Rapid assessment report Baripada

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Building a better working world

Disclaimer

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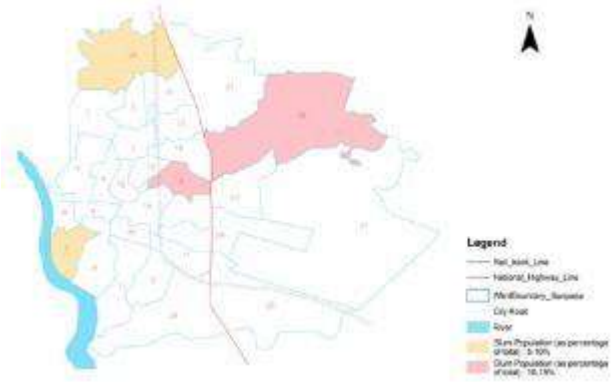
Abbreviations	
ABR	Anaerobic Baffled Reactor
ADM	Additional District Magistrate
AMRUT	Atal Mission for Rejuvenation and Urban Transformation
AWW	Anganwadi Workers
BDA	Bhubaneswar Development Authority
BeDA	Berhampur Development Authority
BIS	Bureau of Indian Standards
BOD	Biological Oxygen Demand
BSS	Basic Safety Standards
CBO	Community Based Organizations
CDMO	Chief District Medical Officer
CHO	City Health Officer
CPHEEO	Central Public Health and Environmental Engineering Organization
CSP	City Sanitation Plans
CSR	Corporate Social Responsibility
CSTF	City Sanitation Task Force
CT	Community Toilets
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
DUSC	District Urban Sanitation Committee
FGD	Focus Group Discussion
FS	Faecal Sludge
FSM	Faecal Sludge Management
FSSM	Faecal Sludge and Septage Management
FSTP	Faecal Sludge Treatment Plant
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
JNNURM	Jawaharlal Nehru National Urban Renewal Mission
KL	Kilo Liters
M+OG	Municipal area + Outgrowth area
MAS	Mahila Arogya Samiti
MHM	Menstrual Hygiene Management
MLD	Million Liters per day

Abbreviations	
MoU	Memorandum of Understanding
MoUD	Ministry of Urban Development
MSW	Municipal Solid Waste
M	Meter
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 Organisation
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
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
ULB	Urban Local Bodies
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 Baripada town. In this Rapid assessment convergent parallel mixed method approach comprising of both quantitative and qualitative methods was used to collect and evaluate data.

Baripada is the district head quarter of Mayurbhanj district located towards northern side of Odisha bordering with two states West Bengal and Jharkhand. It is situated about 60 km from the Bay of Bengal with average elevation of 36meter (118 feet) above sea level. Baripada is one of the oldest municipalities in the State. Baripada has a total population of 1,09743with 26,079households. It is estimated increase to 1, 97,000 in 2020. There are 36 slums where 7397 (28.36%) HHs reside.

Baripada in Numbers

S.No	Indicators	Data
1	Total Population	1,09,743
2	Slum Population	28,462
3	No. of households	26079
4	No. of slum households	7397
5	No. of non-slum households	18321
6	Average no. of person per household	4.2
8	Gender ratio	931 females per 1,000 males

The source of water supply in the town is both through surface and ground water. River Chapat and Budhibalanga are the major sources of surface water supply. Baripada Municipality provides clean source of drinking water to households having direct water connection. There are 11 *pokharis (ponds)* identified in the municipal area which play critical role in regenerating ground water. There are 55 open wells, 360 hand pumps/ tube wells and 456 stand posts. Recently, Baripada Municipality installed water ATMs in the town to provide clean and safe water for the floating population.

On an average, Baripada generates 43.8 Metric Tons of all types of waste per day. According to the SLIP report, currently there is no sewerage network and hence no standard procedure is followed for Septage, collection and treatment. At present, septage disposal is inconsistent with about 35% of the toilets directly connected either to open or closed drains. In addition, the faecal sludge emptied from tanks and pits are emptied into open water bodies, which has an adverse impact on level of water contamination. According to the SLIP report, the gaps in service level with regard to benchmarks

prescribed by MoUD is 100%. Majority of the drains are open and shallow as compare to the small proportion of closed drains. The report also emphasizes the urgent need of having a sewer network, efficiency in sewerage collection and its treatment upto 100%. The collection and transportation of mixed solid waste is exclusively operationalized by the Baripada Municipality. The town generated waste (solid /wet/faecal sludge) is now being unsafely disposed without treatment at Raghunathpur in Ward no 22.

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. Baripada has recently formed 28 Ward Committee as per the resolution passed in Municipal Council. In Baripada, community based institutions has been formed under the flagship programmees of NULM and NUHM. 75 Mahila Arogya Samiti (MAS) have been formed in all 28 wards and 258 Self Help Groups (SHGs) are active under the NULM.

The expenditure pattern of Baripada Municipality shows 42% as depreciation cost. The second highest expenses are establishment expenses, 32% and operations and maintenance which is 22% out of total expenses. The financial report of 2015-16 reveals less than 1% expenses incurred on various programmes, and Grant/contribution /subsidies is 0%. From FSSM point of view, it is suggested to allocate specified budget on various component such as generating awareness, capacity building of key stakeholders, improving value chain mechanism and subsidizing cesspool services. The Municipality has allocated over 232 lakh on constructing IHHL (approved-2602 IHHL), PT (11) and hybrid toilets (156). There is marginal fund available for awareness generation and capacity building related activities.

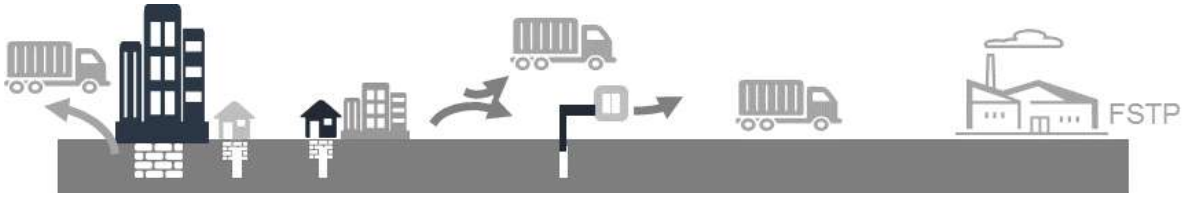
The key policies regulations and guidelines focused on FSSM are indicated below.

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 at 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. Baripada is unique with 50% women representation in the ULB Council. 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 are being tendered out to private players for seven years who are expected to meet operational expenses through service usage charges from households. BCC and capacity building activities is planned to be conducted through SBM funds. Remaining funds are to be allocated through convergence with other schemes and departments such as NUHM, NULM, National

Skill Development Corporation and Labour Commission among others

FSSM Situation of the City

FSSM situation basis rapid assessment study is described hereunder

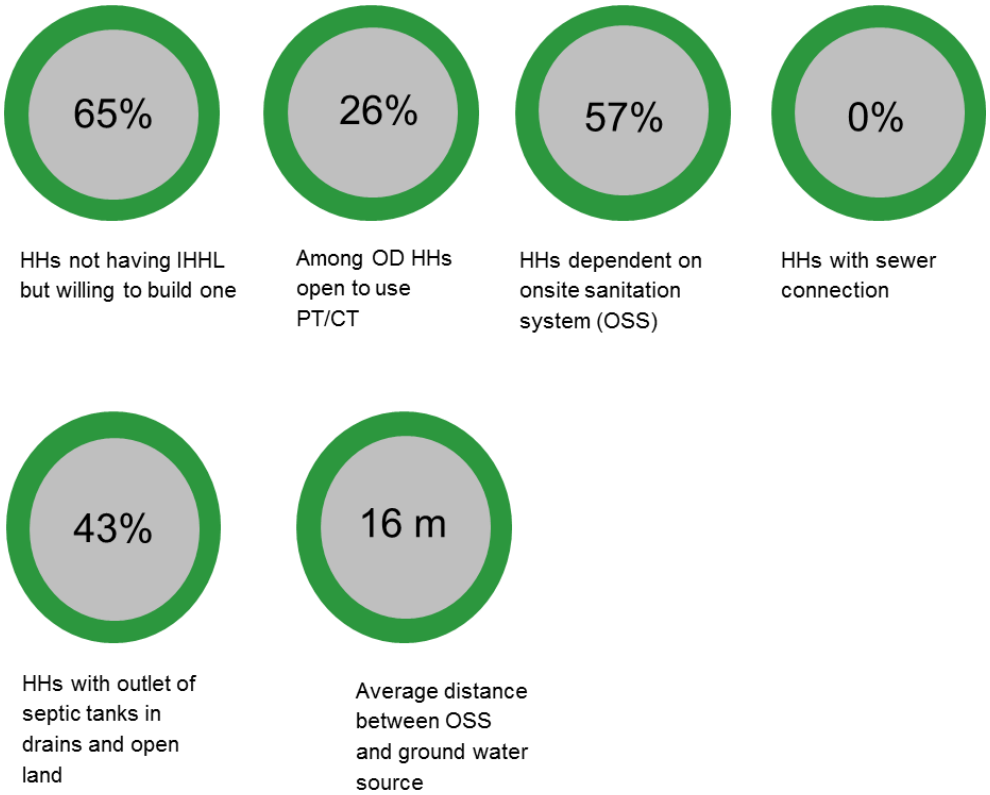


Toilet access and containment

During the year 2016-17, a total 2,880 households have been targeted for individual household latrine construction under the SBM, out of which 2,602 applications have been approved by the Baripada Municipality. Only 445 household have completed latrine construction and 1,992 have commenced construction. However due to inadequate funds majority of the toilets are remain incomplete. Many HHs have cited lack of fund disbursal as a bottleneck in constructing IHHL. This leaves out 4,439 HHs or 18,643 citizens directly or indirectly dependent on CTs/PTs. A total of 156 seats for hybrid toilets[1] are allocated and 11 Public Toilet complexes (total 30 seats) are sanctioned and under progress.

In the primary survey 1,372 HHs were surveyed. Below are the key findings from the primary survey.

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



There is a chance of ground water source contamination as distance between such sources (wells/hand pump) and OSS was found to be 16m, which is less that the required 20 m. Health implication is also huge for citizens since majority on them are dependent on ground water. This could be corrected through focused communication with community and capacity building of masons as

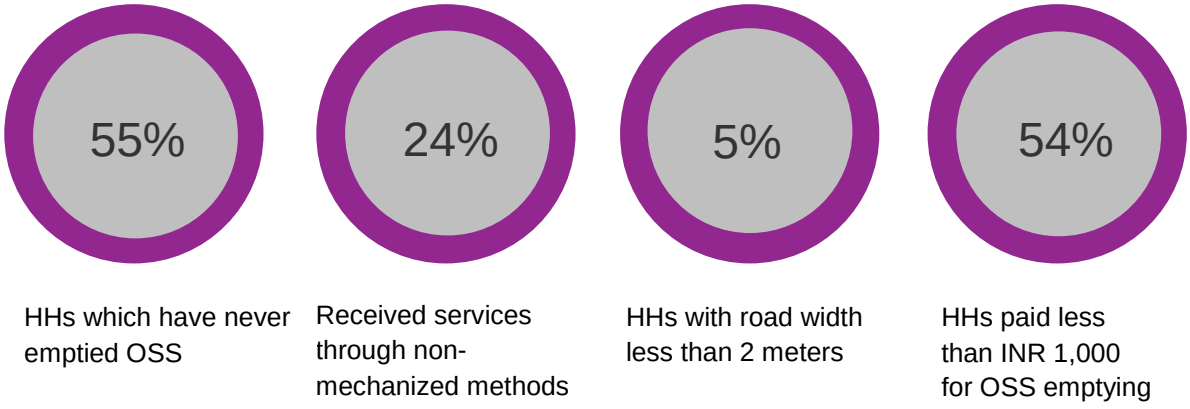
[1] Hybrid toilets is a concept being derived from both community and public toilets, where both options of pay-per-daily use and/ or pay-per-month options are available.

70% HHs sought advice from them for designing and construction of septic tank/pits.

Emptying and transport

The ULB is currently providing cesspool emptying services in the town. Baripada Municipality is one of the few ULBs in Odisha that is running cesspool operations in a profitable manner. The ULB consider this service as a revenue source, one of the reasons why the Municipality showed reluctance to hand-over the service to private players for the new vehicles. The existing capacity is 8.5 Kilo Liter (KL) – 2 vehicles which shall increase to 12 KL with introduction of two new vehicles from the ULB. The new cesspool vehicles have been handed over to private operators and are about to start operations. The ULB also has two existing vehicles both of which are non-operational – one due to mechanical fault and other due to lack of tractor which can move tank and vacuum pump. The ULB is not showing interest in getting these vehicles back in operation citing that new vehicles can meet the requirement. However, the ULB has a waiting period of 2 to 3 days to cater to a desluging request. Many times, this forces HHs to resort to non-mechanized service. 24% HH reported availing non-mechanized services. This situation could be avoided if old vehicles are also pressed into service. Interactions with ULB personnel handling cesspool emptying operations revealed that they are not aware of any regulations. Below are the key findings from our primary survey.

