                    |                 | ○                          |                                  |         |                     |    |                                |                             |   |
|       |                                              | Annual award schemes/ Citizens report card/ inter city competition for improved infrastructure | ✓                       |                    |                 | ○                          | ●                                | ●       | ●                   |    | ●                              |                             |   |
|       |                                              | Setting up of Integral Urban information System (IUIS) for data management                     |                         |                    | ✓               | ○                          |                                  |         |                     |    | ○                              |                             | ○ |

| S.No. | Thematic Areas                             | Broad Measures to be implemented from the AP-SSS (based on SISC discussions)                                                                                                                                                                                                                                                                                                                                                                                                       | Implementation Timeline |                    |                  | State Departments involved |                                  |         |                     |    | Prioritized for Action by SISC |                             |
|-------|--------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|--------------------|------------------|----------------------------|----------------------------------|---------|---------------------|----|--------------------------------|-----------------------------|
|       |                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Short (<1 year)         | Medium (1-3 years) | Long (> 3 years) | MA&UD (C & DMA)            | Swachha Andhra Corporation (SAC) | Finance | Environment /Health | IT |                                | Engineering and Chief (ENC) |
| 5     | Financial and environmental Sustainability | A State Urban Sanitation Fund (SUSF) to be established under the MA&UD Department and with a dedicated financial allocation for the budget year 2016-17 onwards.<br>A Committee shall be constituted for deliberations on alternate financing models and implementation mechanisms for various recommendations under SSS. The committee shall take up priority recommendations as suggested by SISC for working out a detail financial model and budget requirements for the same. |                         | ✓                  |                  | ○                          |                                  | ●       |                     |    |                                |                             |
|       |                                            | Setting up of state urban sanitation fund                                                                                                                                                                                                                                                                                                                                                                                                                                          |                         | ✓                  |                  |                            |                                  |         |                     |    |                                |                             |
|       |                                            | Development of Sector and business investment plan for urbanization                                                                                                                                                                                                                                                                                                                                                                                                                |                         |                    | ✓                | ●                          |                                  | ○       |                     |    |                                |                             |
|       |                                            | Working group for sustainable urban habitat (Climate change in cities)                                                                                                                                                                                                                                                                                                                                                                                                             | ✓                       |                    |                  | ●                          | ●                                |         | ○                   |    | ●                              |                             |
|       |                                            | Review/ preparation of state action plan on cities and climate change                                                                                                                                                                                                                                                                                                                                                                                                              |                         | ✓                  |                  | ●                          |                                  |         | ○                   |    | ●                              |                             |
|       |                                            | Same as above                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                         | ✓                  |                  |                            |                                  |         |                     |    |                                |                             |
|       |                                            | A regular review of the AP SSS will be required for the purpose of reviewing & monitoring the progress towards the goal and vision that translates in concrete outcomes in the lives of people living in urban areas but also to undertake mid-course correction in light of better insight in to the field level feedback coming from the citizens and municipal authorities.                                                                                                     |                         | ✓                  |                  | ○                          |                                  |         |                     |    |                                |                             |

○ Primary Department for Implementation

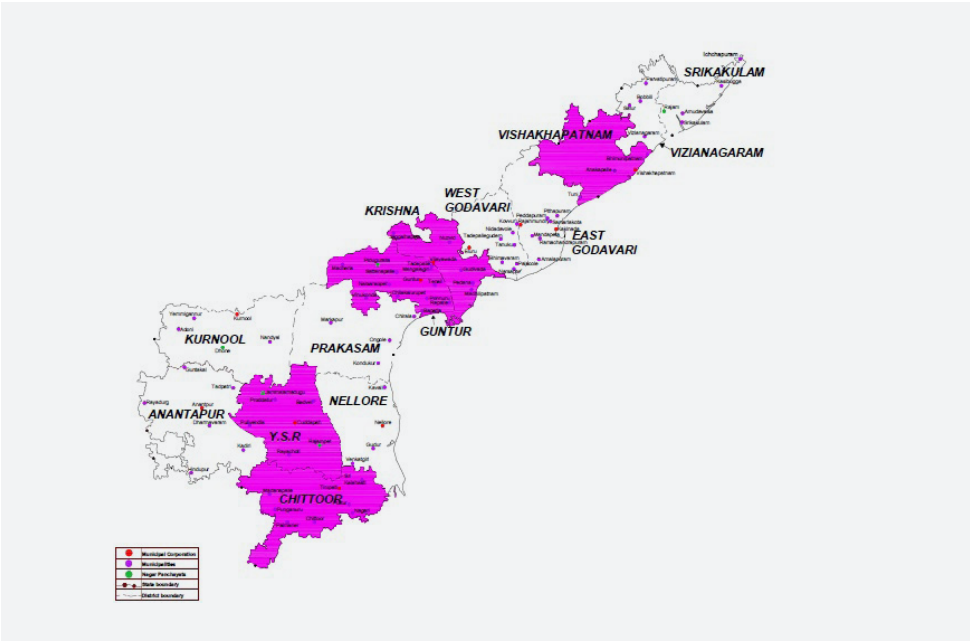
● Secondary Department for Implementation

