Rapid assessment report
Cuttack

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Building a better working world

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Table of contents

List of tables

List of figures

List of abbreviations

Abbreviations	
ABR	Anaerobic Baffled Reactor
ADM	Additional District Magistrate
AMRUT	Atal Mission for Rejuvenation and Urban Transformation
AWW	Anganwadi Workers
BDA	Bhubaneswar Development Authority
BeDA	Berhampur Development Authority
BIS	Bureau of Indian Standards
BOD	Biological Oxygen Demand
BSS	Basic Safety Standards
CBO	Community Based Organization's
CDA	Cuttack Development Authority
CDMO	Chief District Medical Officer
CHO	City Health Officer
CMC	Cuttack Municipal Corporation
CPHEEO	Central Public Health and Environmental Engineering Organization
CSP	City Sanitation Plans
CSR	Corporate Social Responsibility
CSTF	City Sanitation Task Force
CT	Community Toilet
DEWATS	Decentralized Wastewater Treatment
DFO	District Forest Officer
DLRMC	District Level Review and Monitoring Committee
DMA	Directorate of Municipal Administration
DMF	District Mineral Foundation
DPR	Detailed Project Report
DUDA	District Urban Development Agency
DUSC	District Urban Sanitation Committee
FGD	Focus Group Discussion
FS	Faecal Sludge
FSM	Faecal Sludge Management
FSSM	Fecal Sludge and Septage Management
HH	households
H&UDD	Housing & Urban Development Department
IDI	In-depth interviews
IEC/BCC	Information, Education and Communication/Behavior Change Communication
IHHL	Individual Household Latrines
IMTS	Indian Management and Technical Society
JICA	Japan International Cooperation Agency
JNNURM	Jawaharlal Nehru National Urban Renewal Mission
J-PAL	The Abdul Lateef Jameel Poverty Action Lab
KL	Kilo L

Abbreviations	
M+OG	Municipal area + Outgrowth area
MAS	Mahila Arogya Samiti
MHM	Menstrual Hygiene Management
MLD	Million Liters per day
MoU	Memorandum of Understanding
MoUD	Ministry of Urban Development
MSW	Municipal Solid Waste
m	metre
NBC	National Building Code
NGO	Non-Government Organization
NULM	National Urban Livelihood Mission
NUSP	National Urban Sanitation Policy
O&M	Operations & Maintenance
OD	Open Defecation
ODF	Open Defecation Free
OISP	Odisha Integrated Sanitation Improvement Project
OSPCB	Orissa State Pollution Control Board
OUIDF	Odisha Urban Infrastructures Development Fund
OUSS	Odisha Urban Sanitation Strategy
OWSSB	Odisha Water Supply and Sewerage Board
PHEO	Public Health Engineering organization
PIU	Project Implementing Unit
PKDA	Puri Konark Development Authority
PMU	Project Management Unit
PPE	Personal Protective Equipment
PPP	Private Public Partnership
PS	Principal Secretary
PT	Public Toilets
RWA	Residential Welfare Associations
SAAP	State Annual Action Plans
SAI	Social Awareness Institution
SBM (U)	Swachh Bharat Mission - Urban
SDA	Sambalpur Development Authority
SeTP	Septage Treatment Plant
SFD	Shit Flow Diagram
SHG	Self Help Group
SLIP	Service Level Improvement Plan
STP	Sewage Treatment Plant
TC	Total Coliform
TSU	Technical Support Unit
UIDSSMT	Urban Infrastructure Development Scheme for Small and Medium Towns
ULB	Urban Local Bodies
USS	Utkal Seva Samaj

Abbreviations	
WATCO	Water Corporation of Odisha
WKS	Ward Kalyan Samiti
WSC	Ward Sanitation Committee
WTP	Water Treatment Plant
WWTP	Wastewater Treatment Plant

Executive summary

With urban population of 7 million (Census 2011), the urban local bodies in Odisha are currently facing challenges of safe sanitation and effective Faecal Sludge and Septage Management (FSSM) in the form of significant public health and environmental risks. However, there is limited data and information on FSSM at state and city level which constraints programmatic interventions. In order to implement FSSM programme in the towns/cities, it is crucial to understand the existing practices, structure, regulatory framework, capacities, awareness level, and gaps in the FSSM value chain. A rapid assessment study was conducted to examine the current FSSM scenario and generate critical information to develop a roadmap for implementation of FSSM in Cuttack city. As part of this assessment, a primary survey was conducted that had convergent parallel mixed method approach comprising of both quantitative and qualitative methods was used to collect data.

Cuttack city is the former capital and the second largest city of Odisha state. The city is bordered by two major rivers: the Mahanadi and the Kathajodi Rivers. The city with a population of 6.10 lakh is governed by the Cuttack Municipal Corporation (CMC).The total corporation area has been divided in to 59 wards and spread across an area of 193 km^2.

During the consultations, the Collector of Cuttack highlighted the need to address the issue of open defecation on priority. Since Cuttack is more than 1,000-years-old, settlements in the interiors of the city are ill-planned and structures are outdated, lack of availability of land as well as space constraint, construction of toilets is difficult. He plans to keep these issues in priority and provide suitable solutions in the coming years.

Out of Cuttack's total population of 6.10 lakh, 35% reside in slums where open defecation is a serious challenge. There are 264 notified slums covering 32,106 households and 1, 29,471 population. Insanitary toilets, open defecation, choked drains, solid wastes dump yards are especially prevalent in the slums leading to serious threat of water and vector borne diseases.

Sl. No	Indicators	Data
1	Total Population (Cuttack MC)	6,01,089
2	Slum Population	1,29,471
3	No. of households	1,21,919
4	No. of slum households	33,173
5	No. of non-slum households	88,746
6	Average no. of person per household	5.15
7	Average income of people	29,214[1] per annum
8	Gender ratio	930 females per 1,000 males
9	No. of PT	16 + 2 mobile units + 8 defunct
10	No. of CT	15 + 2 (under project Samman) + 17 defunct + 24 (under construction project Samman) + 6 (yet to be constructed under project Samman)
11	HH with toilets connected to septic tank	72,907
12	HH with toilets connected to pit latrines	4,633
13	HH with toilets connected to sewer	22,677

[1] Per capita Net District Domestic Product (NDDP), Odisha Economic Survey, 2015

Sl. No	Indicators	Data
14	No of cesspool vehicle	6 vehicles with 3,000 L each (ULB) + 6 vehicle

The present source of water used in CMC area is ground water. Major source of surface water from Mahanadi and Kathajodi is yet not into use. A project on setting up a Water Treatment Plant (WTP) is in progress. 57% of the population has water service connection while rest depend on other sources like stand posts, pumping wells, open wells, hand pumps and tube wells. This indicates that about 55.7% of households depend on non-revenue source of water. The sewer system roughly covers 25% (68 km) of the area falling under Cuttack Development Authority (CDA) in western part of the city. Cuttack is implementing the Odisha Integrated Sanitation Improvement Project (OISIP), which is being funded by the JICA. This project will cover about 60% of population, by laying 382 km sewer network, of which 187 km has been laid but not connected to households. Cuttack generates around 183 MT of municipal solid waste per day out of which 154 MT gets collected. Collection of solid waste for 40 wards is done door-to-door by private agency wherein they cover all the households in four wards and partially in 36 wards. The waste for the remaining 19 wards is collected by CMC. Since Cuttack is more than 1,000 years old, more than 60% of streets are less than 4.5 m in width thereby creating bottlenecks in the core part of the city.

The Odisha Urban Sanitation Strategy 2017 mandates the formation of a Ward Sanitation Committee in each ward of the ULB consisting of 11 to 15 members. Cuttack has recently formed a WSC as per the resolution passed by the Municipal Council for the by-law on Solid Waste Management. The WSCs are expected to be formed in all the 59 wards of the city soon. The City also has community based institutions under National Urban Health Mission (NUHM) such as Ward Kalyan Samiti (WKS) in 57 out of 59 wards under the ULB and also 269 Mahila Arogya Samiti (MAS) groups. Over 2,500 Self Help Groups (SHGs) are functioning in various wards under National Urban Livelihood Mission (NULM). There are over six prominent NGOs actively working for the urban slum population and sanitation.

The income budget and expense budget estimate for FY 2015-16 was INR 339 crore and 313 crore respectively. The total expenses of ULB in FY 2015-16 were INR 103 crores as compared to the income, which was approximately 98 crore in the same period. This implies that the ULB is not breaking even and is unable to meet the costs despite the fact that grants, contribution and subsidies constitutes 26% of their total income. The major part of the income is generated through assigned revenue and compensation which is 55% of the total income. While on the other hand the major part of the expenditure is due to establishment and administrative expenses which is 55% of the total expenditure. The budget estimate for establishment and administrative expenditure matches with the actual amount spent by CMC (INR 56 crore). Out of INR 40.6 lakh received under AMRUT till 31st March 2017, no expenditure was done on Sanitation, but INR 13.3 lakh were utilised for creation of public parks.

The key policies regulations and guidelines focused on FSSM are indicated in the following figure:

The state level stakeholders bring in new policies, reforms and innovation with regard to funding mechanisms, creating an enabling environment and providing opportunities for the ULBs to implement reforms in sanitation or urban development projects in the city levels. While state level stakeholders build strategies, ULBs are critical stakeholders to implement those strategies, policies and plans. The district level stakeholders play supervising roles and monitor the progress besides facilitating the implementing processes in a limited way. Current institutional arrangement for FSSM starts with AMRUT funds being made available to OWSSB which tenders construction (on Engineering Procurement and Construction mode) and five year O&M to private players. Cesspool trucks are procured from state and transferred to ULB for O&M which in turn is tendering out to private players for seven year who are expected to meet operational expenses through service usage charges from households. BCC and capacity activities is planned to be conducted through SBM funds. Remaining funds are to be allocated through convergence with other schemes and departments such as National Urban Health Mission, National Urban Livelihood Mission and Labour Commission among others.

FSSM situation basis rapid assessment study is described hereunder

Toilet access and containment

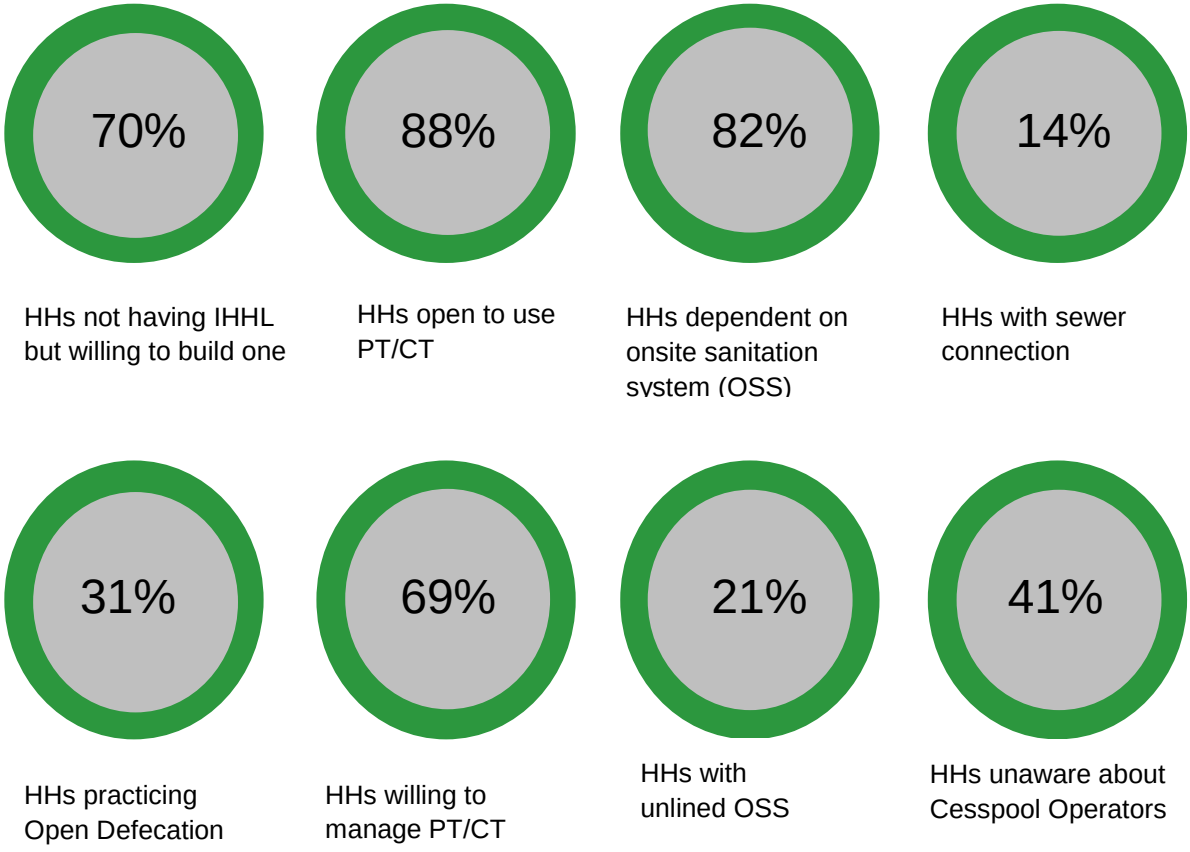
In Cuttack, more than 95,000 citizens do not have access to household toilet[2]. Of these, 26,000 are going to be provided IHHL under the SBM. 69,000 citizens not having household toilets and are directly/indirectly dependent on public or community toilets. Possibility of community based onsite sanitation system is also being explored by the ULB in situations where space within household is a problem. Apart from the existing 25 CT/PT under the scheme of hybrid toilets[3], 37 new toilet complexes are to be constructed. All of them are at construction stage or nearing completion. The City also has user-centered shared toilet design with community based O&M models under Project Samman. 32 such units are planned of which two have been handed over to the CMC. O&M of these units shall be managed by community.

Following figures capture the key findings from limited primary survey of 464 HH.

[2] Census 2011

[3] Hybrid toilets is a concept being derived from both community and public toilets, where both options of pay-per-daily use and/ or pay-per-month options are available.

Figure 0-1: - Key findings on toilet containment from primary survey

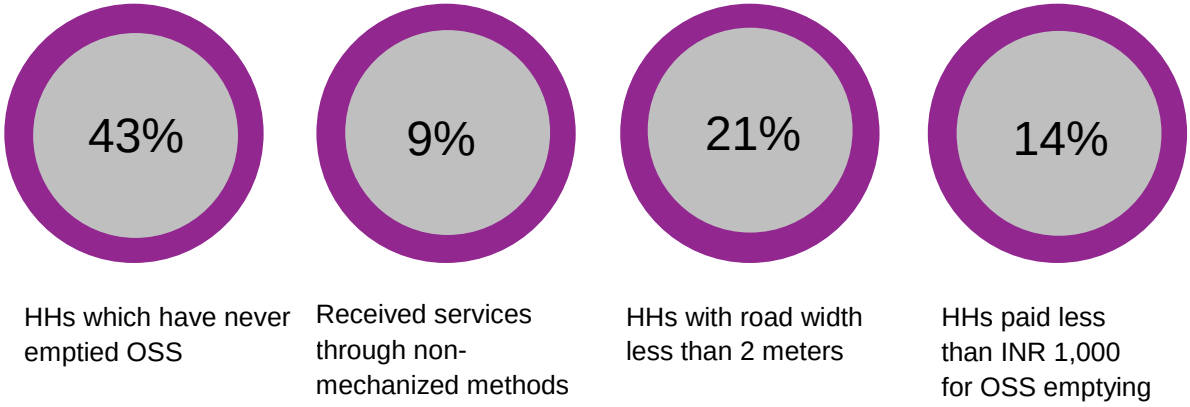


The survey suggested that presence of unlined septic tanks (21%) and average distance between septic tank and water source at 12m is also a probable cause of water borne diseases. Direct connection of latrines or OSS to drain is also an issue along with presence of unscientific OSS which function as holding tank.This could be corrected through focused communication with community and capacity building of masons and contractors as 97% HH sought advice from them for designing and construction of septic tank/pits.

Emptying and transport

The current emptying capacity is 23.5 Kilo Liter (KL) which shall increase to 35.5 KL with introduction of new vehicles from ULB. A request for proposal was floated in December 2016 inviting tenders from private operators towards the operation and maintenance of the newly acquired trucks. 9% HHs reported availing non-mechanized services. This could be due to two reasons – vehicle inaccessibility and unawareness on cesspool vehicles. Existing and new fleet of cesspool vehicles will have limited access due to vehicle width. ULB and other officials have also highlighted this issue. Interactions with ULB personnel handing cesspool emptying operations revealed that their operations are not governed by any regulation. Below are the key findings from our primary survey.

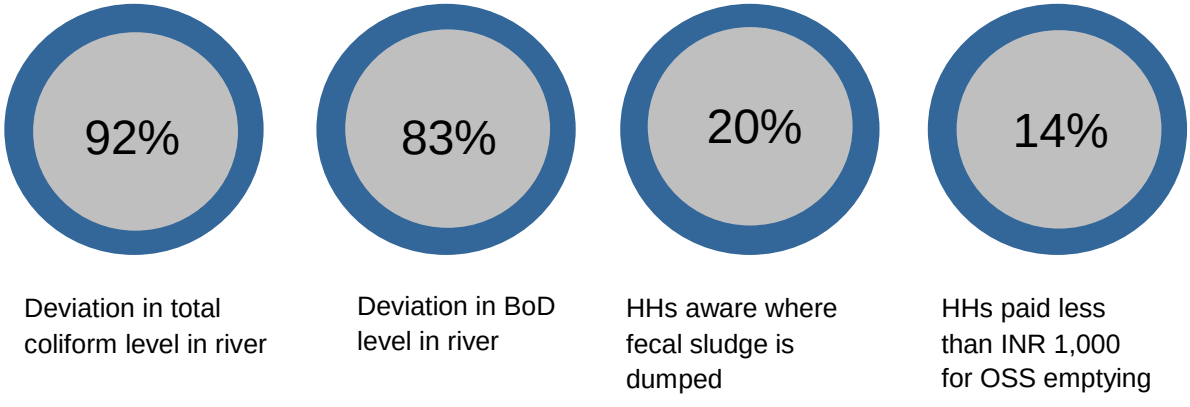
Figure 0-2: -Key findings on emptying and transportation from primary survey



Treatment, re-use and disposal

Dumping of faecal sludge is not monitored by the authorities. However, an existing site (stabilization pond) for temporary disposal near Matgajpur treatment plant is identified. A 60 KLD (Kilo Litre per Day) Septage Treatment Plant (SeTP) is proposed at Matgajpur to treat faecal sludge. Construction has commenced for the SeTP and is in progress. Currently, there is lack of monitoring mechanism to track dumping of faecal waste. Most of sewage is being discharged into river[4]. Potential for re-use of treated waste water and dried manure generated post treatment is not yet explored. Below are the key findings from our primary survey.

Figure 0-3: -Key findings on treatment, re-use and disposal from primary survey



There is a tripartite agreement between the ULBs (only AMRUT towns) in Odisha, H&UDD and the OWSSB. As per this agreement OWSSB shall be the financial and implementation intermediary on behalf of ULBs for urban infrastructures. Yet there is a need for an integrated approach. The OWSSB is constructing SeTPs and will take care of O&M until the facility is handed over to the ULB. But during primary interactions city and district level officials highlighted lack of awareness of activities on treatment plant. SeTPs and cesspool trucks are complimentary to each other but fall under the purview of different bodies. ULBs does not have

Awareness among citizens

- While 89% of the participants are aware that open defecation causes ill-health to their children, only 10% aware that fecal contamination can cause malnutrition and 48% aware that it is one of the cause of jaundice.

[4] Source: State Pollution Control Board (SPCB) during primary interaction

Awareness among citizens
► 4% of the households reported that Mahila Arogya Samiti (MAS) and 2% reported that Self Help Groups were creating awareness on sanitation.. ► Citizen's apathy and lack of participation and ownership for sanitation and hygiene were reported in FGD and IDI Table 7-5

Following are the interventions identified to improve FSSM situation. Interventions are divided into four thematic areas: Infrastructure related (including O&M, business models etc.), capacity building, governance reforms and IEC/BCC.

	**Toilet access and containment**	**Emptying and transport**	**Treatment, re-use and disposal**
Infra-structure (infra and O&M)	► Conversion of insanitary toilets to sanitary toilets by provision of scientific septic tanks can be prioritized ► Greater focus on CT, PT availability ► Explore sustainable O&M models incl. community led, private operators, micro enterprise led etc.	► Optimize mechanized emptying fleet through mix of various types and sizes and also explore transfer stations ► Operating models to increase penetration of mechanized services and make them affordable and available ► Pilot project using GPS technology tracking could be initiated in select wards to monitor usage of mechanized emptying services and check illegal dumping ► Explore potential for scheduled desludging	► Readiness of SeTP to ensure provision of adequate facilities and efficient operations ► Intermittent solutions like at the drain outlet point, interceptors or de-centralized treatment ► Market for manure and treated water to be explored and included as part of the O&M contract to be defined for SeTP operator
Capacity building	► Capacity building of masons on design of scientific septic tanks ► Building capacity of CBOs such as MAS, SHGs and Ward Sanitation Committees to spread awareness on importance of scientific onsite containment system among households	► Strengthened monitoring at community level by building capacity of MAS, Ward Sanitation committee, CSTF and SHG to promote period emptying through mechanized emptying ► Capacitate ULB, parastatal and district officials through training in concept and program design to increase their involvement ► Exposure visits to learn leading practices ► Preparing consumers to pay for the charges of sludge treatment and impairing knowledge on safe disposal	
Govern-ance reforms	► A regulatory set-up can be proposed for ensuring effective implementation of the Odisha septage management guidelines which mandates HHs to make it compulsory for all households to construct septic tanks. ► Amendments could be made in ULB building bye-law to include provision of scientific	► Effective implementation of the Odisha septage management guidelines which mandates HHs to clear out the septic tanks and strictly keep away from engaging manual scavengers. ► Implement provisions through ULB resolution of for emptying and transport activities and on adopting	► Strong regulatory enforcement to stop open discharge from drains into the river ► Regulation at ULB level to enforce disposal of fecal waste at only designated site

	**Toilet access and containment**	**Emptying and transport**	**Treatment, re-use and disposal**
	septic tank as part of building approval process	PPE while emptying and transporting ► Explore potential for training and empanelment of cesspool emptying service providers	
	► Strengthening district administration through participatory planning in city levels for integration with district planning and effectively escalate the issues to state levels through planning structures ► Restructuring the engineering department with added focus on environmental engineering ► Focus should be on zone and ward level interventions – a coordinated program and overall M&E at broader level ► Formalization of community level institutions such as CSTF, WSC in city system ► Service level scores in each wards including sanitation and its integration with CSPs		
IEC/BCC	► A communication campaign under SBM to motivate people to convert insanitary toilets to sanitary ones using incentive provided under SBM ► Disseminate information to citizens on Onsite sanitation system solutions available in market which are economical and quicker to implement	► Communicate the harmful impact of non-mechanized emptying and indiscriminate dumping to relevant stakeholders - citizens, leaders, community groups, sanitation workers and ULB staff ► Identify ways to increase penetration of information to citizens on mechanized emptying service providers ► Promote the use of hybrid, CT/ PT	

An implementation plan is also supplemented basis the key issues and related interventions as identified above during the rapid assessment. This plan shall focus on key milestones, activities, and identifying integration and dependencies across internal and external stakeholders to help steer FSSM programme in the city.

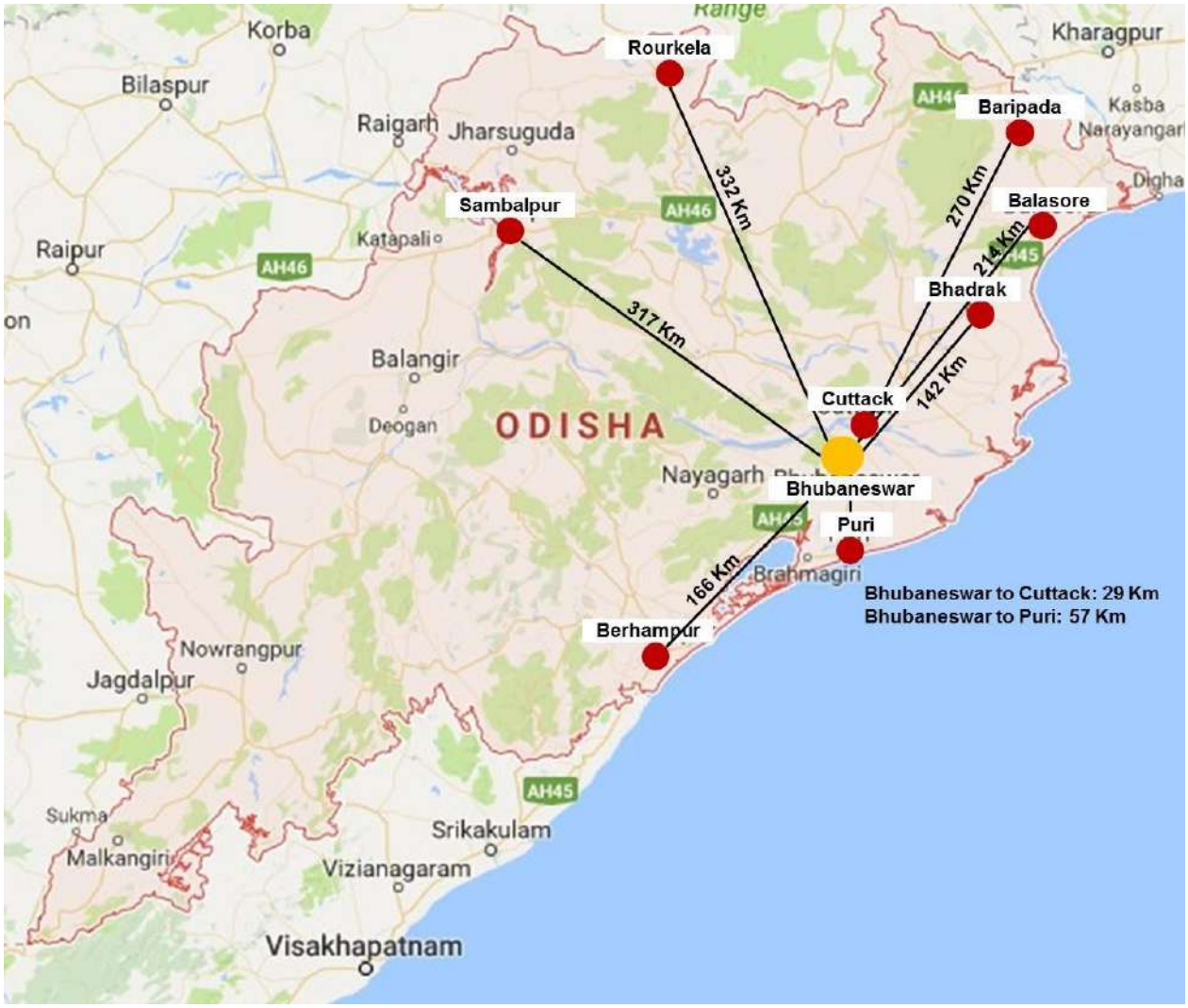
1 Introduction

1.1 Background and rationale of the study

The management of onsite sanitation remains a neglected component of urban sanitation and wastewater management. Only recently have national governments, cities, and wastewater utilities begun to address the management of septage or the sludge that accumulates inside septic tanks and other onsite sanitation systems. With urban population of seven lakh (Census 2011) and statutory towns' population of 60 lakh, the urban local bodies in Odisha are currently facing challenges of safe sanitation and effective Fecal Sludge and Septage Management (FSSM) in the form of significant public health and environmental risks. Ernst & Young LLP (EY), with the support of Bill & Melinda Gates Foundation (BMGF) and at the request of Housing & Urban Development Department (H&UDD), Government of Odisha, are currently working to improve the sanitation situation through effective FSSM in select towns of the state.

In consultation with H&UDD, the towns of Balasore, Baripada, Berhampur, Bhadrak, Bhubaneswar, Cuttack, Puri, Rourkela and Sambalpur were selected as these are covered under Atal Mission for Rejuvenation and Urban Transformation (AMRUT) and the rivers close to these towns were polluted as per reports of Odisha State Pollution Control Board[5]. These towns depend on on-site containment systems along with the prevalence of open defecation.

[5] Odisha State Pollution Control Board report on water pollution, 2015



As per Census 2011, the Open Defecation (OD) rate for these towns have been outlined in the table below:

Table 1-1: -OD rate for 9 AMRUT towns

Town	No of households	Open defecation by households	Percentage of open defecation by households
Balasore	31,539	5,992	19%
Baripada	26,079	7,041	27%
Berhampur	74,720	8,772	12%
Bhadrak	23,084	8,264	35.8%
Bhubaneswar	2,04,056	10,461	5%
Cuttack	1,35,670	21,707	16%
Puri	40,369	7,266	18%
Rourkela	71,368	21,410	30%
Sambalpur	78,803	26,793	34%

Source: Census 2011

Across the region, domestic wastewater has become the main contributor to the degradation of rivers, lakes and groundwater. Currently, there is limited data and information on FSSM at state and city level which constraints FSSM programmatic interventions. In order to implement FSSM programme in the towns/cities, it is crucial to understand the existing practices, structure, regulatory framework, capacities, awareness level, and gaps in the FSSM value chain among the key stakeholders. The rapid assessment study will assess the current FSSM scenario and generate critical information that will facilitate in developing a roadmap for implementation of FSSM in the nine AMRUT towns/cities. The rapid assessment reports are expected to generate a snapshot of the status of FSSM in nine AMRUT towns.

Objectives of the study

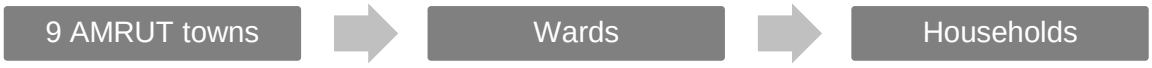
- To assess current practices of FSSM value chain
- To identify the current capacity building needs of stakeholders like Urban Local Bodies (ULBs), cesspool operators, masons, Community Based Organization's (CBOs), citizen groups.
- To assess the institutional structure for operationalization of the FSSM
- To assess the current level knowledge, attitude and practices of key stakeholders and community members with regard to FSSM to contribute to the program design

1.2 Approach and methodology

The rapid assessment study has adopted the following quantitative and qualitative methods to collect information.

1. Household primary survey for households, institutions and commercial establishments on access to onsite sanitation system and practices (Annexure 1 – Questionnaire for Household Survey)
2. In-depth interviews (IDIs) with key stakeholders – Officials and elected representatives of ULBSs, officials from other government institutions like Odisha Water Supply and Sewerage Board (OWSSB), Pollution Control Board (PCB) & service providers like cesspool operators, masons using semi structured IDI guide (Annexure 2 – Questionnaire for In-Depth)
3. In-depth interviews and Focus Group Discussion (FGDs) with citizen groups, Non-Government Organization (NGO), ULB-level Sanitation Committees, ward committees & other CBO. Semi structure approach was used for FGDs. (Annexure 3 – Questionnaire for Focused Group Discussion)

For identifying the representative samples, we adopted multi-stage sampling for all 9 AMRUT towns.



Sample size for Cuttack

For the city of Cuttack, 464 households were surveyed, 3 FGDs and 14 IDIs were conducted over the period of April to May 2017 (**Annexure 4** – In-Depth Interviews and Focused Group Discussion details). The quantitative data was analyzed using descriptive statistics and qualitative data using content analysis methods.

The analysis for sample size calculation for 9 AMRUT towns considering their municipal area is given below:

Table 1-2: -Sample size for Cuttack

City/Town Name	No. of Household	Wards	Required No of Wards	HH Required each city universe	%having latrine	Design effect	No of households surveyed

Cuttack (MC)	1,21,919	59	15	413	84%	2	464

Source: Census 2011

Sample size for wards in Cuttack:
Multistage sampling strategies were followed for the selection of the households. In first stage, 15 out of 59 wards were selected using simple random sampling methods, and then 30 households from each ward were selected using systematic random sampling methods.

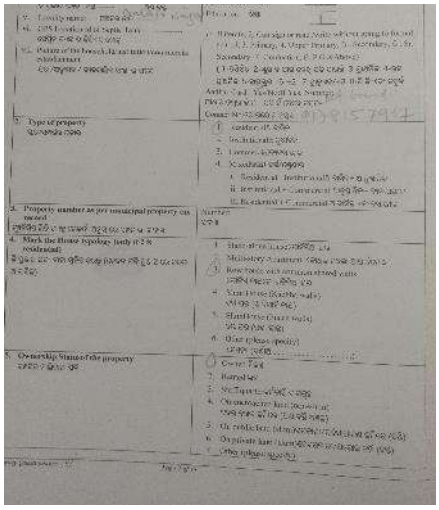
Sample size for households in Cuttack:
In this assessment convergent parallel mixed method approach was used. Primary survey was conducted at household level. Total households of the city was the universe of the study and household was the sampling unit. Total number of households in Cuttack city is 1, 21,919 (Census 2011). Sample size was calculated based on anticipated prevalence i.e. percentage of the household having individual latrine (84%). The power 80%, 95% Confidence Interval (CI 95%) and design effect 2 was applied to the households having individual latrine to arrive at the number of households to be surveyed.
The formula used for calculating the sample size in open EPI info software is:

Sample size (n) = [DEFF*Np (1-p)]/ [(d2/Z21-α/2*(N-1) +p*(1-p)]

For Cuttack, the required number of households calculated using the above mentioned statistical information and formula was 464.

Demographic information, household access to sanitation facilities, septic tanks/pit related information and awareness on environmental and public health impact of sludge disposal and community engagement activities or each household were collected using pre-designed questionnaire.

Figure 1-1: -Household Questionnaire and Survey



1.3 Limitations of study

The rapid assessment of sanitation situation in the city of Cuttack is performed in a period of two months, April to May 2017 with an intent to provide a quick overview of aspects relevant to sanitation and fecal sludge situation in a city and hence, can be limited in coverage.

Sample survey has its own limitations in terms of representative opinion which may not be apply for general population. Sampling technics explains the limitations in detail.