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

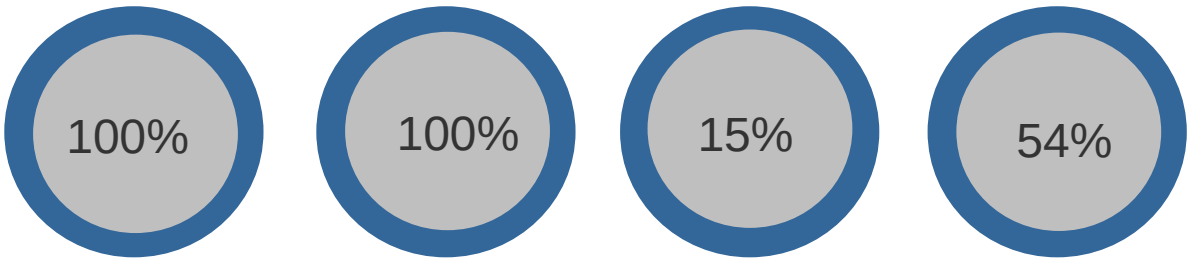


Treatment, re-use and disposal

Faecal waste is being dumped at the solid waste dumping site. This activity is not monitored though. However, a new site for temporary disposal through deep row entrenchment is identified. A 60 KLD (Kilo Liter per Day) Septage Treatment Plant (SeTP) is proposed to treat faecal sludge. Construction has not started as land identification for SeTP is still under process. Currently, there is lack of monitoring mechanism to track dumping of faecal waste. Most of sewage is being discharged into river[2]. 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 secondary data and primary survey

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



Deviation in total coliform level in river

Deviation in BOD level in river

HHs aware where faecal sludge is dumped

HHs paid less than INR 1,000 for OSS emptying

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 do not have environmental engineering sections to comply with standards in public health and environment. Primary survey found low level of citizen participation due to lack of engagement and recognition in the city governance.

Awareness among citizens

- 92% HHs are aware that open defecation causes ill-health to their children
- Mahila Arogya Samiti and Self Help Groups have been formed in Baripada and creating awareness on sanitation and health
- Citizen's apathy, lack of participation and ownership for sanitation and hygiene were reported in FGD and IDI

Basis town situation assessment, 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. Also explore potential for transfer stations[3] which can help in collection and disposal through vehicles of various size. Find ways by which ULB could start operations with old fleet as well. ► Operating models to increase penetration of mechanized services and make them affordable and available ► Pilot project using GPS technology tracking could	► Readiness of SeTP to ensure provision of adequate facilities and efficient operations after land allocation ► Provision for treatment of fresh sludge or undigested sludge ► Intermittent solutions like at the drain outlet point, interceptors or de-centralized treatment ► Market for manure and treated water to be explored and

[3] Transfer stations are intermediate points established to facilitate transfer of faecal sludge from smaller sized vehicles to larger ones to help efficient management of waste. This approach is also used for Solid Waste Management and also for FSSM in some cities of Africa.

	Toilet access and containment	Emptying and transport	Treatment, re-use and disposal
		► be initiated in select wards to monitor usage of mechanized emptying services and check illegal dumping ► Explore potential for scheduled desludging	included as part of the O&M contract to be defined for SeTP operator
Capacity building	► Capacity building of masons on design of scientific OSS including possibility of retrofitting or modifications in existing units ► 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 imparting 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 scientific OSS. ► Amendments could be made in ULB building bye-law to include provision of scientific septic tank as part of building approval process	► 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 including adoption of usage of PPEs. ► Explore potential for training and empanelment of cesspool emptying service providers	► Strong regulatory enforcement to stop open discharge from drains into the river ► Regulation at ULB level to enforce disposal of faecal waste at only designated site
	► 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	► Communicate the harmful impact of non-mechanized emptying and indiscriminate dumping to relevant stakeholders - citizens, leaders, community groups, sanitation workers and ULB staff. Prepare community to build ownership on safe sanitation including ways by which we can help in building financial sustainability for FSSM services through interventions such as property tax or holding tax, sewerage charges among others.	

	**Toilet access and containment**	**Emptying and transport**	**Treatment, re-use and disposal**
	system solutions available in market which are economical and quicker to implement	Also build their willingness to contribute towards paying for using well functional CT/PT through communication and effective operational models which reduce dependence on user fee. ► Identify ways to increase penetration of information to citizens on mechanized emptying service providers	

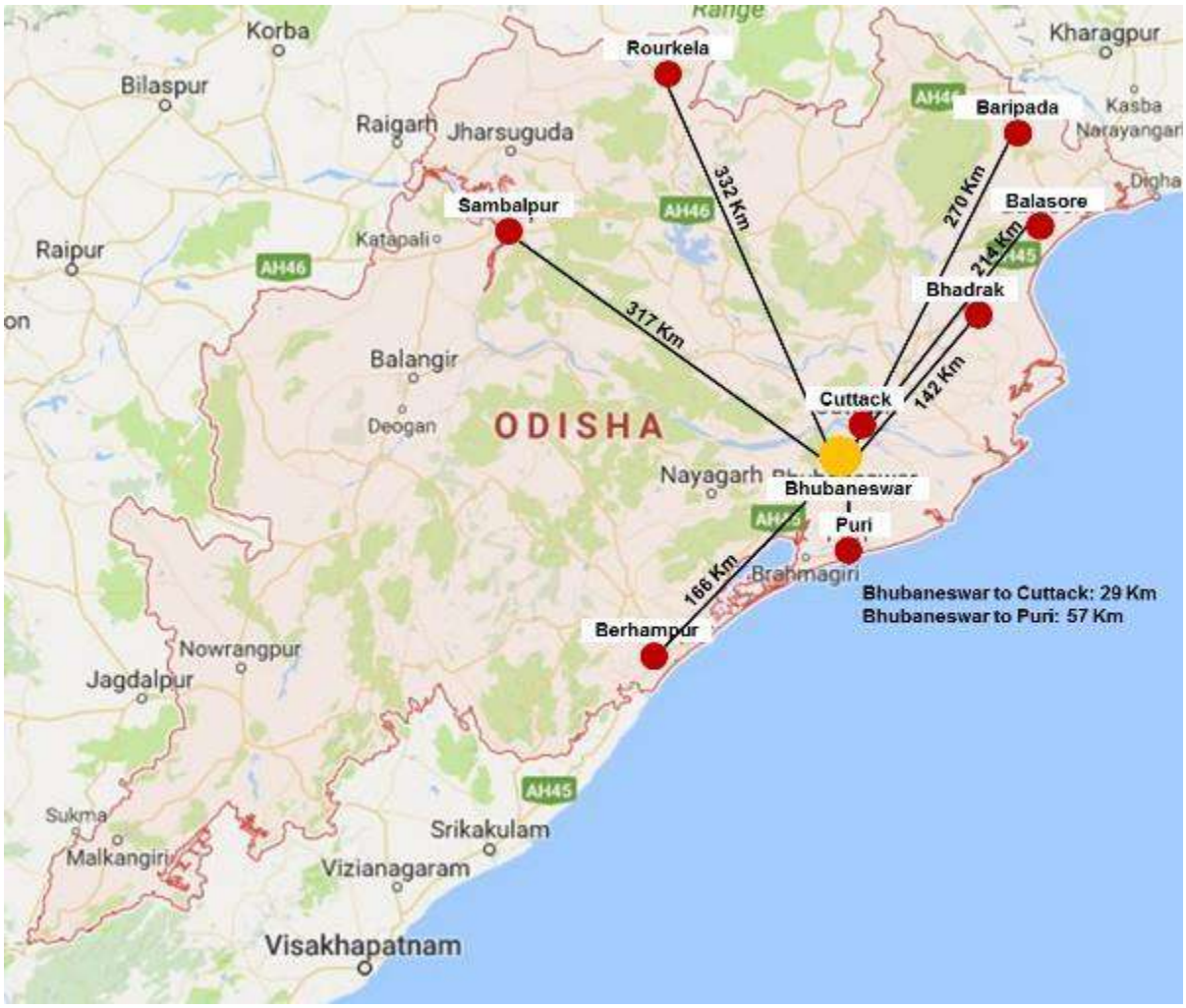
An implementation plan is also supplemented basis the key issues and related interventions as identified above during the rapid assessment. This plan shall focus on key milestones, activities, and identifying integration and dependencies across internal and external stakeholders to help steer FSSM program 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 the national governments, cities, and wastewater utilities have begun to address the management of septage or the sludge that accumulates inside septic tanks and other onsite sanitation systems. With urban population of 70 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 Faecal 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 selected 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 Orissa State Pollution Control Board[4]. These towns depend on on-site containment systems along with high prevalence of open defecation.



[4] 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 household
Balasore	31,539	5,992
Baripada	26,079	7,041
Berhampur	74,720	8,772
Bhadrak	23,084	40,811
Bhubaneswar	2,04,056	10,461
Cuttack	1,35,670	21,707
Puri	40,369	7,266
Rourkela	71,368	21,410
Sambalpur	78,803	26,793

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 all nine AMRUT towns/cities. The rapid assessment reports are expected to generate a snapshot of the status of FSSM in 9 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 Organizations (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), Orissa State Pollution Control Board (OSPCB) & service providers like cesspool operators, masons using semi structured IDI guide (Annexure 2 – Questionnaire for In-Depth Interviews)

3. 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 Baripada

For Baripada, 1,372 household data was extracted from the baseline data, three FGDs and 13 IDIs were conducted over the period of April 2017 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 Baripada

City/Town Name	No. of Household	Wards	Required No of Wards	HH Required each city universe	%having latrine	Design effect	No of households surveyed
Baripada	26079	28	9	413	84%	1	1372

Source: Census 2011

Sample size for wards in Baripada:

Multistage sampling method adopted to extract data from 100% baseline survey data which been collected by the end of May 2017. In the first stage, 7 out of 28 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 Baripada:

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 Baripada city was 26079 (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 1 was applied to the households having individual latrine to arrive at the number of households to be surveyed.

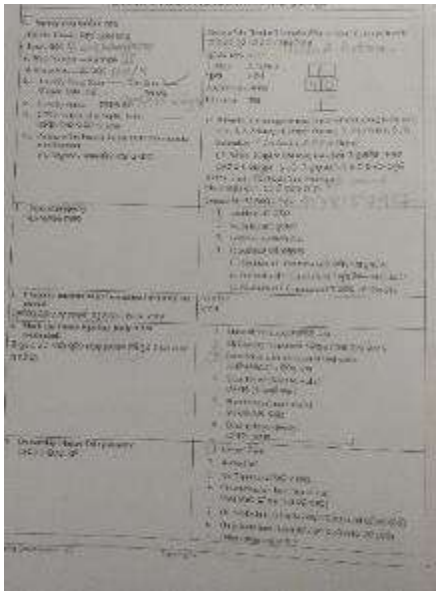
The formula used for calculating the sample size in open EPI info software is:

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

For Baripada, the required number of households calculated using the above mentioned statistical information and formula was 337 however in actual study selected 1372 samples from Baseline database.

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. Written consent was obtained from the head of the household before starting survey.

Figure 1-1: -Household Questionnaire and Survey



1.3 Limitations of study

The rapid assessment of sanitation situation in Baripada 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 faecal sludge situation in the town 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 techniques explains the limitations in detail.

Storm water drainage is not being considered as part of the report since it is beyond the scope of FSSM.

2 City profiles

2.1 Location and regional settings

Baripada is the head quarter of Mayurbhanj district located towards northern side of Odisha bordering with two states West Bengal and Jharkhand. Established in 1912, Baripada Municipality is one of the oldest municipalities in the State.

Baripada municipality consists of 28 wards. Baripada is located at 21°56′N 86°43′E21.94°N 86.72°E. It has an average elevation of 36 meters (118 feet) above sea level (ASL).

Figure 2-1: -Ward map of Baripada

Source: Baripada Municipality

The town is prone to cyclones due to its close proximity to the Bay of Bengal. The National Institute of Disaster Management places the town inside seismic zone II[5]. As per the United Nations Development Programme report, Baripada also falls under the "very high damage risk" from winds and cyclones. Baripada was affected by Phalin cyclone in 2013 and over 50% of the town was submerged under water.

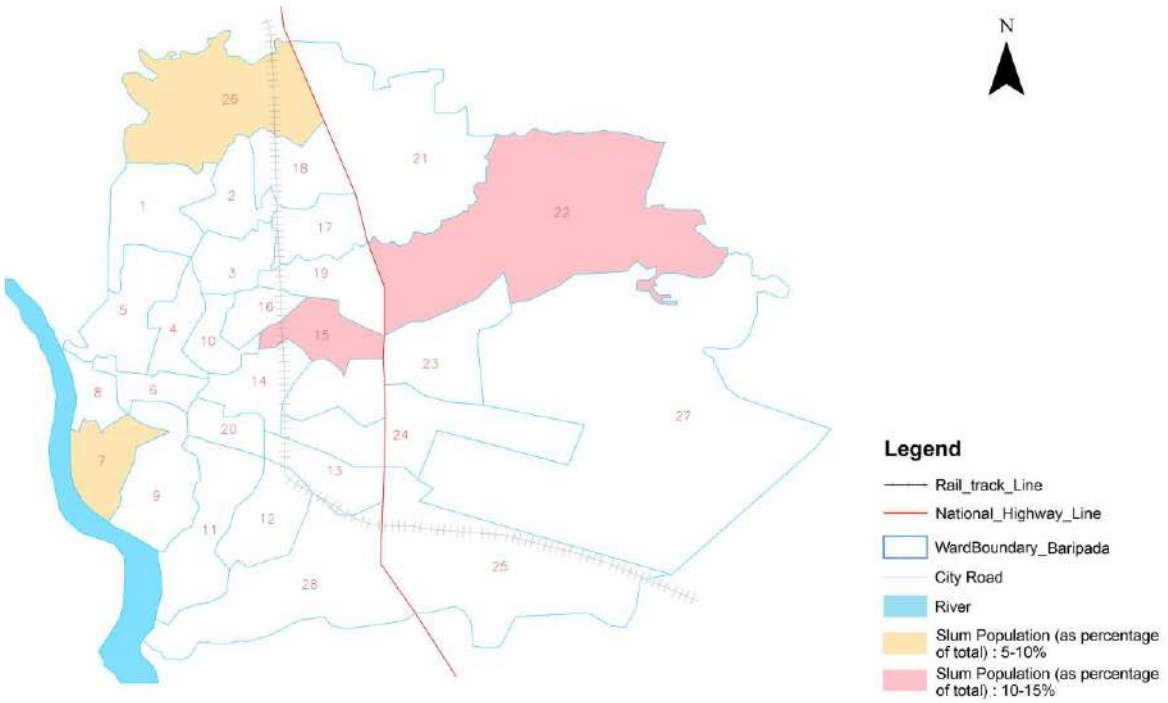
2.2 Demography

Baripada has a total population of 1, 09,473 with 26,079 households. It is estimated that by 2020, the population is expected to be 1, 97,000[6]. There are 36 slums in Baripada, which has 7,397 families, i.e. about 26% of the total population. The identified slums by in the city are shown in the following figure.