Short term

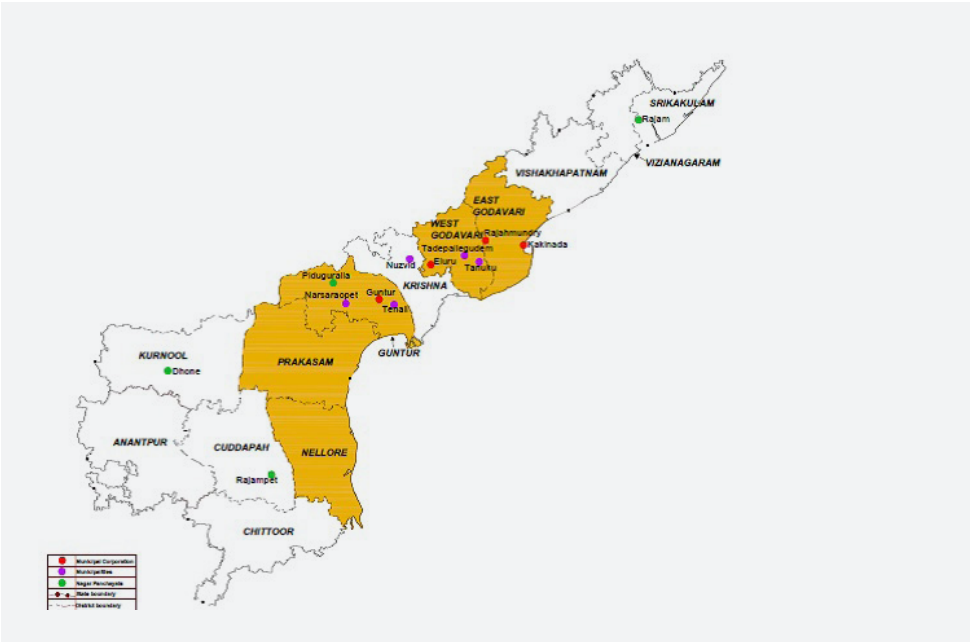
Medium term

Long term

Annexure 2: Districts with highest level of Urbanisation



Annexure 3: Districts with highest percentage of urban households with septic tanks



## Technical Partner

### GIZ - Support to National Urban Sanitation Policy Project – II

## About GIZ

The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH is a global service provider in the field of international cooperation for sustainable development with around 16,400 employees. GIZ has over 50

years of experience in a wide variety of areas, including economic development and employment, energy and the environment, and peace and security. Our business volume exceeds two billion euros. As a public-benefit federal enterprise, GIZ supports the German Government – in particular the Federal Ministry for Economic Cooperation and Development (BMZ) – and public and private sector clients in around 130 countries in achieving their objectives in international cooperation. With this aim, GIZ works together with its partners to develop effective solutions that offer people better prospects and sustainably improve their living conditions..



As a service provider with worldwide operations in the field of international cooperation for sustainable development, GIZ works together with its partners to develop effective solutions that offer people better prospects and sustainably improve their living conditions. GIZ is a public-benefit federal enterprise and supports the German Government as well as many public and private sector clients in a wide variety of areas, including economic development and employment, energy and the environment, and peace and security.

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