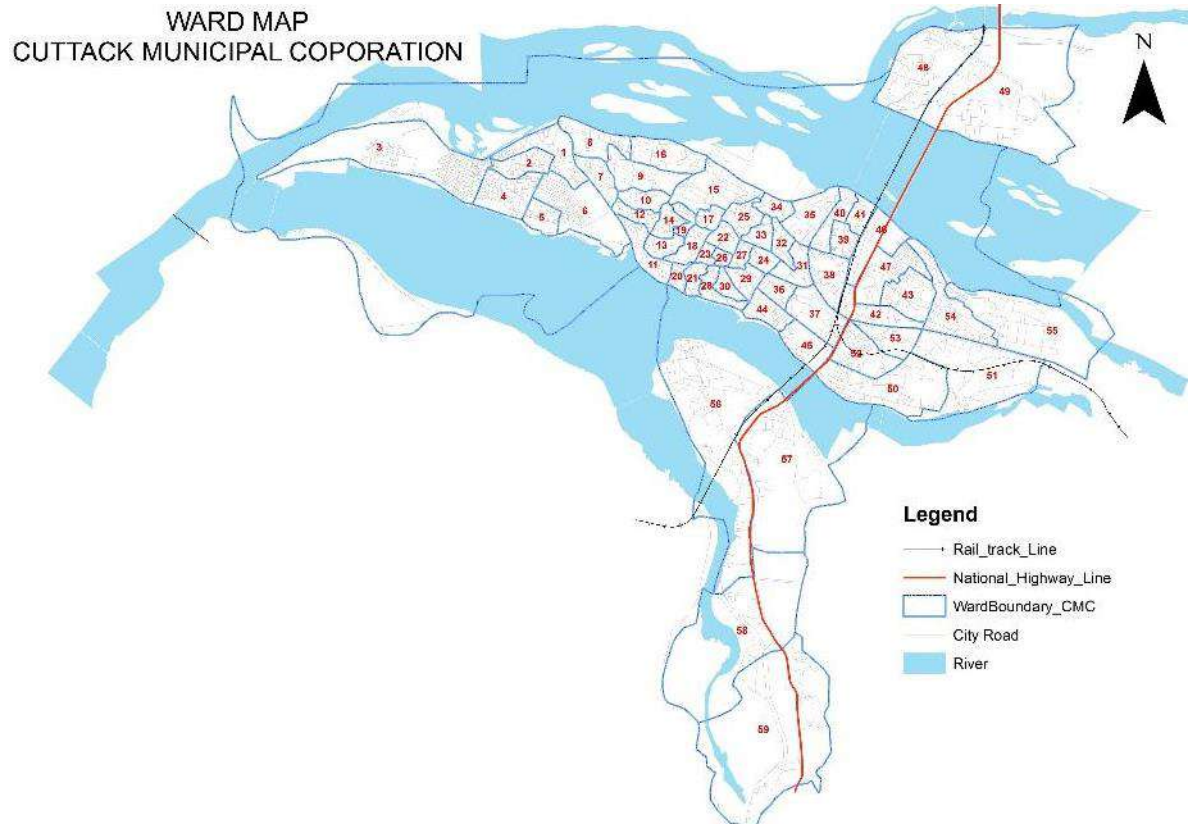
Storm water drainage is not being considered as part of this report since it is beyond the scope of FSSM. Study on FSSM is limited to pits and septic tanks while storm water drainage falls under liquid waste management.

2 City profile

2.1 Location and regional settings

Cuttack city is the former capital and the second largest city of Odisha state. The city is bordered by two major rivers: the Mahanadi and the Kathajodi Rivers as shown in Figure 2-1 . Cuttack is located at 20°30′N 85°50′E20.5°N 85.83°E / 20.5; 85.83 and has an average elevation of 36 m. The city is spread across an area of 193 km^2.

Figure 2-1: -Ward map of Cuttack



Source: Cuttack Municipal Corporation

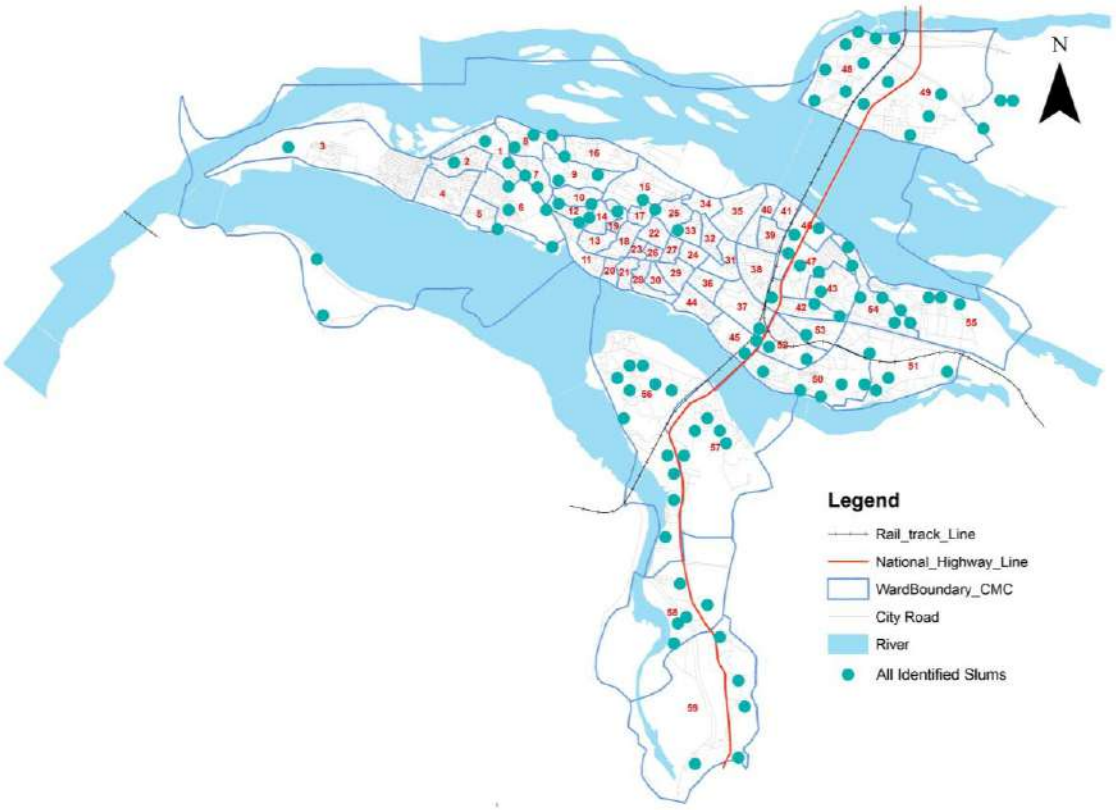
Due to the proximity to coast, the city is prone to cyclones from the Bay of Bengal. The National Institute of Disaster Management places the city inside seismic zone II[6]. As per the United Nations Development Programme report, Cuttack falls under the "very high damage risk" from winds and cyclones. The city also faces major inundation issues because the level of the city is lower than the flood level of the surrounding rivers.

2.2 Demography

The city with a population of 6.10 lakh is governed by the Cuttack Municipal Corporation (CMC).The total corporation area has been divided in to 59 wards. The identified slums by in the city are shown in Figure 2-2: -Identified slums in Cuttack

[6] http://www.nidm.gov.in/pdf/dp/Odisha.pdf

Figure 2-2: -Identified slums in Cuttack



Source: Cuttack Municipal Corporation

Some of the key demographic indicators of the town are given below:

Table 2-1: -Key demographic indicators

S.No	Indicators	Data
1	Total Population	6,01,089
2	Slum Population	1,29,471
3	No. of households	1,21,919
4	No. of slum households	33,173
5	No. of non-slum households	88746
6	Average no. of person per household	5.15
7	Average income of people	29,214[7] per annum
8	Gender ratio	930 females per 1,000 males

Source: Census 2011

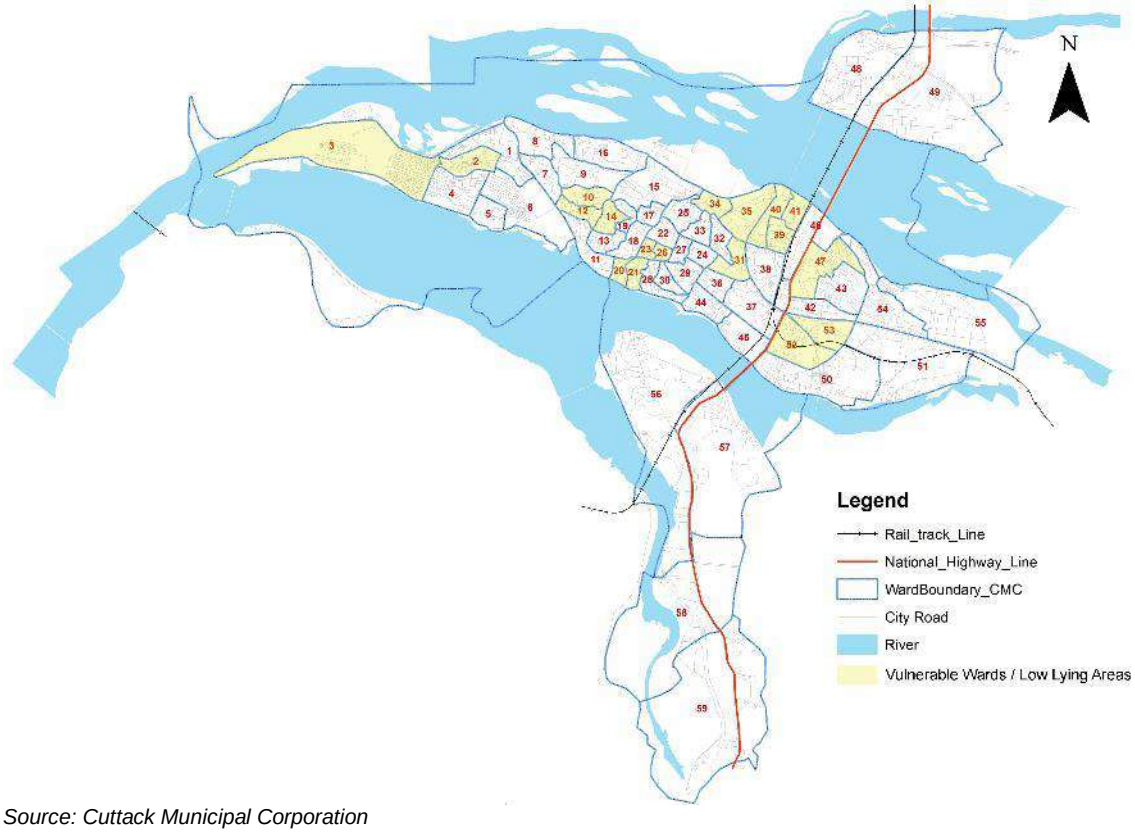
The city has about 12 wards (as shown in Figure 2-3), which are vulnerable due to the following reasons:

a) Location of wards near the low lying areas
b) Proximity of wards to flood prone area

[7] Per capita Net District Domestic Product (NDDP), Odisha Economic Survey, 2015

c) Major outbreaks of jaundice, diarrhea and typhoid due to contamination of water bodies near the wards

Figure 2-3: -Vulnerable wards in Cuttack



Source: Cuttack Municipal Corporation

2.3 Overview of sanitation situation in Cuttack

Cuttack is the oldest city and former capital of Odisha. The city's growth is strongly linked with the state's maritime history and economic growth from ages. Out of Cuttack's total population of 6.10 lakh, 35% reside in slums where open defecation is a serious challenge. There are 264 notified slums covering 32,106 households and 1, 29,471 population. Insanitary toilets, open defecation, choked drains, solid wastes dump yards are especially prevalent in the slums leading to serious threat of water and vector borne diseases.

During the consultations, the Collector of Cuttack highlighted the need to address the issue of open defecation on priority. Apart from that, provision of sewerage network through the current JICA project and cleaning of open drains is essential. He also mentioned that 100% door-to-door solid waste collection and segregation at source is critical for better sanitation. Since Cuttack is more than 1,000-years-old, settlements in the interiors of the city are ill-planned and structures are outdated, lack of availability of land as well as space constraint, construction of toilets is difficult. He plans to keep these issues in priority and provide suitable solutions in the coming years.

Cuttack's poor sanitary condition is clearly evidenced from recurrent and frequent outbreaks of jaundice, typhoid, cholera, malaria, dengue etc. High OD and high rate of dependency on the on-site sanitation is a critical feature of the city. While the city has about 84% of the households having access to individual household latrines[8]; out of the existing 32 community toilets, 18 public toilets and

[8] Census 2011

2 hybrid toilets, all of them are mostly discharging their waste directly into the drains. This practice is common in the city because of dense population and narrow roads which makes it difficult for nearly 70-80% households to access the cesspool services.[9] The specific details related to access to toilets, open defecation scenario and the FSSM value chain is captured in Section 4: FSSM Situation Assessment

Table 2-2: -IDI and FGD responses for sanitation situation in Cuttack

Objective:	To understand key sanitation issues
Participants:	Mayor, Sanitary Inspector[10], Corporator[11] ,Community Organizers (CMC), Mahila Arogya Samiti (MAS)[12], Utkal Sevak Samaj - (NGO) and Swayamshree Samabaya Samiti - Self Help Group (SHG)
Key observations:	• Open defecation is high near major water bodies because of the following reasons: ► Open defecation is being practiced by male members of the households having individual toilets because of cultural reasons, family size and shortage of water supply in low income households. ► Lack of space for constructing toilets as Cuttack is a congested town with narrow lanes ► Poor maintenance of community toilets and public toilets ► User fee for accessing toilets is between INR 2-5 which is high for lower economic strata • Households having insanitary toilets are not aware of the it's health implication • Solid waste is directly thrown in drains • Lack of awareness on the value chain of FSSM, open defecation and solid waste management and their impact on environment and health • Citizen's apathy and lack of participation and ownership for issues on sanitation and hygiene • Jaundice, amoebiasis and diarrhea are recurring diseases • Consumption of contaminated water and food, leads to health issues such as indigestion, loss of appetite, gastro-intestinal infections, jaundice, amoebiasis and diarrhea • Poor sanitation and stagnation of waste water leading to mosquito breeding and spread of insect-borne diseases across the city.

[9] In discussion with the Commissioner of CMC

[10] 16 sanitary inspectors for all 59 wards

[11] 8 Coporators from wards – 26,27,30,38,40,44,50

[12] Shiba Shakti MAS from Ward 25 and Sri Ganesh MAS from Ward 49

Figure 2-6: -Insanitary household toilet along with open drains

Figure 2-4: -IDI with Mayor

Figure 2-5: -IDI with Deputy Commissioner and SBM Nodal In-charge

Case in Point: Awareness on hygiene and sanitation

Raghuram, a 40-year old clerk lives with his wife and two children in Chandi Mandir area. They reside in a housing colony near the famous and religious Chandi Mandir located in Ward No.10 in Cuttack. They occupy a two-bedroom quarter with one-single bathroom, common for toilet and bathing. Since there house is on the first floor of the two-storied residential building, there is one common septic tank for more than 12 households living in the block. Raghuram and his family are quite aware about sanitation and hygiene issues, hence, they use the toilet at their home and have a wash-basin within their bathroom to wash hands after defecating. The latrine is cleaned by Raghuram's wife once or twice every month. Since this area gets affected with jaundice and diarrhea every year, they have tried to improve the hygiene conditions within their household. Raghuram mentions that every year the septic tank gets filled and they call ULB officials to clean the tank. The ULB charges INR 1,000 per trip and in a couple of trips their septic tank get cleaned. Total amount of INR 2,000 that gets paid to the ULB gets divided amongst all the 12 households equally living in the block. Littering by society members within their compound area and open drain outside causes bad odor. Raghuram's family

desires better health and hygiene for their children through covering of open drains and door-to-door waste collection by the ULB.

Figure 2-7: -Raghuram's residence

2.4 Infrastructure facilities

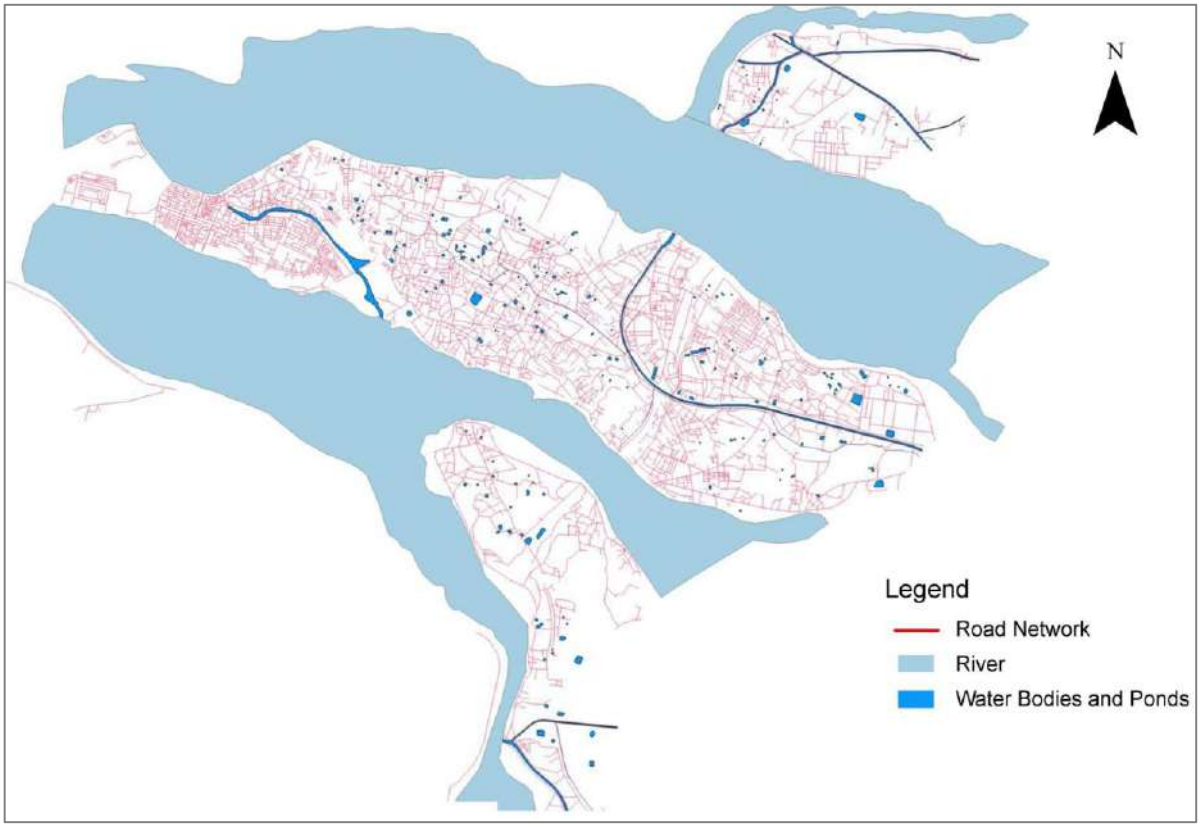
2.4.1 Water supply

The Mahanadi and Kathajodi are two main rivers flowing across each side of Cuttack. There are also numerous ponds (*pokharis*) in the city that store rain water (Figure 2-8: -Water sources in Cuttack). As per the Service Level Improvement Plan (SLIP), 2015 for Cuttack, the present source of water used is ground water. The total capacity of the surface source is 103.12 Million Liters per day (MLD) and the present demand of the city is 101.2 MLD. Major source of surface water from Mahanadi and Kathajodi is yet not into use. A project on setting up a Water Treatment Plant (WTP) is being leaded by OWSSB and Public Health Engineering Organization (PHEO) under the Urban Infrastructure Development Scheme for Small and Medium Towns (UIDSSMT) component of Jawaharlal Nehru National Urban Renewal Mission (JNNURM). This will help in improving the quality of surface water and also transiting the source of water from ground to surface source. As of now, the detailed project report (DPR) for setting up the WTP is being prepared.[13]

[13] Service Level Improvement Plan (SLIP) for Cuttack - 2015

The total existing water supply distribution pipe line in the city is 551.09km. 57% of the population has water service connection while rest depend on other sources like stand posts, pumping wells, open wells, hand pump and tube well. This can be seen from the fact that the city has 182 pumping wells and open wells and 3,371 hand pumps and tube wells. This indicates that about 55.7% of households depend on non-revenue source of water.

Figure 2-8: -Water sources in Cuttack



Source: Cuttack Municipal Corporation

The city has plans to reduce non-revenue source of water by way of introduction of HH level metering, reducing illegal connections and reducing technical losses.

2.4.2 Sewerage systems

Cuttack generates 70 MLD of sewage. Out of this, only 30% (21 MLD) is considered as black water, whereas 70% (49 MLD) is grey water[13].

The sewer system roughly covers 25% (68 km) of the area falling under the CDA. Currently, there are 42 pumping stations, some of which are permanently located at the outfall points[14]. These outfall points have sluice gates so that the gates close when the water level in the river rises during monsoons as shown in Figure 2-9.

Cuttack is implementing the OISIP, which is being funded by the JICA. This project will cover about 60% of population, by laying 382 km sewer network, of which 187 km has been laid but not connected to households. Cuttack has STPs located in Matgajpur, Peta Nala (CDA) and Peta Nala.

[14] Sanitation Situation Assessment for Cuttack, Consortium for Decentralized Wastewater Treatment (DEWATS) Dissemination Society and National Institute of Urban Affairs, April 2017

The details of the same has been outline in Table 2-3.

Figure 2-9: -STP and SWM landfill location in Cuttack

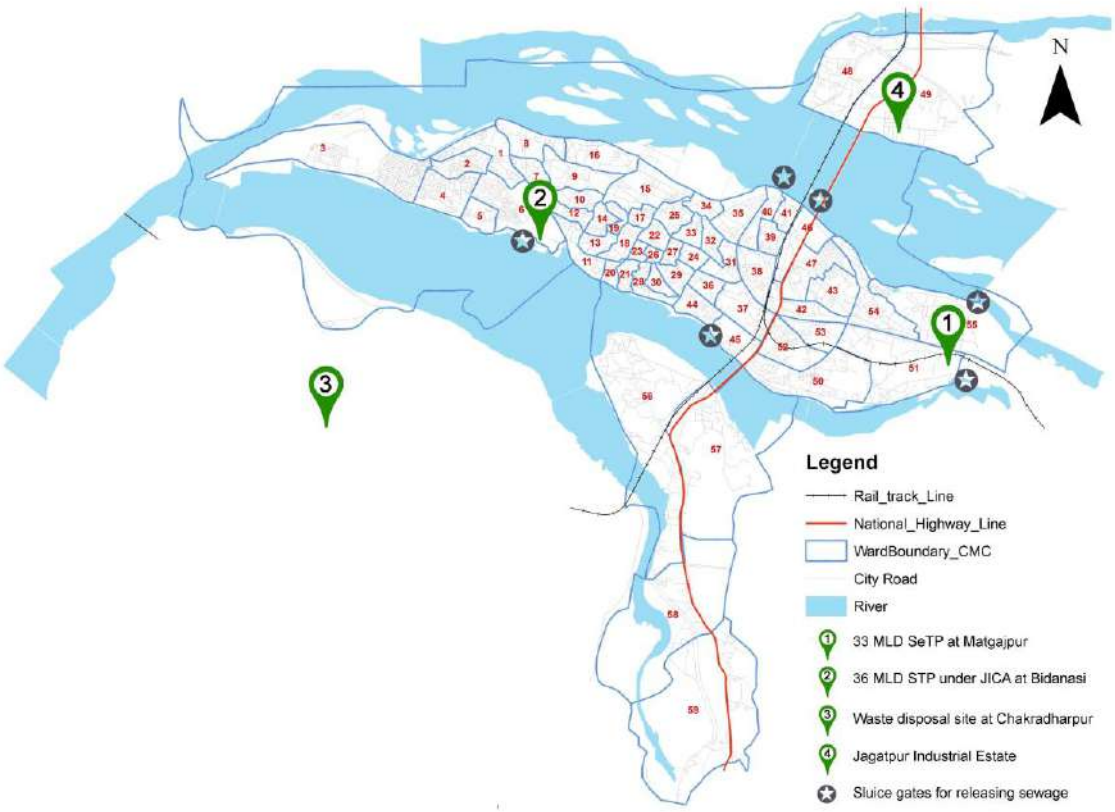


Table 2-3: -Details of STPs in Cuttack

S.No	Location	Capacity	Technology	Status
1.	Matgajpur Wastewater Treatment Plant/Sewage Treatment Plant	33 MLD	Waste stabilization pond	Established in 2007. Currently closed by OWSSB because of maintenance and will be re-opened in September 2017
2.	Matgajpur STP	16 MLD	Activated sludge process	Under construction. Commissioning scheduled on September 2017
3.	Peta Nala CDA STP	4 MLD	Activated sludge process	Defunct because of lack of maintenance
4.	Peta Nala STP	36 MLD	Activated sludge process	Under construction. Commissioning scheduled on September 2017
	Total			

Source: OWSSB

2.4.3 Solid waste management

Cuttack generates around 183 MT of municipal solid waste per day out of which 154 MT gets collected. Collection of solid waste for 40 wards is done door-to-door-by M/s Ramky Enviro Engineers

Ltd. wherein they cover all the households in four wards and partially in 36 wards[15]. The waste for the remaining 19 wards is collected from secondary and community bins set up by the CMC.

Collection and transportation of mixed solid waste collected by both ULB and M/s Ramky Enviro Engineers Ltd. is done using auto tippers, tractors, dumper placers, trucks, compactors and is taken to the transfer station located at Sati Chaura for weighing. This transfer station covers an area of around 500 m^2. There is no existing solid waste treatment plant in the city. However, there are 160 composting pits constructed at the transfer station at Sati Chaura, but are not functional at present. The waste from the city is transported using compactor trucks and tipper trucks of 20 m^3 capacity to the Chakradharpur landfill which is located 15 km away from the city boundary spread across 25 acres of land.

Table 2-4: - IDI and FGD response on solid waste scenario in Cuttack

Objective:	To understand the solid waste scenario
Participants:	Sanitary inspector[10], Corporator[11] and Community Organizers (CMC), Mahila Arogya Samiti (MAS)[12], Utkal Sevak Samaj -NGO and Swayamshree Samabaya Samiti – SHG Federation
Key observations:	• There is lack of solid waste management in city. • The waste is directly disposed into the drains • Absence of safe and sanitary drainage system as most of the drains are open. • Lack of awareness on segregation of waste and throwing waste in bins. • Lack of facilities (dustbins, collection in all wards)

2.4.4 Road network

The width of the approachable road is one of the key indicators for water and sanitation programmes. Cuttack city is more than 1,000 years old and the roads in the internal parts of the city are very narrow and are mostly inaccessible for large vehicles. More than 60% of streets are less than 4.5 m in width thereby creating bottlenecks in the core part of the city. In such a situation, cesspool operations via large capacity cesspool vehicles can be a challenge. Currently, there are a total of three private operators. One of them has four cesspool vehicles with capacity of 1,500 L, 3000 L and 4000 L. The other two have one cesspool vehicle each with 3000 L capacity. This is creating a shortage of small capacity cesspool vehicles. Under such a scenario, there is a high probability of households using non-mechanised services to clean the septic tanks. Therefore, going forward improving the accessibility of cesspool vehicles shall be important for emptying and transporting waste of more than 50,000 HHs in Cuttack.

2.5 Community based institutions and structures

2.5.1 Ward Sanitation Committee (WSC)

The OUSS 2017 mandates the formation of a Ward Sanitation Committee in each ward of the ULB consisting of 11 to 15 members. Ward Councilor/Corporator, Sanitary Inspector or a designated officer by ULB for each ward, frontline workers, representatives of local Committee/Bazar Committee/Sahi Committee, representatives of Residential Welfare Associations (RWAs) of the ward, representatives from slum sanitation committee, representatives of CBO (SHGs, youth club etc.), senior citizens and eminent persons of the area shall be nominated to the said Committee by the Mayor in consultation with the local Corporator. The WSCs shall oversee the sanitation activity in the ward. The Member-Convener of each ward would be notified by the Commissioner.

CMC has recently passed a resolution to form WSC in all the wards as part of the by-law on Solid Waste Management. The WSCs are expected to be formed in all the 59 wards of the city soon.

[15] New tender has been awarded for door to door collection from March 2017. However, due to a PIL, High Court has ordered a stay on the award. Contract guarantee is worth INR 30 Crores, and, PPP partner has to do 100% door-to-door collection.

2.5.2 Community based institutions under the National Urban Health Mission (NUHM)

a) Ward Kalyan Samiti (WKS): WKS is formed at ward level under the urban local bodies (ULBs). It consists of 12 members including the corporator, frontline health workers, SIs, community organizers etc. One of the main responsibilities of the WKS is to identify various health, water, sanitation and nutrition related issues/ problems and health resources of the ward particularly the slum areas. In Cuttack, WKS has been formed in 57 of the total 59 wards except ward no.37 and 38.

b) Mahila Arogya Samiti (MAS): MAS is a local women's collective with an elected Chairperson and a Secretary. Each MAS covers approximately 50-100 households in slum and slum like settlements in a ward. One MAS be consists of 11-15 women members depending on the slum. It addresses local issues related to health, nutrition, water, sanitation and social determinants of health at slum level. It is facilitated by the ASHA who acts as the Member Secretary. The total target area is divided and around 10-12 households are allocated to each MAS member for effective tracking and follow up.
The NUHM provides INR 5,000 as annual untied fund to each MAS for undertaking different activities in their slum or coverage area. The untied fund can be used for conducting fortnightly/monthly meetings of MAS, sanitation and hygiene, meeting emergency health needs etc. The MAS meet at least once in a month.
In Cuttack, a total of 269 MAS have been formed who are active in generating awareness on health and sanitation among the targeted households and several women have emerged as community leaders. They also participate in WKS meetings and raise issues related to health, sanitation, water and hygiene issues of their respective areas. Though the MAS members have been trained by NGOs on health and nutrition and other urban schemes, sensitizing the MAS members particularly on open defecation, its impact on health and FSSM would be useful in spreading awareness among the households.

2.5.3 SHGs formed in urban slums under the National Urban Livelihood Mission (NULM)

The main objective of the NULM programme is to reduce poverty and vulnerability of the urban poor HHs by enabling them to access gainful self-employment and skilled wage employment opportunities, resulting in an appreciable improvement in their livelihoods on a sustainable basis, through building strong grassroots level institutions of the poor. It aims at providing shelters equipped with essential services to the urban homeless in a phased manner.

Women SHG groups from same section of society/likeminded come together mobilization of urban poor and for enhancing their livelihood opportunities. It also has a social agenda as it focusses on generating awareness on critical social issues. Till now, over 2,000 SHGs have been formed in Cuttack. The women SHG leaders are acceptable community leaders who can sensitize the other group members on sanitation and its impact on health. They can also motivate women to build Individual HH Latrines (IHHL) and adopt desirable sanitation practices

2.5.4 Others

The prominent NGOs actively working for the urban slum population and sanitation in Cuttack are as follows:

Table 2-5: -NGO's working for urban slum population

S. No.	NGO
1	Varasha
2	Social Awareness Institution (SAI)
3	Suprativa
4	Utkal Seva Samaj (USS)

5	Indian Management and Technical Society (IMTS)
6	Banki Anchalika Adibasi Harijan Kalyan Parisad

Source: Primary source

Table 2-6: -IDI and FGD response for roles of CBO in Cuttack

Objective:	To understand the roles taken by CBOs
Participants:	Sanitary inspector, Corporator and CBOs
Key observations:	• Community mobilization measures are being taken by the community based organization like MAS, SHG groups, community leaders, Anganwadi Workers (AWW) for sanitation including Menstrual Hygiene Management (MHM). • Awareness to households on the adverse effects of open defecation, having insanitary toilets, disposing garbage on roads on health through group meetings and interpersonal counselling • Resolution passed for WSC to be formed soon. The members need to be aware about their roles and responsibilities. • There is also need to train the WSCs on subjects like SWM, garbage disposal, FSM, OD and toilet constructions. • The MAS spread awareness on toilet construction schemes through communication materials received from various awareness programme running under Swachh Bharat Mission

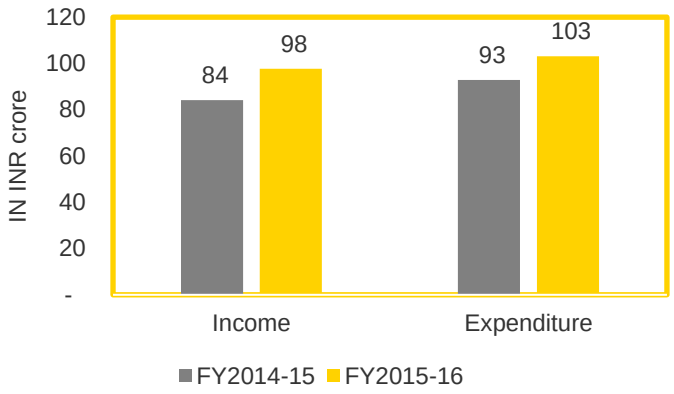
Figure 2-11: -FGD with CBO

Figure 2-10: -FGD with MAS

2.6 Municipal Finance

An attempt is made to analyze the income and expenditure patterns in the Municipality during FY 2014-15 and FY 2015-16. It is observed that the income and expenditure estimated during the FY 2015-16 are marginally higher than those in FY2014-15. While income has increased by 17%, expenditure has grown by 11%.

Figure 2-12: -Income and expenditure pattern in Cuttack



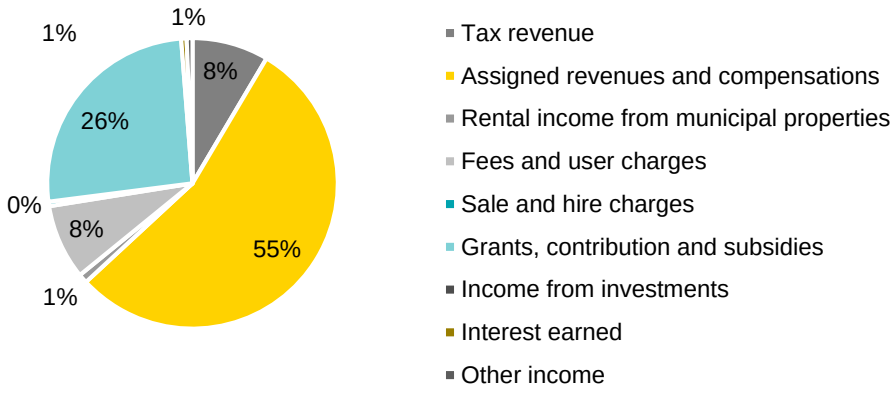
Income

A detailed analysis of municipal revenues and expenditures for the latest year 2015-16 shows that assigned revenues and compensations are the single major source contributing to an overwhelming 55% of the total revenues. The revenue base of municipalities is weak and they are heavily dependent on state government fund as it contributes 26% to the total income. The next major contribution is from fees and user charges as well as tax revenue, each of which contribute approximately 8% of the total revenue. Tax revenue includes holding tax, latrine tax, electricity tax and sewerage tax.

Although property tax reforms are in the offing, the CMC is now collecting holding tax from the tax payers. Collection of holding tax is Rs.4.3 crore collected during 2015-16. There is tremendous potential for increasing the number of holding as well as augmenting holding tax collection. CMC is zeroing in the areas at present through various programmes like door to door collection, awareness campaign for payment of tax, assessment of hitherto unassessed holding and reassessment of under assessed holding through special squads and camps etc. for enhancement of collection as well as detection of holdings.