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

[6] *Action plan for open defecation report – Baripada 2015*

Figure 2-2: -Distribution of slum population



Sources: Baripada Municipality

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	1,09,473
2	Slum Population	28,462
3	No. of households	26079
4	No. of slum households	7397
5	No. of non-slum households	18682
6	Average no. of person per household	4.2
7	Average income of people	35000 which is below state average of INR 50000 Per Capita
8	Gender ratio	931 females per 1,000 males

Source: Census 2011

The city has about major 4 wards shown in Figure 2-2, which are vulnerable due to the following reasons:

a) Over 50% of the wards are located under the low area where water blogging is common problems during monsoon
b) Proximity of wards to flood prone area,
c) Major outbreaks of jaundice, diarrhea and typhoid due to contamination of water bodies near the wards

2.3 Overview of sanitation situation in Baripada

Baripada is the oldest municipality in Odisha. With 26% of population residing in slums areas, almost 48% of the slum population does not have individual household toilets. There are only five public toilets maintained by Sulabh International in Baripada, out of which two are fully functional. The rest three have less footfall as they are located in the outskirts of the town. There are no community toilets available in Baripada.

During the consultations, the Mayor mentioned that their vision for 2019 is to become an open defecation free town. One of the wards has been declared ODF this year. They plan to achieve their vision by constructing 11 CT/ PT and 156 hybrid toilets. He highlighted the fact that ULBs, district administration, elected representatives, NGOs and communities are working together to achieve complete sanitation in Baripada. However, motivating people to construct toilets is a critical challenge. The provision of INR 5,300 as incentive under SBM is inadequate. The ULB is trying to mobilize extra funds so that people receive approximately INR 10,000 to construct toilet in their house.

Insanitary toilets, open defecation, chocked drains, solid wastes dump yards are prevalent in the slums pose serious threat of water and vector borne diseases in Baripada.

Baripada has three cesspool trucks received from the H&UDD in December 2015, out of which two are functioning well. The Baripada Municipality monitors and operationalizes the cesspool vehicles which generated INR 15 lakh revenue in year 2015-16[7]. One cesspool truck has not been functional since the beginning. There is one temporary disposal land site, where all types of solid waste and faecal sludge is dumped. The site is close to human settlement.

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 Baripada

Objective:	To understand key sanitation issues
Participants:	Mayor, Sanitation Inspector, District social welfare officer (DWSO)
Key observations:	➢ Poor awareness on problems associated with sanitation ➢ 90% of the drains are open and narrow. They are mostly chocked due to disposal of solid waste ➢ Poor planning and monitoring of construction work related to drains and other infrastructure which breaks down fast, especially during monsoons ➢ Sanitation situation is very poor and the main reason is that the town is located on a low land ➢ Toilet construction is the most important and priority issue, especially for those households who do not have toilets. Owing to the situation the ULB is constructing hybrid toilets instead of community toilets as there is insufficient space for construction. ➢ People in slums are not aware about the importance of toilets and the priorities for them are different. Though the municipality constructed community toilets in slum areas, people rarely use them. In few wards, people are still practicing open defecation. Some of them are using their toilets as store rooms. ➢ There is understanding with respect to integration of SBM and FSSM as they realize that sanitation needs to go beyond toilet construction.

[7] Baripada Municipal corporation , Finance report 2015-16

Figure 2-3: -IDI with Mayor

2.4 Infrastructure facilities

2.4.1 Water supply

The source of water supply in the town is both through surface and ground water. River Chapat is the source of surface water supply. Baripada Municipality provides clean drinking water to all the households having direct water connection. There are 11 ponds (*pokhari*s) identified in city municipal areas. These ponds play a critical role in regenerating ground water. There are 55 pumping and open wells, 360 hand pumps and tube wells and 456 stand posts.[8]

Total water demand of the town, at the rate of 155 LPCD (including 15% loss), stands at 18.33 MLD. However, total water supplied to the city is 15.8 Million Liters per day (MLD). Ground water provides for the majority of water supplied (11 MLD) while the rest is dependent on surface water (4.8 MLD).

Baripada Municipality has initiated major projects recently to improve water, sanitation and internal road conditions in the town. At present, 4.80 MLD of surface water is being treated daily, while the installed capacity of the treatment plant is 9 MLD. Ground water too is being disinfected using beaching powder.

Entire water supply system of the town is divided into 6 zones. 18 wards have been fully covered with piped water supply whereas 10 wards have been partially connected. Total water storage capacity in Baripada is 3.57 ML and the water distribution channel is 135.6 km long. Water distribution channel has been laid adjacent to open drainage and leakages at various points is the major reason for water contamination.

2.4.2 Sewerage systems

Baripada generates an average of 43.8[9] Metric Tons of waste per day. According to the SLIP report, currently there is no sewerage network. Thus, no standard procedure has been established for septage collection and treatment. At present, septage disposal is inconsistent and is generally done the open drains. Hence, the gap in the service levels with regard to benchmark prescribed by MoUD is 100%. Majority of the drains in the town are open and shallow. Direct discharge of toilets into open and close drains is predominant in Baripada.

[8] City sanitation plan for Baripada, Consortium for Decentralized Wastewater Treatment (DEWATS) Dissemination Society and National Institute of Urban Affairs, May 2017

[9] Calculation of Metric ton is based on SBM guideline: 1person generate average 400gram waste per day.

Table 2-3 shows comparison between existing service levels and target MoUD benchmark for basic sanitation related indicators. Coverage of latrines, individual or community, stands at 73%. Thus, the Municipality needs to have an inclusive action plan to cover the remaining 27% population. Baripada SLIP report has also expressed the urgent need to improve the sewer network, efficiency in sewerage collection and treatment upto 100%.

Table 2-3: -Status of sewerage network[10]

Indicator	Existing service level	MOUD benchmark
Coverage of latrines individual or community	73%	100%
Coverage of sever network services	00%	100%
Efficiency of collection of sewerage	00%	100%
Efficiency in Treatment: Adequacy of sewerage treatment capacity	00%	100%

Source: State level Implementation Plan, 2015

"Baripada doesn't have sewerage connections because of land surface typology (undulating).However, the Municipality has plans to lay decentralized sewerage lines. At present, in areas where sewerage network has been laid down, grey water connections are not yet connected and it goes either directly to open drain or to open field".

City engineer , BMC

2.4.3 Solid waste management

Baripada generates around 48.8 MT of municipal solid waste per day out of which around 40 MT gets collected. Solid waste is collected through both door-to-door collection and from secondary and community bins. Composition of wet waste is 57.7 % and that of dry waste is 42.3%. Door-to-door waste collection is carried out exclusively by the Municipality. However, it has plans to involve private players by assigning them management of certain areas in the town. Biomedical waste is collected and transported to the dumping site along with other waste without any form of segregation.

Collection and transportation of mixed solid waste is done by the ULB. There is no solid waste treatment plant available in Baripada. All waste from the town is transported to Raghunathpur dumping site which is spread across 2 acres of land. There is human settlement within 100 m from the dumping site.

[10] SLIP report : 2015-16

Figure 2-4: -Raghunathpur dumping site

"Baripada has a record for stringent monitoring of sanitation activities under 'Swachh Baripada' campaign for last five years where all the line department officers are the nodal officers engaged for all 28 wards. Each mentor has to oversee the sanitation activities under direct control of the District Collector which has played a big role in progress of sanitation in Baripada"

– Mr. Jyoti Shankar Ray , EO, BMC

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

Objective:	To understand the solid waste scenario
Participants:	Sanitary inspector, Councilors and Community Organizers, Mahila Arogya Samiti (MAS)
Key observations:	➢ Lack of solid waste management ➢ Waste is directly disposed into drains ➢ Absence of safe and sanitary drainage system as most of the drains are open ➢ Lack of awareness on segregation of waste and throwing of waste in bins. ➢ Lack of facilities (dustbins, collection in all wards) ➢ Sweepers does not have safety measures ➢ Waste been dumped in cities periphery area ➢ All types of waste including solid, wet, dead animals, septage is dumped at one site ➢ During monsoon all drains get overflown and water inters into houses ➢ Construction debris remains on the road for longer time ➢ ULB has shortage of human resource and solid waste transport vehicles ➢ The ULB has approved the resolution on CSTF but not yet made it functional ➢ ULB is willing to explore GIS technology to improve solid waste management programme ➢ With the active involvement of elected representatives, Baripada Municipality has declared ward no 4 as Open Defecation Free ward.

2.4.4 Road network

The length and width of approachable roads is one the key indicators for water and sanitation programmes. In general, Baripada's main approaching roads are wider with an average width of 6 meters. However, roads in the internal parts of the city need to be improved. Baripada has around 258 km road web, out of which over 50% streets are less than 5 mt wide. This throws practical challenge in accessing areas with bigger trucks/tractors for solid waste collection as well as cesspool services.

Currently, there are two functional cesspool vehicles with capacity of 3,000 L each and one tractor mounted cesspool for inaccessible areas. However, since majority of areas are out of reach for cesspool vehicles, there is a high probability of households using non-mechanized services to clean the septic tanks. Therefore, going forward, improving the accessibility of cesspool vehicles is important for safe emptying and transportation of waste for more than 7000 HHs in slum/semi-slum areas. Baripada has planned expenses worth INR 288 cr[11] for internal road infrastructure under the AMRUT programme. In addition, the ULB has approved the work of INR 70.52 lakh for internal road construction work for year the 2016-2017.[12]

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 (SI) 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 oversee the sanitation activities in the ward. The member-convener of each ward would be notified by the Commissioner. Baripada has recently formed 28 WSCs as per the resolution passed by the Municipal Council for the by-law on Solid Waste Management.

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, Sanitary Inspector, 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 Baripada, WKS has been formed in all 28 wards.

b) Mahila Arogya Samiti (MAS): MAS is a local women's collective formed under the National Urban Health Mission (NUHM) with an elected chairperson (any member from group) and Accredited Social Health Activist (ASHA) as member 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 community level. 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 their locality.

[11] State level Implementation Plan for Baripada city , 2015-16

[12] Action plan under road development : 2016-2017

Over 7,000 household reside in Baripada slum/semi-slum area and is the potential population to form MAS. However, only 75 MAS has been formed in Baripada, which indicates a shortfall of 450 from the target.

Existing MAS members 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 would have larger impact.

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 households 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 are being formed for mobilization of urban poor and for enhancing their livelihood opportunities. Till now, over 258 SHGs have been formed in 28 wards of Baripada having slums. Area and city level federations of SHGs have also been formed. The women SHG leaders are acceptable community leaders who can sensitise the other group members on sanitation and its impact on health. They can also motivate women to build Individual Household Latrines (IHHL) and adopt desirable sanitation practices

2.5.4 Others

Inter-sectoral collaboration among the H&UDD, Health and Family Welfare Department and Woman and Child Development Department (W&CD) as well as other stakeholders has been institutionalized though formation of city coordination committees[13]. There is a great need to revitalize such committees to strengthen the sanitation agenda in collaboration with NGOs.

The role of civil society/NGOs in local development is crucial. However, in Baripada, the involvement of NGOs is negligible. There is only one NGO working on sanitation in the ULB area.

Baripada has countless organizations registered, but hardly any NGOs are working at ground level. There is only one NGO named- "Shakti Sikha" which comes forward to provide support and we engage them in various activities like health campaign, organizing camps, or conducting survey etc.

Mr. Ujwal Das, SBM in charge, Baripada

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

S. No.	NGO	Focus area
1	Shakti Sikha	Urban sanitation, mobilization for SBM

Source: Baripada Municipality

[13] Urban Health Programme in Odisha :An Innovation for GO-NGO and Community Partnership: 2015

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

Objective:	To understand the roles taken by CBOs
Participants:	Community organizer (CO) and CBO
Key observations:	➢ Key responsibility of CO is to mobilize the community on various government initiatives and programmes as well as on various health and sanitation related preventive measures. This also includes information about construction of sanitary latrines which includes safe containment through septic tank and pits ➢ The process of forming WSC has commenced in the last few months for all the wards ➢ WSC can play an important role in creating awareness on FSSM. It can monitor cesspool operation in the respective wards to reduce frequency of manual emptying and promoting mechanized dislodging and also generate demands for cesspool services. ➢ Lack of funds for WSC is one of the main barriers ➢ Anganwadi workers (AWW) motivate people by spreading awareness on maintaining personal hygiene, hand washing, safe drinking water. They also motivate people to construct toilets and support ULB to conduct IHHL survey in Baripada. In the Monthly Progress Report (MPR) of ICDS, the status of toilets in each area is recorded. Since AWW has extensive reach at community level and they also stay in the same community, they can integrate key sanitation issues with other priorities. ➢ Community organizers are overburdened and there is shortage of COs in Baripada

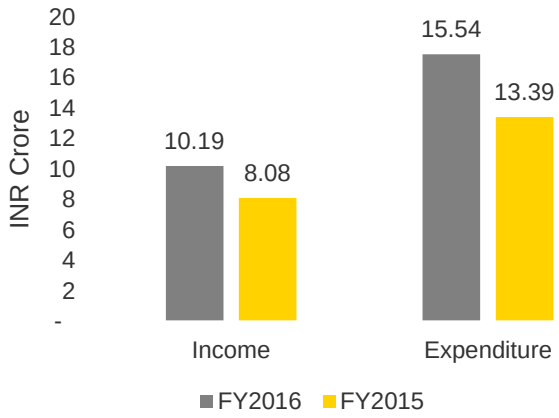
Figure 2-6: -FGD with CBO

Figure 2-5: -FGD with MAS

2.6 Municipal Finance

An attempt has been made to analyze the income and expenditure patterns in the Municipality during FY 2015 and FY 2016. It is observed that the income and expenditure estimated during the FY 2015-16 has marginally increased. While income has increased by 26%, expenditure has grown by 16%. This data establishes the need for generating revenues in same or higher proportion.

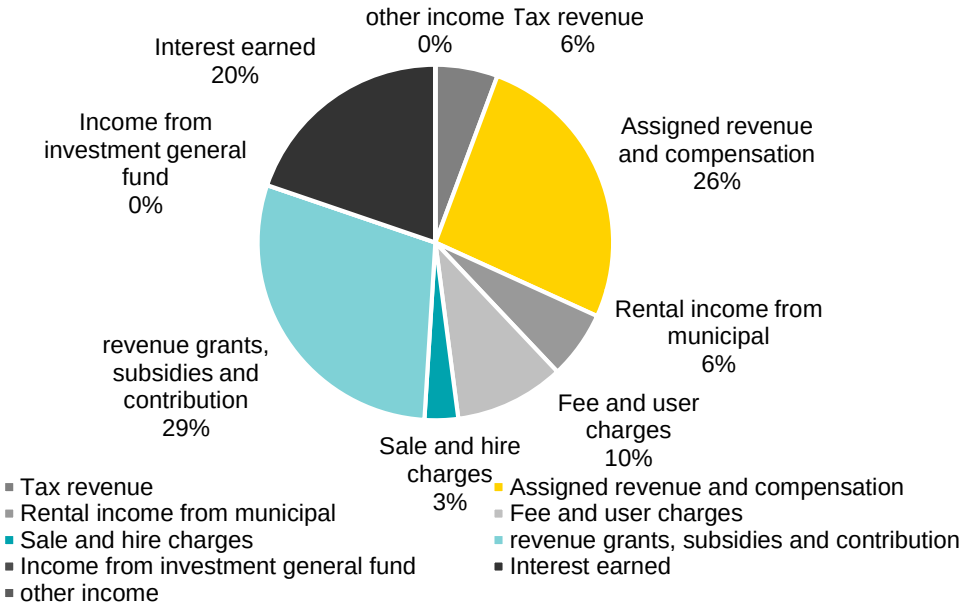
Figure 2-7: -Income and expenditure pattern in Baripada



Income

A detailed analysis of the municipal revenue and expenditure of year 2015 and 2016 shows that assigned revenues and compensations are the major contributors of revenue generation with 26% of the total revenue. The revenue base of municipalities is weak and they are heavily dependent on state government fund as it contributes 29% to the total income. The next major contribution is from the interest earned which contributes to 20% and tax revenue, which contributes approximately 6% of the total revenue. Tax revenue includes holding tax, latrine tax, electricity tax and sewerage tax. BMC has come up with a resolution wherein unless a customer clears all holding tax, they will not able to avail cesspool service. Data shows there is huge potential to increase the revenue from Sales and Hire charges and tax revenues which respectively shows 3% and 6% of total revenue generation.

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

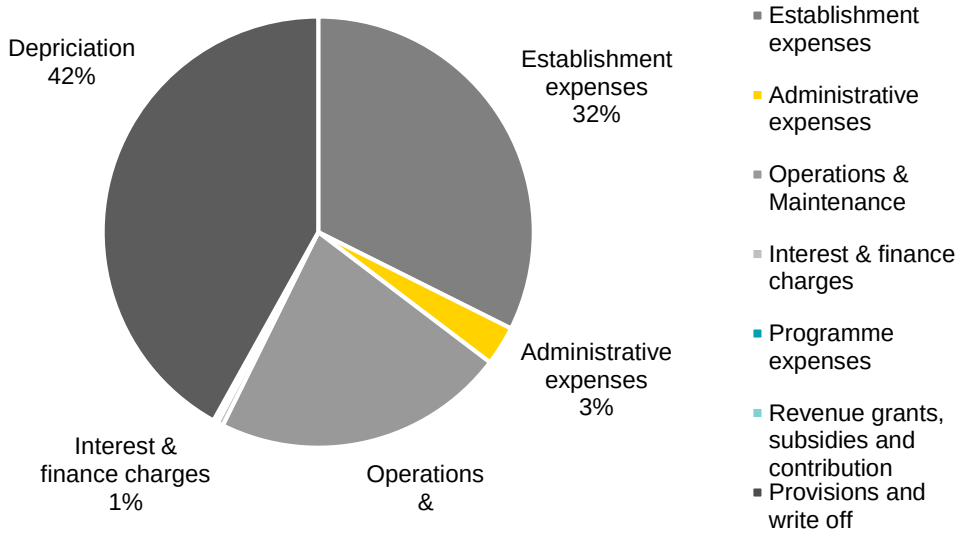


"Sanitation budget for capacity building is mostly spent on meetings. Baripada Municipality does not have a full-fledged sanitation cell as such where FSSM can be linked. Presently, while the engineering section deals with mainly infrastructure, the City Health Officer (CHO) deals with awareness generation, and communication"

- *Executive Officer , Baripada Municipality*

Expenditure

Table 2-8 Expenditure of BMC in FY2015-16



The expenditure pattern of Baripada Municipal Corporation shows 42% as the depreciation cost. Other significant expenses are establishment expenses (32%) and operations and maintenance expenses (22%). The financial report 2015-16 reveals that less than 1% expenses have been incurred on various program. From FSSM point of view, it is suggested to allocate specified budget on capacity building of various stakeholders and to subsidize FSSM related services in order to increase the demand. As per the data received from SBM (U), BMC has allocated over INR 232 lakhs on constructing IHHLs, PTs and hybrid toilets.

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 programmess in comparison to the previous ones. At present, urban sanitation interventions are target oriented and partnership based 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 the Ministry of Urban Development (MoUD), 2016, found progress of Odisha in the SBM targets need accelerations[14] to meet the mission targets. Out of 511 cities[15], 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[16]. 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 [17]

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;
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.

[14] MoUD 2017

[15] MoUD 2017

[16] SBM(U) guidelines 2016

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

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, the MoU 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.[18]

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 cover 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 Plans (SAAP) for project period (2015-2020).

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 level- 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[19]. However it addresses synergies between FSSM and 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 objective 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.

[18] AMRUT reforms

[19] National FSSM 2017

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 ++)[20]
- 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

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

[20] 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)

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 FSSM is defined in the earlier sections. In Odisha, FSSM rules and programmes falls under multiple agencies. The OWSSB creates assets and infrastructures and sewerage network projects in five cities[21] 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.[22]) under the overall 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 a 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 sanitary workers, 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

[21] 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. Berhampur is in DPR stage.

[22] Bhubaneswar Development authority, Cuttack Development authority, Sambhalpur Development authority, Berhampur Development authority

FSSM 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 also have roles to pay as per OUSS 2017.

CASE IN POINT: FSM policy is backed by investment plan

Besides the aforementioned 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[23]%, 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, FSSM 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[24]. **As a matter of policy[25], 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 subsidies.

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[26] 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 for FSSM 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.

[23] Census 2011

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

[25] Odisha septage management guidelines

[26] 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) in 27 districts out of 30, 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 for the urban sanitation infrastructures including SeTPs, constructions of CT, PT and HTs and even purchase of cesspool trucks as these infrastructures involves bulk money to be budgeted. Though all 30 districts are DMF districts, yet nearly 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 to prioritize the CSR fund allocations and spending where urban sanitation is on high priority. This creates a scope for all ULBs in the state to plan and utilize such funds. Funds to the tune of INR 11 lakh crore is currently being invested in the state.

Another important development is proposal for the Urban Waste Water Management Bill 2016 (which is under legal scrutiny) by the H&UDD and mostly likely be enacted as a law in 2017. This can push regulated sanitation in urban areas by making the processes for FSSM services legally, institutionally, technology wise and managerial point of view implementable in the state.

[27] 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.

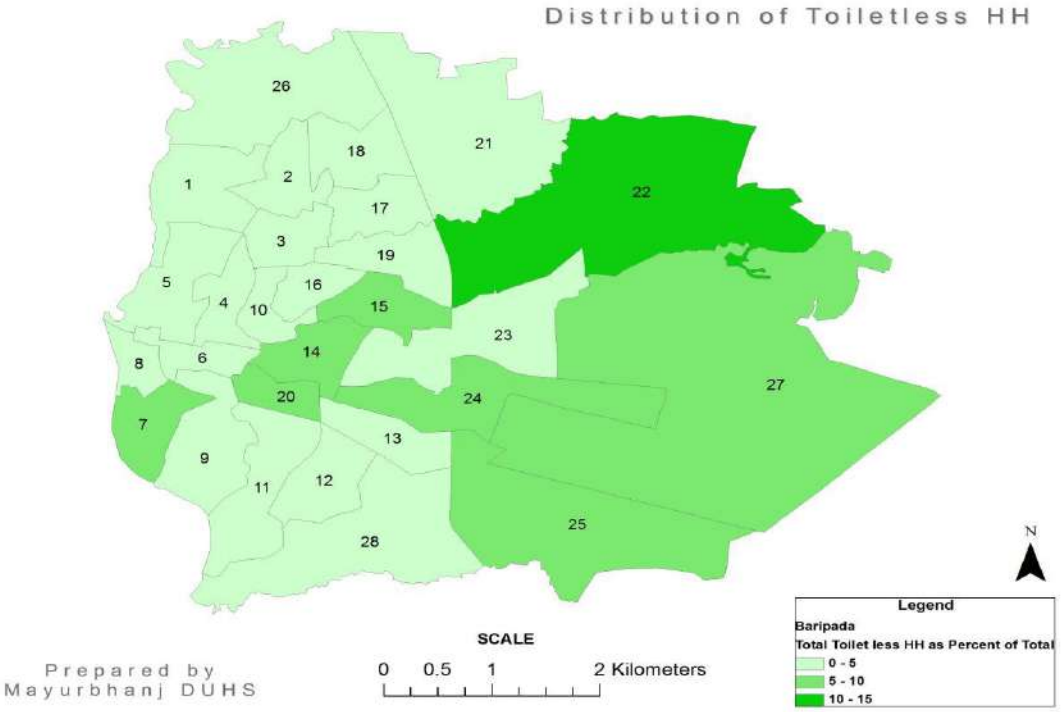
4 FSSM situation assessment

4.1 Toilet containment typologies

As per census 2011, Baripada municipal area has 27,079 households. Out of these, 73.9% have individual household latrines (IHHL). Open defecation (OD) is estimated to be 26.1% (7,041 HHs) which is higher than national urban average of 12.6%. Out of 28 wards, five wards have high incidences of open defecation. In Baripada, around 23 wards have reported having over 26% of open defecation incidences which is higher than the national average (12.6%)[28]. 35 slum pockets have been identified in the town where poor sanitation and high open defecation problems require critical interventions.

The rapid assessment primary data indicated that 31% HHs from slums practice Open Defecation while 5% respondents reported using Public Toilets. Remaining 64% respondents reported having IHHL in house. Figure 1.1 shows wards affected by Open Defecation in Baripada Municipality.

Figure 4-1: -Ward Map indicating open defecation areas



Source: Action Plan for Open Defecation in Baripada, 2015-216

Open Defecation in urban setting poses serious challenges especially in areas with high population density. Wards viz. 7, 14, 15, 20, 22, 24, 25 and 27 have high population density. Being a border district, Baripada receives significant number of incoming migrants from Jharkhand and West Bengal. This contributes to an increasing slum population growth which further negatively impacts the already inadequate infrastructure and unavailability of necessary services.

According to report 'Action for open defecation free Baripada city', 48% slums do not have access to community toilets in Baripada.