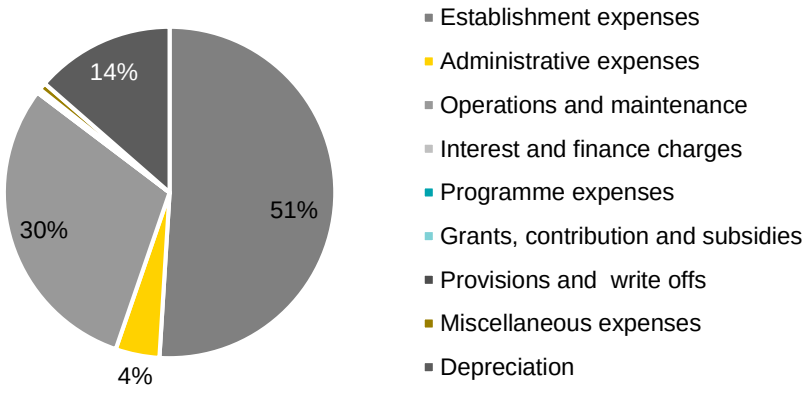
Sources such as income from investments, sale and hire charges and income from investments together contribute less than 10% of total revenues. Rent from Municipal properties is approximately 1% of the total income.

Table 2-7: -Income of CMC in FY2015-16



Expenditure

Table 2-8 Expenditure of CMC in FY2015-16



The total expenses of ULB in FY 2015-16 were INR103 crore as compared to the income, which was approximately 98 crore in the same period. This implies that the ULB is not breaking even and is unable to meet the costs despite the fact that grants, contribution and subsidies constitutes 26% of their total income.

Establishment expenses constitutes 51% of the total cost for CMC. This includes the salary paid to staff. It can be observed that Operations and maintenance constitutes another 30% and administrative expenses is 4%.Depreciation constitutes about 10% of the total expenditure. The CMC also received funds under 14th Finance commission. In the last 3 financial years, INR 40.28 lakh were received under this grant and approximately 28 lakh was spent.

It is important to understand the total budget for sanitation. The total funds spent in this area is less than 1% of the total expenditure of the municipal corporation. As per data from SBM (U), CMC has spent INR 4.61 crore on sanitation in FY 2015-16. A major proportion of this (85%) was on construction of individual household toilets, another 10% on community toilets and a mere 5% for capacity building and IEC/BCC activities. The details have been given in the table below.

Table 2-9: -Expenditure on sanitation by CMC in FY2015-16

Line item	In lakhs
Community toilets	47.5
IEC/BCC activities	18.5
Capacity building	4.6
IHHL	391.3
Total	**461.9**

Miking, posters and rallies are the most common activities under IEC/BCC. Sometimes, they involve NGOs and SHGs to lead and participate.

It was also observe that CMC received INR 40.6 lakh under AMRUT till 31st March 2017. Under this fund, no expenditure was done on Sanitation, but INR 13.3 lakh were utilised for creation of public parks.

3 Policy, regulatory and institutional framework

3.1 Overview of national policies and framework

The public policies of urban sanitation in India is moving in-line with political and development contexts, trends and patterns of urbanization and the magnitudes of challenges that urban sanitation sector is posing before the nation. Urban sanitation is primarily a state subject. However, urban sanitation is dealt at center, state and city level by Government of India, Government of Odisha and Municipalities, respectively. In the field of urban sanitation policies in India and in Odisha, there is a 'paradigm shift' in approaches and frameworks in the current policies and programmes in compare to the previous ones. At present, urban sanitation interventions are target oriented[16] and partnership based[17] to bring universality, efficiency and sustainability in sanitation services. Across the Country including Odisha, urban sanitation activities are being governed by the Swachh Bharat Mission (SBM-U) programme. .

1. Swachh Bharat Mission (Urban)

A recent study conducted by Ministry of Urban Development (MoUD), 2016 found progress of Odisha in the SBM targets need accelerations[18] to meet the mission targets. Out of 511 cities[19], declared as ODF till March 2017, not a single city form Odisha has been able to find a place in this list. The Swachh Survekshan 2017 conducted by MoUD in all major cities in Odisha shows decline in ranks indicating real challenges before the state to achieve sanitation goals. In the FSSM context, SBM guideline specifies that "in addition to the construction of the toilet superstructure, an onsite treatment system (such as twin pits, septic tanks, bio-digesters, or bio-tanks) should also be constructed for the collection, treatment, and/or disposal of sewage at or near the point of generation[20]. The guidelines specifically mentioned that ULB officials or private contractors should "ensure safe disposal of septage at a treatment plant," however, it doesn't specify any monitoring framework or suggestive action steps that states can adopt if the quality standards of construction of septic tanks or emptying and safe disposal by private contractors are not met.

2. National Urban Sanitation Policy (NUSP), 2008 [21]

The key perception of NUSP 2008 is that changing mind-sets is often harder than changing technology and the policy attempts to address many institutional issues, the plight of the urban poor, especially the manual scavengers, the lack of awareness on sanitation, integrated planning, and the lack of technical knowhow and capacity due to which most of our infrastructure facilities to not operate efficiently. NUSP, 2008, brought about a paradigm shift in India's approach from a 'conventional centralized sewerage network' approach of urban sanitation to a more 'holistic framework'. With regard to FSM, NUSP has very clearly outlined the following:

i. Promoting proper disposal and treatment of sludge from on-site installations (septic tanks, pit latrines, etc.)
ii. Ensuring that all human wastes are collected safely, confined, and disposed of after treatment so as not to cause any hazard to public health or the environment;
iii. Promoting proper functioning of network based sewerage systems and ensuring connections of households to them;

[16] SBM targets to make India ODF by 2nd October 2019

[17] One of the guiding principles of SBM is encourage PPP and involve civil society groups, academic institutions, corporate bodies, users associations, NGOs, corporations and ensure citizens participation etc.

[18] MoUD 2017

[19] MoUD 2017

[20] SBM(U) guidelines 2016

[21] A revised version of NUSP is currently in draft and has not been released yet.

iv. Encouraging recycle and reuse of treated waste water for non-potable applications, wherever possible.
v. Initiating a framework for cities to prepare City Sanitation Plans (CSPs) under the scheme of State Sanitation Strategy.

A key highlight of the Policy and the award plan is that the focus is not on infrastructure development alone but outcomes and behavior change. Under the Policy, all states are required to develop state sanitation strategies according to the national guidelines. Odisha was the first state in the country to develop Odisha Urban Sanitation Strategy (OUSS) in 2011 in response to the NUSP 2008. The state has also redeveloped the OUSS in 2016 by fixing a target to achieve NUSP goals and objectives by 2026. In In order to realize the goals of NUSP, MoUD has recently released a primer on FSSM as well as Rapid Assessment Tool to estimate the budget for FSSM. The aim is to implement citywide FSM. This tool gives an estimate of the financial requirement of the city to put in place the necessary infrastructure for FSM. The MoUD has also directed the states to assign responsibility of FSSM to the respective 'Water and Sanitation Board' and rename these boards as 'Water, Sanitation, and Septage Board.[22]

3. Atal Mission for Urban Transformation (AMRUT) guidelines 2017

AMRUT is a step forward to implement NUSP 2008 in urban areas. The AMRUT guidelines 2015 stipulated the need of septage management especially, 'mechanical and biological cleaning of septic tanks' and central funding support in partnership of state government has been suggested. However, it does not emphasize on dedicated septage treatment facilities or disposal/reuse of the sludge. Enhanced convergence between AMRUT and SBM (Urban) would streamline activities for making ODF communities. In Odisha, only nine Class I cities with population above one lakh are covered under the AMRUT programme and are constructing the SeTPs. Small towns are not covered in AMRUT and the guidelines focus more on coverage rather than treatment and reuse. The AMRUT cities/towns covers almost 50% of Odisha's urban population and all nine cities have a clear cut SLIP covering all sanitation components on priority and have adopted an 'integrated service approaches' - water supply, access to toilets by all, storm water management, waste water management and solid waste management. The state has also prepared a State Annual Action Plan (SAAP) for project period (2015-2020).

Table 3-1: -Project detail for SeTP in Cuttack

S.no	Project name (Approved SAAP)	Amount (In INR crore)	DPR	SLTC (State Level Technical Committee)	Work order
1.	Septage management for Cuttack	1.76	Yes	Yes	M/s Ionex Envirotech Pvt. Ltd

Source: OWSSB – Status of SeTP under AMRUT as on 24.05.2017

4. National FSSM policy 2017

The key objective of the urban FSSM Policy is to set the context, priorities, and direction for, and to facilitate, nationwide implementation of FSSM services in all ULBs such that safe and sustainable sanitation becomes a reality for all. It seeks to address the efficiency of systems in place for onsite sanitation whereof the fecal sludge output needs to be managed in an environmentally safe manner including the proper engineering design, construction and maintenance of septic tank systems, pit latrines and such other systems generating fecal sludge. It defines the roles of each levels- center, state and ULBs with technology options and clarification of roles and responsibilities of institutions. Only on-site sanitation facilities and areas served by such facilities would fall under the purview of this FSSM Policy. It does not seek to cover network or conventional sewerage system (including treatment plants) of wastewater/sewage management[23]. However, it addresses synergies between FSSM and

[22] AMRUT reforms

[23] National FSSM 2017

sewerage systems or municipal solid waste (MSW) management, e.g., co-treatment of fecal sludge and septage at sewage treatment plants or co-treatment and management of fecal sludge and septage, and MSW.

The Policy lay stress on the setting up of fecal sewage treatment plants in cities and urban local bodies, as well as address the restructuring of sewerage systems in urban India. It also addresses gaps in urban sanitation and lays a clear vision and objectives to deal with fecal sludge and septage management. It has been duly recognized by the MoUD that the objectives of the SBM cannot be fulfilled without a dedicated FSSM Policy. Management of fecal sludge in urban areas should go hand-in-hand with the installation of toilets before the gap between production of sludge and its treatment becomes too wide to exist. The policy provides proper outcomes with well-defined directions.

3.2 State level policy and regulatory framework

1. Odisha Urban Sanitation Policy (OUSP-2017)

Odisha Urban Sanitation Policy (OUSP) 2017 is the most recent policy document that has evolved on the lines of overall sanitation goals and objectives set in the national and international policies and programmes on sanitation. The aim of this policy is to support the implementation of India's National Urban Sanitation Policy, 2008 in Odisha. It also has brief sections on institutional mechanisms, planning and financing, incentives for urban local bodies (ULBs), and implementation, reaching the un-served population and urban poor, provision for migrants and the floating population, and behavior change communication, proper operation & maintenance of all sanitary installations.

Key outcomes envisaged through OUSP 2017 are

- Urban areas will be Open-defecation (ODF) and open discharge free (ODF +/++)
- Sewage, septage and liquid waste will be safely managed
- MSW will be safely managed
- Women and girls will have access to safe MHM
- Safety standards and guidelines would be followed in the entire service chain
- Cities/towns would not pollute rivers/ basins
- A sustainable and comprehensive business model over septage management

2. Odisha Urban Sanitation Strategy (OUSS-2017)

OUSS (2011) had a target to achieve ODF by 2017. However, this target has now shifted to 2026. SBM target is to achieve ODF by 2019. Odisha urban sanitation strategy (2017) was formulated to achieve the goals set in OUSP 2017. Key strategies are -

- Solid Waste –Practice of 3 R's at source, door to door collection, transport dumping and treatment
- Cost recovery, end to end service, reuse
- Sanitation is beyond toilets (ODF+ and ODF ++)[24]
- Liquid Waste – waste water management , FSSM services in sanitation chains
- Multiple Approaches for ODF – IHHL, Public Toilets, Community Toilets, Hybrid Toilets, Mobile Toilets etc.
- Sanitation still remains supply driven. It needs to be demand driven
- Equity and safety for access and use for the vulnerable and unserved
- Awareness
- Institutional roles and responsibilities as well as capacity building
- Emphasis on O&M , PPP and private participation
- Environmental concerns in service delivery
- Robust city and district level institutional structures – District Urban Development Agency (DUDA), District Urban Sanitation Committee (DUSC), City Sanitation Task Force (CSTF), Ward Sanitation Committee (WSC) and users association for engagement

[24] ODF+ (No undesignated discharge of septage, sewage and black water)
ODF++ (No open discharge of human fecal and liquid waste, and safe containment, transport, treatment, and disposal of all human fecal waste, and waste water (black and grey)

3. Odisha Septage Management Guidelines (2016)

The Housing & Urban Development Department, Government of Odisha, intends to put in place a set of operative guidelines for ULBs that will formalize and provide a framework for safe handling of septage in the entire sanitation delivery chain (containment, emptying, transport, treatment, and disposal/reuse) and aims to achieve the goals of OUSS,(2016-2026). These guidelines conform to the advisory note on septage management developed by the MoUD and the guidelines on design and construction of septic tanks issued by the Bureau of Indian Standards (BIS) and the Central Public Health and Environmental Engineering Organization (CPHEEO). Further, these guidelines are intended to strengthen the existing framework focused on implementing the provisions of the Prohibition of Employment as Manual Scavengers and their Rehabilitation Act, 2013, in the state of Odisha.

The operational procedures outlined in these guidelines are applicable to all ULBs of Odisha and covers the following areas:

- Framework on septic tanks, including standard design and construction;
- Adoption of desludging procedure for the septage generated;
- Safe transportation of septage from collection point to receiving facility;
- Technological intervention for proper treatment of septage, disposal, and re-use;
- Public awareness

The guidelines framed by the H&UDD of Odisha have made it compulsory for all households to construct septic tanks and stop the sludge from out flowing into municipal drains. The rules direct house owners to contact only civic body officials or other registered sanitary agencies to clear out the septic tanks and strictly keep away from engaging manual scavengers.

3.3 Existing regulatory framework

The regulatory and institutional framework for FSM is defined in the earlier sections. In Odisha, FSSM rules and programmes falls in multiple agencies. OWSSB creates assets and infrastructures and sewerage network projects in five cities[25] at present. The O&M of sewerage facilities is done by the OWSSB for the CDA area in Cuttack and in Puri and the Rourkela Municipal Corporation (RMC) for Koel Nagar area in Rourkela.

State level

ULB is the constitutional body accountable and responsible for the sewerage system/septage system as part of urban sanitation as per 74th Constitutional amendment but lacks capacity to handle the service. The state government has arrangements for tripartite agreement between the H&UDD, parastatals and ULBs for the service provisions.

The Directorate of Municipal Administration (DMA) is the key department to monitor the ULBs for adherence of rules and regulations and promote capacity in HR and Finance. The Urban Sanitation Mission is headed by the Chief Minister of Odisha and the State Steering Committee is headed by the Chief Secretary and the State Management Committee is headed by the Principal Secretary of H&UDD. Public health and environment standards are as per the CEPHEO guidelines and the Orissa State Pollution Control Board (OSPCB) serves notices to violators including the ULBs. It is strictly mandated under the laws to adhere to BIS, Basic Safety Standards (BSS) and National Building Code (NBC) for the construction of septic tanks. The two mission directorates - AMRUT and SBM - are handling FSSM services. However, the above mentioned standards and guidelines are required to be implemented by development authorities (BDA, PKDA, CDA SDA, BeDA etc.[26]) under the overall

[25] Puri was commissioned in 2014. Bhubaneswar and Cuttack is under process and expected to be commissioned by 2018 (JICA). In Sambalpur and Rourkela –contract has already been awarded. Brahmapur is in DPR stage.

[26] Bhubaneswar Development authority, Cuttack Development authority, Sambalpur Development authority, Berhampur Development authority

guidance of State Directorate of town Planning

Moreover, other departments are also linked. The Planning & Coordination Department which handles the District Mineral Foundation (DMF) funds can play big role in FSSM under the present strategy of the government. The Health & Family Welfare Department will be heavily involved in community mobilization. For skill promotion among the masons and scavengers, the Skill Development Authority and finance agencies like SC ST Finance Corporations can be leveraged. Engagement of private agencies has become more common as many corporate houses and private parties have started playing a role in FSSM.

District level:

District Collector is given ample power in urban sanitation to steer the processes both as a regulator and as a promoter. As urban sanitation carries multiple processes district administrations such as District Forest Officer (DFO), Additional District Magistrate (ADM), Tehsildar and others are part of FSM processes. Project Director, District Urban Development Agency (PD-DUDA) is vested with powers to supervise and monitor the ULBs in all affairs including the District Urban Sanitation Committees (DUSC). DUSC is expected to take ownership of urban sanitation planning and execution, get funds and approvals from state and center and also integrate the same with district planning. Institutions like OSPCB, OWSSB, PHEO, Water Resource Department (basin engineers) based in the regional set ups are also part of FSSM institutions. However, district structures and agencies need to be more proactive in urban sanitation.

City level

City level institutions are basically ULB councils who take all decisions over the ULB affairs. It consists of legislative wing, controlled by the Mayor and Chairpersons and executive wing headed by Executive Officers and Commissioners. The CSTFs and WSCs are also have roles to pay as per OUSS 2017.

CASE IN POINT: FSM policy is backed by investment plan

Besides the above policies, the Government of Odisha also has a plan for FSSM services in the State. The State acknowledges high urban OD rate of 33.2[27]%, 49.41 % households with septic tanks, only 2% of liquid waste is being treated. The State Government concurs that although underground sewerage is desirable, it requires high investment, longer implementation period as well as a high O&M cost. The government cannot wait longer as the number of toilets are increasing under the SBM and there is a high probability of aggravation of river pollution, surface and ground water contamination and spread of epidemics such as cholera and jaundice etc. in the cities. In this situation, FSM emerges as an alternative to underground sewerage system which is efficient, effective and has low capital and O&M cost. The government has put in place a financial, technical, institutional and regulatory framework and a septage management model where "sludge may be treated in an anaerobic digester and liquid may be treated in anaerobic baffled reactor and planted gravel filter. The treated sludge and effluent can be reused in horticulture and other similar purpose[28]. **As a matter of policy[29], the government has provisioned 0.5 acres of land for population of 25,000 and 1 acre of land for septage treatment facilities for cities with population above 25,000.**

The government has designated the OWSSB to be the institution for creation of required infrastructure on behalf of ULBs and private operators be engaged on Performance Based Service Contract (PBSC) for O&M of septage treatment facility and cesspool trucks. The user fee from the households may be used to fully/ partly repay the cost of O&M and ULBs / state to subside.

The government is also considering an on-line regulatory framework to be operational where guidelines for septic tanks and its specifications(linked to building plan approval), regulation of septage transportation operations, user fees for septage transport, treatment and disposal, SOP for all levels of septage management and levy of penalty for open defection, discharge of raw sewage, septage to drain and discharge of septage at places other than the treatment facility or designated place – will be developed.

For Capex, from 2016-17 to 2019-20, **a total investment of INR 213.75 crore is planned for FSSM in all 112 statutory towns of the State.** A proposal for a separate division of septage management in the State is under government's active consideration. **Under AMRUT, out of total investment of INR 1,598.96 crore in nine Class-I cities in the State, INR 17.86 crore[30] have been approved for setting up of nine SeTPs. The government has also provided 209 cesspool trucks of different capacities to all 112 cities for sludge emptying in two phases (123+83).**

Government is also proactively considering to get funds from FSM services from DMF (District Mineral Foundation), CSR funds of Corporate houses and donor agencies. The nine focus cities have been rated on credit worthiness to pull funds from the market for infrastructure projects including water supply, sanitation and waste water management.

[27] Census 2011

[28] MOM of 31.3.2016, the H&UD. detailed presentation of "improving urban sanitation through Septage management"

[29] Odisha septage management guidelines

[30] OWSSB (CAPEX for 8 plants. Bhadrak is not included)

Regulatory and institutional developments

From the point of view of urban sanitation in general and FSSM in particular, most encouraging developments in Odisha are formations and operations of District Mineral Development Foundation (DMF)31 in all 30 districts, formation of CSR state Council under the chairmanship of Chief secretary of Odisha and the proposal for enactments of Urban Waste Water Management Act.

In case of DMF, until June 2017, around INR 2,800 crores have been collected as royalty from mines and minerals areas but remain unspent. This could be leveraged out for the urban sanitation infrastructures including SeTPs, constructions of CT, PT and HTs including even purchase of cesspool trucks as these infrastructures involves bulk money to be budgeted. Though all 30 districts are DMF districts, yet some 13 major mineral rich districts have huge opportunities to be leveraged out. Keonjhar district has taken the lead and SeTPs have been sanctioned from DMF funds in five ULBs.

Like DMF, as per Companies Act 2013 every corporate entity with net profit of INR 5 crore is required to spend 2% of their profit on mandatory CSR activates. Odisha is one of the leading industrial state with quite a good amount of CSR funds which could be spent for development of the state. Recently the state government has formed the State Council of CSR under the Chief Secretary of Odisha to prioritize the CSR funds allocations and spending where urban sanitation is on high priority of the state government. This gives an opportunity to be leveraged out with proper planning where the scope is for all the ULBs in the entire state. Funds to the tune of ~INR 11 lakh crore is currently in being invested in the state.

Another important development is proposal for the Urban Waste Water Management Bill 2016 (which is under the legal scrutiny) by the H&UD department and mostly likely be enacted as a law in this year can push regulated sanitation in urban areas by making FSSM services processes legally, institutionally, technology wise and managerial point of view implementable in the state.

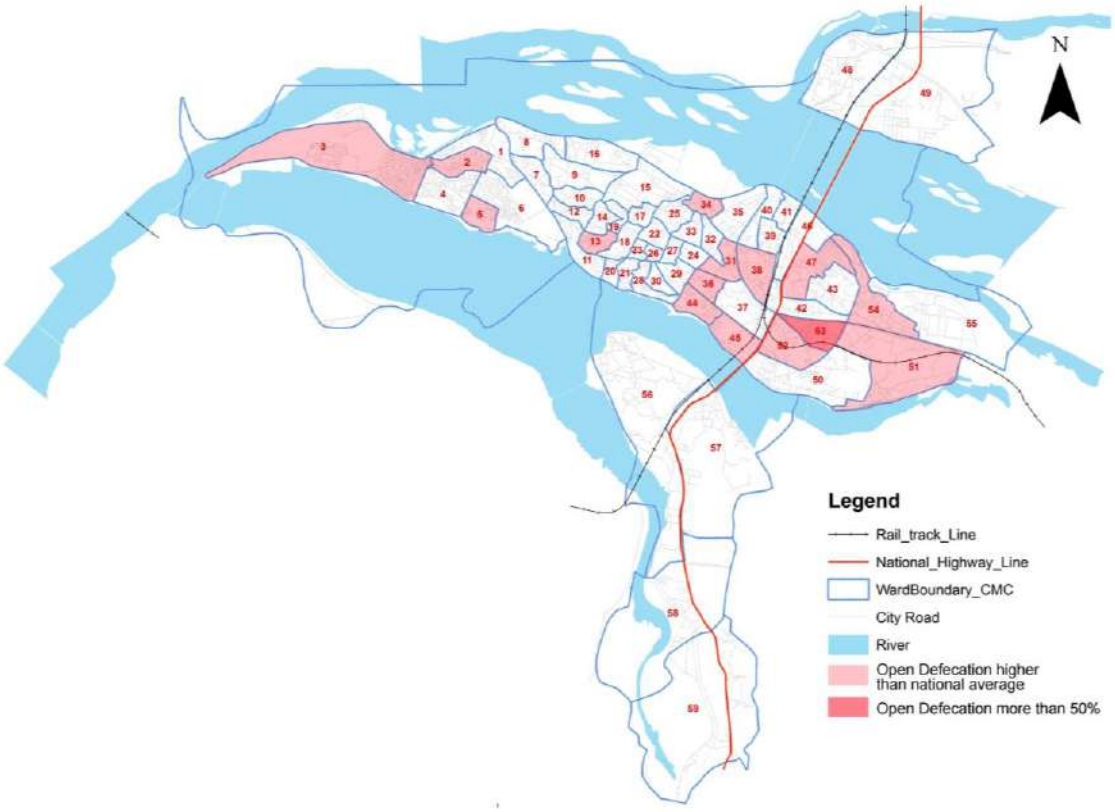
[31] DMF provides support to person and areas in districts affected by mining related operations. Fund is collection through royalty from mine lease holders, a part of which (typically 33% of royalty collected) is contributed towards DMF.

4 FSSM situation assessment

4.1 Toilet containment typologies

The city of Cuttack has 1.2 lakh households. 84.2% of the households have individual toilets. Open defecation due to lack of toilet access stands at 11.4%, which is lower that national urban average of 12.6%. However, there are 15[32] wards having higher instances of open defection than national average. Almost 50% of ward no. 53 resorts to open defecation. Around 4.4% of households are dependent on public or community toilet. The figure below shows the wards with high OD.

Figure 4-1: -Ward map indicating high open defecation areas



Source: Cuttack Municipal Corporation

Cuttack has a river-based culture since it is surrounded by Kathajodi and Mahanadi on all sides. During the consultations, the City Health Officer shared that it is a common practice, especially for slum dwellers to go to the river, defecate in the open, take bath and then worship 'Sun' (Surya) God. As per discussions with the Chief District Medical Officer (CDMO), it was noted that open defecation is being practiced by male members of the households having individual toilets because of cultural reason, family size and shortage of water supply in low income households.

Under the SBM, requests for 7,290 IHHL have been received and summary is presented hereunder:

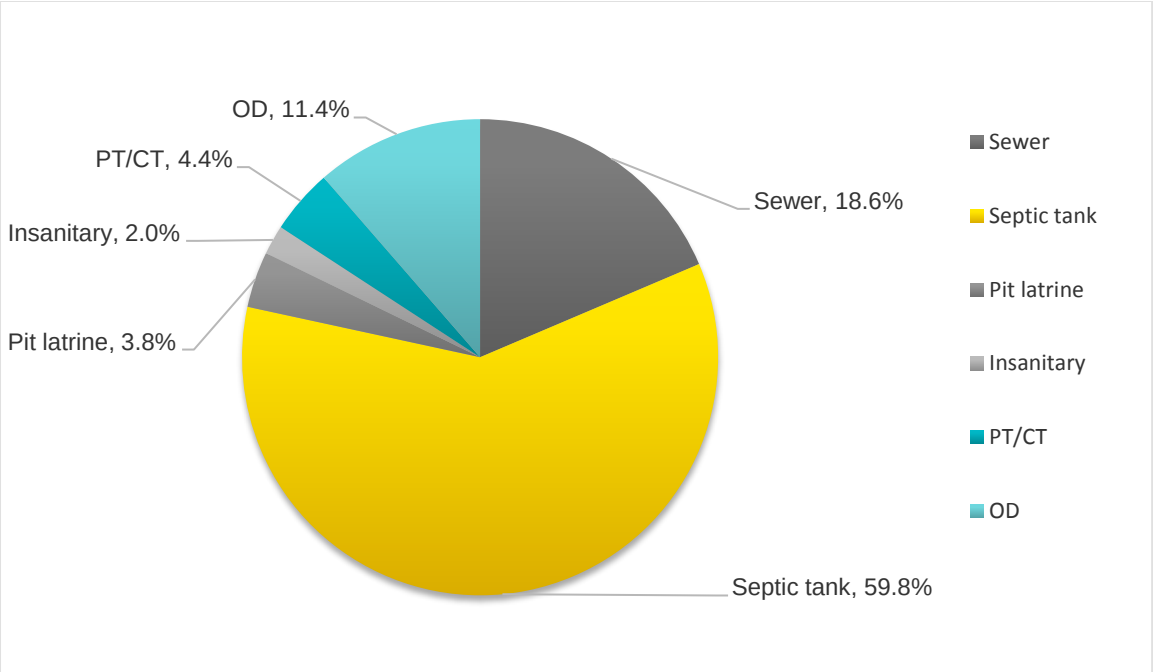
Table 4-1: -SBM Progress (as on 25 May 2017)

Received	Verified	Approved	Rejected	Constructed	Commenced
7,290	6,176	5,101	7	1,726	1,667

Source: SBM-PMU Odisha

[32] The ward numbers are 2, 3, 5, 13, 31, 34, 36, 38, 44, 45, 47, 51, 52, 53 and 54.

Figure 4-2: -Sanitation system at household level and access to toilets



Source: Census 2011

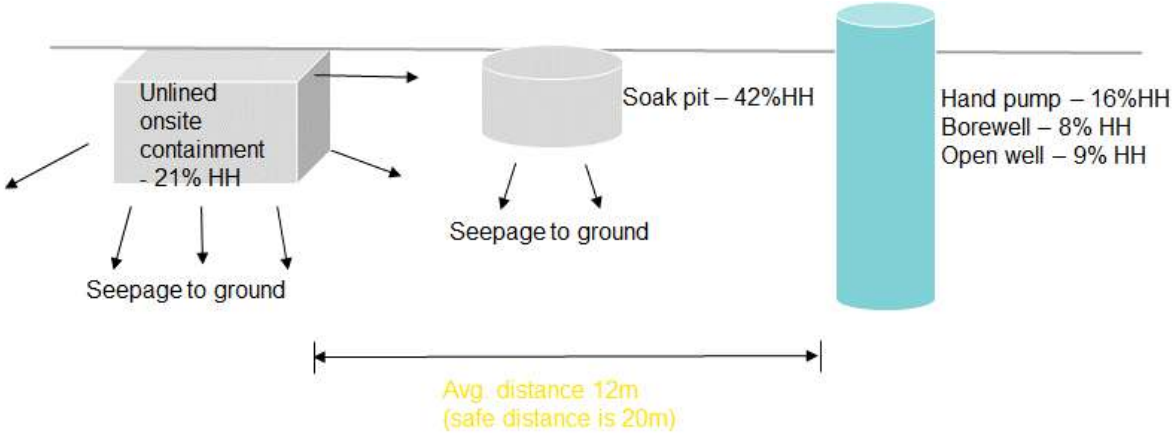
Toilets which directly dispose into drains and/or require night soil to be removed by human or animal are considered as Insanitary

Connectivity to sewer network is 18.6%. More than 64% of households are dependent on onsite containment system (septic tanks and pit latrines). The primary survey indicates that 21% households (HH) have unlined onsite systems. 42% HHs have septic tank connected to soak-pits. Together, this could be a potential source of ground water pollution due to lack of safe distance from water source. Average distance found between onsite system and open well or hand-pump or bore-well during survey is 12m, which is lower than conventionally considered safe distance of 20m. This holds significance as 33% of HHs are dependent on ground water source. The city administration also use ground water for further processing and supply to citizens as mentioned in Section 2.4.1.

"Jaundice, amoebiais and diarrhea are recurring diseases in Cuttack due to food and water contamination caused by poor sanitation." - CDMO

"FSSM services are critical for Cuttack considering its topography. Instances of ground water contamination are recorded frequently due to poor sanitation services and hence FSSM plays a critical role to address this issue." – City Health Officer (CHO)

Figure 4-3 Situation with onsite containment system as per our primary survey for Cuttack



Some of the stakeholders also brought to light the problem of direct connection to drains. While only

2% HHs are insanitary as per Census 2011[33]. Here is the summary of various responses received from stakeholders which indicates that this issue needs attention.

Our primary interaction with masons reveal that while households rely on masons for suggestions on septic tank design, most of the time even masons are not aware if they are following right standard. Even if they are, then the final design is made as per household's demand which may not be as per standard norms. Many prefer septic tank with large size and no chamber which effectively reduces it to a holding tank and affects bio-digestion potential. ***This could be a reason why 43% of households mentioned that they have never availed cesspool emptying services.***

Such variations in design can have bearing on performance of treatment plant as un-digested sludge from unscientific septic tank can have different characteristics than those achieved from scientific septic tanks designed as per norms. The proposed Septage Treatment Plant (SeTP) at Cuttack is designed considering scientific septic tank.

Masons also reported that households also sometimes avoid making septic tanks to avoid cost of making one, emptying and also when space is a constraint. This was further confirmed through our primary survey which revealed ***that 5% of households directly connect their toilet to drain or water body (Insanitary toilet).***

"Most of the HHs have toilet outlets connected to open drains leading to hygiene issues" – District Collector

"Toilets connected to open drains is one of key sanitation challenge of the city" - Mayor

"More than half of the toilets open to the drains" – Additional Commissioner

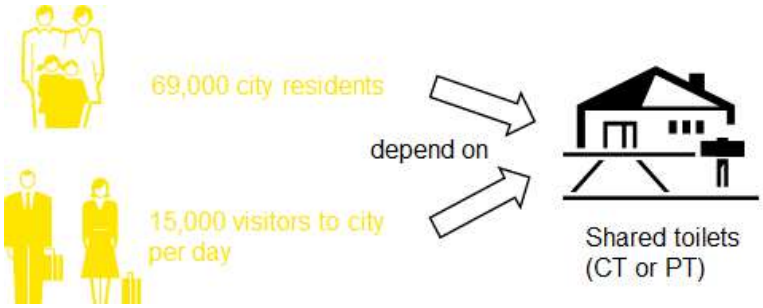
"Not as per norms. Some latrines are connected to open drains" – City Corporators

"Toilets connected to open drains: Many toilets are connected to open drains" – Sanitary Inspectors

Figure 4-4: -Interaction with masons and cesspool operator

[33] *Toilets which directly dispose into drains and/or require night soil to be removed by human or animal are considered as Insanitary*

4.2 Status of CT and PT



Source: SBM-PMU and SAAP- AMRUT Odisha

Census data indicates that 16% of the HH or 95,000 citizens do not have access to household toilets. Of these 26,000 are going to be provided IHHL under the SBM[34]. So 69,000 citizens do not household toilets and are directly/indirectly dependent on public or community toilet. In addition, there is need for public toilet to cater to the floating population of 15,000 per day who come to this cultural city for various purposes.

H&UDD started a novel initiative to build hybrid toilets. The concept being derived from both community and public toilets, where both options of pay-per-daily use and/ or pay-per-month options are available. Presently, under the scheme, the department has signed a memorandum of understanding (MoU) with Sulabh International to build 6,000 toilets in the nine AMRUT towns. Implementation is done under the SBM. 37 hybrid toilets are allocated for Cuttack. Following is the overall status of shared toilets in the city.

Table 4-2: -Status of Community Toilets (CT) and Public Toilets (PT)

	Existing complexes (available for usage)	Existing complexes (defunct)	New (under construction)	New (yet to start construction)
Public toilet	16 + 2 Mobile units	8	-	-
Community toilet	15 + 2 (Project Samman)	17	24 (Project Samman)	6 (Project Samman)
Hybrid toilet	2	Not applicable	35	0
TOTAL	**37**	**25**	**59**	**6**

Source: CMC

A quick calculation of need for toilet seats in CT reveals that 1,018 seats for men and 1,326 seats for women is required as per SBM norms for CT. This is considering only those who do not have IHHL and are not covered under SBM yet.

[34] SBM – PMU Odisha

Figure 4-5: -10 seater mobile unit and newly constructed Hybrid unit at Telengapentha

Under the scheme of hybrid toilets, presently 37 toilet complexes are to be constructed. All of them are at construction stage or nearing completion. All locations are specifically chosen by Sulabh International considering the Operations & Maintenance (O&M) sustainability. As on date, two hybrid toilets have been constructed at Nuapada market complex and Gandhi Vidyapitha, Telengapentha.