"*Children below 10 years of age defecate into open drains or on the road sides is another problem in Baripada".*
- Sanitary inspector

Despite having access to IHHL, the primary survey shows 28% of male members practice Open

[28] Wards with open Defecation: 1,5,7,8,11,12,13,14, 15,17,18,19,20,22,23,24,25,26,27,28,29,30,and 31

Defecation. Large family size, inadequate water supply and land space availability, habitual/cultural factors, low household income and tendency of delaying the cleaning of septic tank are the prominent factors that cause an increase in open defecation, despite having toilets in house.

The primary survey shows that 88% households that do not have toilet access and resort to OD are willing to construct one. Those unwilling cite lack of funds and space as major constraint. 71% HHs are also open to use CT/PT.

As per SBM, out of 7,041 HHs which do not have toilets, only 3,950 HHs submitted applications for IHHL by March 2017. Application and summary is presented in Table 4-1

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

Received	Verified	Approved	Rejected	Constructed	Commenced
3,950	2,880	2,602	66 (against verified)	445	1,927

Source: SBM-PMU Odisha

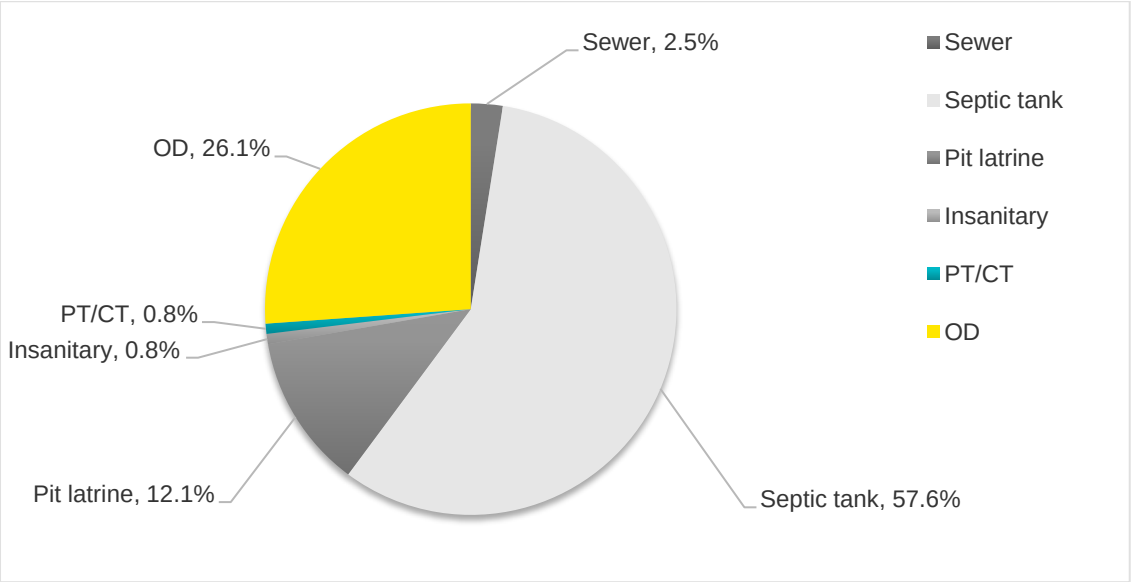
The data mentioned in above table shows that applications were received from only 56% of the total HHs practicing OD. Out of these 73% applications have been verified and 66% applications have been approved by ULB. The rejection rate is 2% for the total applications received.

Declaration of ODF in Baripada

Ward no. 4 among the 28 wards under Baripada Municipality administration took the initiative of making it ODF and worked out plan. The ward comprises administration offices, market centers and various social infrastructures. The plan was formulated under the chairmanship of the Hon'ble Deputy Speaker (Odisha), Sananda Marandi with combined supervision and efforts from Chairperson Babita Das, Executive Officer Aboli Sunil Narawane (IAS), Assistant Executive Officer Jyoti Sankar Ray, Vice Chairperson Jitendra Mohanty, Councilor, and foremost active participation and initiative taken by Ward No. Councillor Krushnananda Mohanty.

Complete eradication of solid dumping on the streets or drains, along with solid waste segregation at source with door-to -door collection with the help of existing solid waste tricycle carts were among the key measures taken up. It was followed by regular meetings with various SHGs and ward committees by mobilizing community for building social awareness and infrastructural development at micro level. This ward has already set up a deep impact on the Baripada citizens. The Assistant Executive Officer is determined to transform Baripada as one of the first OD free towns in not only Mayurbhanj but also in Odisha by end of 2017.

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



Source: Census 2011

As per the census 2011, the proportion of population dependent on on-site containment systems (OSS) is 70%. 1.6% of the household access public toilets and insanitary toilets[29].

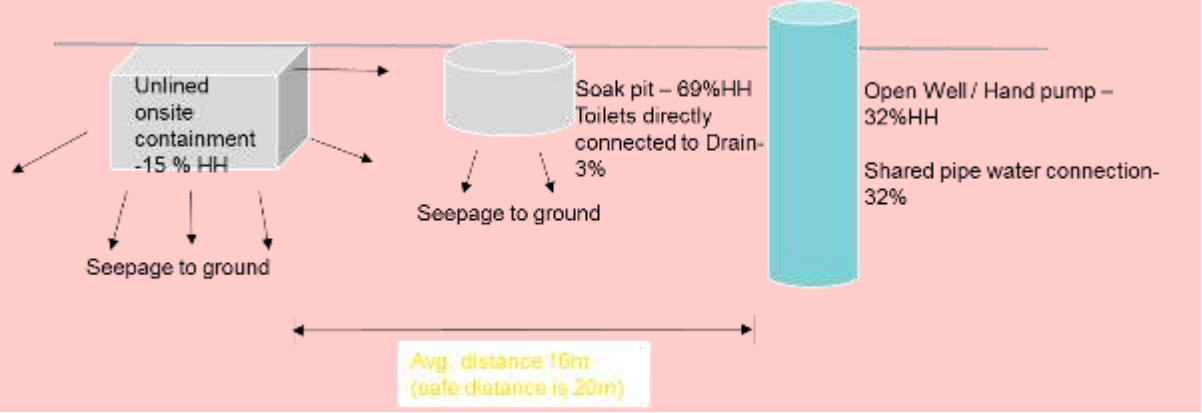
Primary survey shows that 35% toilets discharge into open drain, 6% toilets discharge into closed drains and 2% toilets discharge into open land fields. The distance between septic tank/soak pit and source of water bodies such as well, hand pump is critical determinants of water contamination. Data shows average distance found between onsite sanitation system and open well or hand-pump /bore-well is around 16m which is lesser than safe distance of average 20m. 32% of respondents reported wall/hand pumps are the primary source of drinking water and has toilets constructed in less than 20m range. Baripada also uses ground water to ensure drinking water supply to citizens as mentioned in Section 2.4.1. Together this could be potential source of water contamination and related waterborne ailments.

Figure 4-3:-Toilet directly connected to Open and closed drains

"While working with children we have observed Diarrhea, malaria and jaundice. These are the common recurring health problems observed in Baripada" – DSWO Baripada.

[29] *Toilets which directly dispose into drains without onsite sanitation system and/or require night soil to be removed by human or animal are considered as Insanitary*

Figure 4-4: -Situation with onsite containment system as per our primary survey for Baripada



Source: Primary survey

While Baripada has 3% HHs with insanitary toilets, there are 35% HHs found connected their onsite sanitation system to open drains. ULB and district level critical stakeholder have thrown light on the problem during interactions.

"Most of HHs have toilet outlets connected to open drains leading to hygiene issues. Toilets connected to open drains is one of key sanitation challenge of the city" -- Chairperson, ULB

"Not as per norms. Some latrines are connected to open drains" – Municipal Councilor

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

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 standards. 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 holding tank and affects bio-digestion potential. This could be a reason why 55% 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) 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 in cases space is a constraint. This was further confirmed through the primary survey which revealed that 3% of households directly connect their toilet to drain or water body (insanitary toilet).

We do not have any formal knowledge about building septic tanks but we build septic tanks as per our knowledge which we have gathered from our senior family members or other masons or as per the household's demands. We try to tell HHs the standard specifications that we are aware of, but sometimes HHs may want something different. Usually they are not aware about design and capacity of the septic tanks and depend on masons – FGD with Masons

Figure 4-5: -Interaction with masons and cesspool operators

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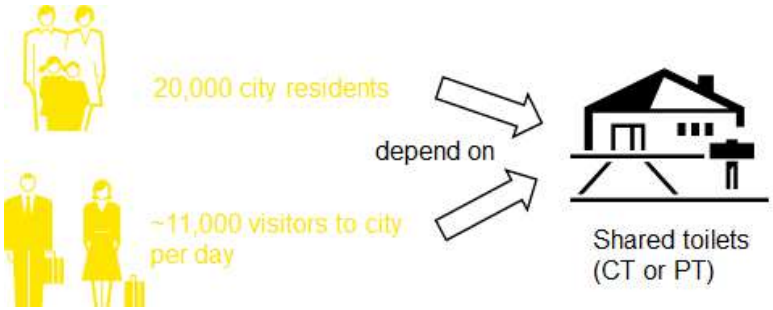
4.2 Status of CT and PT



Source: SBM-PMU and SLIP- AMRUT Odisha

As per census 2011, 26% or 7,041 HHs do not have access to individual toilets and 0.8% or 217 HH depend on CT/PT. Of these, 2,602 are to be provided IHHL under the SBM, based on status till May 2017. This leaves out 4,658 HHs or over 20,000 citizens directly /directly dependent on CTs/PTs. In addition, the town receives floating population of 10% every day which comes to 11,000 visitors per day and increasing burden on sanitary services.

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. SBM is closely monitoring toilet construction activities. Following is the overall status of CT/PT toilets in the city.

Out of 11 high priority areas, 8 localities has been identified where hybrid toilets are proposed to be construct by Sulabh International. Sulabh International is primarily responsible for Operations & Maintenance (O&M) and its sustainability.

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

	Existing complexes (available for usage)	Existing defunct complex	New (under construction)	New (yet to start construction)
Public toilet	5	0	3	8
Community toilet	0	0	0	0
Hybrid toilet	0	0	8	148
TOTAL	**5**	**0**	**11**	**156**

Source: SBM, ULB Baripada

Figure 4-6: Under construction Hybrid toilets at Bugudakata and Murgabadi

Table 4-3: -Locations at which hybrid toilet is under construction

Identified location	No. of seats
Station Bazar	10
MCH Building Hospital Campus	10
Bhanjpur	7
Mrgabadi Golei	10
RO Office	7
Bugudakata	7
Sadaksahi Raghunathpur	10
Saraswati Colony	10

Table 4-4: -Management of PT & CT

	Construction	O&M	O&M revenue source
Hybrid (156)	Private agency (Sulabh)	Private agency (Sulabh) – 8 to 10 years contract	User fee
Public Toilets (11)	Private Agency (Sulabh)	Sulabh	User fee
PT (existing) 5	Sulabh	Sulabh	User free
Defunct PT	Sulabh	Sulabh	User free

The primary survey show that citizens are willing to use CT/PT if it is accessible, clean and safe to

use. Lack of water supply, poor hygiene and lack of safety (due to lack of electricity) are main reasons behind poor performance of PT in Baripada. According to Census 2011 only 0.8% household were using CT/PT in Baripada. This rate has increased to 5% as found during primary survey. The reasons of increasing CT/PT usage could be due to increased awareness, increased floating population, positive political will, increased communication and higher influx of migrants from rural to urban towns.

There are five public toilets maintained by Sulabh International. There is no community toilet in Baripada. Two PTs are located in heart of city are functioning well. Remaining three located on the outskirts of Municipality have lower foot fall, poor maintenance and poor response from community. In few areas, water scarcity or non-availability of general water points in nearby locations have forced families to go for open defecation in spite of having IHHL[30] .

Table 4-5: -Monthly expenditure pattern of public toilets

Available services	Standard Service rate (in INR)	Average Footfall for sanitary services	Total average collection per day (in INR)	Average monthly collection (in INR)
Charges for normal toilets	3 per usage	250	750.00	22,300.00
Charges for special toilets and bathing	5 per usage	115	575.00	17,250.00
Total monthly average Income				39,750.00

Source: On spot PT field assessment.

Figure 4-7: -Well-functional PT near Baripada bus stand

Figure 4-8: -Relatively less functional PTs

[30] Action for Open Defecation Free Baripada, CDD report 2015-16

Urinals are not kept clean. It stinks badly. Women do not use PT at night due to safety/security reasons. Also the number of PT is not proportional to slum population – CBOs

People are not aware about standard service charges. It should be clearly displayed on wall. – SBM in-charge

4.3 Emptying and transportation

Baripada Municipality is primarily responsible for mechanized emptying and transportation of cesspool services in the town. At present, two out of four old trucks are engaged in cesspool operation whereas two trucks are dysfunctional due to O&M issues. The functional ones include a cesspool truck capacity of 4000KL and a tractor mounted cesspool 4.5 KL vehicle. The ULB has appointed a dedicated staff to regulate cesspool services in the town. Emptying and transport service is generally available within one or two working days from the day of requisition at the ULB office. The current emptying capacity is 14.5 KL. A request for proposal was floated in December 2016 for inviting tenders from private operators to engage into operation and maintenance of newly acquired cesspool trucks. At present, tender has received and subject to approval order from H&UDD. Based on the past experience, initially the ULB had proposed to operate cesspool operation on its own. However to comply with uniform state policy the tenders were invited from private operators. The ULB had to make extra efforts to negotiate with private operator to bring down cost to less than INR 1000 per trip.

"Till date, the ULB has been managing the entire cesspool operation but now we have invited private operators for O&M which will help in widening service coverage."
- Sanitary Inspector

Table 4-6: -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)	1 trucks X 4,000 L (3 trips per day)	INR 800 in administrative boundaries	8am to 6pm	Owned and operated by ULB
2	ULB (existing)	1 truck X 4500 Ltr (3 trips per day)	INR 1,000 (residential) INR 2,000 (commercial) INR 3,000 (beyond ULB's administrative boundaries	6am to 6pm	
3	ULB (2 new)	2 truck X 3000 Ltr	INR 1,000	6 AM to 6PM	Owned by ULB and operated by private player
TOTAL		14.5 KL capacity			

Source: ULB data and primary interaction with private operator

Figure 4-9: -Existing cesspool emptying vehicles with ULB

Figure 4-10: -New cesspool emptying vehicle

In the existing fleet, one truck has the capacity of 4500 L, another one of 4000 L and the other two of 3000 (New) L capacity. Such vehicles typically have width of 2.2 m. This creates further difficulty in providing services in a town like Baripada especially in areas where roads are narrow and marginally medium size. The primary survey revealed that access to around 70% HHs is through medium sized road. Majority of these roads further becomes inaccessible to cesspool emptying vehicles especially in slum pockets. During interactions, the Sanitary Inspector revealed that sometimes people have to wait for 2-3 days to receive services. Such delays makes people resort to non-mechanized emptying.

"Most of the road width in the town are narrow to medium which further limits the accessibility of cesspool truck to provide emptying services."

- Mayor, Baripada ULB

"The cesspool services is not accessible in medium and narrow roads, which also makes people use manual laborers for emptying. Manual emptying is not allowed but still in some places people do it. The cesspool vehicles cannot reach nearly 50% of the town area."

-SBM in-charge, Baripada

Many houses have pit latrines which are cleaned by manual labourers. Nowadays, awareness has increased on mechanized cesspool services provided by ULB, still there are some localities which are dependent on non-mechanized services due to limited access

-Community Organizers

The work is very unsafe. Majority of those who clean the pits/septic tanks/drains manually perform their duties without safety gears such as shoes, gloves, helmet, mask etc.

- Sanitary workers

Existing regulations around cesspool emptying are weak or absent. Cesspool vehicle operator in ULB reported that they are currently not required to follow any guidelines around safe practices. This could be perhaps reason why it was found during the in-depth interviews that cesspool operators do not use personal protective equipment (PPE). Additionally they too are not fully aware of different type of PPE.

Case Study on Cesspool Operation

The cesspool emptying services of the ULB has contributed nearly 20% of the annual revenue generated for the last five years. This makes Baripada Municipality unique as no other ULB generates similar revenue from cesspool operations.

Before receiving two additional cesspool trucks from the State Govt, Baripada Municipality had two cesspool trucks with capacity of 4000L & 4500L. It followed an internal strategy with consensus from the ULB Council to offer cesspool services only to those citizens who have cleared their holding tax. As a result, cesspool services in Baripada turned out to be economically viable. Revenue generated out of cesspool services were over INR 2.41 lakh in 2013-14), INR 9.26 lakh in 2014-15, and INR 9.78 lakh in 2015-16 and over INR 15 lakh in last financial year 2016-17.

4.4 Treatment and disposal/re-use

Baripada Municipality currently generates 24 cubic meter of sludge per day.[31] However, it doesn't have a facility to safely treat and dispose the faecal waste. The ULB has designated land in Raghunathpur for solid waste dumping site as well as for faecal waste disposal site. However it is in the range of 3-5 km from the city. Primary interactions revealed that operators are currently disposing faecal waste in open fields, drains and water bodies leading to pollution of water bodies.

[31] CDD report , Baripada

Figure 4-11: -Disposal of collected sludge in open area

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

–Ward council member

Tracking of cesspool vehicles, trips, improvement in service and grievance redressal are absent.

Baripada has one river, Budhalabanga. As shown in the following table, there are clear indications of coliform in the water probably due to influx of city's wastewater into it. Odisha State Pollution Control Board (OSPCB) has observed 100% deviation in present level of total coliform.

Table 4-7: -River water pollution[32]

Town	River	Location	Biological Oxygen Demand (BOD) in mg				Total Coliform (TC)				Present frequency of deviation	Present % deviation
			2012	2013	2014	2015	2012	2013	2014	2015		
BARIPADA	BUDHABALANGA	Upstream										
		Down-stream	1.5	1.5	1.2	1.8	**15,083**	**18,118**	**52,200**	**39,417**	**12(TC)**	**100(TC)**

"Over 90 % of sewage water from the district is discharged into Budhibalanga river through various drains. 100% storm water drains/grey water/faecal waste mixed with drain water is directly discharged into Budhibalanga." – Regional Officer, Odisha State Pollution Control Board

The State Government has taken steps to implement septage treatment to treat and thereafter safely dispose or reuse the faecal waste. This is being covered under the AMRUT scheme. The treatment plant is designed such that it has capacity to handle faecal waste generated for next 7 years. The land for SeTP has been approved for Baripada. The work order has been issued to INEX- Construction Company to construct the SeTP in Raghunathpur area. The estimated time for SeTP completion and operationalization is by Feb. 2018 as per the plan though construction is yet to begin.

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

Figure 4-12: -Location of proposed SeTP

Table 4-7: -Snapshot of proposed SeTP

Capacity	Area	Cost (in INR)	Lifecycle period	Distance from city	Technology	Expected date of completion
50 KLD (kiloliter per day)	1.5 acre	2.41 cr	20 years	8 km from ULBC	Settling tank and thickening tank, anaerobic baffled reactor, anaerobic filter, planted gravel filter, sludge drying bed, polishing pond	Feb. 2018 – current delays 5 months

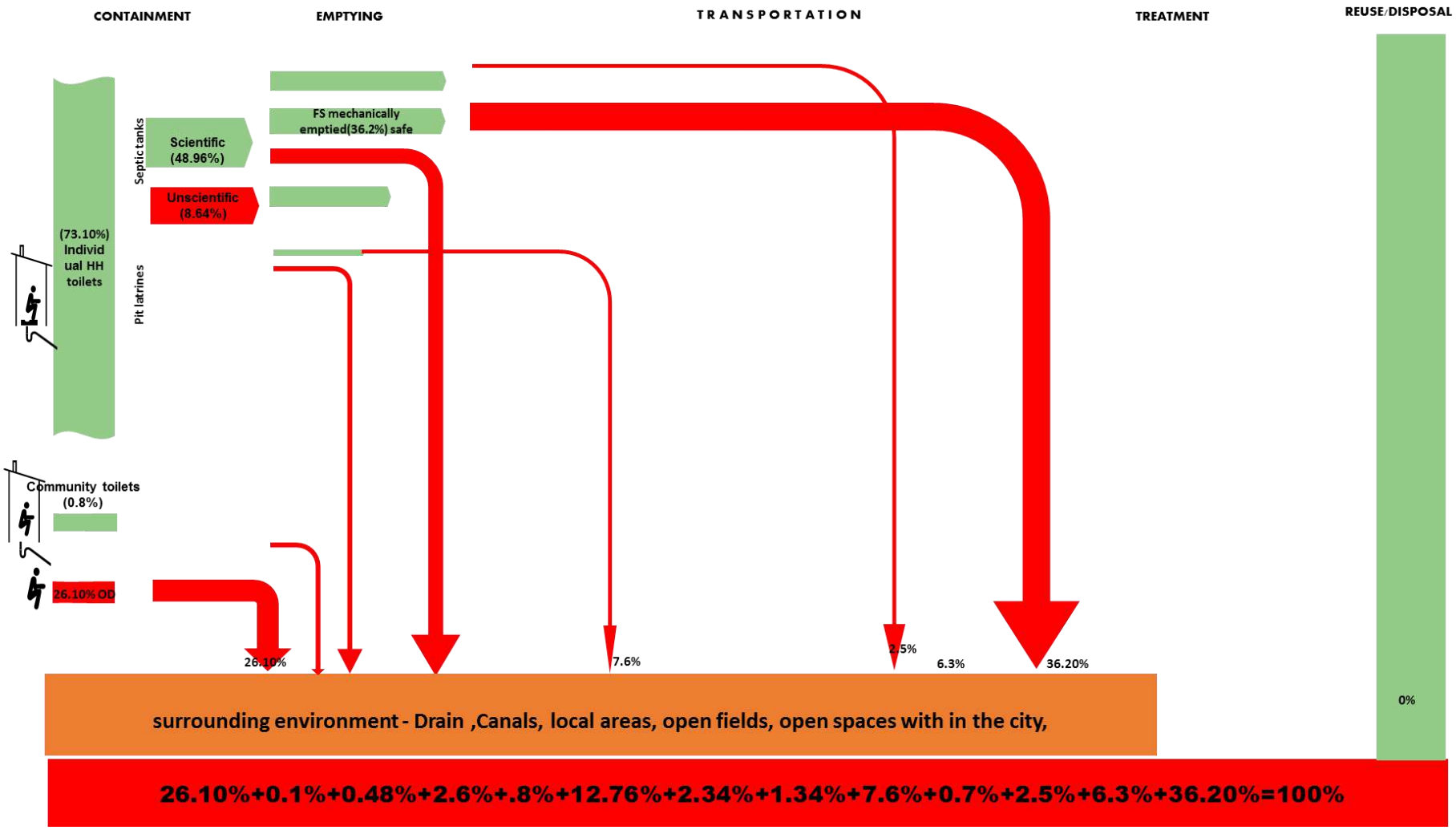
During the construction phase of SeTP, an interim safe disposal facility is required for the faecal waste being generated. As such, deep row entrenchment has been identified and notified by the State Government to ULB. 2-3 acres of land is required for this purpose. Raghunathpur could be the location for disposal of faecal waste with no concerns over local disputes over disposal.

Figure 4-13: - SeTP and deep row entrenchment site

The tender has issued for engineering firm to construct the SeTP. Until the SeTP comes in service, the ULB has approved an alternate land for temporary safe disposal by using deep row entrenchment technique. Temporary site shall be functional soon.

- Executive Officer, Baripada Municipality

4.5 Shit flow diagram (SFD) of Baripada



4.6 Assumptions for SFD

- Census 2011 data used for access related information
- Scientific and unscientific septic tanks and pit latrines are divided in the ratio 67:33 respectively based on finding of our primary survey covering lined and unlined containment system.
- 'Other systems' identified in census is 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 76:24.
- CT/PTs have scientific septic tanks

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.

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&UD ► State SBM Directorate, headed by the 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 FSSM 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 & finance for FSM ► Corporate Houses -Corporates Social Responsibility (CSR) ► Regional Centers of OSPCB – 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 Baripada

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/ PCB/ OWSSB	ULB
Treatment, safe disposal and re-use	AMRUT	OWSSB	OWSSB	OWSSB/ private operators	OWSSB/ H&UDD	PCB/ OWSSB	OWSSB /H&UDD
IEC Campaign (Information, Education and Communication)	SBM Directorate	Mission directorate	ULB, Community Based Organisation		SBM directorate/ ULB	ULB	ULB/ SBM directorate
Capacity Building	SBM Directorate	SBM 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 Office (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 Baripada

	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	SBM 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 Program	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

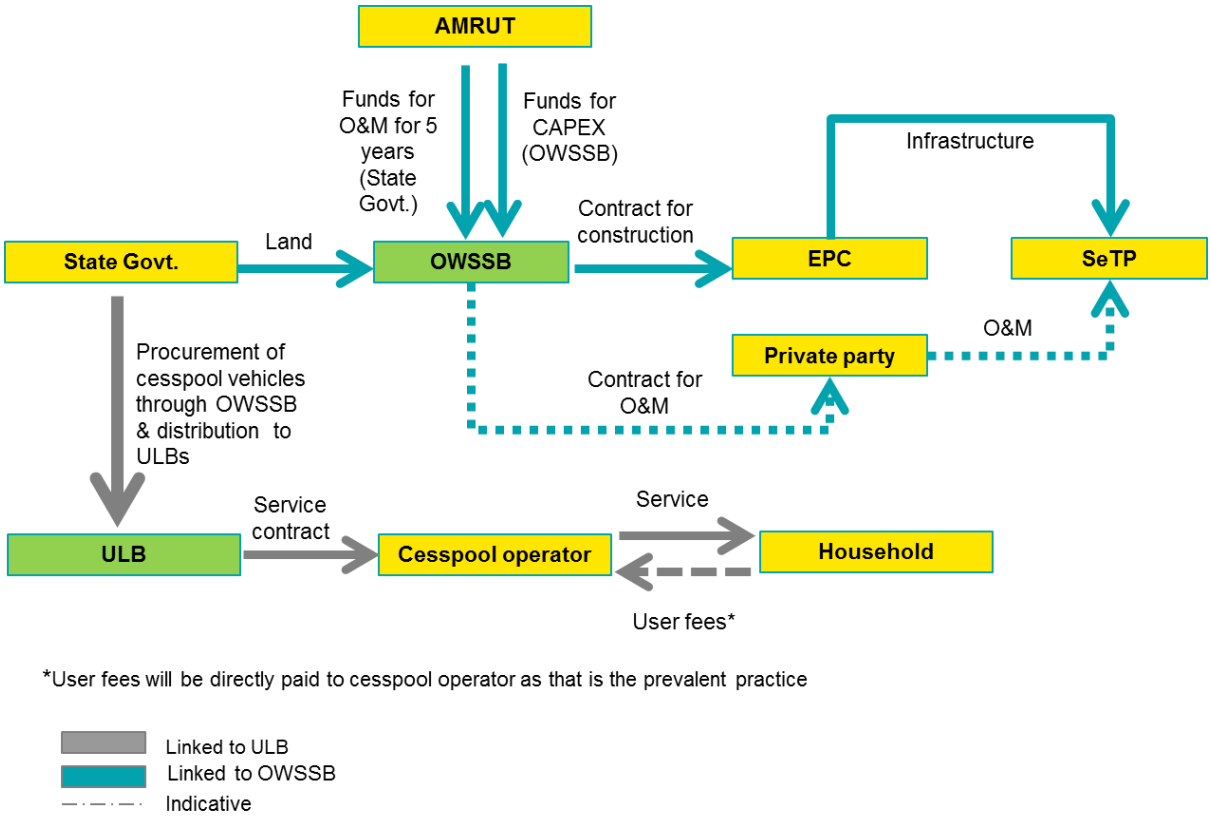
s levels, certain key issues have been identified.