H&UDD has also taken approach to develop user-centered shared toilet design with various O&M models for community toilet in the city in collaboration with The Abdul Lateef Jameel Poverty Action Lab (J-PAL) under Project Samman. Cuttack is planning 32 such units of which 2 are already handed over to CMC. These units comprise of various facilities such as sanitary pad incinerator, hand and foot wash station, cloth wash area. The toilet and urinal pans are designed keeping in mind the user. O&M of these units shall be managed by community.

Case in Point: Well managed community toilet in Pilgrim basti
Pilgrim basti is a slum settlement in Ward No.38 with 393 households having more than 2,000 population. This notified slum is located in central part of Cuttack next to College Square Road. It is spread across an area of more than 50,000 m^2. More than 5 years ago, the people residing in the slum contributed INR 27,760 to construct a community toilet for themselves with financial support of few local NGOs. Ever since, the community toilet having more than 10 toilet seats (5 each for men and women), have succeeded in managing the toilet effectively. They charge a fee of INR 2-5 from users every time for using the toilet. This toilet is managed by the community members themselves and regular cleaning of septic tank takes place. This is a prime example of well-managed community toilet in slum area of Cuttack. Similar strategies can be adapted for community-led toilet construction and management in all wards in Cuttack under the 'Construction of CT/PT' component of Swachh Bharat Mission.

Figure 4-6: -Community toilet in Pilgrim basti

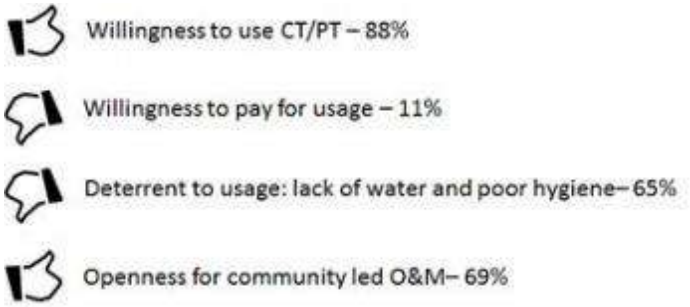
Figure 4-7: -New CTs set-up under Project Samman

Table 4-3: -Management of PT & CT

	Construction	O&M	O&M revenue source
Hybrid	Private agency (Sulabh)	Private agency (Sulabh) – 8 to 10 years contract	User fee
CT (Project Samman)	J-PAL/TARU	Community	User fee
CT (existing)	CMC	CMC	
PT (existing)	CMC	Private agency	User fee

The primary survey indicates that citizens are willing to use CT/PT but would not like to pay for usage. They highlighted concern due to lack of water and hygiene and indicated that they are willing to explore community led models for O&M of the facilities.

Figure 4-8: -Key responses from citizens through primary survey



4.3 Emptying and transportation

Mechanized emptying and transportation services is provided by ULB as well as private players.

Below table provides overall snap-shot of services available in the city. Current emptying capacity is 23.5 Kilo L (KL) which shall increase to 35.5 KL with introduction of new vehicles from ULB. A request for proposal was floated in December 2016 inviting tenders from private operators towards the operation and maintenance of the newly acquired trucks. Currently, the tender is under price negotiation.

"Private sector participation for cesspool vehicle O&M must be encouraged since it will create jobs and ULB shall be able to provide better service to its citizens." – District Collector

Table 4-4: -Mechanized cesspool emptying and transport available in the city

S. N.	Service provider	Capacity	Service rates (INR/trip/truck)	Service hours	Operating model
1	ULB (existing)	2 trucks X 3,000 L	INR 1,000	8am to 6pm	Owned and operated by ULB
2	ULB (new)[35]	4 trucks X 3,000 L	To be confirmed		Owned by ULB. Operated by private player.
3	Private operator (3 nos.)	1 truck X 1,500 L 4 trucks X 3,000 L 1 truck X 4,000 L	INR 800 for smaller vehicles INR 1,000 to 2,000 depending on size of vehicle and distance	Round the clock	Owned and operated by private player
TOTAL		35,500 L			

Source: ULB data and primary interaction with private operator

Figure 4-9: -New cesspool emptying trucks of CMC

Majority of the trucks in existing fleet are of 3,000 L capacity or more as seen in Figure 4-9. Such vehicles typically have width of 2.2 m. This creates difficulty in providing services in city like Cuttack were majority of the roads are of lesser width. This was confirmed during the primary survey which found that 21% of roads have less than 2m width. Situation is grim in slums which have 38% of road with less than 2 m. This could effectively leave services inaccessible to 50,000 citizens living in slums. Sanitation situation assessment (2017) also acknowledges that 70-80% of onsite sanitation system are not accessible due to narrow road lanes which are 1.5 to 3 m wide. In such situation, it is possible that households may resort to other means such as non-mechanized emptying and open defecation to prevent filling of onsite sanitation system.

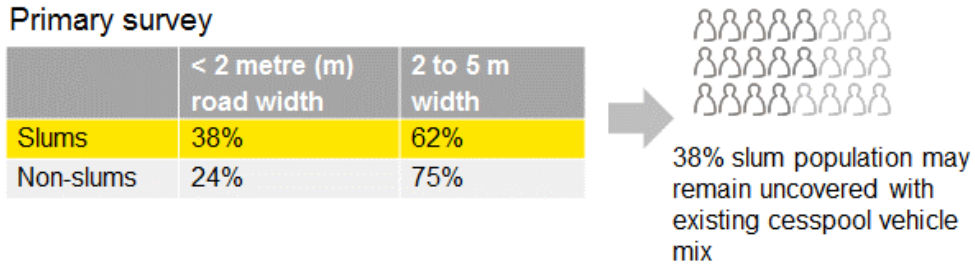
"Accessibility of big cesspool vehicles is limited due to narrow streets in more than 60% of the city" – District Collector

[35] New cesspool vehicle was sent to CMC in June 2016

This also has impact on prices of cesspool services as was found during interactions with the private operators. They mentioned that they charge higher than average charge due to lesser trips per day resulting from inaccessibility to septic tanks and pits.

Lesser trips per day also impacts CMC's services. Sanitary Inspectors have reported during interview that citizens typically have to wait for 2 to 3 days to avail services from CMC. This makes them approach private operators or even look for non-mechanized emptying.

Figure 4-10: -Mechanized emptying services



Source: ULB, private operators and Sanitation situation assessment 2017 – NIUA, CDD

One of the private operator who has bid for cesspool vehicle O&M contract has expressed willingness to bring prices lower provided he is given smaller vehicle as this would provide access to more households.

Existing regulations around cesspool emptying are weak or absent. Operators reported that they are currently not required to follow any guidelines around safe practices. This could be perhaps reason why it was found during interview that they do not use personal protective equipment (PPE) while they are fully aware of different type of PPE.

Private operators informed that they spread information on their services through wall paintings, pamphlets, newspaper and display board at ULB. During primary survey 43% household also confirmed that received information on cesspool services through these mediums.

41% households reported that they don't find information on cesspool emptying services anywhere

4.4 Treatment and disposal/re-use

Currently the city generates 55 cubic meter of sludge per day.[36] However it doesn't have facility to safely treat and dispose fecal waste. CMC has designated Chakradharpur solid waste dumping site also as designated fecal waste disposal site. However it is more than 15km from the city. Our primary interactions revealed that operators currently dump fecal waste in open fields, drains and water bodies. This is leading to pollution of water bodies and serious health implication.

There are no regulations governing the operations of cesspool operators as confirmed through interactions with ULB officials and operators. Also mechanism to track their operations is presently absent.

"The sludge which is emptied is usually disposed near habitation and sometimes quite close to the house from which it has been emptied. It is also dumped in the open drains." – City Corporators

As shown in the following table, Mahanadi and Kathajodi rivers are almost uncontaminated before wastewater from the city is discharged into them, if only measured through Biological Oxygen Demand (BOD). However, there are clear indications of coliform in the water even before entering the city; these numbers furthermore increase drastically once the city's wastewater combines with the rivers.

[36] Sanitation situation assessment 2017, National Institute of Urban Affairs (NIUA) and CDD

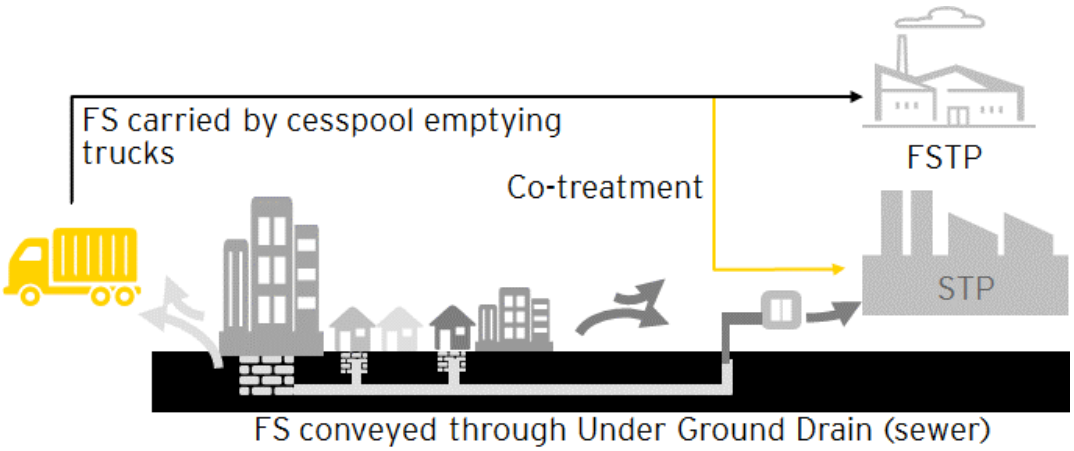
Figure 4-11: -River water pollution[37]

Town	River	Location	Biological Oxygen Demand (BOD)				Total Coliform (TC)				Present frequency of	Present % deviation
			2012	2013	2014	2015	2012	2013	2014	2015		
CUTTACK	Mahanadi	Upstream	1.5	1.1	1.0	1.0	3,256	4,552	4,817	1,748	1 (TC)	8 (TC)
		Down-stream	2.5	2.5	2.2	2.2	**55,417**	**82,000**	**62,455**	**51,017**	**10** (TC)	**83** (TC)
	Kathajodi	Upstream	1.7	1.2	1.2	1.2	15,889	5,140	5,600	3,627	2 (TC)	17 (TC)
		Down-stream	3.4	3.8	3.7	3.3	**90,333**	**70,600**	**98,118**	**27,108**	10 (BOD) 11 (TC)	83 (BOD) 92 (TC)

The State Government has taken steps to implement septage treatment plant in order to treat and thereafter safely dispose or reuse the fecal waste. This is being covered under the AMRUT scheme. The treatment plant is designed such that it has capacity to handle fecal waste generated for next 7 years[38]. Incremental capacity required beyond this would is being planned to be covered through sewerage system. The proposed plant shall work on co-treatment approach with supernatant going to pond system for treatment while separated sludge shall be sent to unplanted drying bed to remove pathogens.

"More than 80% of sewage water from the district is discharged into Kathajodi and 15-20% of sewage water is discharged into Mahanadi." – Pollution Control Board official

Figure 4-12: -Co-treatment approach adopted by CMC for disposal of fecal waste



[37] Odisha State Pollution Control Board. River pollution due to sewage.

[38] Sanitation situation assessment 2017, NIUA and CDD

Figure 4-13: -Location of STP and proposed SeTP and WTP

Capacity	Area	Cost	Lifecycle period	Distance from city	Technology	Expected date of completion
60 KLD (kiloliter per day)	2.5 acre	1.76 crore	20 years	13 km from CMC	Co-treatment with STP after solid liquid separation	Feb 2018

Figure 4-14: -On-going work at Cuttack SeTP (co-treatment within STP)

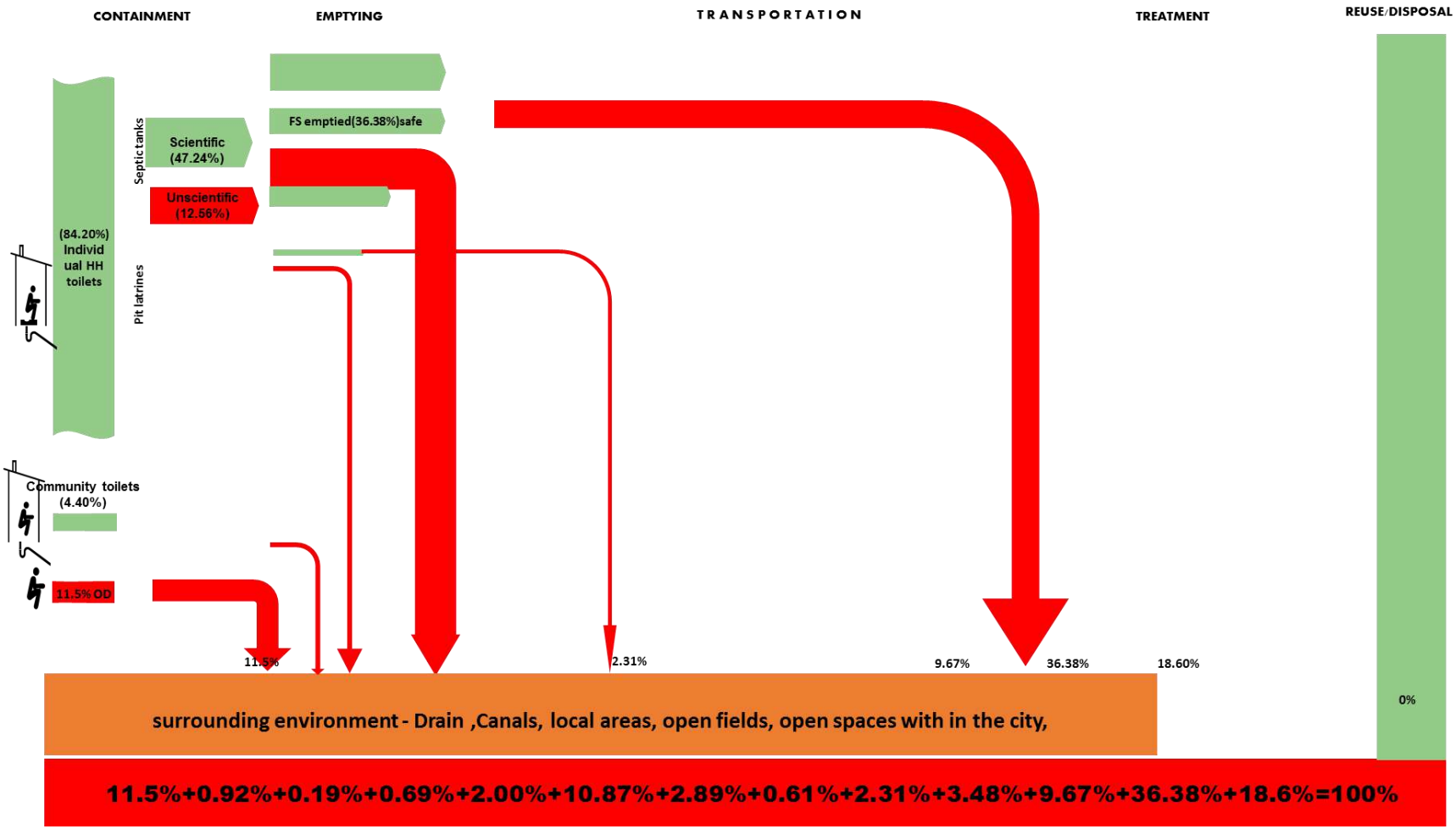
Work on SeTP has started. Land provided was used earlier for fisheries purpose and has around 9-10 big pits. These have to be filled to ground level 60,000 cubic meter) to start actual construction work.

In addition, during the construction phase of the SeTP at Matgajpur, safe disposal is required for the fecal waste being generated by Cuttack. As such, an interim solution of deep row entrenchment has been identified and notified by the government. CMC is to identify a total of 18.20 acres of land for deep row entrenchment considering the present situation of on-site containment in Cuttack. Matgajpur could be the location for disposal of fecal waste with no concerns over local disputes over disposal.

Figure 4-15: -Typical deep row entrenchment site

Source: FSM book, 2014

4.5 Shit flow diagram (SFD) of Cuttack



4.6 Assumptions made for SFD

- Scientific and unscientific septic tanks and pit latrines are divided in the ratio 79:21 respectively based on finding of our primary survey covering lined and unlined containment system.
- Other systems identified in census included as pit latrine
- Toilet which have night soil removed by animal and human as part of insanitary toilet.
- FS emptying and transport is divided as safe and unsafe in the ration of 77:23.
- CT/PTs have scientific septic tanks and are safely emptied

5 Stakeholder mapping and analysis

Basis the assessment of regulatory framework prevalent at the center, state and at the municipal level conducted in the previous chapter, the stakeholders of the sanitation value chain have been identified. Their roles and responsibilities across the value chain have been assessed and their influence and interest is presented in the subsequent sections of this chapter.

5.1 Stakeholder identification

The state level stakeholders bring in new policies, reforms and innovation with regard to funding mechanisms, creating an enabling environment and providing opportunities for the ULBs to implement reforms in sanitation or urban development projects in the city levels. While state level stakeholders build strategies, ULBs are critical stakeholders to implement those strategies, policies and plans. The district level stakeholders play supervising roles and monitor the progress besides facilitating the implementing processes in a limited way. District level stakeholders are required to integrate the plans and programmes in the cities of the respective districts into the district planning processes, thereby escalating these local plans into the state level planning processes through districts level planning committees. Despite the abovementioned provisions, urban development programmes are not reflected in the district planning processes in Odisha. In addition, private stakeholders also play a critical role in investment for capex and O&M of FSSM services.

Table 5-1 Stakeholders at state level and district level

State level	District level
► State Urban Sanitation Mission headed by the Chief Minister of Odisha which is the highest policy making body for urban sanitation ► State High Power Committee headed by the Chief secretary of Odisha and convened by the PS H&UDD ► State SBM Directorate, headed by the State Mission Director reporting to PS H&UDD. It has a Project Management Unit (PMU) ► Technical Support Unit (TSU) on FSSM under the H&UDD ► Directorate of Town Planning – to integrate FSM rules and standards into town planning laws ► Department of Water Resource ► Directorate of AMRUT headed by Special Secretary for infrastructure creation, funding and reforms ► Directorate of Municipal Administration (DMA) to monitor the regulatory services oversight of sanitation ► Odisha Urban Infrastructures Development Fund (OUIDF) for PPP and investment ► PHEO for water supply ► The OWSSB – nodal agency ► PDMC – EIL ► Consulting Firms and funding agencies – BMGF, DFID, Practical Action, J PAL South Asia, EY, IPG, Deloitte, Tata Trust and others	► District Level Review and Monitoring Committee (DLRMC) - for monitoring ► Development trusts/ authorities – for enforcements and regulations ► District Mineral Foundation (DMF) funding for FSM ► Corporate Houses -Corporates Social Responsibility (CSR) ► Regional Centers of Pollution Control Board – pollution checks air, water and soil etc. ► Regional OWSSB offices – to execute sewerage and SeTP projects/ waste water management ► Regional PHEOs for water supply ► SBM PIU ► **City level** ► ULB - Mayors, Dy Mayors, EO/Commissioners, Engineers ► City Sanitation task force (CSTF) ► Ward Sanitation Committee (WSC) ► PIUs of various schemes - SBM, PMAY, NULM, AMRUT & others ► Frontal units of line departments such as MAS, WKS, SHGs & others ► Influential & key educational institutions, industrial units, trade union associations ► Residential Welfare Associations/ Slum federations ► NGOs, CBOs, youth clubs, Puja/ peace committee, citizen groups etc. ► Outsourced agencies as service providers

Seven key roles have been identified across the sanitation value chain encompassing funding, planning & designing, implementation, operation & maintenance, policy support, regulatory function and monitoring mechanism. The table below presents the outcomes of the mapping of stakeholders for overall sanitation management in Cuttack

Table 5-2: Stakeholders and their functions in sanitation value chain

Key areas	Funding	Planning & designing	Implementation	Operation & Maintenance	Policy support	Regulatory function	Monitoring mechanism
Toilets (HH level) with containment	SBM, Households	SBM, Masons, Household	ULBs, Households, Private contractor	Households	State Sanitation Mission	With ULBs	State SBM Directorate & ULBs
Toilets (CT and PT) with containment	State govt. ULB CSR/ NGOs PPP SBM	Engineering dept., Sanitation dept., Town planning dept., ULB	• Private operators / ULBs • Engineering dept. in ULB	Private Operators / Sulabh/ ULBs	State urban Sanitation Mission	ULBs	State SBM Directorate & ULBs
Emptying and transport (septage)	Households ULB (PT/CT)	ULB	ULB	Private Operators & ULB	H&UD	ULBs/ OSPCB/ OWSSB	ULB
Treatment, safe disposal and re-use	AMRUT	OWSSB	OWSSB	OWSSB/ private operators	OWSSB/ H&UDD	OSPCB/ OWSSB	OWSSB /H&UDD
IEC Campaign (Information, Education and Communication)	SBM Directorate	SBM Directorate	ULB, Community Based Organisation		SBM Directorate /ULB	ULB	ULB/ SBM Directorate
Capacity Building	Mission Directorate	Mission Directorate	ULB, Community Based Organisation		SBM Directorate	ULB	ULB/ SBM Directorate/ H&UDD

5.2 Interrelationship between stakeholders

Promoting sanitation sector across a value chain often requires identifying the key stakeholders involved in various other sectors and engaging them in planning and implementing activities. For example, the Road Transport Organisation (RTO) and Transport Department's support may be needed in improving the emptying and transportation practices in these towns. Similarly, the agencies preparing land-use plans, master plans, building bye-laws etc., need to make provisions for earmarking land for septage treatment and enforcing appropriate sanitation systems. Irrigation department has an understanding of waste water flows and pollution of water bodies and their inputs may also be crucial in promoting waste water treatment. Many of the ULB departments may need to have convergence of activities with these stakeholders. Hence, an exercise for identifying the key stakeholders across various sectors and convergent role of ULB departments is undertaken and

presented in the following table-

Table 5-3: -Interrelationship of stakeholders across various sectors in Cuttack

	Stakeholders		
Sector	**Planning, Regulation Monitoring**	**Implementation**	**Operation and Maintenance**
Land Use/ Master Plan/ Building Byelaws	Directorate of Town planning Development authorities and improvement trusts	Directorate of Town planning Development authorities and improvement trusts	Regional improvement trusts and development authorities/ ULB (Amendments)
Water Supply	PHEO	PHEO	PHEO
Sewerage and waste water treatment	OWSSB	OWSSB	PHEO
Drainage	Major drains- Water Resource Department Minor drains- ULB	Major drains- Water Resource Department Minor drains- ULB	Major drains- Water Resource Department Minor drains- ULB
Traffic and Transportation	RTO	Commiserate of police	RTO
Storm Water Drainage	Water Resource Department	Water Resource Department	Water Resource Department
Access to toilets	Mission Directorate	ULB (Sanitation department)	ULB(Sanitation department)
Solid Waste Management	ULB (Sanitation and engineering)	ULB (Sanitation and engineering)	ULB (Sanitation and engineering)
Slum Development/ Urban Poverty Programme	ULB (Slum Improvement department)	ULB (Slum Improvement department)	ULB (Slum Improvement department)
Housing or EWS	H&UDD	ULB	ULB
Environment/ Forestry	Forest department , ULB	ULB	ULB
Industrial Development	Industry Department	Industry Department	Industry Department

One of the observation from the above table is that urban infrastructure including sanitation and FSSM remains outside the purview of the ULBs. But in case of SWM, the ULBs manage, collect, transport and treat (landfills) through private participation quite successfully. Improvement is quite satisfactory in case of adopting bylaws and standards. In case of liquid waste or waste water treatments , the ULB should be given the power and capacity to handle these functions directly instead of fully transferring the responsibilities to OWSSB and then remain out of its ambit during construction and O&M for certain period of times. Therefore, government may consider giving opportunities and chance to the ULBs to undertake urban infrastructural projects so that they can gain knowledge, skill and experiences to usher a new beginning and have the required power as well as accountability.

It has been observed from the past experience of implementing projects that often the beneficiaries who are most affected by the project outcomes do not have adequate influence on the project. On the other hand, those stakeholders who have high influence often do not have adequate interest in project

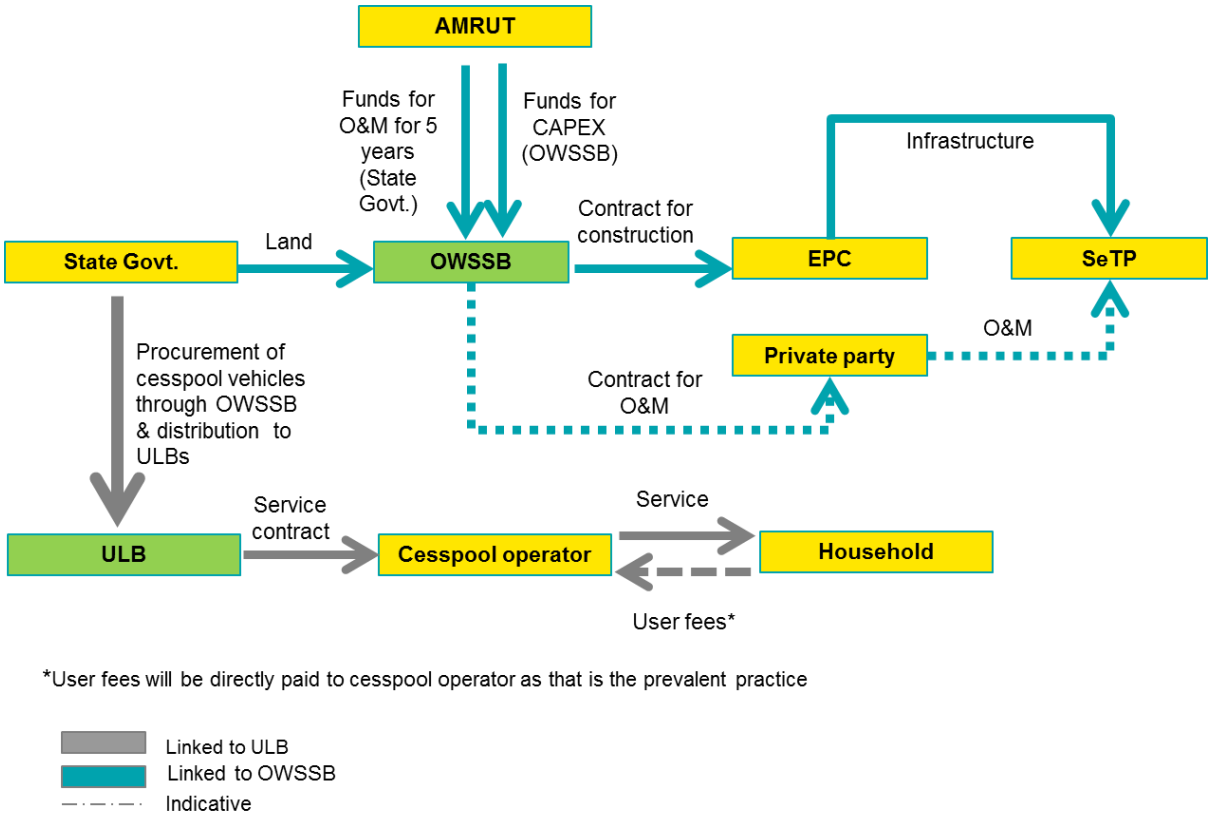
activities. Hence, a carefully designed strategy of engaging the stakeholders based on an analysis of their interest and influence is quite useful. Influence refers to the power and authority to make decisions and allocate funds. Interest indicates the highest beneficiaries of the successful outcomes of the project. Basis interactions with officials at various levels, certain key issues have been identified.

Key issues in stakeholder interrelationship

Cesspool emptying of sludge and corresponding treatment in FSTP are important aspects of the FSSM value chain. Earlier, ULB and private operators used to run cesspool vehicles separately.

Under the new Private Public Partnership (PPP) model, ULB will incur the capital expenditure for purchase of cesspool vehicles and the private party will bear the operating expenses. ULB can monitor where the cesspool operator is dumping the sludge. Under the new scenario, it is important to understand the relationship between OWSSB and ULB specific to FSSM service. The institutional framework has been depicted in the figure below.

Table 5-4: -Institutional framework for FSM service



Source: National workshop by OWSSB, 2016

1. In case of FSSM two key city level infrastructures – SeTPs and cesspool trucks are complimentary to each other but fall under the purview of different bodies. The OWSSB constructs SeTPs and the responsibility of the O&M of the treatment plant is by the private parties. The cesspool trucks are placed with the ULBs by the OWSSB[39] after central procurement at the state level (June 2016). ULBs are responsible for engagement with private operators for emptying and transportation. Thus different parts of the value chain are mapped to different stakeholders which can result in coordination challenges.
2. Further clarity is required on-
   - Revenue generation from SeTPs

[39] On behalf of H&UDD

- Cost recovery from reuse of treated resources
- Tariff policy

3. Under the present scenario, cesspool trucks are not considered as revenue generation assets for most of the ULBs. However, certain human resource as well as operational costs are involved in management of the fleet of cesspool vehicles. Currently the operations are proposed to be managed by private operators. The critical aspect to consider is who will bear the expenses for O&M of SeTP after five years and what will be operating model at that stage.

4. Scaling up the FSSM solution in non-AMRUT cities under this framework will be challenging because OWSSB is not an institutional structure. It is a project based organization of the PHEO and has presence in almost 103 cities in the State. Therefore, roles of different levels should be clarified and a functional relationship should be established between the ULB, district administration, parastatals – OWSSB and OSPCB etc. for FSSM services.
5. There is a lack of integrated approach to FSSM within various bodies and departments. OSPCB is responsible for monitoring to ensure that dumping of waste into drains or rivers. While they have the authority to penalize, they can only notify the private and ULB run vehicles in case of indiscriminate dumping. They have the regulatory power but no executive authority to implement it. It is important that monitoring is done in coordination and not in insolation by multiple departments.
6. City systems have weak structure as they have no formal power. Under the AMRUT programme, ULBs are the prime stakeholder for reforms implementation. However, in practice, ULBs have formally transferred the service procurements and implementation of infrastructural projects under AMRUT to the parastatals through ULB's council resolutions and through tripartite agreements between H&UDD parastatals and ULB. But district level institutions have shown interest in taking responsibilities provided they are given clarity of their roles over ULB affairs by the government. This is a positive trend observed during interactions with the stakeholders.