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.

Figure 5-1: -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 O&M of the treatment plant is by the private parties. The cesspool

trucks are placed with the ULBs by the OWSSB[33] 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
    - 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. The 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 primary interactions with the stakeholders.

[33] On behalf of H&UDD

6 Capacity Building

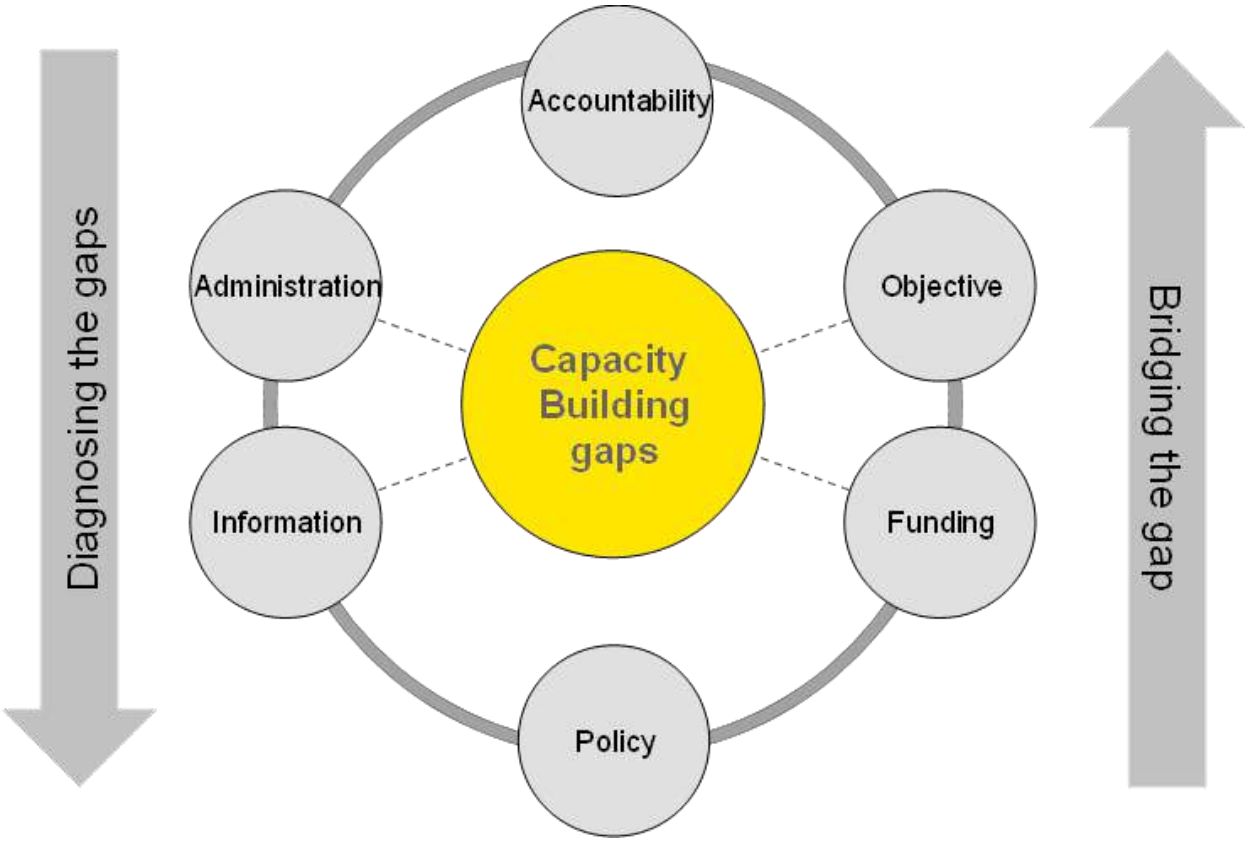


Table 6-1: -Key gap assessments and strategies for capacity building in Baripada

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 programs ► 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 program 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 Baripada University, 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, RWAs and colony societies ► Engagement with the corporates, lawyers' association, bus owners associations, workers unions, doctors association, 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 ► 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	► 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 including city council, mayor, standing committee chairman, and ward councilors ► Capacitate target audience through training in concept and program design to increase their involvement ► Create pilots to show workability of concepts and plan roll-out	► Mayor, Deputy mayor ► Standing Committee ► Councilors ► Commissioner ► Deputy Commissioners ► Additional commissioners ► Engineers ► Finance section ► City health offices ► Sanitation department ► PIUS- AMRUT, SBM, PMAY, NULM and others

Key capacity areas	Gaps Identified / observations	Strategies suggested	Key target groups
	manage the expected workflow of waste-water and SeTPs	► 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	► 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. ► 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, SWM and drainage have missing interlinks operationally but aim to have common outcomes on sanitation	► 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 PCB ► Regional OWSSB ► Regional PHEO ► City Commissioner ► Deputy Commissioners ► City Engineer ► City sanitation officer ► Officials of Baripada Development Authority ► Members DUSC ► Members of CSTF ► Members of DPC ► Members of Standing Committees ► Councilors of Baripada municipality ► Key institutions in the city including other line departments – health, education MLAs, MPs, Department of social justice ► Water resource department ► Private agencies
Creation of environmental engineering cell in engineering section	► Baripada municipality 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 Baripada municipality ► Commissioner ► Standing committee on sanitation and health ► City engineer

Key capacity areas	Gaps Identified / observations	Strategies suggested	Key target groups
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 water borne diseases in Baripada 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 Baripada municipality 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 selected areas of Baripada 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

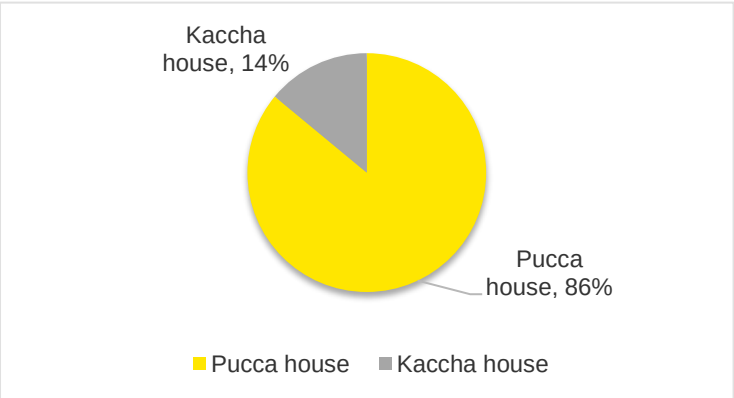
Out of the total HHs, data for 5.2% HHs was extrapolated by using exclusive random sampling technique out of which 26% HHs are from slum areas and 74% from non-slum areas. Nature of the property for 62% respondents are residential. House typology for 86% of the surveyed HH are *pucca* house. The owner resided in 67% of the surveyed households and 2% of the households were in public land.

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

Table 7-1: -Demographic profile of households

Demographic profile of the survey household	N	%
Nature of the locality (N=1372)		
Slum	351	26
Non-slum	1021	74
Nature of property (N=1372)		
Residential	849	61.88
Institutional	73	5.32
Commercial	40	2.91
Mixed	410	29.88
Household ownership (N=1372)		
Owned	920	67
Rented	409	30
Staff quarter	10	1
Public land	33	2

Figure 7-1: -House typology

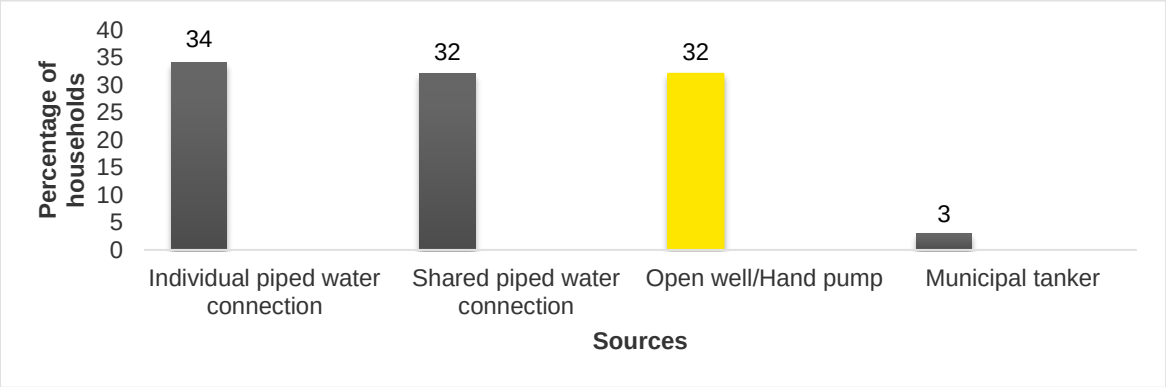


7.3 Source of water for domestic use

Prime source of domestic water for 34% HH is through individual pipe connection. 38% HHs with

piped water connection had water supply between two-four hours per day. 32% of the respondents have hand pump/well in their house/plot.

Figure 7-2: -Primary source of domestic water



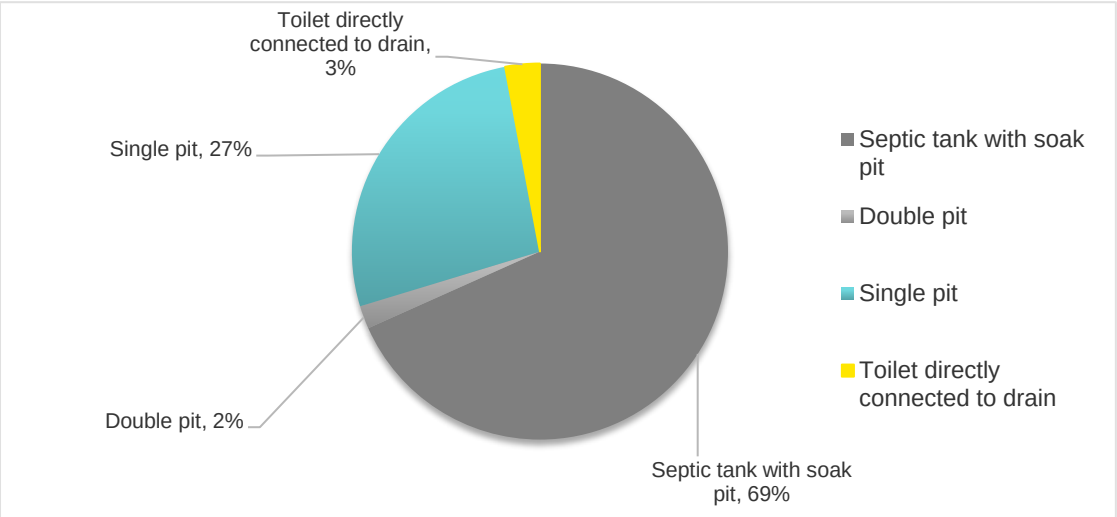
Key findings

32% of HHs depend on ground water sources such as bore-well and hand pump. 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 the average distance between the well/ hand pump situated in house/ plot and pit/ septic tank is 16 m.

7.4 Household sanitation accessibility/facility scenario

Out of 1,372 HHs 63.8% respondent stated having individual toilets in their houses while only 5% informed accessing public toilet. About 69% of the latrine have septic tank with soak pit for disposal and 27% have single pit latrines. Figure 7-3 gives information on disposal from latrine connection.

Figure 7-3: -Latrine connection for disposal



7.4.1 Household views towards community/public toilet

Only 8 households reported using public toilets and their cleaning status was average. They also reported that the CT had separate toilet for male and female. These toilets are being maintained by Sulabh and the average amount per household was INR 200**.**

7.4.2 Open defecation scenario

Amongst the HH practicing OD, the major reason for doing so for 56% HH is due to lack of access to CT/PT and for the remaining it is because of habit. However, 65% HH practicing OD are interested to build individual latrines and the remaining do not agree to do so because of lack of funds (82%) and for few it is lack of space (18%).