6 Capacity Building

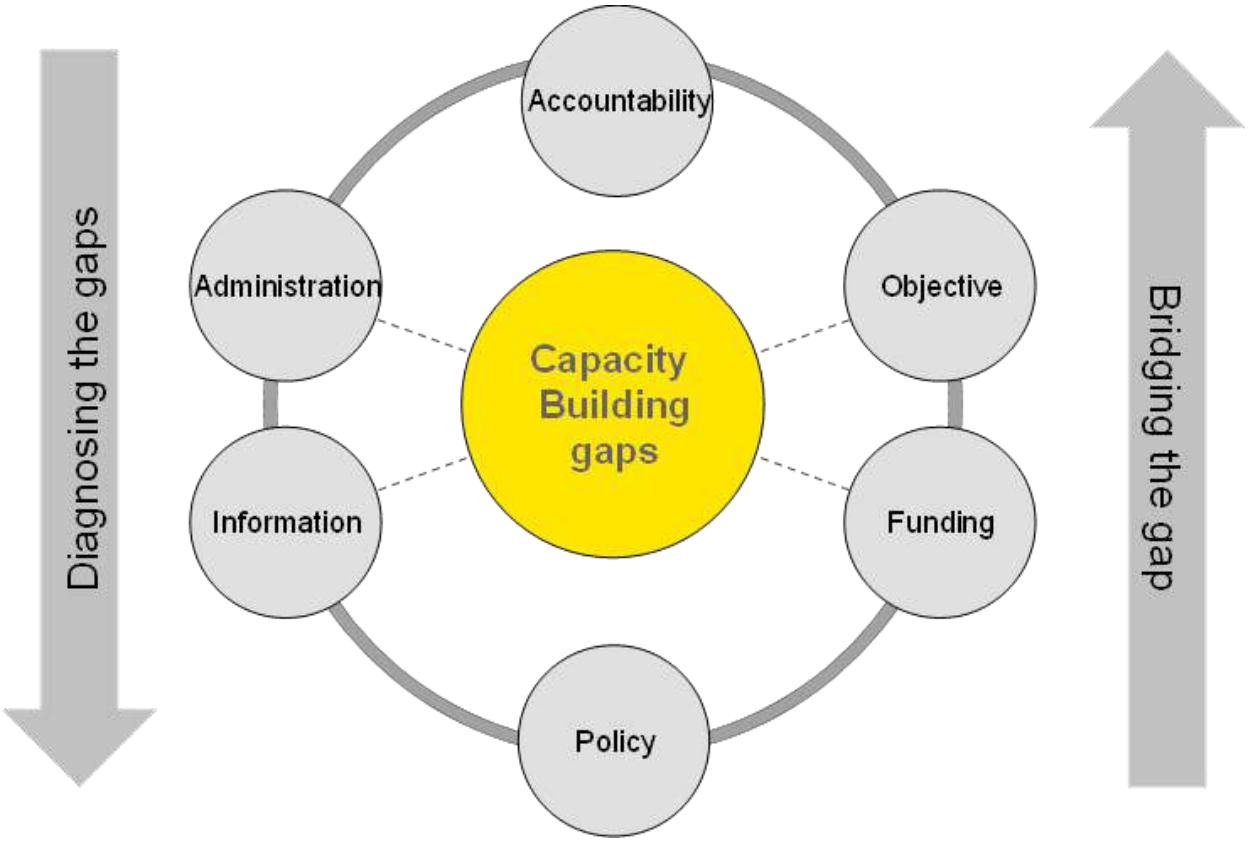


Table 6-1: -Key gap assessments and strategies for capacity building in Cuttack

Key capacity areas	Gaps Identified / observations	Strategies suggested	Key target groups
Institutional arrangement within city	► Existing institutions are indifferent and lack consistent approach to sanitation issues ► Lack of structured engagement and integration with existing institutions ► CSP has not been formalized and implemented as a binding document ► Rules and regulation and enforcement are not clear. It falls under the purview of multiple departments and not on ULB exclusively.	► Integration of community level informal groups with city sanitation programmes ► Formalization of community level institutions such as CSTF, WSC in city system ► Strengthening front-line departmental groups for FSM services in cities ► Focus should be on zone and ward level interventions – a coordinated programme and overall M&E at broader level at ward level	► CSTF, WSC ► Puja committees, Sahi committees, slum federations, youth clubs, sports clubs, cultural groups etc. ► Mahila Arogya Samiti, Ward Kalyan Samiti , SHGs ► Ward Councilors ► Zone level officials of city
Community engagement and ownerships	► Low level of engagement at present. No active citizen participation due to lack of engagement and recognition in the city governance ► Lack of volunteering and mentoring from local communities ► Informal community structures (ex. Puja basti committee) have no functional relations with line departments (ex. MAS/ Ward Kalyan Samiti) and front-line personnel. They are not aligned to city system operationally. ► No to limited data availability to prepare ward plans ► Potential Institutions/ establishments are not mapped and consulted for sanitation campaign in the city ► Communication and messaging are stereotyped and typically ineffective.	► Promotion of volunteering and mentorship on sanitation at ward level including community engagement and recognition systems and processes ► Integration with ULB council, staffs and committees through interactions ► Converging all community level influencers, line departmental frontal units and city councilors at zones and ward levels to discuss, decide and agree over key sanitation issues ► Base line sharing with ward councilors ► Service level scores in each wards including sanitation and its integration with CSPs ► Messaging needs to target community engagement and more inclusive and contextual ► Assign each ward level sanitation promotion to the key institutions in the city such as Ravenshaw University, SCB medical college, High Bar associations etc.	► SHGs and SHG federations ► Ward councilors and standing committee members ► City officials ► Community Organizers, Sanitary Inspectors - MAS, WKS, Youth Clubs, Traders associations ► Slum committees directly interacting with PCB, OWSSB, PHEO,CMC, RWAs and colony societies ► Engagement with the corporates, lawyers' association, bus owners associations, workers unions, doctors association and SCB medical colleges students, schools and colleges ► Bar council
City leadership in undertaking reforms/ enforcement/regulation	► Lack of data and knowledge on FSM and overall sanitation sectors ► Low skill to comprehend issues of sanitation in local contexts and finding solutions	► Exposure visits to learn leading practices ► Better data management for improved decision making process in councils. Data should be regularly shared from wards to city level	► Mayor, Deputy mayor ► Standing Committee ► Councilors ► Commissioner ► Deputy Commissioners

Key capacity areas	Gaps Identified / observations	Strategies suggested	Key target groups
	► Accountability and power lies with different stakeholders leading to gaps in planning and implementation ► Incoherent relationship between council, standing committee and executive wings (commissioner) and district administration ► The capacities of engineering department are already maxed and may not have capacities to manage the expected workflow of waste-water and SeTPs	including city council, mayor, Standing Committee chairman, and ward councilors ► Capacitate target audience through training in concept and programme design to increase their involvement ► Create pilots to show workability of concepts and plan roll-out ► Model SOPs should be prepared and shared with the city officials ► CSP should be adopted as a binding document ► City level resolutions on critical sanitation decisions should include enforcement and regulatory mechanism as well as involvement of community structures in its implementation	► Additional commissioners ► Engineers ► Finance section ► City health offices ► Sanitation department ► PIUS- AMRUT, SBM, PMAY, NULM and others ► Departmental front line organizations
Administrative/ governance areas	► Multiple agencies are involved in services and no coordination and accountability ► Lack of skilled manpower ► Low planning and spending capacity of available funding ► Low capacity in mobilization of own sources of revenue and alternative financing sources (DMF, CSR, PPP and others) ► Awareness of FSSM is limited, whether it is a complimentary, supplementary or alternative solution among other technical aspects. Similarly, the planning needs to be integrated going forward, for example in Cuttack 100% areas of households and institutions are targeted to be covered in the sewerage services by 2018 ► Community level structures (informal and formal) are not in tandem but active in their own spheres ► New community institutions and user associations are strategic but remain out of formal system ► Key components of sanitations infrastructures- toilets, water supply, waste water management,	► Strengthening district administration through participatory planning in city levels for integration with district planning and effectively escalate the issues to state levels through planning structures ► Prepare operating model options for sanitation and FSSM ► Plan interactions with community level organizations for local specific solutions	► District Collector ► ADM, Tehsildar ► PD DUDA ► DFO ► Regional OSPCB ► Regional OWSSB ► Regional PHEO ► City Commissioner ► Deputy Commissioners ► City Engineer ► City sanitation officer ► Officials of CDA ► Members DUSC ► Members of CSTF ► Members of DPC ► Members of Standing Committees ► Councilors of CMC ► Key institutions in the city including other line departments – health, education

Key capacity areas	Gaps Identified / observations	Strategies suggested	Key target groups
	SWM and drainage have missing interlinks operationally but aim to have common outcomes on sanitation		MLAs, MPs, Department of social justice ► Water resource department ► Private agencies
Creation of environmental engineering cell in engineering section	► CMC does not have environmental engineering sections to comply with standards in Public health and environment.	► Restructuring the engineering department with added focus on environmental engineering	► Mayor, Deputy Mayor of CMC ► Commissioner ► Standing committee on sanitation and health ► City engineer
Private participation in the urban infrastructures (Capital and operating expenditure)	► People are not aware of reasons of privatization of sanitation services leading to dissatisfaction among the workers ► SWM is accepted and adopted as an essential element of sanitation vis-à-vis FSSM having limited understanding and acceptance ► Recurring and frequent outbreaks of jaundice in Cuttack has increased demand for FSSM services ► Low participation of private operators in bid process of cesspool vehicles ► Public is not aware of end-to-end service provisions of FSM value chain which restricts demands for FSM ► Pricing and sanitation use fees / tax is a political / legal issues ► High expectation of public from ongoing sewerage projects and people are expecting it to address to address all sanitation issues	► Interfacing of CMC officials with potential private operators, and business communities ► Empanelment of masons with adequate trainings ► Masons associated with developers associations should be trained ► Increased involvement of house owners associations and RWA in undertaking innovative models ► Key engineering and management institutions to be involved for mentoring and creation of entrepreneurship models for sanitation services including banks and financial institutions, SC/ ST financial corporations, micro-finance institutions, Livelihood and Skill development authority	► Private operators ► Masons ► Banks and financial institutions ► Skill development authorities ► NULM ► NBFCs and MFIs

7 Primary survey - household level

7.1 Rationale of the primary survey

As described in Section 1.3, a limited primary survey was conducted in the selected areas of Cuttack to collect data on the FSSM situation, existing practices, structure, capacities and awareness level, and gaps across the value chain. The collected data is expected to generate evidences which would further help in developing a road map towards implementation of FSSM programme.

7.2 Demography of households

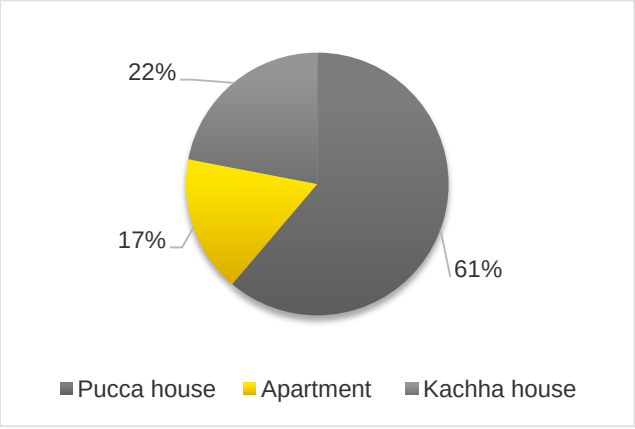
A total of 464 households were surveyed for the demographic assessment, out of which 81% households were from non-slum areas. Nature of the property was mostly residential (85%). House typology for 61% of the surveyed households were *pucca* house.

Details of demographic profile of the surveyed households are given in Figure 7-1

Table 7-1: -Demographic profile of households

Demographic profile of the survey household	N	%
Nature of the locality (N=464)		
Slum	89	19
Non-slum	375	81
Nature of property (N=464)		
Residential	397	85
Institutional	2	1
Commercial	2	1
Any mixed	63	13
Household ownership (N=464)		
Owned	299	65
Rented	97	21
Staff quarter	15	3
Public land	53	11

Figure 7-1: -House typology



The owner resided in 65% of the surveyed households and 11% of the households were in public land. 62% of households have small family size (four or less than four) and 16% have large family size (more than seven members). The average no. of persons per household among the respondents

is observed to be lower than the Census 2011 statistic.

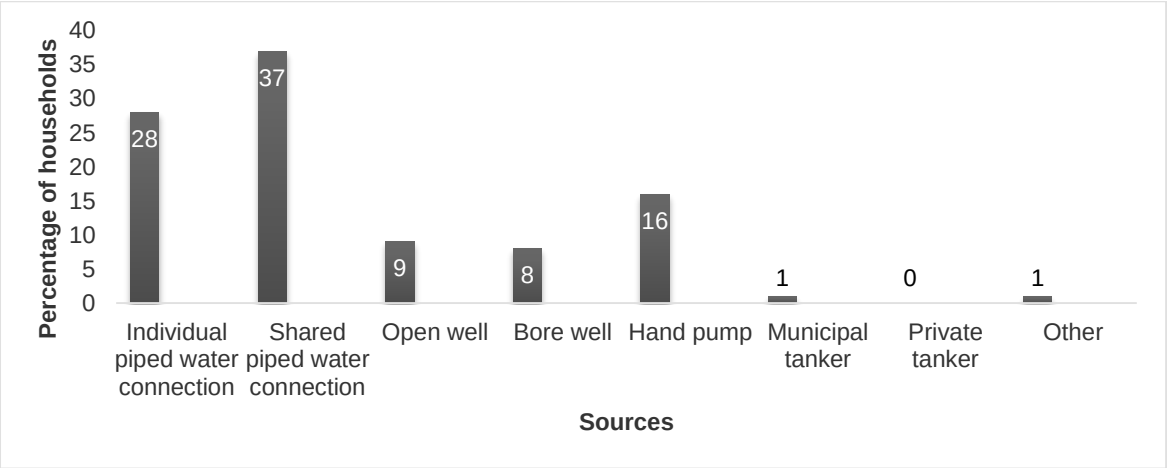
7.3 Source of water for domestic use

Prime source of domestic water for 65% of households is ULB water supply. Households with piped water connection, 43% had water supply more than eight hours per day and only 26% reported that their piped water connection supply was less than two hours per day. About 24% depended on hand pump and bore well.

In order to increase the demand on latrine use, availability of water is an important component. 38% respondents reported that availability of domestic water is not sufficient for maintenance of toilet.

There is a high chance of groundwater contamination for the households having well/hand pump in close proximity to pit/septic tanks owing to seepage from the pit/septic tanks. The survey result shows that 34% households have well/ hand pump situated in house/ plot with average distance of 12 meters from pit/ septic tank.

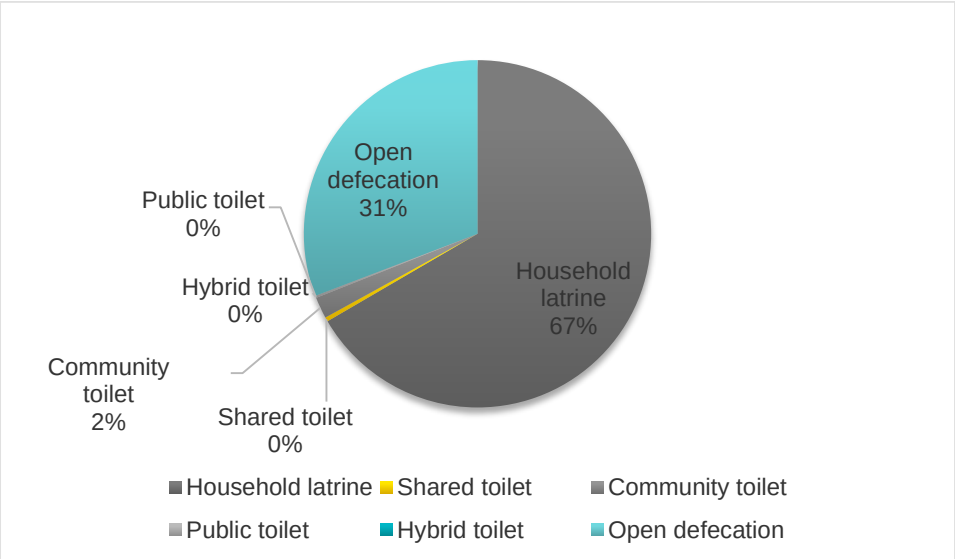
Figure 7-2: -Primary source of domestic water



7.4 Household sanitation accessibility/facility scenario

Out of 464 households, 67% of the households had individual latrines and only 2% depended on shared/ community/public toilets and none of the household used hybrid toilet and *about 31% practice open defecation.* Figure 7-3 shows defecation practice of the households is given.

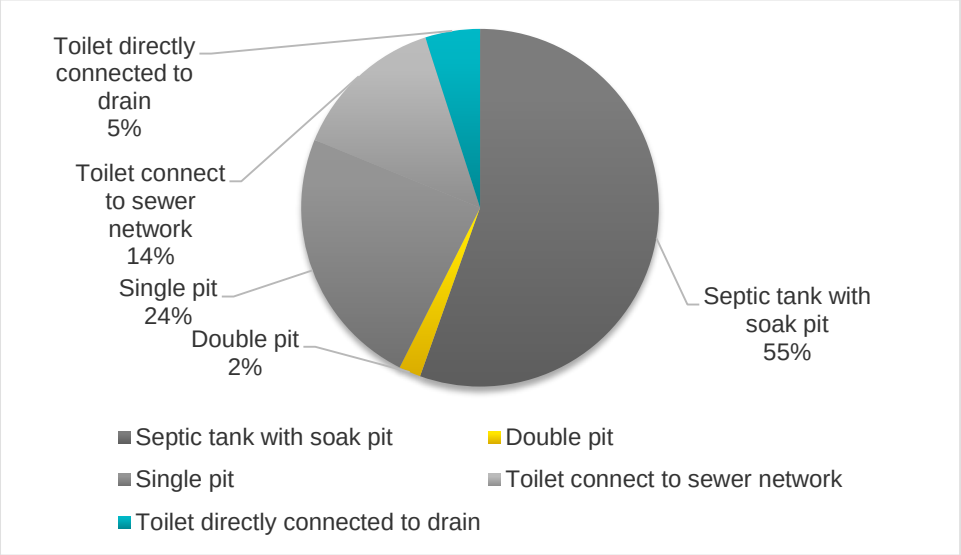
Figure 7-3: -Defecation practice by households



Among 322 households using toilet, 56% had septic tanks and 26% had pit latrines. 14% of the toilets

were connected to sewer network and 5% toilets were directly connected to drain. Figure 7-4 gives information on disposal from latrine connection

Figure 7-4: -Latrine connection for disposal



7.4.1 Household views towards community/public toilet

Out of 464 households, only 12 households used community toilets. Among these households 10 viewed that there is a separate toilet for male and female, four opined the availability of dustbin for disposal of sanitary pads, two said that there is an availability of hand washing. None of them got free services, eight households paid less than INR 50 and four spent INR 50 to 100 per month. With respect to maintenance of the toilets, four reported that the maintenance was done by the ULB, seven felt that the maintenance was done by the community and one of them felt that there's no agency that is maintaining the community/ public toilets. *While 33% households using community toilets felt that the toilets were clean and well maintained, the remaining felt that the cleanliness and maintenance done was average. However, most of them perceived that there is a scope of improvement in maintaining the toilets and improve security situation at the facilities.*

7.4.2 Open defecation scenario

Out of 142 households which practicing open defecation, 99% of them did not have individual household latrines nor had access to community/public toilets. Among the households practicing OD, when asked about problems associated with OD, 92% perceived that during OD there is lack of safety for girls and women, 80% felt that inconvenience in terms of time (before dawn and after dusk), and 55% viewed maintaining privacy was a major challenge associated with OD.

Table 7-2: -Open defecation scenario

Open defecation scenario	N	%
Reason for practicing (N=142)		
Lack of household larine	109	77
Lack of access to PT/CT	32	22
Habit	1	1
Perceived problem associated with OD		
Lack privacy **(N=142)**	78	55
Lack of safety for girl and women **(N=142)**	130	92
Lack of dignity **(N=142)**	29	20
Inconvenience in terms of time **(N=142)**	125	80

Open defecation scenario	N	%
Inconvenience in terms of distance **(N=142)**	49	35
Infections and diseases **(N=142)**	61	43
Willing for construction of individual household latrine (N=142)	100	70
Reasons for not willing to construction of individual household latrine (n=42)		
Lack of fund	24	57
Lack of space	20	43
Willing for individual superstructure with pit/septic tank (N=142)	42	30
Will be interested for use of community/public toilet (N=142)	125	88
Perceived reasons for not willing to use community/public toilet		
Not hygienic **(N=17)**	11	65
No water facility **(N=17)**	11	65
Unsafe/insecure **(N=17)**	0	0
Inconvenience **(N=17)**	2	12
Not willing to share with others **(N=17)**	1	6
Willing to pay for using community/public toilet (N=142)	15	11
Willing to community level management of community/public toilet (N=142)	98	69
Number of household practice OD in spite of having latrine facility (N=310)	15	5
Reason for practice OD in spite of having latrine facility (N=15)		
Lack of water facility	8	54
Small septic tank or pit	2	13
In order to avoid frequency of cleaning	2	13
Cultural preference	3	20

Among the OD households, 70% were willing for construction of individual household latrine. The remaining (*30%) were not willing to construct individual latrines because of lack of funds (57%), which emphasizes the need for support on IHHL construction under SBM. 43% had lack of space, which signifies the need for construction of PT/CT or hybrid toilet*. Around 88% of the households practicing OD were interested to use community toilet, however, only 11% of the households were interested for paying money for use of the CT but around 69% agreed for community level management of CT. *About 5% of the households in spite of having latrines practiced OD, mostly because of lack of availability of water (54%), small septic tank (13%), in order to avoid frequent cleaning (13%) of tank/pit and remaining 20% prefer to defecate outside.*

7.4.3 Septic tank/pit status of the households

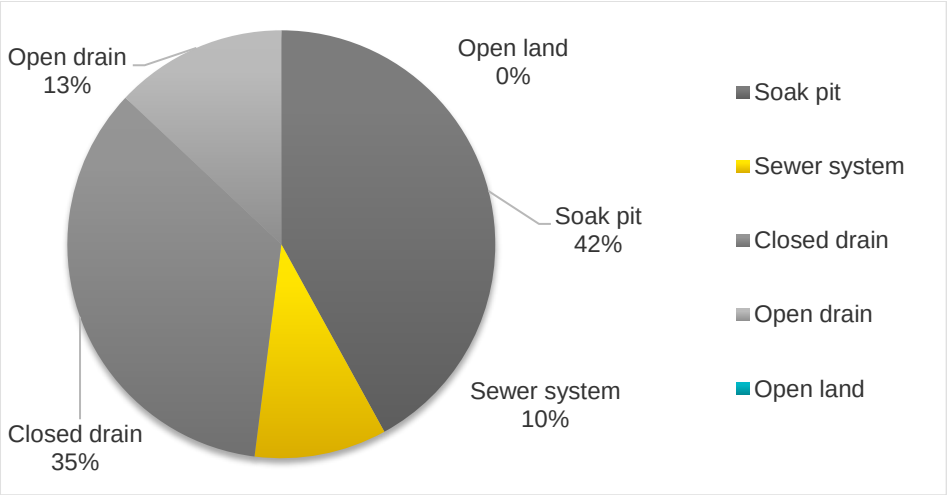
Total 262 households had septic tanks/pits. About 37% of the septic tanks/pits were located inside the house. Out of 164 septic tanks/pits located outside of the house 80% were in front side and 20% were located in back side of the house. About 54% of the septic tank/pits were rectangular in shape. Around 97% of the households sought advice from mason/contractor for designing and construction of septic tank/pits, *only 3% sought advice from ULB officials; which indicates the capacity building training among mason/contractor on standard guideline for construction of household latrine*. Only 3% household checked ground water level during construction of septic tank/pits. About 79% of the septic tanks were lined.

Table 7-3: -Description of septic tanks/pits

Description of septic tank/pit	n	%
Location (N=262)		
Inside the house	98	37
Outside the house (n=164)	164	63
Front side of the house	132	80
Back side of the house	32	20
Shape (N=262)		
Rectangular	142	54
Circular	120	46
Seek advice for designing and construction (N=262)		
Mason/ Contractor	254	97
Municipality officials	8	3
NGO/Neighbor/Relative/Friend	0	0
Ground water level checked before construction (N=262)	8	3
Type of the lining (N=262)		
Lined	208	79
Non-lined	54	21
Gray water connection to septic tank/pit (N=262)		
Kitchen water/washing/bating water	3	1
Surface/roof water	0	0
Size (N=262)		
Breadth in ft., Average (range)	5 (3 – 10)	
Length in ft., Average (range)	7 (3 – 36)	
Depth in ft., Average (range)	8 (3 – 56)	

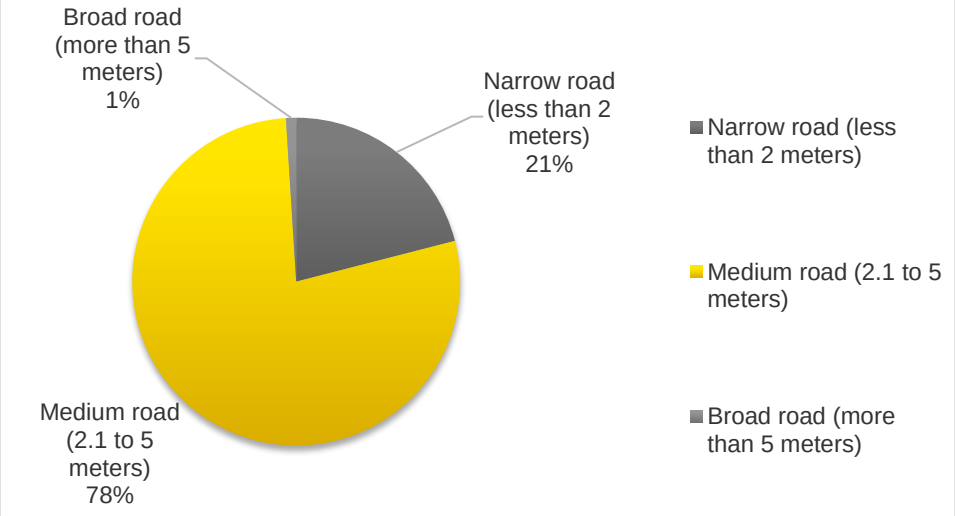
Out of 262 septic tanks/pits, 42% were connected to soak pit, 10% sewer system and remaining 48% to drain. Figure 7-5 details the outfall connection.

Figure 7-5: -Outfall connection of septic tanks/pits



From road accessibility perspective, 21% household had narrow road (less than 2 meters) and 78% households connected with medium road (2.1 to 5 meters) as described in Figure 7-6Figure 7-7

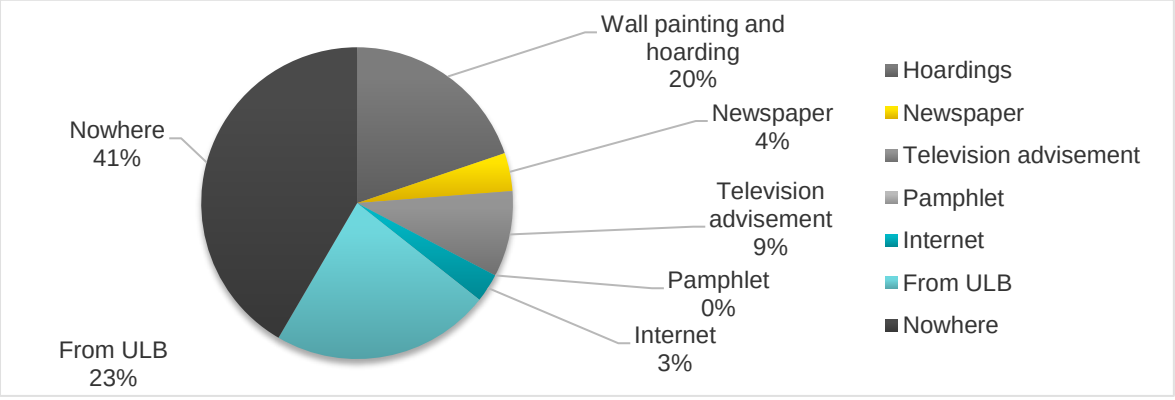
Figure 7-6: - Road accessibility to households having septic tanks/pits



7.4.4 Septic Tank emptying practice

The key source of information regarding cesspool operation was ULBs (23%), wall painting and hoardings (20%), and television advisement (9%). *About 41% of the households were unaware about cesspool operators.* Figure 7-7Figure 7-7 presents the detail source of information.

Figure 7-7: -Source of information regarding cesspool operations



Out of 262 households having septic tanks or pits, 58% preferred ULB as the service provider, 1% preferred private providers, 3% preferred local laborers or self-cleaning, and 38% had not yet decided the service providers. About 72% contacted government cesspool for emptying*, however, 2% communicated with manual laborers.* Out of 262 households, only 57% (n=149) received the services. *About 56% household cleaning frequency was more than 24 months.* Around 96% (n=143) households did not face any barriers during cleaning, however, only 4% households faced barriers related to breaking of floor tiles/manholes and difficulty to locate the septic tanks. Above 83% households were satisfied in emptying, transportation and disposal.

Table 7-4 presents the detail of septic tank emptying practices. Out of 149 households 82% (n=121) received the services from Govt. cesspool providers, 9% (n=14) from private cesspool providers and remaining 9% resorted to non-mechanised cleaning. Figure 7.6 presents the description of the operators for septic tank cleaning. Around 14% households paid less than INR 1000, 40% spent INR 1,000 to 1,500, and 46% spent more than INR 2,000 INR for emptying the septic tank.

Figure 7-8: -Septic tank emptying services received

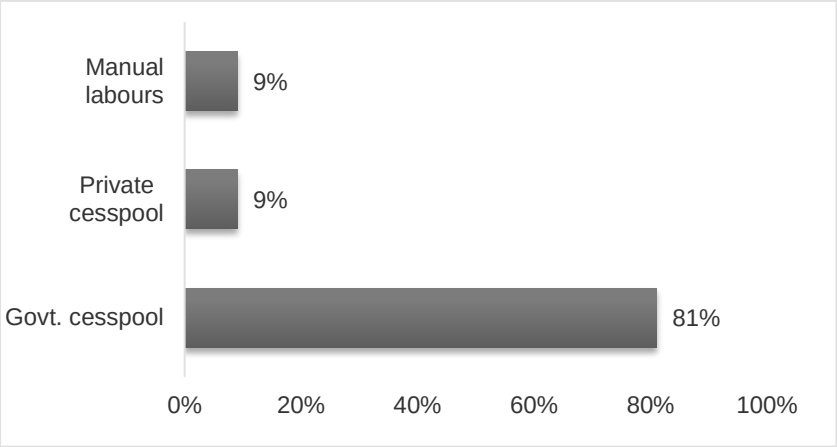


Table 7-4: -Septic tank emptying practice

Septic tank empty practice (N=262)	n	%
Preferred service provider (N=262)		
Municipality	153	58
Private	3	1
Local labor	2	1
Self	4	2
Not yet decided	100	38
Contacting for emptying (N=262)		
Govt. cesspool	189	72
Private cesspool	14	5
Manual labors	4	2
Not yet communicated	55	21
Cleaning frequency of septic tank (N=262)		
Not yet clean	113	43
Cleaned (N=149)	149	57
6 months	6	4

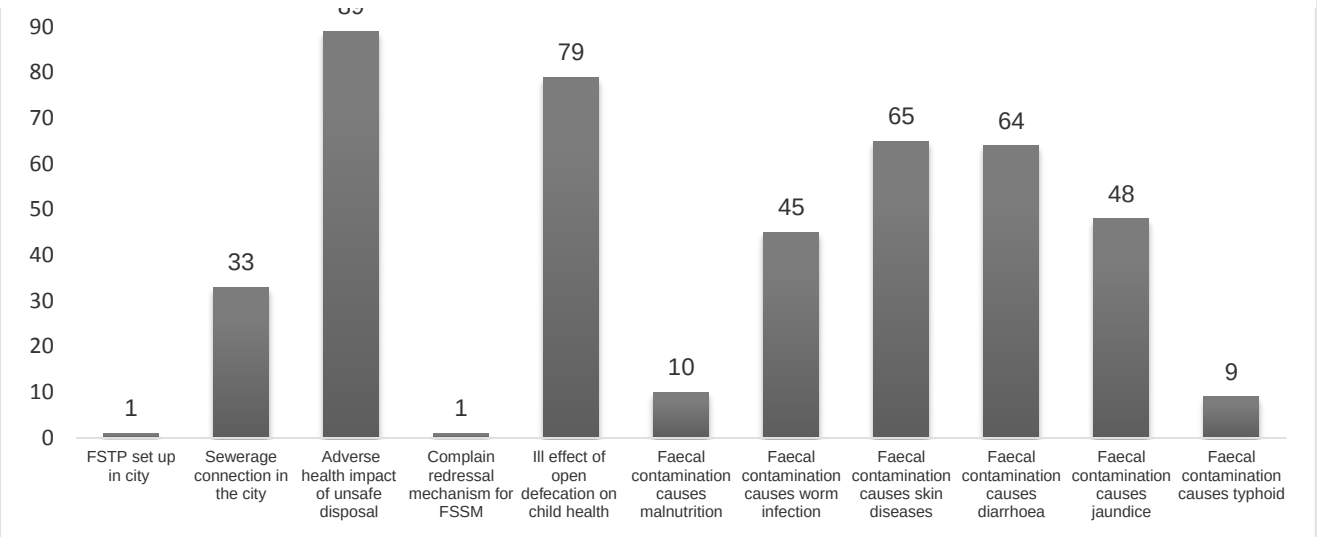
Septic tank empty practice (N=262)	n	%
6 to 12 months	16	11
12 to 24 months	43	29
24 to 36 months	42	28
More than 36 months	42	28
Amount spent for emptying process (N=149)		
No cost	4	3
500 to 1000 INR	17	11
1001 to 1500 INR	59	40
1501 to 2000 INR	15	10
2001 to 3000 INR	45	30
More than 3000 INR	9	6
Barriers in emptying (N=149)		
Access of cesspool truck to house	0	0
Breaking floor tiles/manholes	5	3
Difficult to locate	1	1
No barriers	143	96
Satisfied in emptying, transportation and disposal (N=149)	123	83

7.4.5 Awareness on environmental and health impact of sludge disposal

Out of 464 households, only 20% (n=94) households were aware on environmental and health impact of sludge disposal. Out of 94 households, those who were aware on disposal of collected sludge, 48% (n=45) viewed that the collected sludge was disposed at drain/canal, and 31% perceived that the disposal happens at agricultural land; however 22% reported that it was directly thrown into the river.

Only 2% (n=9) households' family members suffered from diarrhea and only one family member suffered from jaundice during last three months from the survey. Figure 7-9 shows that 89% (n=413) were aware on adverse health impact of unsafe disposal, 79% (n=366) on ill effect of open defecation on child health, 64% on fecal contamination leading to diarrhea, 45% on fecal contamination causes worm infection. Only 1% were aware about SeTP being set up in the city.

Figure 7-9: -Awareness on environmental and health impact of sludge disposal



7.5 Status of community engagement in sanitation activities

4% of the households reported that Mahila Arogya Samiti and 2% reported that Self Help Groups were creating awareness on sanitation. Table 7-5 details of community engagement is provided.

Table 7-5: -Community engagement

Community engagement in sanitation	n	%
Community group create awareness on sanitation (N=464)		
Mahila Arogya Samiti	19	4
Self Help Group	11	2
Ward Kalyana Samiti	3	1
Youth club	5	1
Pooja committee	6	1
Sanitation related issues discussed during community engagement (N=464)		
Children and women health	33	7
Fecal sludge and septage management	0	0
Promoting use of public and community toilets	1	1
Other sanitation related issue	0	0

8 Key issues and action plan

The rapid assessment carried out household surveys, in-depth interviews with key ULB and non-ULB departments and focus group discussions with relevant stakeholders on sanitation and FSSM at the city level. This helped in the identification of key issues, concerns and gaps on infrastructure, operations, capacity building and behavior change and communication. This chapter summarizes the key issues and identified next steps. Subsequent to identification of these aspects, an implementation plan shall be prepared to ensure effective delivery of interventions for each of the cities.

Inputs from the following stakeholder has been taken and their views has been outlined in the section below:

- Mayor
- Deputy Mayor
- Municipal Commissioner
- District Collector
- Financial Officer
- Deputy Commissioner & SBM nodal officer
- Sanitary Inspector
- Corporator
- Households
- Project Director, District Urban Development Authority (DUDA)
- Executive Engineer, Public Health Engineer Organization (PHEO)
- Regional Officer, Pollution Control Board
- City Health Officer
- Chief District Medical Officer
- Project Engineer, Odisha Water Supply and Sewerage Board (OWSSB)
- City Engineer
- District Social Welfare Organization
- Community based organizations
- Masons and
- Cesspool operator

In the following table, we are describing a summary of key findings, issues, references and required interventions.

S.No.	Key issue/observation	Supporting data	Proposed interventions / Action point/	Thrust area
1	Insanitary toilets	► The Census 2011 shows that about 2% of the households have their toilet outlets to open drains[40]. ► Basis the household survey, we found out that out of 464 HHs, 5% has insanitary toilets and 13% of HH connected to septic tanks have outfall directly into open drains. ► During the consultations (FGDs, IDIs) with the ULB and non-ULB officials and CBOs, insanitary toilet was highlighted as the key issue for sanitation in Cuttack.	► A communication campaign under SBM could be initiated to motivate people to convert insanitary toilets to sanitary ones using incentive provided under SBM either through building septic tanks/ pits or connecting to proposed sewer lines ► Ward councilors/ corporators need to be sensitized on this to convey to households in their respective wards ► CBOs such as MAS, SHGs and Ward Sanitation Committees should be oriented to spread awareness among households in their respective wards ► Information on onsite sanitation system (OSS) solutions available in market which are economical and quicker to implement to be disseminated to citizens	**IEC/BCC**
			► A regulatory set-up can be proposed for ensuring effective implementation of the issue. Amendments could be made in ULB building bye-law to include provision of scientific septic tank as part of building approval process.	**Governance reforms**
			► ULB should find out the space for constructing more CT/PT and its accessibility to HH in slum area.	**Infrastructure(infra and O&M)**
2	Unscientific septic tanks	► As per the HH survey, out of 262 HH with septic tanks, 21% are non-lined which can lead to seepage of sewage into groundwater. ► As per SLIP 2015, there are 182 pumping and open wells and 3,371 hand pumps and tube-wells. Further, 55.7% of the city population depends on groundwater for water supply.	► Further capacity building of masons on design of scientific septic is desired ► Knowledge on piping from bathrooms to septic tanks. Construction methodology for larger size septic tanks for building with high occupancy ► Building capacity of CBOs such as MAS, SHGs and Ward Sanitation Committees to spread awareness on importance of scientific onsite containment system among households in their respective wards.	**Capacity building**

[40] *Toilets which directly dispose into drains and/or require night soil to be removed by human or animal are considered as Insanitary*

S.No.	Key issue/observation	Supporting data	Proposed interventions / Action point/	Thrust area
		► 97% of HHs indicated during primary survey that they rely on mason for designing and construction of septic tank/pit. However, as per discussions with masons in FGD, HHs take a final decision on this aspect. Even if the masons highlights the importance of including baffle wall/ lining, HHs choose to ignore it for saving costs. ► As per discussions with ULB officials and CBO, the households are not aware of adverse effects of unsafe containment ► As per conventional safe practice, minimum distance between groundwater source and containment unit (septic tank/ pit latrine) should be 20m. While the household study revealed the average distance between groundwater source and onsite containment system as 12m. Hence this could be a possible reason for groundwater contamination through seepage of sewage from unscientific septic tanks.	► A regulatory set-up can be proposed for ensuring effective implementation of the Odisha septage management guidelines which mandates ULBs to make it compulsory for all households to construct septic tanks. ► Amendments could be made in ULB building bye-law to include provision of scientific septic tank as part of building approval process.	**Governance reforms**
			► Dos and Don'ts of building septic tanks ► Importance of schedule desludging and how to do it ► How treatment of septage and sludge before disposal has positive impact on health and environment ► OSS solutions available in market which are economical and quicker to implement and can be retrofitted to be disseminated to citizens	**IEC/BCC**
3	Practice of open defecation	► As per primary survey, 99% of 142 HHs surveyed who defecate in open do not have IHHL and lack access to other toilets facilities	► Construction of IHHL, CT/PT and hand pump/tube wells/ bore wells ► Facilitating the process of building IHHL along with the components for applicants so that they are not demotivated. The process need to be implemented at an accelerated pace.	**Infra-structure (infra and O&M)**
		► HH survey highlighted that the households having toilets practice open defecation because of following reasons: 1. Lack of water facilities (54%) 2. Fearing that their small septic tanks would fill up quickly (13%) 3. Minimize frequency of cleaning (13%) 4. Habit/ Culture (20%)	► Engaging with CBOs to motivate people to build and use IHHL and through CT/PT especially through sustained inter personal counselling for a targeted households who do not have access to toilets. ► Also motivating people to use CT/PT, who have habit of defecating in open. through signboards and by educating them about negative impact on health	**IEC/BCC**

S.No.	Key issue/observation	Supporting data	Proposed interventions / Action point/	Thrust area
4	Low usage of CT/PT	► The household survey highlighted two primary reasons for not using CT/PT - Unhygienic toilet (65%) and lack of water in facility (65%) ► 8 out of existing 26 PT and 17 out of existing 34 CT are defunct presently	► Engaging community in taking ownership CT/ PT while involving a private firm for management. ► Innovative models for O&M of these shared toilets to be explored while learning from practices adopted in other cities. ► Plan for refurbishment of the defunct shared toilets through SBM and other avenues ► Develop sustainable ways to ensure 24X7 availability of water and electricity	**Infra (infra and O&M)**
5	Lack of space for IHHL	► As per the household survey, 43% households feel that there is lack of space for constructing IHHL ► As per discussions with ULB officers, there is lack of availability on land and city has space constraints resulting in difficulty in construction of IHHL	► Greater focus on CT, PT availability and better O&M of the available and upcoming facilities ► Explore sustainable O&M models including community led, private operators etc. ► Under the Prime Minister Awas Yojna (PMAY), the government has adopted AWASS Yojana in the Odisha where urban poor and slums dwellers have been given opportunities to avail decent housing units for their stay in cities. Under the affordable housing schemes and slum rehabilitation through PPP models, a large number of housing units are being constructed where toilets are also constructed along with the containment units which need to be constructed as per FSSM requirements. Particularly, the beneficiary led housing schemes where supports from the PMAY is extended could be considered on how the toilets can be built and retrofitted if needed as it gives scope for the same. New housing schemes also give chance to regulate sanitations as per the laws and also ensure roads and other complexes for cesspool vehicles etc. Directorate of Town Planning along with the ULBs need to coordinate the programmes.	**Infra (infra and O&M)**
6	Challenges in emptying septic tanks due to narrow lanes	► As per household survey, 38%HHs in slum and 24% HH in non-slum have road width less than 2m. This leaves them inaccessible to majority of existing fleet of city with ULB and private operator (except a 1,500	► Size of cesspool vehicles should be planned keeping in mind the narrow roads of Cuttack and explore alternative technologies for emptying during procurement. Solutions of mechanized emptying such as Vacutug to be explored along with manually operated mechanized in slums with extremely narrow lanes.	**Infra (infra and O&M)**

S.No.	Key issue/observation	Supporting data	Proposed interventions / Action point/	Thrust area
	and low usage of mechanized service	liter vehicle with private operator) is having minimum width of 2.2m. ► ULB and other officials and cesspool operators have also highlighted this issue. ► Lack of access to mechanized emptying vehicles indirectly creates scope for non-mechanized manual work ► 41% HHs have reported that they aren't aware of any communication medium through which they can access information on mechanized emptying service providers	► Need for transfer stations[41] which can help use of vehicles of different sizes to be explored to optimize the cost of transport which could help reduce price of service delivery. ► Operating models that can help makes payment for cesspool emptying affordable for urban poor to be devised	
			► Strengthened monitoring at community level by building capacity of MAS, Ward Sanitation committee, CSTF and SHG to promote usage of mechanized emptying	**Capacity building**
			► Communicate the harmful impact of non-mechanized emptying to relevant stakeholders - citizens, leaders, community groups, sanitation workers and ULB staff ► Identify ways to increase penetration of information to citizens on mechanized emptying service providers	**IEC/BCC**
7	Disposal of fecal sludge	► Cuttack city has a designated fecal waste dumping site but it is not being used by operators due to distance. Operators mention that distance increase their operating cost and also reduces the no. of trips they can make per day as it takes longer to travel to the dumping site. ► There is no monitoring mechanism in place to track dumping of fecal waste. ► Cesspool emptying truck operators are not governed by any regulation for their operation	► A pilot project using GPS technology tracking could be initiated in select wards. ULB vehicles can be mounted with GPS devices which track the movement of vehicles. Considering that site for temporary disposal is being identified, GPS tracking would help map the trips made to this site. ► Deep row entrenchment method will be carried out for safe disposal of septage temporarily	**Infra-structure (infra and O&M)**
			► Strengthened monitoring at community level by building capacity of MAS, Ward Sanitation committee, CSTF and SHG to promote disposal of waste at designated sites	**Capacity building**
			► Communicate the harmful impact of indiscriminate dumping non-mechanized emptying to relevant stakeholders - citizens, leaders, community groups, sanitation workers and ULB staff	**IEC/BCC**

[41] Transfer stations are intermediate points established to facilitate transfer of fecal sludge from smaller sized vehicles to larger ones to help efficient management of waste. This approach is also used for Solid Waste Management.

S.No.	Key issue/observation	Supporting data	Proposed interventions / Action point/	Thrust area
			► Regulation at ULB level to enforce disposal of fecal waste at only designated site	**Governance reform**
8	Re-use of treated waste	► Potential for re-use of treated waste water and dried manure generated post treatment is not yet explored	► Implementation strategy and plan to be devised based on learnings from Project Nirmal and interventions in other places. ► Market for manure and treated water to be explored and included as part of the O&M contract to be defined for SeTP operator	**Infra-structure (infra and O&M)**
9	Recurring incidence of water borne diseases	► As per discussions with ULB officers, health officers and CBO's, jaundice, diarrhea and amoebiasis are recurring diseases. ► The survey suggested that presence of unlined septic tanks (21%) and average distance between septic tank and water source at 12m is also a probable cause of water borne diseases.	► Communication messages for CBOs to link the adverse effect of poor sanitation on health Inform citizens about options available for retrofitting existing unscientific septic tank	**IEC/BCC**
			► Strengthening staff for conducting water sample checking during summers especially for areas prone to water borne diseases	**Government reforms**
10	Attitude of people towards sanitation and hygiene	► Citizen's apathy and lack of participation and ownership for sanitation and hygiene was reported in FGD and IDI. People openly admit practicing open defecation without any apparent embarrassment or shame. ► As per FGD's with MAS, their discussions during community meetings is limited to solid waste management, hygiene and construction of toilets. Even household survey led to the same observation. Over 4% of the households reported that MAS and 2% of the households reported that SHGs were	► Building capacity of CBOs such as MAS, SHGs and Ward Sanitation Committees to spread awareness on importance of sanitation, hygiene and FSSM among households in their respective wards.	**Capacity building**
			► For ULB officials (especially Community Organizers, Sanitary Inspectors), CBOs on FSSM and on the key messages to be conveyed to community	**IEC/BCC**

S.No.	Key issue/observation	Supporting data	Proposed interventions / Action point/	Thrust area
		creating awareness on sanitation. However, these discussions are only limited to use of PT and CT.	► Government has to find out space for putting up more numbers of bins for collecting solid waste and properly covering the drains with slabs.	**Infrastructure**
11	ULB and private cesspool operations work in silos	► As per discussions with cesspool operators in Cuttack, the following issues were highlighted 1. Private cesspool operators have basic knowledge for adherence to safety and hygiene standards for emptying but do not practice it. They also do not keep the essential personal protective equipment (PPE). 2. There is lack of awareness on right operating practices for desludging ► Operations from private operator is not regulated or monitoring by ULB formally	► Empanelment of private operators with ULB to ensure adherence to safety and social aspects including usage of personal protective equipment ► Regulation required at ULB level to enforce adherence to Odisha State FSM Operational guidelines from operators ► RTO and transport department's support may be needed in improving the emptying and transportation practices.	**Governance reform**
			► Comprehensive ULB dissemination plan should be drafted to help understand the role they play in cesspool operation	**IEC/BCC**
12	Gaps in stakeholder engagement, coordination and institutional framework	► OWSSB constructing SeTPs and will take care of O&M until the facility is handed over to the ULB. Further clarity needs be brought in for - a. Revenue generation from SeTPs b. Cost recovery from reuse of treated resources c. Tariff policy d. Transition plan and management after 5 years ► There is a need of integrated approach to FSSM. Multiple department work are currently working in silos.	► Operating model to be formulated for sustainable operation of SeTP through various models including cost recovery through sale of dried and treated sludge and treated waste water. ► Inputs from this model to be incorporated as part of O&M contract for private agency ► Potential integrated FSSM contract i.e. cesspool operation and SeTP operation to be checked.	**Infra (infra and O&M)**

S.No.	Key issue/observation	Supporting data	Proposed interventions / Action point/	Thrust area
		► CMC does not have environmental engineering sections to comply with standards in public health and environment. ► Low level of citizen participation due to lack of engagement and recognition in the city governance	► Capacitate target audience through training in concept and programme design to increase their involvement ► Exposure visits to learn leading practices ► Strengthen city level groups by building capacity of MAS, WSC, CSTF and SHG to promote and drive citizen engagement Assign each ward level sanitation promotion to the key institutions in the city such as Ravenshaw University, SCB medical college, High Bar associations etc.	**Capacity building**
			► Strengthening district administration through participatory planning in city levels for integration with district planning and effectively escalate the issues to state levels through planning structures ► Restructuring the engineering department with added focus on environmental engineering ► Focus should be on zone and ward level interventions – a coordinated programme and overall M&E at broader level ► Formalization of community level institutions such as CSTF, WSC in city system ► Service level scores in each wards including sanitation and its integration with CSPs	**Governance reforms**
13.	Lack of funds & spending capacity at the ULB level	► One of the key issues which emerged during the IDIs and FGDs with ULB officials and council members is "the lack of funds and human resources" at the ULB level as a major bottleneck to undertake need based innovative sanitation and infrastructure programme. However, it is also observed that spending capacity of the ULB is also a key area of concern. Even though the own source revenue base has been decreased	► Specialised urban cadre staff for mobilizing funds as mobilization capacity for funds is certainly constrained by the lack of qualified and skilled human resource.	**Capacity Building**
			► The ULB should tap funding from the DMF and CSR funds.	**Governance Reforms**

S.No.	Key issue/observation	Supporting data	Proposed interventions / Action point/	Thrust area
		or taken away by the state and central governments (first Octroi and now GST), alternative sources of funds have been created. Particularly, after the 14 Central Finance Commission (CFC) and Fourth State Finance Commission (SFC), the ULBs of Odisha have good amount of devolution funds available to be spent on the developmental activities but remain unspent as found in recent cluster level reviews conducted by the H&UDD. ► In the devolution front, the ULBs are expected to get INR 5379 crore under the 4th SFC and INR 1772 crore under the 14 CFC during (2015-2020). Secondly, the government through various channels has been raising funds form the markets borrowing for the ULBs for basic services and infrastructures. The government has also adopted PPP models of different types to undertake projects to improve infrastructure for basic services. ► Most cities are found not very successful in property assessments and the properties assessed have not come under the tax nets. Thus, the city loses funds.		

Rapid state assessment has mapped the situation on ground and identified key gaps and action points across the following thrust areas.

- Infrastructure (infra and O&M)
- Capacity building
- IEC/BCC activities
- Governance and reforms

The key to sustaining urban sanitation and FSSM activities is to implement, operationalize and make effective the action points drafted in the strategy. A detailed city-wise implementation roll-out plan would follow this situational assessment report. This would also include prioritization of the interventions, estimated timeline, and resource requirements for implementation of key interventions identified.

9 Annexures

9.1 Annexure 1 – Questionnaire for Household Survey

Study on on-site sanitation system & practices with focus on fecal sludge &septage management
Survey questionnaire

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Form ID:
ସୂଚନାପତ୍ର

<u>ଅନୁସନ୍ଧାନର ଅଭିପ୍ରାୟ:</u> ମୁଁ ହାଉସିଂ ଆଣ୍ଡ ଅର୍ବାନ ଡେଭେଲପମେନ୍ଟ ଡିପାର୍ଟମେନ୍ଟ ରୁ ଆପଣଙ୍କ ଅଞ୍ଚଳକୁ ଏକ ଅନୁସନ୍ଧାନ କରିବା ପାଇଁ ଆସିଅଛି । ଏହି ଅନୁସନ୍ଧାନର ଉଦ୍ଦେଶ୍ୟ ହେଉଛି, "ସହରାଞ୍ଚଳ ର ପରିମଳ ବ୍ୟବସ୍ଥା ଓ ପାଇଖାନା ସଫା ପରିଚାଳନା ବିଷୟରେ ସମୀକ୍ଷା କରିବା" । ଏହି ଅନୁସନ୍ଧାନରେ ହେବାକୁ ଥିବା ମୁଖ୍ୟ ଆଲୋଚନା ଓ କଥୋପକଥନରେ ଆପଣଙ୍କୁ ଭାଗ ନେବା ପାଇଁ ଅନୁରୋଧ। ଆପଣଙ୍କ ସହଯୋଗ, ଆପଣଙ୍କ ସହରକୁ ନିର୍ମଳ ରଖିବାରେ ସହାୟକ ହେବ। ଏହି ଅନୁସନ୍ଧାନରେ, ଆପଣଙ୍କ ଅଂଶଗ୍ରହଣ ସମ୍ପୂର୍ଣ୍ଣ ସ୍ୱେଚ୍ଛାକୃତ ଅଟେ। ପୂର୍ବରୁ ଇଚ୍ଛୁକ ଥିବା ସତ୍ତ୍ୱେ ଯେ କୌଣସି ସମୟରେ ଯଦି ଆପଣ ଚାହିଁବେ, ତାହା ହେଲେ ଆପଣଙ୍କ ମତ ପରିବର୍ତ୍ତନ କରି ଆଲୋଚନାରୁ ଓହରିଯାଇପାରିବେ। ଏହି ଆଲୋଚନା ଆପଣଙ୍କ ବୃତ୍ତି ବା ଧନ୍ଦାରେ କୌଣସି ପ୍ରଭାବ ପକାଇବ ନାହିଁ। ଯଦି ଆଲୋଚନାରେ କିଛି ବ୍ୟକ୍ତିଗତ କିମ୍ବା ସଂବେଦନଶୀଳ ପ୍ରଶ୍ନ ଥିବାର ଆପଣ ଅନୁଭବ କରନ୍ତି କିମ୍ବା କୌଣସି ପ୍ରଶ୍ନ ଆପଣଙ୍କୁ ଅଡୁଆ ଲାଗେ ତେବେ,ଆପଣ ତାହାର ଉତ୍ତର ନ ଦେଇପାରନ୍ତି ବା ସେଥିପାଇଁ ଆପଣ ଆଲୋଚନରୁ ଯେ କୌଣସି ସମୟରେ ଓହରିଯାଇପାରନ୍ତି ଏବଂ ଆପଣଙ୍କ ଏହି ନିଷ୍ପତ୍ତିକୁ ସମ୍ମାନ ଜଣାଇ ଆପଣଙ୍କୁ କୌଣସି କାରଣ ପଚରାଯିବ ନାହିଁ। ଏହି ଆଲୋଚନା ରେ ଭାଗ ନେଲେ ଆପଣଙ୍କୁ କୌଣସି ପ୍ରକାର ସିଧାସଳଖ ଲାଭ ମିଳିବ ନାହିଁ। ଏହି ଅନୁସନ୍ଧାନର କଥୋପକଥନକୁ ଡିଜିଟାଲ ରେକର୍ଡିଂ ପାଇଁ ଅନୁମତି ମାଗୁଛୁ। ଏହି ଅନୁସନ୍ଧାନରେ ଆପଣଙ୍କ ନାମ ଏବଂ ଆପଣ ଦେଇଥିବା ସମସ୍ତ ତଥ୍ୟ ଗୋପନୀୟ ରଖାଯିବ। ଅନୁସନ୍ଧାନରେ ଜଡିତ ଥିବା କର୍ମଚାରୀଙ୍କ ବ୍ୟତୀତ ଏହି ତଥ୍ୟ ଆଉ କାହାରିକୁ ଜଣାଯିବ ନାହିଁ। ଯଦି ଆପଣଙ୍କର ଏହି ଅନୁସନ୍ଧାନ ସମ୍ବନ୍ଧୀୟ କିଛି ଜିଜ୍ଞାସା/ସନ୍ଦେହ ଅଛି,ତାହେଲେ ଆପଣ ଡିସଟ୍ରିକ୍ଟ କୋଡିନେଟୋର ଙ୍କ ସହ ଯୋଗାଯୋଗ କରନ୍ତୁ।

<u>ସମ୍ମତି / ଅନୁମତି ପ୍ରମାଣପତ୍ର</u>

ଅଂଶଗ୍ରହଣକାରୀ/ ଅଭିଭାବକଙ୍କର ମନ୍ତବ୍ୟ

ମୋତେ ଏହି ଅନୁସନ୍ଧାନର ଆଲୋଚନାରେ ଭାଗ ନେବା ପାଇଁ ଅନୁରୋଧ କରାଯାଇଛି। ପୂର୍ବରୁ ସୂଚନା ପତ୍ରରେ ଥିବା ତଥ୍ୟକୁ ମୁଁ ପଢିଛି ଅବା ମୋତେ ପଢି ଶୁଣାଇ ଦିଆଯାଇଛି। ସୂଚନା ପତ୍ରରେ ଥିବା ବିଷୟ ବସ୍ତୁ ଏବଂ ସେହି ସମ୍ବନ୍ଧୀୟ ପ୍ରଶ୍ନ ପଚାରିବାର ସୁଯୋଗ ମୋତେ ଦିଆଯାଇଛି ଓ ଏହାର ସନ୍ତୋଷ ଜନକ ଉତ୍ତର ମୋତେ ମିଳିଛି । ମୁଁ ସ୍ୱେଚ୍ଛାକୃତ ଭାବରେ, ଏହି ଅନୁସନ୍ଧାନରେ ଭାଗ ନେବା ପାଇଁ ନିଜର ସମ୍ମତି ଜଣାଉଛି।
ଅଂଶଗ୍ରହଣକାରୀ ନାମ :_____

ଅଂଶଗ୍ରହଣକାରିଙ୍କ ଦସ୍ତଖତ_____

ଯଦି ଅଶିକ୍ଷିତ: ମୁଁ ଏଠାରେ ସାକ୍ଷ୍ୟ ଦେଉଅଛି ଯେ, ଅଂଶଗ୍ରହଣକାରୀ ଜଣକ ସୂଚନା ପତ୍ରକୁ ସଠିକ ଭାବେ ପଢି ବୁଝିଛନ୍ତି ଓ ତାଙ୍କୁ ପ୍ରଶ୍ନ ପଚାରିବାର ସୁଯୋଗ ମିଳିଛି ତଥା ସେଥିପାଇଁ ସେ ଆଲୋଚନା ରେ ଭାଗ ନେବା ପାଇଁ ସ୍ୱାଧୀନ ଭାବେ ସମ୍ମତି ଜଣାଇଛନ୍ତି ।
ସାକ୍ଷ୍ୟକାରୀଙ୍କ ନାମ _____

ଅଂଶଗ୍ରହଣକାରିଙ୍କ/ ଅଭିଭାବକଙ୍କର ଟିପ ଚିହ୍ନ

ସାକ୍ଷ୍ୟକାରୀଙ୍କ ଦସ୍ତଖତ _____

ତାରିଖ (ଦିନ / ମାସ /ବର୍ଷ) _____

<u>ଅନୁସନ୍ଧାନ / ସମ୍ମତି ନେଉଥିବା ବ୍ୟକ୍ତିଙ୍କ ଘୋଷଣା:</u> ମୁଁ ସଠିକ ଭାବରେ ସମ୍ଭାବ୍ୟ ଅଂଶଗ୍ରହଣକାରିଙ୍କୁ ସୂଚନା ପତ୍ରଟି ପଢିବାର ସୁଯୋଗ ଦେଇଛି/ପଢି ଶୁଣେଇଛି ଓ ମୋର ଶ୍ରେଷ୍ଠ ଦକ୍ଷତା ଅନୁସାରେ ବିଶ୍ୱାସ ରଖିଛି ଯେ, ଅଂଶଗ୍ରହଣକାରୀ ଏହି ଅନୁସନ୍ଧାନର ଉଦ୍ଦେଶ୍ୟ ସମ୍ପୂର୍ଣ୍ଣ ବୁଝିପାରିଛନ୍ତି।ତାଙ୍କୁ ପ୍ରଶ୍ନ ପଚାରିବାକୁ ସୁଯୋଗ ଦିଆଯାଇଥିଲା ଓ ସେହି ସମସ୍ତ ପ୍ରଶ୍ନର ସଠିକ ଉତ୍ତର ଦିଆଯାଇଛି । ଅଂଶଗ୍ରହଣକାରୀ ଜଣଙ୍କୁ ଆଲୋଚନାରେ ଭାଗ ନେବା ପାଇଁ କୌଣସି ବାଧ କରାଯାଇ ନାହିଁ; ସେ ନିଜ ଇଚ୍ଛା ଅନୁସାରେ ଅଂଶଗ୍ରହଣ ପାଇଁ ନିଜର ସମ୍ମତି ପ୍ରଦାନ କରିଛନ୍ତି ।

ଅନୁସନ୍ଧାନକାରିଙ୍କ ଦସ୍ତଖତ_____

ତାରିଖ (ଦିନ / ମାସ /ବର୍ଷ)_____

SECTION A: PRIMARY INFORMATIONକ ବିଭାଗ : ପ୍ରାଥମିକ ସୂଚନା	
Survey area ସର୍ବେକ୍ଷଣ ଅଞ୍ଚଳ *(Fill the Details)(*ସମ୍ପୂର୍ଣ ପୂରଣ କରନ୍ତୁ i. Town: ସହର ii. Ward Number ---ୱାଡ଼ ନମ୍ବର- iii. House No-----ଘର ନମ୍ବର _____ Locality Type: Slum-------, Non slum------- କି ପ୍ରକାର ଅଞ୍ଚଳ : ବସ୍ତି ------ ଅଣ ବସ୍ତି-------- Locality name: ଅଞ୍ଚଳର ନାମ -------- GPS Location Id of Septic Tank---------- ସେପ୍ଟିକ ଟ୍ୟାଙ୍କ ର ଜିପିଏସ କୋଡ଼ Picture of the household/institution/commercial establishment ଘର /ଅନୁଷ୍ଠାନ / ବ୍ୟବସାୟିକ ସଂସ୍ଥା ର ଫଟୋ	Name of the Head of Household/Supervisor of the apartment: ପରିବାରର ମୁଖ୍ୟ ଙ୍କ ନାମ / ଆପାର୍ଟମେଣ୍ଟ ସୁପରଭାଇଜର ଙ୍କ ନାମ 1. Male 2. Female ପୁରୁଷ ମହିଳା Age:(in years)ବୟସ Education: ଶିକ୍ଷା Illiterate, 2. Can sign or read /write without going to formal school, 3. Primary, 4. Upper Primary, 5 . Secondary, 6 . Sr. Secondary, 7. Graduation, 8. P.G &Above) (1-ଅଶିକ୍ଷିତ, 2-ସ୍କୁଲ ନ ଯାଇ ଲେଖି ପଢି ପାରନ୍ତି, 3-ପ୍ରାଥମିକ, 4-ଉଚ ପ୍ରାଥମିକ ,5-ହାଇସ୍କୁଲ , 6-+2 , 7-ଗ୍ରାଜୁଏଟ/+3 ,8-ପି ଜି ଏବଂ ତଦୁର୍ଦ୍ଧ୍ୱ Aadhar Card: Yes/No:If Yes, Number: ଆଧାର ନମ୍ବର-ହଁ ନା : ଯଦି ହଁ ତେବେ ନମ୍ବର- Contact No:ଯୋଗଯୋଗ ନମ୍ବର :
Type of property ପ୍ଲଟ/ସମ୍ପତ୍ତିର ପ୍ରକାର	Residentialଆବାସିକ Institutionalଆନୁଷ୍ଠାନିକ Commercialବ୍ୟବସାୟୀକ Mixedଉଭୟ ବର୍ଗ/ଶ୍ରେଣୀର Residential +Institutionalଆବାସିକ+ ଆନୁଷ୍ଠାନିକ Institutional + Commercial ଆନୁଷ୍ଠାନିକ+ ବ୍ୟବସାୟୀକ Residential + Commercial ଆବାସିକ +ବ୍ୟବସାୟୀକ
Property number as per municipal property tax record ମ୍ୟୁନିସିପାଲିଟି ଟ୍ୟାକ୍ସ ରେକର୍ଡ ଅନୁସାରେ ସମ୍ପତି ର ସଂଖ୍ୟା	Number: ସଂଖ୍ୟା
Mark the House typology (only if 2 is residential) କି ପ୍ରକାର ଘର ତାହା ସୂଚିତ କରନ୍ତୁ (କେବଳ ଯଦି ପ୍ରଶ୍ନ 2 ରେ ଉତ୍ତର ଆବାସିକ)	Stand-alone houseଗୋଟିକିଆ ଘର Multi-story Apartment ଏକାଧିକ ମହଲା ଆପାର୍ଟମେଣ୍ଟ Row house with common shared walls ଗୋଟିଏ କାନ୍ଥରେ ଧାଡିକିଆ ଘର Slum House (Kachha walls) ବସ୍ତି ଘର (ଝାଟିମାଟି କାନ୍ଥ)

	SlumHouse (Pucca walls) ବସ୍ତି ଘର (ପକ୍କା କାନ୍ଥ) Other (please specify) ଅନ୍ୟାନ୍ୟ (ଦର୍ଶାଅ.....)
Ownership Statusof the property ସମ୍ପତ୍ତିର ମାଲିକାନା ସ୍ଥିତି	Owned ନିଜସ୍ୱ Rented ଭଡା Staff quarterକର୍ମଚାରି ବାସଗୃହ On encroached land (non-slum) ଜବର ଦଖଲ ଜମିରେ (ଅଣ ବସ୍ତି ଅଞ୍ଚଳ) On public land (slum)ସରକାରୀ/ସର୍ବସାଧାରଣ ଜମିରେ (ବସ୍ତି) On private land (slum)ବେସରକାରୀ/ଘରୋଇ ଜମି (ବସ୍ତି) Other (please specify) ଅନ୍ୟାନ୍ୟ (ଦୟାକରି ଦର୍ଶାଅ)
In case of apartment, name of the apartment building ଯଦି ଆପାର୍ଟମେଣ୍ଟ ,ତେବେ ଆପାର୍ଟମେଣ୍ଟର ନାମ ଲେଖନ୍ତୁ	Nameନାମ _____
No of blocksବ୍ଲକ ସଂଖ୍ୟା	Numberସଂଖ୍ୟା _____
How many flats are there in this propertyଏହି ଜାଗାରେ କେତୋଟି ଫ୍ଲାଟ ଅଛି	Numberସଂଖ୍ୟା _____
Number of flats that are occupied କେତୋଟି ଫ୍ଲାଟ ଅଧିକୃତ/ଦଖଲରେ ଅଛି	Numberସଂଖ୍ୟା _____
How many households are there on this property?ଏହି ପ୍ଲଟରେ କେତେଜଣ ପରିବାର ଅଛନ୍ତି	Numberସଂଖ୍ୟା _____
How long has your family been staying in this house?*(Not applicable in case of unauthorized slum)* ଏହି ଘରେ ଆପଣଙ୍କ ପରିବାର କେତେଦିନ ହେଲା ରହି ଆସୁଛନ୍ତି ? (ଅଣ ସୀକୃତିପ୍ରାପ୍ତବସ୍ତି ପାଇଁ ଏହା ପ୍ରଯୁଜ୍ୟ ନୁହେଁ)	Numberସଂଖ୍ୟା _____
Select the type of Institution (only if 2 is institutional) ଅନୁଷ୍ଠାନଟି କି ପ୍ରକାର ବାଛନ୍ତୁ (କେବଳ ଯଦି ପ୍ରଶ୍ନ 2 ରେ ଉତ୍ତର ଅନୁଷ୍ଠାନ ଥାଏ)	Hospital/Nursing Homeଡାକ୍ତରଖାନା/ନର୍ସିଙ୍ଗହୋମ School/Collegeସ୍କୁଲ/କଲେଜ Religious Institutionଧାର୍ମିକ ଅନୁଷ୍ଠାନ Government Officeସରକାରୀ ଅଫିସ Other (Please Specify)ଅନ୍ୟାନ୍ୟ (ଦର୍ଶାଅ)
Select the type of commercial (only if 2 is	Industryଶିଳ୍ପ

commercial) ବ୍ୟବସାୟୀକ ସଂସ୍ଥାଟି କି ପ୍ରକାର ବାଛନ୍ତୁ (କେବଳ ଯଦି ପ୍ରଶ୍ନ 2 ରେ ଉତ୍ତର ବ୍ୟବସାୟୀକ ଥାଏ)	Shop/private officeଦୋକାନ/ବେସରକାରୀ ଅଫିସ Hotel/Lodgeହୋଟେଲ/ଲଜ Other (please specify)ଅନ୍ୟାନ୍ୟ (ଦର୍ଶାଅ)

SECTION B: WATERବିଭାଗ-ଖ : ପାଣି

14	Sources of Water for domestic use*(Can mark more than one)* ଘରୋଇ ବ୍ୟବହାର ପାଇଁ ପାଣିର ସ୍ରୋତ (ଏକାଧିକ ସ୍ରୋତ ମାର୍କ କରିପାରିବ)								
	Piped water supply ପାଇପ ଦ୍ୱାରା ପାଣି ଯୋଗାଣ		Public (Free) ସର୍ବସାଧାରଣ (ମାଗଣା)						
	a. Individual HH Connection ଘରେ ନିଜ ର କନେକ୍ସନ	b. Shared HH Connection ଗୋଟିଏ ଘରୋଇ ପାଣି ପାଇପ କନେକସନ କୁ ଏକାଧିକ ପରିବାର ବ୍ୟବହାର	c. Stand Post ଷ୍ଟାଣ୍ଡ ପୋଷ୍ଟ	d. Open well ଖୋଲା କୂଅ	e. Bore well ବୋରିଂ କୂଅ	f. Hand pump ନଳ କୂଅ	g. Municipal Tanker ମୁନିସିପାଲିଟି ଟ୍ୟାଙ୍କର	h. Private tanker ବେସରକାରୀ ଟ୍ୟାଙ୍କର	i. Others (specify) ଅନ୍ୟାନ୍ୟ (ଦର୍ଶାନ୍ତୁ)
15	Please indicate duration of water supply. *If the option of Que no 14 is a/b/c* ଦିନକୁ କେତେ ସମୟ ପାଣି ଆସେ। (ଯଦି ପ୍ରଶ୍ନ 14 ରେ ଉତ ର *a/b/c* ଥାଏ)	Less than 2 hours in a day ଦିନକୁ 2ଘଣ୍ଟାରୁ କମ Between 2 to 4 hours in a day ଦିନକୁ 2ଘଣ୍ଟା ରୁ 4 ଘଣ୍ଟା ମଧ୍ୟରେ Between 4 to 8 hours in a day ଦିନକୁ 4 ରୁ 8 ଘଣ୍ଟା ମଧ୍ୟରେ More than 8 hours in a day ଦିନକୁ 8 ଘଣ୍ଟାରୁ ଅଧିକ							
16	Is the quantity of water available sufficient to use and maintain the toilet in your house?ଆପଣଙ୍କୁ ଯେତିକି ପରିମାଣ ର ପାଣି ମିଳୁଛି ତାହା ଘରେ ଥିବା ପାଇଖାନାର ବ୍ୟବହାର ପାଇଁ ଯଥେଷ୍ଟ କି ?	Yesହଁ Noନାହିଁ							

SECTION C1: Sanitation – Toilet in the house/institution/commercial establishment ବିଭାଗ ଗ1 : ପରିମଳ – ଯଦି ଘରେ/ଅନୁଷ୍ଠାନ/ବ୍ୟବସାୟୀକ ସଂସ୍ଥାରେ ପାଇଖାନା ଥାଏ			
17	How is your toilet connected to, for disposal? Pls. take a picture of the facility, if possible. ଆପଣଙ୍କ ପାଇଖାନା କାହା ସହିତ କନେକ୍ସନ ହୋଇଛି ? ଯଦି ସମ୍ଭବ ଦୟାକରି ଏହାର ଫଟୋ ନିଅନ୍ତୁ *(To be physically verified by surveyor)* (ସାକ୍ଷାତକର୍ତ୍ତା ନିଜେ ଯାଞ୍ଚ କରନ୍ତୁ) (Picture would be put against each of the option)(ପ୍ରଶ୍ନ ପଚାରିଲା ସମୟରେ ଫଟୋ ଦେଖାଇ ଉତ୍ତର ଲେଖନ୍ତୁ)	Sewer networkଭୂତଳ ନର୍ଦମା / ଡ୍ରେନ ବ୍ୟବସ୍ଥା Septic tank with soak pit ସେପ୍ଟିକ ଟ୍ୟାଙ୍କ ଶୋକପିଟ ସହିତ Septic tank connected to open/closed drain ସେପ୍ଟିକ ଟ୍ୟାଙ୍କ ଟି ଖୋଲା/ବନ୍ଦ ଥିବା ନର୍ଦମା ସହିତ କନେକ୍ସନ Single pitଗୋଟିଏ ପିଟ Double pitଦୁଇଟି ପିଟ Directly to open/closed drain ଖୋଲା/ବନ୍ଦ ଥିବା ନର୍ଦମା ସହିତ ସିଧାସଳଖ କନେକ୍ସନ Others, specifyଅନ୍ୟାନ୍ୟ , ଦର୍ଶାଅ	
18	Picture of the toilet taken ପାଇଖାନାର ଫଟୋ ନିଆଗଲା ?	Yesହଁ Noନାହିଁ	
19	Provide a brief description of the septic tank/ Pit ସେପ୍ଟିକ ଟ ୍ୟାଙ୍କ/ପିଟର ସମ୍ପୂର୍ଣ ବିବରଣୀ ଦିଅନ୍ତୁ Locationଅବସ୍ଥିତି Shapeଆକୃତି Sizeଆୟତନ Access road to the septic tank	Inside the houseଘର ଭିତରେ Outside the houseଘର ବାହାରେ In case of option 2, ଯଦି ଉତ୍ତର 2 ହୁଏ , 2i. Front Side of the propertyଘର ଆଗରେ 2ii. Back Side of the propertyଘର ପଛରେ Rectangularଆୟତାକାର Circularଗୋଲାକାର Don’t Knowଜାଣିନାହିଁ Breadth/Diameter_____ft. ଓସାର/ବ୍ୟାସ ...ଫୁଟରେ Length_____ft.ଲମ୍ବ.....ଫୁଟରେ	

	ସେପ୍ଟିକ ଟ୍ୟାଙ୍କକୁ ପହଞ୍ଚିବା ରାସ୍ତା Type of the bottom ତଳ ଭାଗ ଟି କି ପ୍ରକାର ର	Depth_____ft.ଗଭୀର.....ଫୁଟରେ No of rings used in septic tank (in case the shape is Circular): Don't knowଜାଣିନାହିଁ Narrow road (less than 2 mts.) ଅଣ ଓସାରିଆ ରାସ୍ତା (2ମିଟରରୁ କମ) Medium (less than 5 mts.) ମାଧ୍ୟମ ଧରଣ(5 ମିଟରରୁ କମ) Broad road (more than 5 mts.) ଓସାରିଆ ରାସ୍ତା (5ମିଟରରୁ ଅଧିକ) Linedସିମେଣ୍ଟ ପ୍ରସ୍ତର Non-linedମାଟି ପ୍ରସ୍ତର	(Picture would be put against each of the two option) (ପ୍ରଶ୍ନ ପଚାରିଲା ସମୟରେ ଫଟୋ ଦେଖାଇ ଉତ୍ତରର ଲେଖନ୍ତୁ)
20	How old is your toilet ଆପଣଙ୍କ ପାଇଖାନାଟି କେତେବର୍ଷ ର ପୁରୁଣା	_____ (in years)(ବର୍ଷରେ)	
21	How many persons are there in this household? (for Commercial, approx.. numbers of toilet users)ଏହି ପରିବାରରେ ମୋଟ କେତେଜଣ ଲୋକ ରହୁଛନ୍ତି ? (ଯଦି ବ୍ୟବସାୟୀକ ସଂସ୍ଥା ହୋଇଥାଏ ତେବେ ଆନୁମାନିକ କେତେଜଣ ପାଇଖାନା ବ୍ୟବହାର କରନ୍ତି)	Children (less than 18 year):___, Other Male: ___ Other female: ___ ଛୋଟ ପିଲା (୧୮ ବର୍ଷରୁ କମ)....., ଅନ୍ୟାନ୍ୟ ପୁରୁଷ :…….. ଅନ୍ୟାନ୍ୟ ମହିଳା	
22	Do you share your toilet with any other Family	YesହଁNoନାହିଁ	
23	If yes who are the members from other	Male Female	

	family use it		
24	Did anyone help you in designing and construction of toilet ପାଇଖାନା ନିର୍ମାଣ ଏବଂ ଏହାର ଡିଜାଇନ/ପରିକଳ୍ପନା ପାଇଁ କେହି ସାହାଯ୍ୟ କରିଥିଲେ କି ? Who helped you in designing and construction of toilet ନିର୍ମାଣ ଏବଂ ଏହାର ଡିଜାଇନ/ପରିକଳ୍ପନା ପାଇଁ କିଏ ସାହାଯ୍ୟ କରିଥିଲେ	Yesହଁ Noନାହିଁ If yes, then, who provided guidance ଯଦି ହଁ , ତେବେ କିଏ ନିର୍ଦ୍ଦେଶ ଦେଇଥିଲେ Masonରାଜମିସ୍ତ୍ରୀ Contractorଠିକାଦାର Municipality officialsମୁନିସପାଲ କର୍ମଚାରି Neighborsପଡୋଶୀ Relatives and friends ବନ୍ଧୁବାନ୍ଧବ/ ସାଙ୍ଗସାଥୀ NGOଏନଜିଓ Any otherଅନ୍ୟାନ୍ୟ	
25	Do some member(s) of your family do not use the toilet in the house and practice open defecation? ଆପଣଙ୍କ ପରିବାରରେ କୌଣସି ସଦସ୍ୟ ଘରେ ଥିବା ପାଇଖାନା ବ୍ୟବହାର କରନ୍ତି ନାହିଁ ଏବଂ ଖୋଲା ଜାଗା /ବାହାରକୁ ଝାଡା ଯାଆନ୍ତି କି ?	Yesହଁ Noନାହିଁ	
	If yes, who does it ଯଦି ହଁ , କେଉଁମାନେ ଯାଆନ୍ତି	Male Members ପୁରୁଷ ସଦସ୍ୟ Female Membersମହିଳା ସଦସ୍ୟ Children (below 18 Yrs)18 ବର୍ଷରୁ କମ ପିଲାମାନେ Others (specify):ଅନ୍ୟାନ୍ୟ (ଦର୍ଶାଅ)	
	If, yes please explain the reasons for doing so ଯଦି ହଁ, ଏହିପରି କରିବାର କାରଣ କୁହନ୍ତୁ	Lack of water ପାଣିର ଅଭାବ Matter of habit/ cultural preference ଏହା ଏକ ଅଭ୍ୟାସ/ପରମ୍ପରାଗତ ପସନ୍ଦ Joint/ group activity ସାଙ୍ଗହୋଇ ଝାଡା ଯିବା ର ଅଭ୍ୟାସ Small septic tank/pitଛୋଟ ସେପ୍ଟିକ ଟ୍ୟାଙ୍କ/ପିଟ	

		Avoid frequent cleaning ବାରମ୍ବାର ସଫାକରିବାକୁ ପଡିବନି Any other (specify)ଅନ୍ୟକିଛି (ଦର୍ଶାଅ.....)	
Toilet Typologies, Emptying, Transportation and Disposal ପାଇଖାନାର ପ୍ରକାର , ମଳ ବାହର କରି ବାହାରେ ପକାଇବା			
26	Which of the following are connected to the septic tank/Pit latrine ନିମ୍ନ ଲିଖିତ ମଧ୍ୟରୁ କେଉଁ ଗୁଡିକ ସେପ୍ଟିକ ଟ୍ୟାଙ୍କ/ପିଟ ପାଇଖାନାକୁ ସଂଯୋଗ କରାଯାଇଛି Wash Basins ହାତ ଧୁଆ ବେଶିନ Kitchen waste water ରୋଷେଇ ଘର ର ଆବର୍ଜନା ପାଣି Washing area ଲୁଗାସଫା ଜାଗା Bathing area ଗାଧୋଇବା ଜାଗା Surface water (e.g. area above the septic tank ସେପ୍ଟିକ ଟ୍ୟାଙ୍କର ଉପରି ଭାଗର ପାଣି Roof water ଛାତ ର ପାଣି Other (please specify) ଅନ୍ୟାନ୍ୟ (ଦର୍ଶାନ୍ତୁ)	Please tick all that apply ଦୟାକରି ସମସ୍ତ ଉତ୍ତର ଗୁଡିକୁ ଟିକ ଚିହ୍ନ ଦିଅନ୍ତୁ ।	Total Number (where applicable)ସମୁଦାୟ ସଂଖ୍ୟା (ଦରକାର ସ୍ଥାନରେ)
27	Outflow of septic tank/pit latrine is connected to ସେପଟିକ ଟ୍ୟାଙ୍କ/ ପିଟ ପାଇଖାନାରୁ ବାହାରୁଥିବା ମଇଳା କାହା ସହିତ କନେକ୍ସନ ହୋଇଛି	Open drainଖୋଲା ନର୍ଦ୍ଦମା / ଡ୍ରେନ Closed drain ସ୍ଲାବ / ଘୋଡଣିଥିବା ନର୍ଦ୍ଦମା / ଡ୍ରେନ Sewer system ଭୂତଳ ନର୍ଦ୍ଦମା / ମାଟି ତଳେ ଯାଇଥିବା ଡ୍ରେନ ର ବ୍ୟବସ୍ଥା Soak pitପାଣି ଶୁଖିବା ଖାତ	
28	Where does the discharge of grey water and effluent from septic tank or latrines take place? ପାଇଖାନା କିମ୍ବା ସେପଟିକ ଟ୍ୟାଙ୍କ	Drainନର୍ଦ୍ଦମା / ଡ୍ରେନ Sewer system ଭୂତଳ ନର୍ଦ୍ଦମା / ମାଟି ତଳେ ଯାଇଥିବା ଡ୍ରେନ Soak pitପାଣି ଶୁଖିବା ଖାତ	

	ରୁ ବାହାରୁଥିବା ମଇଳା ପାଣି ଏବଂ ଆବର୍ଜ୍ଜନା କେଉଁଠିକି ଯାଏ ?	Any other, please specifyଅନ୍ୟାନ୍ୟ ଦର୍ଶାନ୍ତୁ	
29	Where is the liquid waste from your house discharged? ଘରୁ ବାହାରୁଥିବା ମଇଳା ଆବର୍ଜ୍ଜନା ପାଣି କେଉଁଠିକି ଯାଏ ?	Drainନର୍ଦ୍ଦମା / ଡ୍ରେନ Soak pitପାଣି ଶୁଖିବା ଖାତ Open areaଖୋଲା ଜାଗା Any other, please specifyଅନ୍ୟାନ୍ୟ ଦର୍ଶାନ୍ତୁ	
30	Is there a well or hand pump in your house/plot? ଆପଣଙ୍କ ଘରେ /ପ୍ଲଟ ରେ ଖୋଲା କୂଅ କିମ୍ବା ନଳକୂଅ(କେବଳ ପୁରୀ ପାଇଁ) ଅଛି କି?	Yesହଁ Noନାହିଁ	
31	If yes, pls. record the distance between the well and septic tank/pit ଯଦି ହଁ ତେବେ କୂଅ ଏବଂ ସେପଟିକ ଟ୍ୟାଙ୍କ/ପିଟ ମଧ୍ୟରେ ଦୂରତା କେତେ ?ରେକର୍ଡ କରନ୍ତୁ	Distance in meters_____ ଦୂରତା ମିଟର ରେ -------	
32	Was the ground water level Checked before deciding depth of pit/ septic tank? ସେପ୍ଟିକ ଟ୍ୟାଙ୍କ/ପିଟର ଗଭୀରତା କେତେ ରହିବତାର ନିଷ୍ପତି କରିବା ପୂର୍ବରୁ ପାଣିର ସ୍ତର କେତେ ଅଛି ଯାଞ୍ଚ କରିଥିଲେ କି ?	Yesହଁ Noନାହିଁ	
33	What are the purposes for which water from the well is used *(Can encircle more than one)* କେଉଁକେଉଁ ଉଦ୍ଦେଶ୍ୟ ରେ କୂଅ ର ପାଣି ବ୍ୟବହାର କରାଯାଏ (ଏକାଧିକ ଉତ୍ତର ପାଇଁ ଗୋଲ ବୁଲାନ୍ତୁ)	Drinking and cooking without treatment ବିଶୋଧନ ନ କରି ପିଇବା ଏବଂ ରୋଷେଇ କରିବା Drinking and cooking after treatment ବିଶୋଧନ କରି ପିଇବା ଏବଂ ରୋଷେଇ କରିବା Non-drinking purposes such as bathing, washing etc. ପିଇବା ବ୍ୟତୀତ ଅନ୍ୟାନ୍ୟ ଉଦ୍ଦେଶ୍ୟରେ (ଗାଧୋଇବା,ଲୁଗା ସଫା କରିବା ଇତ୍ୟାଦି) Any other (specify) ଅନ୍ୟାନ୍ୟ (ଦର୍ଶାନ୍ତୁ)	
34	Do you think the water from the well can get	Yesହଁ	

	contaminated due to proximity to toilet? ପାଖରେ ପାଇଖାନା ରହିଲେ କୂଅର ପାଣି ଦୂଷିତ/ସଂକ୍ରମିତ ହେବ ବୋଲି ଆପଣ ଭାବୁଛନ୍ତି କି?	Noନାହିଁ	
35	Whom you contact for emptying of septic tank	1.ULBs 2.Govt Cesspool operators 3.Private cesspool operators 4.Manual labours	
36	What was the source of information related to emptying septic tank	1.Hoardings 2.Newspaper 3.T.V. Ads 4.Pump lets 5.Internet Others if any…specify	
37	Did any member of your family suffer from diarrhea/dysentery in the last 3 months? ଗତ 3 ମାସ ଭିତରେ ଆପଣଙ୍କ ପରିବାରର କୌଣସି ସଦସ୍ୟ ଙ୍କୁ ଡାଇରିଆ / ଝାଡା ବାନ୍ତି / ପତଳା ଝାଡା ହୋଇଛି କି ?	Yes- 01 ହଁ No-02 ନାଁ If Yes, who : ଯଦି ହଁ ତେବେ କିଏ ? 1. Children ପିଲାମାନେ 2. Adult ବୟସ୍କ 3. Both ଉଭୟ	
38	Did any member of your family suffer from jaundice in the last 3 months? ଗତ 3 ମାସ ଭିତରେ ଆପଣଙ୍କ ପରିବାରର କୌଣସି ସଦସ୍ୟ ଙ୍କୁ ଜଣ୍ଡିସ ହୋଇଛି କି ?	Yes- 01 ହଁ No-02 ନାଁ If Yes, who : ଯଦି ହଁ ତେବେ କିଏ ? 1. Children ପିଲାମାନେ 2. Adult ବୟସ୍କ 3. Both ଉଭୟ	
39	How frequently is the septic tank/pit latrine emptied? କେତେ ବ୍ୟବଧାନରେ ସେପ୍ଟିକଟ୍ୟାଙ୍କ /ପିଟ ପାଇଖାନା ସଫା କରାଯାଏ	6 months 6 ମାସ 6 – 12 months 6-12 ମାସ 12 – 24 months 12-24 ମାସ 24 – 36 months24-36 ମାସ More than 36 months 36 ମାସରୁ ଅଧିକ Not yet emptied since construction ତିଆରି ହେବା ଦିନଠାରୁ ସଫା ହୋଇନାହିଁ	

		Mention the last date of emptying of the septic tank/pit latrine-------- ଶେଷ ଥର କୌ ତାରିଖ ରେ ସେପ୍ଟିକଟ୍ୟାଙ୍କ /ପିଟ ପାଇଖାନାସଫା ହୋଇଥିଲା ଲେଖନ୍ତୁ ……	
40	Why was the septic tank emptied ସେପ୍ଟିକ ଟ୍ୟାଙ୍କ କାହିଁକି ସଫା କଲେ ?	Schedule emptying is required ଉପଯୁକ୍ତ ସମୟରେ ସଫା କରିବା ଦରକାର ଥିଲା Blocked toilet ପାଇଖାନା ଭର୍ତି ହୋଇ ବନ୍ଦ ହୋଇଯାଇଥିଲା Overflow from access hole/manhole ମଇଳା ଗୁଡିକ ସେପ୍ଟିକ ଟ୍ୟାଙ୍କର ଦୁଆରମୁହଁ ଦେଇ ବାହାରକୁ ବାହାରି ଆସିଥିଲା Foul Smellଦୁର୍ଗନ୍ଧ ବାହାରିଲା Other, Specifyଅନ୍ୟାନ୍ୟ ଦର୍ଶାନ୍ତୁ Don’t know/Rememberଜାଣି ନାହିଁ /ମନେ ନାହିଁ	
41	How is the septic tank emptied? *(Encircle appropriate no.)* ସେପ୍ଟିକ ଟ୍ୟାଙ୍କ କିପରି ସଫା କରାଗଲା (ଉପଯୁକ୍ତ ଉତ୍ତର ଗୁଡିକ ଗୋଲ ବୁଲାନ୍ତୁ)	Manually using local labour ସ୍ଥାନୀୟ ଶ୍ରମିକ / ମଜୁରିଆ ହାତରେ ବାହାର କଲେ Using suction machine (pvt.) ବେସରକାରୀ ସକ୍ସନ ମେସିନ ବ୍ୟବହାର କରି Using suction machine(govt) ସରକାରୀ ସକ୍ସନ ମେସିନ ବ୍ୟବହାର କରି Self ନିଜେ	
42	Were there any problems during emptying of septic tanks? (multiple answer) ସେପ୍ଟିକ ଟ୍ୟାଙ୍କ ସଫା କରିବା ସମୟ ରେ କୌଣସି ପ୍ରକାର ଅସୁବିଧା ହୋଇଥିଲା କି? (ଏକାଧିକ ଉତ୍ତର ସମ୍ଭବ)	Access or distance for suction truck to house ଘର ଠାରୁ ସକ୍ସନ ଟ୍ରକ ଦୂରରେ ଥିଲା କିମ୍ବା ସୁବିଧା ନଥିଲା Break floor tiles to access septic tank ସେପ୍ଟିକ ଟ୍ୟାଙ୍କର ଚଟାଣ ର ଟାଇଲି ଭାଙ୍ଗିଯାଇଥିଲା Break concrete manhole to access septic tank ସେପ୍ଟିକ ଟ୍ୟାଙ୍କର ଉପର ସିମେଣ୍ଟ କଂକ୍ରିଟ ଘୋଡଣି ଟି ଭାଙ୍ଗିଯାଇଥିଲା Difficult to locate the septic tank ସେପ୍ଟିକ ଟ୍ୟାଙ୍କ ଖୋଜି ପାଇବାରେ ଅସୁବିଧା ହୋଇଥିଲା Made a messଅପରିଷ୍କାର ହୋଇଯାଇଥିଲା No problem foundକୌଣସି ଅସୁବିଧା ହୋଇନଥିଲା Others, specifyଅନ୍ୟାନ୍ୟ ଦର୍ଶାନ୍ତୁ	

		Don't knowଜାଣିନାହିଁ	
43	Who is your preferred service provider for emptying septic tank? ସେପ୍ଟିକ ଟ୍ୟାଙ୍କ ସଫା କରିବା ପାଇଁ ଏମାନଙ୍କ ମଧ୍ୟରୁ ଆପଣ କାହାକୁ ପସନ୍ଦ କରନ୍ତି ।	Municipalityମୁନସିପାଲିଟ Private operatorବେସରକାରୀ ସଂସ୍ଥା/ଅପରେଟର Local Labourସ୍ଥାନୀୟ ଶ୍ରମିକ Self ନିଜେ Any otherଅନ୍ୟକେହି	
44	How much do you pay for the emptying services? *(Encircle appropriate no.)* ସେପ୍ଟିକଟ୍ୟାଙ୍କ ସଫା କରିବା ପାଇଁ କେତେ ଟଙ୍କା ଦେବାକୁ ପଡିଥିଲା ? (ସଠିକ ଉତ୍ତରରେ ଟିକ୍ କରନ୍ତୁ)	Rs 500 – 1000 ୫୦୦ ରୁ ୧୦୦୦ Rs 1000-1500 ୧୦୦୦ ରୁ ୧୫୦୦ Rs 1500 -2000 ୧୫୦୦ ରୁ ୨୦୦୦ Rs 2000-3000 ୨୦୦୦ ରୁ ୩୦୦୦ More than 3000 3000 ରୁ ଅଧିକା No cost- କୌଣସି ଖର୍ଚ କରିନାହାନ୍ତି	
45	Are you satisfied with the services related to proper emptying, transportation and disposal?(multiple answer) ସେପ୍ଟିକଟ୍ୟାଙ୍କ ଠିକ ଭାବରେ ସଫା କରିବା ,ବାହାରିଥିବା ମଳ କୁ ନେଇ ଠିକ ଭାବରେ ପକାଇବା ବିଷୟରେ ଆପଣ ସନ୍ତୁଷ୍ଟ କି ?(ଏକାଧିକ ଉତ୍ତର ସମ୍ଭବ)	Yesହଁ Noନାହିଁ Give reasons in case option is Yes ଯଦି ଉତ୍ତର ହଁ ହୁଏ ତେବେ ଏହାର କାରଣ କଣ ? Lower costକମ ଖର୍ଚ Timely availability/ quick response ଠିକ ସମୟରେ ମିଳିବା/ ଶୀଘ୍ର ଆସନ୍ତି Ease of contactଯୋଗାଯୋଗ ଅତି ସହଜ Better expertiseଭଲ ଦକ୍ଷତା Better equipmentଉନ୍ନତ ଉପକରଣ Any Otherଅନ୍ୟକିଛି Give reasons incase option is No ଯଦି ଉତ୍ତର ନାହିଁ ହୁଏ ଏହାର କାରଣ କଣ ? High cost ଅଧିକ ଖର୍ଚ Delay in responseଆସିବାରେ ଡେରି କରନ୍ତି Difficult to contact ଯୋଗାଯୋଗ କରିବାରେ ଅସୁବିଧା Poor expertise କମ ଦକ୍ଷତା Poor equipment ନିମ୍ନମାନର ଜନ୍ତ୍ରପାତି / ଉପକରଣ Any otherଅନ୍ୟକିଛି	

46	Where is the sludge collected from septic tanks disposed? *(for authentication, user may be asked whether they have actually seen it)* ସେପ୍ଟିକ ଟ୍ୟାଙ୍କରୁ ବାହାରୁଥିବା ମଇଳାଗୁଡିକ କେଉଁ ସ୍ଥାନରେ ପକାଯାଏ ? (ଉତ୍ତରଦାତା ଙ୍କୁ ପଚାରନ୍ତୁ ସେ ନିଜେ ଏହା ଦେଖିଛନ୍ତି କି ?)	Next to the houseଘର ପାଖରେ Drain/Canalଡ୍ରେନ/କେନାଲ Agricultural landଚାଷ ଜମିରେ Any Other (Specify)ଅନ୍ୟାନ୍ୟ (ଦର୍ଶାଅ) Riverନଦୀ Not awareଜଣାନାହିଁ	
47	Are you aware that a SeTP is being set up in your city to treat FSS for safe disposal?	1.Yesହଁ 2.Noନାହିଁ	
48	Do you know that fecal sludge can be treated as a resource and reused?	1.Yesହଁ 2.Noନାହିଁ	
49	Are you concerned about where the sludge is disposed? ଯେଉଁ ଜାଗାରେ ସେପ୍ଟିକ ଟ୍ୟାଙ୍କ ର ମଳ ପକାଯାଉଛି ସେଥିପାଇଁ ଆପଣ ଚିନ୍ତିତ କି ?	Yesହଁ Noନାହିଁ	
50	Are you aware of the adverse impact on health and environment due to unsafe disposal of fecal sludge? ଝାଡା/ ଆବର୍ଜନା ଗୁଡିକ ଅସୁରକ୍ଷିତ ଭାବରେ ପକା ଯାଉଥିବା ଯୋଗୁଁ ସ୍ୱାସ୍ଥ୍ୟ ଏବଂ ପରିବେଶ ଉପରେ ପ୍ରତିକୂଳ ପ୍ରଭାବ ପକାଉଛି ବୋଲି ଆପଣ ଜାଣିଛନ୍ତି କି ?	Yesହଁ Noନାହିଁ If yes describe them ---------- ଯଦି ହଁ , କେଉଁ କେଉଁ ପ୍ରତିକୂଳ ପ୍ରଭାବ ପକାଉଛି କୁହନ୍ତୁ	
51	Are you aware whether any sewerage connection being laid down in your area ଆପଣଙ୍କ ଅଞ୍ଚଳ ଦେଇ ଭୂତଳ ନର୍ଦ୍ଦମା/ ଡ୍ରେନ ଯାଇଛି ବୋଲି ଆପଣ ଜାଣିଛନ୍ତି କି ?	Yesହଁ Noନାହିଁ NA ପ୍ରଯୁଜ୍ୟ ନୁହେଁ	

52	Did the municipal authority/OWSSB inform you to connect your septic tank/pit latrine with the sewerage line ଆପଣଙ୍କ ଭୂତଳ ନର୍ଦ୍ଦମା/ପିଟ ପାଇଖାନା ସହିତ କନେକ୍ସନ ପାଇଁ ମୁନିସପାଲ ଅଧିକାରୀ/ ଓଡିଶା ଜଳ ଯୋଗାଣ ଏବଂ ସ୍ୱେରେଜ ବୋର୍ଡବିଭାଗ ତରଫରୁ ଆପଣଙ୍କୁ ସୂଚନା ଦିଆଯାଇଥିଲା କି ?	Yesହଁ Noନାହିଁ NA ପ୍ରଯୁଜ୍ୟ ନୁହେଁ	
53	If 52 is Yes, are you informed that the external connection cost from property boundary to nearest sewerage manhole will be done by OWSSBଯଦି ପ୍ରଶ୍ନ 52 ରେ ଉତ୍ତର ହଁ ହୁଏ – ଆପଣଙ୍କ ପ୍ଲଟ ପାଚେରି ରୁ ପାଖରେ ଥିବା ଭୂତଳ ନର୍ଦମା/ ଡ୍ରେନ ସହିତ ସଂଯୋଗ ପାଇଁ ହେଉଥିବା ଖର୍ଚ ଓଡିଶା ଜଳ ଯୋଗାଣ ,ସ୍ୱେରେଜ ବୋର୍ଡ ବିଭାଗ ବହନ କରିବ ବୋଲି ଆପଣ ଙ୍କୁ କୁହା ଯାଇଛି କି ?	Yesହଁ Noନାହିଁ NA ପ୍ରଯୁଜ୍ୟ ନୁହେଁ	
54	If 52 is Yes, what are the impediments in taking a sewerage connection ଯଦି ପ୍ରଶ୍ନ 52 ରେ ଉତ୍ତର ହଁ ହୁଏ – ଭୂତଳ ନର୍ଦମା / ଡ୍ରେନ ସହିତ କନେକ୍ସନ କଲେ କି ପ୍ରକାର ବାଧାବିଘ୍ନ / ଅସୁବିଧା ହେବ ?	Difficulties in obtaining road cutting permission from municipality ରାସ୍ତା କାଟିବା ପାଇଁ ମୁନିସିପାଲିଟି ର ଅନୁମତି ପାଇବାକୁ ଅସୁବିଧା Inconvenience due to Digging / Cutting the Road ରାସ୍ତା ଖୋଳିବା / କାଟିବା ଯୋଗୁ ଅସୁବିଧା Financial Problem(ଆର୍ଥିକ ଅସୁବିଧା) Any other, please specify ଅନ୍ୟାନ୍ୟ ଦର୍ଶାନ୍ତୁ NA ପ୍ରଯୁଜ୍ୟ ନୁହେଁ	
55	Are you able to afford internal plumbing cost କନେକ୍ସନ ପାଇଁ ଦରକାର	Yesହଁ Noନା NA ପ୍ରଯୁଜ୍ୟ ନୁହେଁ	

	ହେଉଥିବା ପାଇପ କାମ ର ଖର୍ଚ କରିବା ପାଇଁ ଆପଣ ସକ୍ଷମ କି ?		
56	Are you aware of any complaint redressal system which you can approach in case of any complaint related to emptying, collection & transportation	Yesହଁ Noନା	
57	Have you ever complained? Was your complaint addressed satisfactorily?	Yesହଁ Noନା	
SECTION C 2: Sanitation – No Toilet in the House Households Using Public or Community Toilet ଭାଗ ଗ -2 : ପରିମଳ – ଯଦି ଘରେ ପାଇଖାନା ନାହିଁ ଯେଉଁ ପରିବାର ରେ ପାଇଖାନା ନାହିଁ କିମ୍ବା ଯେଉଁ ମାନେ ସର୍ବସାଧାରଣ ପାଇଖାନା କିମ୍ବା ଗୋଷ୍ଠୀ ପାଇଖାନା ବ୍ୟବହାର କରୁଛନ୍ତି ସେମାନଙ୍କୁ ପଚାରନ୍ତୁ			
58	Since you do not have a toilet in your house, where do most members of your family go to meet their toilet needs? ଯେହେତୁ ଆପଣଙ୍କ ଘରେ ପାଇଖାନା ନାହିଁ, ଘରର ଅଧିକାଂଶ ସଦସ୍ୟ ମଳତ୍ୟାଗ(ଝାଡା) କରିବା ପାଇଁ କେଉଁଠିକି ଯାଆନ୍ତି	Public toilet ସର୍ବସାଧାରଣ ପାଇଖାନା Community toiletଗୋଷ୍ଠୀ ପାଇଖାନା Neighbor's toilet ପଡିସା ଘର ପାଇଖାନା	
59	Is there separate toilet for men and womenପୁରୁଷ ଏବଂ ମହିଳା ଙ୍କ ପାଇଁ ଅଲଗା ପାଇଖାନା ଅଛି କି	Yesହଁ Noନାଁ	
60	Is there closed dustbin for disposal of used sanitary napkinବ୍ୟବହୃତ ସାନିଟାରି କପଡା ପକାଇବା ପାଇଁ ଘୋଡଣି ଥିବା ଡଷ୍ଟବିନ /ଅଳିଆ ବାକ୍ସ ଅଛି କି	Yesହଁ Noନାଁ	
61	What is the status of cleanliness/maintenance of the public toilet? If the option ofQue 54	Very Goodବହୁତ ଭଲ Goodଭଲ Averageମଧ୍ୟମ ଧରଣର / ଚଳିବ	

	is1ସର୍ବସାଧାରଣ ପାଇଖାନା ଟି ର ସଫା ସୁତୁରା /ଦେଖାରଖା କିପରି ହୁଏ – ଯଦି ପ୍ରଶ୍ନ 54 ରେ ଉତ୍ତର 1 ହୁଏ	Poorଖରାପ Very Poorଅତି ଖରାପ	
62	For the public toilet that you use, do you pay any usage charges? If the option of Que 54 is 1 ସର୍ବସାଧାରଣ ପାଇଖାନା ବ୍ୟବହାର କରିବା ପାଇଁ ଆପଣଙ୍କୁ ଟଙ୍କା ଦେବାକୁ ପଡେ କି (ଯଦି ପ୍ରଶ୍ନ 54 ରେ ଉତ୍ତର 1 ହୁଏ)	Yesହଁ Noନାଁ If yes, how much ଯଦି ହଁ ତେବେ କେତେ ଟଙ୍କା	
63	What is the status of cleanliness/maintenance of the community toilet? ଗୋଷ୍ଠୀ ପାଇଖାନା ଟି ର ସଫା ସୁତୁରା / ଦେଖାରଖା କିପରି ହୁଏ If the option of Que 54 is 2ଯଦି ପ୍ରଶ୍ନ 54 ରେ ଉତ୍ତର 2 ହୁଏ	Very Goodଅତି ଭଲ Goodଭଲ Averageମଧ୍ୟମ ଧରଣର / ଚଳିବ Poorଖରାପ Very Poorଅତି ଖରାପ	
64	Who maintains the community toilet? ଗୋଷ୍ଠୀ ପାଇଖାନା ଟି ର ଦେଖାରଖା କିଏ କରେ If the option of Que 54 is 2ଯଦି ପ୍ରଶ୍ନ 54 ରେ ଉତ୍ତର 2 ହୁଏ	Municipalityମୁନିସିପାଲିଟି NGOଏନ ଜି ଓ Communityଅଞ୍ଚଳର ଲୋକମାନେ No maintenance. କୌଣସି ପ୍ରକାର ଦେଖାରଖା ହୁଏ ନାହିଁ	
65	For the community toilet that you use, do you pay any usage charges? ଗୋଷ୍ଠୀ ପାଇଖାନା ବ୍ୟବହାର କରିବା ପାଇଁ ଆପଣଙ୍କୁ ଟଙ୍କା ଦେବାକୁ ପଡେ କି If the option of Que54 is 2 (ଯଦି ପ୍ରଶ୍ନ 54 ରେ ଉତ୍ତର 2 ହୁଏ)	Yesହଁ Noନାଁ If yes, how much ଯଦି ହଁ ତେବେ କେତେ Less than Rs 50 per month per family. ପରିବାର ପ୍ରତି ମାସକୁ 50 ଟଙ୍କା ରୁ କମ Between Rs 50 to Rs 100 per month per family. ପରିବାର ପ୍ରତି ମାସକୁ 50 ରୁ 100 ଟଙ୍କା ଭିତରେ More than Rs 100 per family per month. ପରିବାର ପ୍ରତି ମାସକୁ 10 0 ଟଙ୍କା ରୁ ଅଧିକ।	

66	How satisfied are you with community toilet? ଗୋଷ୍ଠୀ ପାଇଖାନା ବ୍ୟବହାର ରେ ଆପଣ କେତେ ସନ୍ତୁଷ୍ଟ If the option of Que 54 is 2ଯଦି ପ୍ରଶ୍ନ 54 ରେ ଉତ୍ତର 2 ହୁଏ	Highly Satisfied ଅତି / ବହୁତ ସନ୍ତୁଷ୍ଟ Satisfiedସନ୍ତୁଷ୍ଟ Neither satisfied or dissatisfied ସନ୍ତୁଷ୍ଟ ନୁହଁ କି ଅସନ୍ତୁଷ୍ଟ ନୁହଁ Dissatisfiedଅସନ୍ତୁଷ୍ଟ Highly dissatisfiedଅତି /ବହୁତ ଅସନ୍ତୁଷ୍ଟ	
67	According to you, in which area/s need improvement in the public/ community toilet ଆପଣଙ୍କ ଅନୁସାରେ ସର୍ବସାଧାରଣ / ଗୋଷ୍ଠୀ ପାଇଖାନା ରେ କି ପ୍ରକାର ଉନ୍ନତି କରିବା ଦରକାର ଏକାଧିକ ଉତ୍ତର ସମ୍ଭବ)	Facilitiesସୁବିଧା Maintenanceଦେଖାରଖା Securityସୁରକ୍ଷା Any other, please specifyଅନ୍ୟାନ୍ୟ ଦର୍ଶାନ୍ତୁ	
68	Do you practice hand washing with soap/detergent/liquidsoap in the toilet? ଆପଣ ଶୌଚଳୟ ରେ ହାତ ଧୋଇବା ପାଇଁ ସାବୁନ /ସାବୁନ ପାଉଡର /ଲିକୁଇଡ ସାବୁନ ବ୍ୟବହାର କରନ୍ତି କି *(This question is to be asked to all households)*ଏହି ପ୍ରଶ୍ନ ଟି ସମସ୍ତ ପରିବାର କୁ ପଚରାଯିବ	Yesହଁ Noନାଁ	
69	If No, why ଯଦି ନାଁ କାହିଁକି	No handwashing station ହାତ ଧୋଇବା ପାଇଁ ବେଶିନ ନାହିଁ Soap not available ସାବୁନ / ସାବୁନ ପାଉଡର / ଲିକୁଇଡ ସାବୁନ ଉପଲବ୍ଧ ନାହିଁ No water supplyପାଣିର ସୁବିଧା ନାହିଁ Don't think it is important ଏହା ଦରକାର ବୋଲି ଭାବୁ ନାହିଁ	
SECTION C 3: Sanitation- No Toilet in the House Open Defecation ଭାଗ ଗ 3 : ପରିମଳ –ଯଦି ଘରେ ଶୌଚଳୟ ନାହିଁ ବାହାରକୁ ମଳତ୍ୟାଗ (ଝାଡା)କରିବାକୁ ଯାଆନ୍ତି			
70	Do your family members practice open	Yes, Alwaysହଁ ସବୁବେଳେ	

	defecation?ଆପଣ କିମ୍ବା ଆପଣଙ୍କ ପରିବାରର ସଦସ୍ୟ ମାନେ ଖୋଲା ରେ/ ବାହାରକୁ ମଳତ୍ୟାଗ କରିବାକୁ ଯାଆନ୍ତି କି ?	Yes, Sometimesହଁ ବେଳେବେଳେ Noନାଁ If sometimes, then state when ଯଦି ବେଳେ ବେଳେ ଯାଆନ୍ତି ତେବେ କେତେ ବେଳେ / କେଉଁ ସମୟରେ	
71	If Yes, Who in the family practice open defecation ଯଦି ହଁ ପରିବାରରେ କେଉଁ ମାନେ ଖୋଲା ରେ/ବାହାରକୁ ମଳତ୍ୟାଗ କରିବା ପାଇଁ ଯାଆନ୍ତି ଏକାଧିକ ଉତ୍ତର ସମ୍ଭବ)	Allସମସ୍ତେ Only Male membersକେବଳ ପୁରୁଷ ଲୋକ Only childrenକେବଳ ପିଲା ମାନେ Only Female membersକେବଳ ମହିଳା ମାନେ	
72	If yes or sometimes, what are the reasons for you to practice open defecation? ଯଦି ହଁ କିମ୍ବା ବେଳେ ବେଳେ ,ତେବେ ଖୋଲା ରେ/ବାହାରକୁ ମଳତ୍ୟାଗ କରିବା ପାଇଁ ଯିବା ର କାରଣ କଣ	Lack of access to community/public toilet ସର୍ବସାଧାରଣ / ଗୋଷ୍ଠୀ ପାଇଖାନା କୁ ଯିବା ପାଇଁ ଅସୁବିଧା Matter of habit/ cultural preference ଏହା ଏକ ଅଭ୍ୟାସ / ପରମ୍ପରାଗତ ପସନ୍ଦ Joint/ group activityମିଳିମିଶି କି ଯିବା ଅଭ୍ୟାସ Any other, please specify:ଅନ୍ୟାନ୍ୟ ଦୟାକରି ଦର୍ଶାନ୍ତୁ	
73	What are the problems associated with open defecation faced by you and your family members?(ଖୋଲା ରେ/ବାହାରକୁ ଶୌଚ/ ଝାଡା ଗଲେ ଆପଣ କିମ୍ବା ଆପଣଙ୍କ ପରିବାର ଲୋକଙ୍କୁ କି ପ୍ରକାର ଅସୁବିଧା ହୁଏ – ଏକାଧିକ ଉତ୍ତର ସମ୍ଭବ)	1. lack of Privacyଗୋପନୀୟତା ରହେନି 2. Lack of safety for women and girls ମହିଳା ଏବଂ ଝିଅ ପିଲା ମାନଙ୍କ ପାଇଁ ବିପଦ 3. lack of Dignityସନ୍ମାନ / ମର୍ଯ୍ୟାଦା ହାନି 4. Inconvenience – timeଅବେଳରେ ଯିବା ଅସୁବିଧା 5. Inconvenience – distanceଦୂରତା ଜନିତ ଅସୁବିଧା 5. Infections and Diseasesସଂକ୍ରମଣ/ରୋଗ ର ଆଶଙ୍କା 7. Any other, Specify:ଅନ୍ୟାନ୍ୟ , ଦର୍ଶାନ୍ତୁ	
74	Will you be interested in using a community/public toilet if individual toilet is not possible? ଯଦି ନିଯେ ପାଇଖାନା ତିଆରି	Yesହଁ Noନାଁ If no, give reasonsଯଦି ନାଁ ତେବେ କାରଣ କୁହନ୍ତୁ Not hygienicସ୍ୱାସ୍ଥ୍ୟକର ନୁହେଁ	

	କରିବା ସମ୍ଭବ ନୁହେଁ ତେବେ ଆପଣ ଗୋଷ୍ଠୀ /ସର୍ବସାଧାରଣ ପାଇଖାନା ବ୍ୟବହାର କରିବା ପାଇଁ ଆଗ୍ରହୀ ହେବେ କି ? ଏକାଧିକ ଉତ୍ତର ସମ୍ଭବ)	No water facilityପାଣିର ସୁବିଧା ନାହିଁ Unsafe/ insecureଅସୁରକ୍ଷିତ/ବିପଦପୂର୍ଣ Inconvenienceସୁବିଧା ନୁହଁ Not willing to share with others ଅନ୍ୟ ମାନଙ୍କ ସହିତ ମିଶି ବ୍ୟବହାର କରିବା ପାଇଁ ଇଚ୍ଛା ନୁହେଁ High costଅତ୍ୟଧିକ ଖର୍ଚ Any otherଅନ୍ୟାନ୍ୟ	
75	Are you willing to pay for the use of public / community toilet?ପଇସା ଦେଇ ସର୍ବସାଧାରଣ / ଗୋଷ୍ଠୀ ପାଇଖାନା ବ୍ୟବହାର କରିବା ପାଇଁ ଆପଣ ଇଚ୍ଛା କରିବେ କି ?	Yesହଁ Noନାଁ If yes indicate the amount per usage or per month: Public toilet: ……per family /month Community toilet……..per family /month ଯଦି ହଁ ତେବେ ବ୍ୟବହାର କରିବା ପାଇଁ ପ୍ରତି ପରିବାର ପିଛା ମାସକୁ କେତେ ଟଙ୍କା ଦେଇପାରିବେ କୁହନ୍ତୁ ସର୍ବସାଧାରଣ ଶୌଚାଳୟ ..... ଗୋଷ୍ଠୀ ଶୌଚାଳୟ	
76	Are you willing for individual superstructure with common pit/ septic tank?ଗୋଟିଏ ନିଜସ୍ୱ ଶୌଚଳୟ ର ଢାଞ୍ଚା ରେ ଏକାଧିକ ପରିବାର ବ୍ୟବହାର ଯୋଗ୍ୟ ସେପ୍ଟିକଟ୍ୟାଙ୍କ /ପିଟ ତିଆରି କରିବାକୁ ଆପଣ ଇଚ୍ଛା କରିବେ କି ?	Yesହଁ Noନାଁ	
77	Were there any efforts made in your area to construct community toilet? *(Encircle appropriate no's)*ସରକାରଙ୍କ ତରଫରୁ ଆପଣଙ୍କ ଅଞ୍ଚଳରେ ଗୋଷ୍ଠୀ ପାଇଖାନା ତିଆରି କରିବା ପାଇଁ ପଦକ୍ଷେପ ନିଆ ଯାଇଥିଲା କି ?	Yesହଁ Noନାଁ	
78	Do you think your community will take responsibility for O&M	Yesହଁ Noନାଁ	

	of a community toilet?ଆପଣଙ୍କ ଅଞ୍ଚଳର ଲୋକମାନେ ଗୋଷ୍ଠୀ ପାଇଖାନା ର ଦେଖାରଖା ଦାୟିତ୍ୱ ନେବେ ବୋଲି ଆପଣ ଭାବୁଛନ୍ତି କି		
79	Will you be interested in constructing individual toilet in your house? ଆପଣ ଘରେ ଗୋଟେ ନିଜସ୍ୱ ପାଇଖାନା ତିଆରି କରିବା ପାଇଁ ଆଗ୍ରହୀ କି ? ଏକାଧିକ ଉତ୍ତର ସମ୍ଭବ)	Yesହଁ Noନାଁ If no, give reasons:ଯଦି ନାଁ ତେବେ କାରଣ କଣ Lack of fundsଟଙ୍କା ପଇଶା ର ଅଭାବ Lack of spaceଜାଗାର ଅଭାବ Out of habitବାହାରକୁ ଯିବା ର ଅଭ୍ୟାସ Any otherଅନ୍ୟାନ୍ୟ	
80	From where do you get information on sanitation (toilets, sewerage system, septic tank emptying ଆପଣ ପରିମଳ ବିଷୟରେ (ଯଥା ଶୌଚାଳୟ, ସ୍ୱେରେଜ ବ୍ୟବସ୍ଥା / ଭୂତଳ ନର୍ଦମା/ ଡ୍ରେନ , ସେପ୍ଟିକ ଟ୍ୟାଙ୍କ ସଫା କରିବା ଇତ୍ୟାଦି) କେଉଁ ଠାରୁ ସୂଚନା ପାଆନ୍ତି ଏକାଧିକ ଉତ୍ତର ସମ୍ଭବ)	Municipal officialsମୁନିସିପାଲିଟି କର୍ମଚାରୀ Media (TV, radio) ଗଣ ମାଧ୍ୟମ (ଟିଭି , ରେଡିଓ , ଖବର କାଗଜ ଇତ୍ୟାଦି) Mikingମାଇକ ଦ୍ୱାରା ପ୍ରଚାର Neighbour/friends/relatives ପଡୋଶୀ/ସାଙ୍ଗ ସାଥି/ ବନ୍ଧୁ ବାନ୍ଧବ NGOsଏନ ଜି ଓ Others (Specify)ଅନ୍ୟାନ୍ୟ	
81	What more information would you like to know about septic tank emptying?ସେପ୍ଟିକ ଟ୍ୟାଙ୍କ ସଫା କରିବା ବିଷୟରେ ଆପଣ ଆଉ ଅଧିକ କି ପ୍ରକାର ସୂଚନା ଜାଣିବା ପାଇଁ ଚାହାନ୍ତି ଏକାଧିକ ଉତ୍ତର ସମ୍ଭବ)	When to empty କେବେ ସଫା କରାଯିବ About service providers & their contact details ସଫା କରୁଥିବା ସଂସ୍ଥା / ସେମାନଙ୍କ ସମ୍ପୂର୍ଣ୍ଣ ଯୋଗାଯୋଗ ନମ୍ବର Fees/Chargeଫିସ /ପାଉଣା /ମୂଲ୍ୟ About benefits of doing it ଏହା କଲେ କି କି ଉପକାର /ସୁବିଧା ମିଳିବା ବିଷୟରେ About disposal ପକାଇବା ଜାଗା ବିଷୟରେ 6.Design	
		<u>Community Engagement with HH</u>	

82	Are you aware about any citizen/Community groups working on health and sanitation in your area	Yesହଁ Noନା	
83	If Yes, Nature of community groups	Mahila Samities Youth groups Common interest groups Pooja Committees Self-help groups If others..specify	
84	Does anybody from citizens groups approached you to discuss sanitation issues	Yes/No	
85	If Yes, what are the subject they discussed with you	Issues related to children and women health FSSM Promoting the use of PT/CT Specify, if any other	
87	If PT/CT are maintained by citizen group, do you think the community usage will increase?	Yes No Don't know	
		<u>Health related</u>	
88	Do you know the ill effects of open Defecation on health & growth of children?	Yes/ No	
89	If yes, what are those ill effects	1. Malnutrition 2. Worm infestation 3. Skin disease 4. Diarrhoea 5. Jaundice 6. Typhoid	

N:B - Response for questions from 51 to 55 are to be collected from respondent of Puri, Bhubaneswar, Cuttack, Rourkela & Sambalpur.

Name of the Investigator:ସାକ୍ଷାତକର୍ତ୍ତା ଙ୍କ ଦସ୍ତଖତ Date of investigation:ସାକ୍ଷାତ୍କାର ତାରିଖ

Survey start time:ସର୍ଭେ ଆରମ୍ଭ ର ସମୟ Survey end time:ସର୍ଭେ ଶେଷ ର ସମୟ

Name of the data quality controller: ସୂଚନା ର ମାନ ନିର୍ଧାରକ ଙ୍କ ନାମ Date of back check:ଯାଞ୍ଚ ତାରିଖ

9.2 Annexure 2 – Questionnaire for In-Depth

- **Interview with Mayor**

1. What are the key sanitation issues in your city?
2. What are the main water borne diseases that occurs in the City since the last 5 years? How do you deal with them?
3. Will the City be able to meet the SBM deadline?
4. What are the key challenges in toilet construction and usage in the City?
5. How important is FSM as part of sanitation?
6. How is fecal sludge/septage managed in the City?
7. Does the City have a sewerage system? If yes, what is the status of coverage?
8. What is the level of coordination with OWSSB, PHEO, PCB, Water Resource Department etc. to deal with SWM and liquid waste?
9. How many cesspool trucks are operating under the ULB? What is your suggestion to make cesspool vehicle operation a profitable business?
10. Are you aware about the ongoing SeTP being constructed in your city?
11. How can citizens and communities be made aware about the benefits of SeTP and be engaged proactively?
12. How is the ULB planning to undertake the O&M of SeTP?
13. Are you aware about the recent changes in urban sanitation policies and programmes for sustainable sanitation by the Central & State Government?
14. Under the OUSS and OUSP-2017, there is a need to form CSTFs and WSCs in the city. Please share your views on how best that could be formed and made functional under your leadership.
15. How can communities from your ward be mobilized to participate in FSSM?
16. What kind of capacity building is needed among the ULB and non-ULB stakeholders for effective FSSM?
17. How can Ward Committee members be effectively engaged for improved sanitation in the wards and help the communities raise demand for sanitation services?
18. Do you think the people from the City will agree to pay more for improved sanitation facilities?

- **Interview with Collector**

1. What are the sanitation priorities of the city for coming years?
2. Does the city have a City Sanitation Plan (CSP)?
3. How are you planning to meet the SBM deadline of 2nd October 2019 to make the city ODF? What are key bottlenecks in implementing the programme?
4. Is there any strategy adopted to meet local level challenges in sanitation?
5. Has there been any plan to implement the recently notified policies/strategies such as OUSS, OUSP, along with SBM and AMRUT and other schemes?
6. Is there any district level coordination between different agencies such as OWSSB, PCB, DUDA, PHEO and ULB in sanitation infrastructures creation and management?
7. Are there any plans to utilize the potentialities of CSR, DMF and other sources of funding for sanitation programmes?
8. What are the key challenges with regard to FSSM in the City?
9. How do you see private participation in O&M of cesspool vehicles and SeTPs?
10. Awareness level is very low among the people on FSSM as toilet construction is still ongoing. How do you propose to undertake IEC, BCC and capacity building activities on FSSM in the city?
11. What kind of capacities need to be built to deal with FSSM at the city & district level?
12. What do you suggest could be the best way for effective FSSM in the city?
13. What do you think about the opportunities for reuse of treated septage (fertilizer)?

- **Interview with Financial Officer**

1. What are the various revenue sources of ULB?
2. What is the status of revenue generated from cesspool vehicles in Baripada?
3. Do you think two cesspool truck is sufficient to meet the service demand?
4. So, the places where big cesspool vehicles are unable to reach, how are septic tanks emptied? Is there any instances of manual emptying of septic tanks?
5. How is the revenue generated from cesspool services get managed?
6. The revenue generated from cesspool is being used only for cesspool operation or any other domain under ULB functionality?
7. Do you think if these revenues are dedicated particularly for cesspool operation then it will be effective?
8. Are you aware of SeTP budget and its O&M?
9. Do you think engagement of private operator will be helpful, what is your take on PPP model?
10. Is there any specific funds allocated for Capacity building for various stakeholder under sanitation domain?
11. As per your knowledge, who will be expected target group for potential capacity building strategy in Baripada?
12. Looking at the current finance budget how much funds can be mobilized for Capacity building strategy in within ULB budget?
13. Is there any other funds received from any Company / DMF / Govt. Program/ or any financial institution. Or is there any unutilized funds
14. Do you think you need more funding to increase the functionality of FSSM, or do you think Baripada ULB funding is sufficient?

- **Interview with Deputy Commissioner & SBM nodal officer**

1. To what extent is FSSM services integrated with SBM?
2. What are the current level of FSSM addressed under SBM at the ULB level in the city?
3. Are current capacities adequate to deal with FSSM at the city level?
4. What kind of capacities need to be built to deal with it?
5. Which are the key institutions which needs to be involved at district and city levels?

- **Interview with Sanitary Inspector**

1. What are the key sanitation issues in your city? Please state the top three
2. Is FSSM a part of the sanitation services in the city?
3. What are the key issues related to FSSM value chain in the city?
4. How can FSSM activities be monitored by ULBs at the city level?
5. How can communities be made aware about the FSSM services and participate in the same?
6. Are current capacities adequate to deal with FSSM at the city level?
7. What kind of capacities need to be built to deal with it?
8. Has Ward Sanitation Committees been formed for each ward in the City?
9. What role can Ward Sanitation Committees play in improving sanitation and enhancing community participation?
10. What kind of capacity building do the committees require to perform better?

- **Interview with Corporator**

1. What are the major sanitation issues in your ward?
2. Whether Ward Sanitation Committees have been formed?
3. If yes, what is the size of the Committee and how does it function?
4. What role do ward councilors/corporators and ward committees play in making their respective wards ODF?
5. How is fecal sludge/septage managed in your Ward?
6. How can communities from your ward be mobilized to participate in FSSM?
7. What kind of capacity building do you require to work on FSSM?

8. How can Ward Committee members be effectively engaged for improved sanitation in the wards and help the communities raise demand for sanitation services?
9. Do you think the people from your ward will agree to pay more for improved sanitation in your respective wards?

- **Interview with Project Director, District Urban Development Authority (DUDA)**

1. What are the key issues related to urban sanitation in urban areas?
2. What are the key roles and responsibilities of DUDA in implementation of sanitation programmes?
3. What are the key challenges in making the towns and cities ODF in the district?
4. What is the district specific plan to address challenges in sanitation?
5. What kind of coordination presently exists between DUDA and the ULB?
6. What is the linkage between DUDA and other urban development programmes like AMRUT, SBM, OULM etc.?
7. How important is FSSM in sanitation in urban areas of the district?
8. What role can the DUDA play in effective FSSM?
9. What kind of capacities need to be built to deal with FSSM at the city & district level?
10. Government has strategically planned to empower and capacitate DUDA as planning and monitoring agency for all urban services in the district. What are your key suggestions on this?

- I**nterview with Regional Officer, Pollution Control Board**

1. What is the status of river and ground water pollution from municipal sewages in the district?
2. Number of water bodies and sources contaminated in the district?
3. Do you have ULB wise details on the grades of water?
4. What is the amount of contamination of ground water in your area?
5. Have you observed human contact usage of contaminated water in activities like bathing, drinking etc.?
6. From which locations do you collect your samples for water quality testing?
7. What kind of monitoring is done by the PCB to prevent water contamination at the City level?
8. How frequently is the water quality monitored as per water quality protocols and what is the sample size adopted?
9. Is there any coordination with OWSSB, PHEO, ULB and the district administration?
10. Does the PCB monitor the indiscriminate dumping of septage which is one of the major causes of water contamination?
11. How much awareness do people have on water quality issues and its impact on health and environment?
12. Have you undertaken taken any public awareness activities on water pollution and its prevention?
13. Does the PCB have any coordination with river basin engineers in the region? If not, why, as they are responsible for water conservation and prevention from pollution.
14. Are you aware about OUSS, OUSP 2017 of the GoO?
15. Are you aware about the status of FSSM in the City? (desludging, cesspool operators, SePT?
16. Are there any norms prescribed by MoEF which should govern the characteristics of effluent of a SeTP.
17. What are the standards for site allocation and approval for the construction of a SeTP?

- **Interview with City Health Officer**

1. What are the key health issues related to sanitation in your city? Please state the top three?
2. What is the ULB's approach to deal with sanitation problems?
3. What are major reasons for OD in the city?

4. What is the role of CHO in city sanitation improvement?
5. What are the public health and environmental consequences of poor sanitation in your city?
6. Are you aware about FSSM services as an integrated component of sanitation?
7. How important is FSSM as a key health issue?
8. What is the trend of water related disease, particularly water borne diseases?
9. Has your city faced jaundice, cholera, diarrhea and typhoid during the last two years? What are the other most frequent diseases?
10. Do you think FSSM should be prioritized in CSPs
11. How can the community and citizens be made aware about the health consequences of poor FSM?

- **Interview with Chief District Medical Officer**

1. What are the key health issues related to sanitation in your city? Please state the top three?
2. What is the Health Department's approach to deal with sanitation problems?
3. What are major reasons for OD in the city?
4. What is the role of H&FW Dept. in city sanitation improvement?
5. What are the public health and environmental consequences of poor sanitation in your city?
6. Are you aware about FSSM services as an integrated component of sanitation?
7. How important is FSSM as a key health issue?
8. What is the trend of water related disease, particularly water borne diseases?
9. Has your city faced jaundice, cholera, diarrhea and typhoid during the last two years? What are the other most frequent diseases?
10. Do you think FSSM should be prioritized in the CSP?
11. How can the community and citizens be made aware about the health consequences of poor FSM?

- **Interview with Executive Engineer, Public Health Engineer Organization (PHEO)**

1. PHEO is the nodal agency for O&M of the infrastructures developed by the OWSSB. How does the PHEO coordinate? Are there any challenges?
2. Does the PHEO have any role in the O&M of SeTP being constructed?
3. Revenue collection for sewerage is one of the key activity of the PHEO. What is the current price structures of connection fees (capex) and what is the price for OPEX (monthly) collected by PHEO?
4. What is the rate of the demand for sewerage services from the public at present?
5. What is the level of utilization of sewerage facilities?
6. How many samples pass the norms prescribed by the MoEF for drinking water supply?
7. How many water sources are used for water supply?
8. Is water distributed in the city through PHEO water tankers?

- **Interview with Project Engineer, Odisha Water Supply and Sewerage Board (OWSSB)**

1. What is the role of OWSSB in creating urban sanitation infrastructure at the City level?
2. Have you received any communication from the OWSSB on FSSM services in the cities?
3. What is the level of coordination with ULB on construction of SETP in the city?
4. Is the ULB aware that it is responsible for O&M of SeTP after its completion?
5. What kind of capacity building is required for the O&M of SePT at the ULB level?
6. Are there any challenges which you faced during the SeTP construction? If yes, please state them.
7. What is the plan for integrating the SeTP with the other services of the FSSM value chain?
8. What plans are in place for making the SeTP socially acceptable, like landscaping etc.?
9. What portion of the city's population has been considered to calculate the capacity of the SeTP?

10. What plans are in present for the remaining population?

- **Interview with City Engineer**

1. What is the status of sanitation infrastructure in the City? (Length of sewer lines, status of desludging, cesspool operation, and disposal sites if any for septage, solid waste etc.)
2. What is status of the sewerage system in Baripada?
3. Is there any target when the City will be Open Defecation free? How many HHL, CT/PT, hybrid toilets are been sanctioned, completed and in use?
4. What is the status of disposal site?
5. How important is the issue of FSSM in city sanitation?
6. Do you think when fecal sludge gets discharged in open drain or dumped in open it will contaminate water bodies?
7. Who monitors the cesspool vehicle?
8. How does the ULB coordinate with other departments, is there any joint planning, coordination or joint review of program related to SBM, FSSM?
9. Have you gone through the DPRs for SeTP construction?
10. Any suggestions to improve FSSM in the city?

- **Interview with District Social Welfare Organization**

1. What are the key sanitation issues in the urban areas?
2. How can the communities be engaged to raise demand for sanitation services?
3. What is the role of DSWO in implementing and monitoring sanitation programmes?
4. Are you aware about FSSM services as an integrated component of sanitation?
5. Your Department is the nodal department to implement the Manual Scavenging Act 2013. How are you implementing with ULB?
6. What are the ways in which sanitary workers can be prevented from being engaged in manual scavenging?

9.3 Annexure 3 – Questionnaire for Focused Group Discussion

► Community based organizations

1. What are the key health issues related to sanitation in your city? Please state the top three?
2. On what sanitation issue do you work in the city?
3. In which areas of the city do you work and with whom do you work with?
4. What kind of community mobilization activities do you do?
5. Do you use any kind of communication activities to inform and mobilize communities?
6. Are there any urban slum committees that you work with? If yes, in which wards?
7. Have you worked on MHM in any of the areas in the town?
8. Are you aware about FSSM value chain in sanitation?
9. How can communities be made more aware about their role and participation in FSSM?
10. What kind of capacity building and support do you require to work on FSSM?

► Masons

1. Are you aware of NBCC / IS standards for septic tanks and pits?
2. Do you practice these standards while constructing the septic tanks?
3. Based on your experience, what percentage of septic tanks and pits conform to these standards?
4. Do you think the current design of the septic tank is good? If No, can you suggest the best kind of technology for FSM that you provide?
5. Have you ever been trained or imparted knowledge on septic tank construction by any government /private agency?
6. Who are the builders of septic tanks and pits in the city and do you think they have adequate knowledge about design of septic tanks and pits as well as emptying and transportation?
7. Do you think households in the city have knowledge of any specification or standards for construction of septic tanks and pits?
8. Which type of septic tanks and pits are easier for emptying?
9. Who contacts you for construction of septic tanks and pit latrines? Builders or House owners?
10. What kind of capacity building do you require to build standard septic tanks and pit latrines?

► Cesspool operator

Name of the Operator:

Education of Operator

Registered name of the company and address (if any):

Start date (year) of business operations:

Area of Service:

General Description:

- Age of the operator
- Caste of the operator
- No. of Vehicles operating
- Who is owner of the cesspool truck – self – private - ULB
- No of people employed in business
- No of people deploy for each vehicle
- Number and type of vehicles owned at the start of business

Year Procured	Average trips in a day	Make/ Technology of vehicle	Capacity

1. How did you come to know about the emptying and transportation business? (trigger for starting this business
2. Do you see any increase in demand of your service after you have started operations?
3. Average number of trips per day in the current year of operations
4. User charges per trip in the current year
5. Did you apply for permissions to the government for starting the business
    a. Yes
    b. No

    If yes please list the departments and nature of permission

Department	Nature of permission	Requirements for giving permission	Time taken for approval	Charges paid
Industries department				
PCB				
MA&UD				
RTO				
Any Other				

6. Was there any directive or GO from the ULB to initiate FSM services to the private operators?
    a. Yes
    b. No

    If yes please provide us the reference document
7. Do you have any contractual arrangement with the ULB?
    a. Yes
    b. No

    If YES please provide us a sample copy of contract documents (EoI, RFP, etc.)
8. How do you receive requests from households for emptying and transportation
    a. Phone
    b. In person
    c. From ULB
    d. Any other
9. What is the nature of information you seek from the household when a request for emptying and transportation is made?

Q1	
Q2	
Q3	
..	

..	
..	

10. Do you have any process of maintaining records in the form of a register or book for the requests received from households?
    a. Yes
    b. No

    If yes please provide a copy of such record (register/book)
11. How do you plan your operations after a request is recorded and accepted?
12. Do you have any guideline or manual that needs to be followed for emptying and transportation?
    a. Yes
    b. No

If yes please provide a copy and indicate the name of the author of guideline/manual

13. How do you advertise your operations and create awareness about your business among the households?
    - Posters
    - Pamphlets
    - Wall Paintings in public areas
    - News papers
    - Mobile Street loud speaker
    - Display board at ULB
    - Through Internet/ website
14. What are the tools provided to workers and vehicles for emptying and transportation?
15. What are the factors considered for planning the transportation routes? Please chose from the below and also add relevant ones?

Any traffic or peak hour protocols	
Most direct route	
Expected volumes of septage of pumps	
Proximity of disposal pumps	
Others	

16. What are the key steps in locating the septic tank and initiating the dislodging?
17. What are the problems faced in initiating dislodging? (while locating the septic tank and parking the truck for operations)
18. Do you break open the floor or cover of the septic tank. If doing so who is responsible for repairing it and who bears masonry charges and do you take any permission for the same
19. Do you provide any masonry support for your costumers, if so what kind of engagement you have with the mason
20. What are the safety and security precautions taken by workers for initiating and completing dislodging?
21. Do you know the different types of safety gears that are used for operations
    a. Yes
    b. No

    If Yes List them

Norm Source	Safety Equipment	Tick if responds

CPHEEO	Gloves	
CPHEEO	Boots	
CPHEEO	Hard Hat	
CPHEEO	Face Mask	
Robins, 2007	Hand wash supplies	
Robins, 2007	Light	
Self - Domain knowledge	Plastic/ Rubber over coat	

22. Do you have guidelines or rules to be followed either from ULB or other organizations during dislodging?
23. What are your terms of agreement with your costumer (descriptive – What work is the operator providing to his costumer i.e. like sanitizing the site after cleaning etc.) Describe
24. Is it mandatory for workers to wear safety gear and how do you ensure compliance?
25. Do workers experience any health problems after dislodging? Have they developed any prolonged illnesses which can be attributed to continuous exposure to the dislodging? (discuss with sub ordinates)
26. What are the key steps after completing the dislodging including sanitizing the location, washing hands etc.?
27. What is the procedure for collection of user charges?
28. Do you maintain any billing book to account your payments?
    a. Yes
    b. No

    If yes please provide a copy
29. Did you follow any criteria for pricing your services? or How did you price your services
    a. Yes
    b. No

    If YES, please describe the criteria
    a- Value of vehicle purchased
    b- Salary of operator & Helper
    c- Fuel expenses
    d- Operation and maintenance expenses
    e- Others if any
30. Did any customer ever raise a complaint on damage of his property? Neighbors or anyone in the community complain of the dislodging process? Explain
31. Are there any instances that you have either rejected or could not provide the service related to de-sludging? Explain
32. Did you or any of your staff members undergo training or awareness orientation with regard to septic tanks, collection, emptying, and transportation and disposal activities?
33. What is proportion of septic tanks and leach pits are emptied by you in a month (separately)?
34. Is there any kind of septic tank that you cannot desludge? If yes give the reasons
    a- Not able to locate tank/Pit
    b- Septic tank is sealed/ Covered with tiles
    c- Not accessible for existing cesspool vehicle
    d- Due to no emptying for long period, desludging is not lucrative as time taken is inefficient
    e- Others if any
35. Are you aware about practice of manual desludging & emptying in the city?
36. If yes, are you aware how many septic tanks and pits are manually emptied in a month?
37. Do you provide support for costumers for manual desludgers?

38. Do you face any problems from the traffic authorities, neighbors, colonies or vehicles on road while transporting the sludge?
39. Did your truck breakdown anytime while carrying fecal load in the vehicle? What do you do if it happens??
40. Did your vehicle ever leaked from the container when it is loaded? What will be your first step if such thing happens?
41. What is the most commonly used location for disposal of fecal sludge? Provide locations.

S.No	Location	Land use

42. Do you have a dedicated fecal waste disposal place as prescribed by ULB? List of the locations.
43. Do you face any problem or rejection from community or any other authority for disposing waste?
44. Did any authority levy fine or file a complaint for disposing waste in a particular location? Give the details and also share a copy of the same.
45. Did your vehicle retain fecal waste for few days, without disposing it for non-availability of site or any other reason? If so, how many days and reasons?
46. Do you dispose waste during day or in the night (preference and why)
47. Do you sell fecal sludge to any person or any industry for example farmers, or fertilizer industries?
48. What is your annual business turn over?
49. Did you take any lone for the vehicle, if so can you please provide some details
50. What are your profits from last year?
51. Will you be willing to supply sludge if a treatment plant is established?
52. Will you be willing to construct or operate a septage treatment plant?
53. Will you support the entry of other operators into emptying and transportation and treatment?
54. If citizens expect a lower tariff for emptying, would you be open to the idea?

9.4 Annexure 4 – In-Depth Interviews and Focused Group Discussion details

S.no	Name	Organization	Position held	Date of interaction
1	Mrs. Meenakshi Behera	Cuttack Municipal Corporation	Mayor	28th April 2017
2	Mr. Ajay Kumar Barik		Deputy Mayor	28th April 2017
3	Mr. Bharat Behera		Municipal Commissioner	28th April 2017
4	Mr. Ramakant Nanda		Finance Officer	28th April 2017
5	Mrs. Nirupama Swain		Deputy Commissioner & SBM nodal officer	6th May 2017
6	FGD		Sanitary Inspectors	6th May 2017
7	Meeting with Corporators		Corporators	6th May 2017
8.	Dr. Pradeep Pradhan		CHO	18th May 2017
9.	Mr. Arghya Prakash Mohanty, Senior Community Organizer, CMC Ms. Sabana Begum, Community Organizer, CMC		Community Organizers	25th April, 2017
9			City Engineer	28th April 2017
10.	FGD with CBOs (NGOs, MAS, SHGs)			25th April, 2017
9	FGD (Masons)			25th April, 2017
10	Mr. Udaynath Tripathy	Private cesspool operator	Owner	5th May 2017
11	Mr. Ajay Mohanty	ULB cesspool operator	Operator	6th May 2017
12		District Administration	District Collector	
13.	Dr. A. K. Nayak	District Administration	PD, DUDA	3rd May 2017
14.	Mrs. Tuna Behera	District Administration	DSWO	18th May 2017
15.		District Administration	CDMO	18th May 2017
16.		PHEO	EE, PHEO	
17.	Mr. Haribandhu	PCB	RO, PCB	27th May 2017
18.	P. K. Sahoo	OWSSB	OWSSB PE	3rd May 2017

9.5 Annexure 5 - Resolution passed by the Municipal Council for the by-law on Solid Waste Management and formation of WSC

CHAPTER-IX

MONITORING BY WARD COMMITTEE

11. Constitution of Ward Sanitation Committee: A Ward Sanitation Committee shall be constituted in each ward of this Municipal Corporation. The Ward Sanitation Committee shall have 11 to 15 members. The members of the Ward Sanitation Committee would comprise Ward Corporator, Tax Collector, Sanitary Inspector or a designated officer by Municipal Corporation for each ward. Representatives of local Puja Committee/Bazar Committee/Sahi Committee, representatives of Residential Welfare Associations (RWAs) of the ward, representatives from slum sanitation committee, representatives of Community Based Organisations (SHGs, youth club etc.), senior citizens and eminent persons of the area shall be nominated to the said Committee by the Mayor with due regard to suggestions of local Corporator. The Ward Sanitation Committee shall oversee the sanitation activity in the ward. The Member-Convener of each ward would be notified by the Commissioner.

12. A City Sanitation Task Force shall be constituted to monitor the sanitation work in the entire City in accordance with City Sanitation Committee formed by the Govt. in H & U.D Department. The Committee would comprise:

1. Mayor - Chairperson
2. Commissioner – Member-Convenor
3. City Health Officer – Member

15 | Page

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