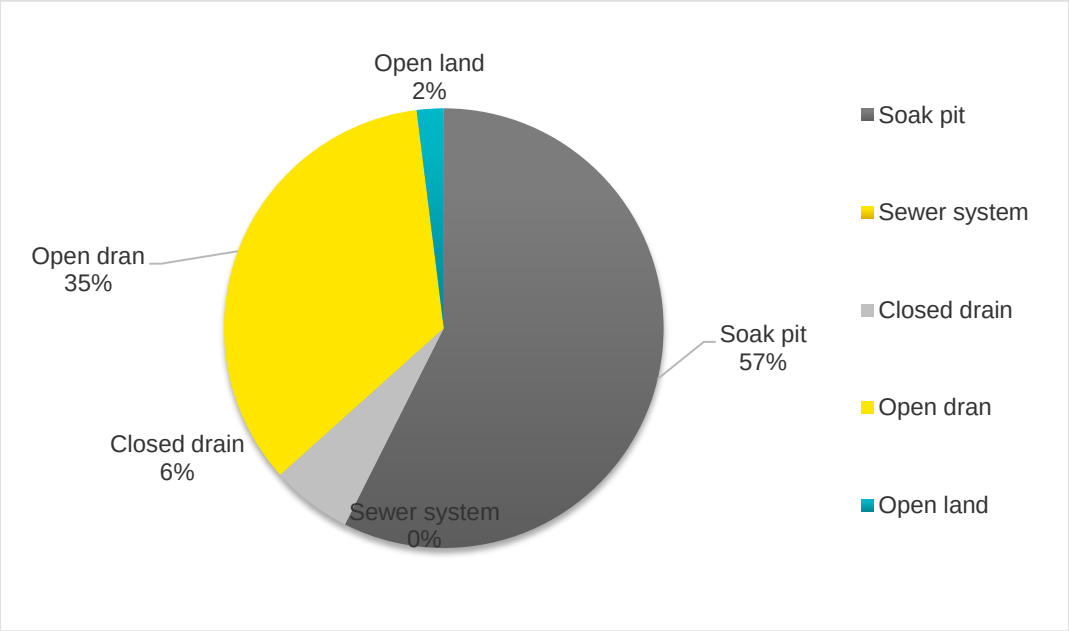
7.4.3 Septic tank/pit status of the households

Total 1,236 HH had septic tank/pit. About 5% of the septic tank/pits were located inside the house. Out of 95% septic tank/pit located outside of the house, 29% were in front side and 71% were located in back side of the house. About 71% of the septic tank/pits were rectangular in shape. 70% of the households sought advice from mason for designing and construction of septic tank/pits and 14% from municipality officials. 85% HH do not check ground water level during construction of septic tank/pits. About 85% of the septic tanks are lined. 58% of septic tanks were connected to soak pit and 20% to open drain. Figure 7-4 details the outfall connection.

Table 7-2: -Description of septic tanks/pits

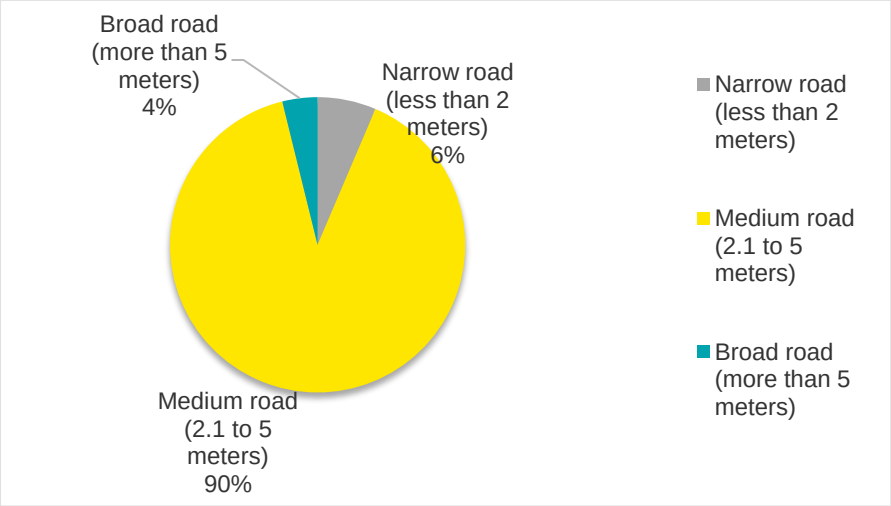
Description of septic tank/pit	n	%
Location (N=1236)		
Inside the house	61	5
Outside the house (n=1175)	1175	95
Front side of the house	341	29
Back side of the house	834	71
Shape (N=1236)		
Rectangular	872	71
Circular	364	29
Seek advice for designing and construction (N=1236)		
Mason	863	70
Contractor	59	5
Municipality officials	177	14
NGO/Neighbor/Relative/Friend	137	11
Ground water level checked before construction (N=1265)		
Yes	187	15
No	1078	85
Type of the lining (N=729)		
Lined	619	85
Non-lined	110	15
Size (N=254)		
Breadth in ft, Average (range)	4 (1 – 10)	
Length in ft, Average (range)	4 (2 – 20)	
Depth in ft, Average (range)	3 (1 – 8)	

Figure 7-4: -Outfall connection of septic tanks/pits



*From road accessibility point of view, 70% household had medium road (*2.1 to 5 meters*)* and 25% households connected with broad road (more than 5 meters) as indicated in Figure 7-

Figure 7-5: - Road accessibility to households having septic tanks/pits



Key findings

- 70% HHs sought advice from masons for designing and construction of septic tank or pit indicating that they could be influence makers in ensuring proper design of septic tanks and pits
- 35% HHs have their septic tank outfall connection to open drains

7.4.4 Septic Tank emptying practice

Out of 1,236 HHs having septic tank or pits, 95% preferred municipality as the service provider, and 5% preferred local laborers. About 45% HHs get their septic tanks/pits cleaned while the rest have not yet decided to get their septic tanks/pits cleaned. The cleaning frequency for 27% HH is more than 36 months. About 76% HHs received emptying services from government cesspool, however, 24% communicated with manual laborers. 90% households were satisfied in emptying, transportation and disposal. Around 54% HHs pays INR 500-1000, 16% spends INR 1,000 to 1,500 and 19% spends

around INR 1500-2000 for emptying the septic tank.

Table 7-3: -Septic tank emptying practice

Septic tank empty practice (N=1236)	n	%
Preferred service provider (N=1236)		
Municipality	1174	95
Private		0
Local labour	62	5
Cleaning frequency of septic tank (N=1236)		
Not yet decided	676	55
Cleaned	560	45
6 months	99	18
6 to 12 months	123	22
12 to 24 months	115	21
24 to 36 months	71	13
More than 36 months	152	27
Septic tank emptying services received (N=560)		
Govt. cesspool	428	76
Private cesspool	0	0
Manual labours	132	24
Amount spent for emptying process (N=560)		
500 to 1000 INR	301	54
1001 to 1500 INR	92	16
1501 to 2000 INR	105	19
2001 to 3000 INR	42	08
More than 3000 INR	20	4
Satisfied in emptying, transportation and disposal (N=560)		
Yes	504	90
No	56	10

Key findings

- 55% HHs have not decided yet to get their septic tank/pit latrines cleaned
- 95% HHs have contacted ULB for emptying service and have indicated preference for their services
- 24% HHs receive manual labors for emptying septic tanks in-spite of most them contacting ULB for cleaning.

7.4.5 Awareness on environmental and health impact of sludge disposal

Out of 1,372 HH surveyed, only 2% were aware about SeTP being set up in Baripada. Only 1% HH family members suffered from jaundice during last three months from the survey.

8 Key issues and action plan

The rapid assessment study 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
- Executive officer
- Financial Officer
- SBM nodal officer
- Sanitary Inspector
- Councilor
- Household Respondent
- Project Director, District Urban Development Authority (DUDA)
- Executive Engineer, Public Health Engineer Organization (PHEO)
- Regional Officer, Odisha State Pollution Control Board
- Project Engineer, Odisha Water Supply and Sewerage Board (OWSSB)
- City Engineer
- District Social Welfare Organization
- Community based organizations (FGD)
- Masons (FGD)
- Cesspool operator(FGD)

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 less than 1% of the households have their toilet outlets to open drains[34]. ► During the consultations (FGDs, IDIs) with the ULB and non-ULB officials and CBOs, insanitary toilet was considered to be a major concern for Baripada	► 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 sewer lines (UGD will require financial support from State Govt.) ► 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, youth groups, pooja committees, should be oriented to spread awareness among households in their respective wards ► Information on onsite sanitation system solutions available in market which are economical and quicker to implement to be disseminated to citizens. ► Use of digitalized media to spread awareness. ► Adding standard messages on FSSM component in other ongoing campaign, IEC/BCC strategy plan in NUHM/ NULM / ICDS programmes.	**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**
2	Sewage disposal in adjoining rivers	► As per the Census 2011, 2.5% toilets are connected to sewer line (interpreted as close/open drains). The proportion of insanitary latrines is 1% ► As per IDIs/FGDs large part of the sewage is being dumped into either open drains/ close drains ► Only a 9MLD plant is established to treat water taken from a local non-perennial tributary source (river	► Creation of onsite sanitation treatment facilities for primary treatment including conversion of insanitary toilets to sanitary toilets by provision of scientific septic tanks can be prioritized. ► Readiness of the WTP and SeTP to ensure provision of adequate facilities and efficient operations.	**Infra-structure (infra and O&M)**
			► Strong regulatory enforcement to stop open discharge from drains into the available water sources ► Convert open drains into close drains and shutting down all direct toilets outlets into drain. ► GPS tracking on cesspool truck to regulate proper desludging	**Governance reform**

[34] *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
		Chipat) for fulfilling town's water demand.		
3	Recurring incidence of water borne diseases	► As per discussions with ULB officers, district officers and CBOs, jaundice, diarrhea and cholera are the major recurring diseases.	► Preventive measures to control epidemics such as major drain cleaning, ► Restrictions on using plastics to prevent drain blockage ► Proper execution of solid waste in terms de-segregation at source. ► Spreading awareness on epidemics and preventive measures. ► 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**
4	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. ► Over 25% population (mainly urban slums) admitted to practice open defecation due to lack of proper toilet facilities.	► 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. ► Developed community based monitoring systems to ensure community participation in reducing Open defecation ► Promote more community toilets considering small pockets ► Micro planning for covering vulnerable population access the sanitation services ► Vulnerability mapping exercise can be introduced to assess the vulnerability from sanitation point of view	**Capacity building**
			► For ULB officials (especially Community Organizers, Sanitary Inspectors), CBOs on FSSM and on the key messages to be conveyed to community for improved Sanitation ► Joint action review plan at city level	**IEC/BCC**
5	Practice of open defecation	► As per information available from the ULB, around 25% population does not have IHHL, only 5% respondent reported using Public toilets, it means	► Construction of IHHL, PT, and hybrid toilets (target 156, 77 under construction) ► Facilitating the process of building IHHL along with the components for applicants so that they are not demotivated. The process needs to be implemented at an accelerated pace.	**Infra-structure (infra and O&M)**

S.No.	Key issue/observation	Supporting data	Proposed interventions / Action point/	Thrust area
		large chunk of population still practicing Open defecation in Baripada. ► Target to make Baripada an OD free town by end of December 2017	► Engaging with CBOs to motivate people to build and use IHHL and through PT especially through sustained inter personal counselling for a targeted households who do not have access to toilets. ► Developing long term comparing with active participation from multi stakeholder. ► Identify the community volunteers as sanitation advocates. ► Use of digital media/ advertisement through cinema hall / local TV cables, writing quote of official notices/ bill receipt/ tax receipt/ electric bill etc. ► Identify Open Defecation spots and develop those for sports or recreation centers for children or women. ►	**IEC/BCC**
6	Low usage of CT/PT/ HT	► Currently under the SBM, there are 5 PTs in Baripada, 2 are well functional whereas 3 receive poor footfall. ► Until now, no CT has been constructed, rather the focus is on building Hybrid Toilets	► Engaging community in taking ownership of 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 ► Explore the possibility of engaging MAS, SHGs in management of hybrid toilets as source of income generation and proper operationalization of HT ► Ensure that service charges are displayed on wall ► Grievance system need to be established. ► Street sign boards mentioning distance of CT/PT/HT. ► Develop sustainable ways to ensure availability of water and electricity throughout the day	**Infra (infra and O&M)**

S.No.	Key issue/observation	Supporting data	Proposed interventions / Action point/	Thrust area
7	Challenges in emptying septic tanks due to narrow lanes and low usage of mechanized service	► As per Establishment and Work Sections feedback (along with cesspool drivers), most of the road way network is accessible for cesspool trucks. ► Only less than 5% of the total roadway network is narrow where the cesspool operation takes place by tractor driven cesspools (slum areas).	► With improved town road planning, the accessibility of cesspool trucks can be improved ► Operating models that can help makes payment for cesspool emptying affordable for urban poor to be devised. ► Support from ULB cesspool vehicles to cater to demands within the town boundaries ► Encourage NGOs to work on FSSM to make citizens aware on the mechanized services.	**Infra (infra and O&M)**
			► Strengthen 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/BC**
8	ULB and private cesspool operations work in silos	► As per discussions with cesspool operators in Baripada both the Private and ULB cesspool operators have basic knowledge for adherence to safety and hygiene standards for emptying but do not practice it. ► 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.	**Governance reform**
			► Comprehensive ULB dissemination plan should be drafted to help understand the role they play in cesspool operation	**IEC/BCC**

S.No.	Key issue/observation	Supporting data	Proposed interventions / Action point/	Thrust area
9	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 2 years ► There is a need of integrated approach to FSSM. Multiple department work are currently working in silos. ► Baripada Municipality 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	► 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. privatized cesspool operation and SeTP operation to be checked. ► District level implementation and coordination committee can be established to review and guide FSSM programme ► Need to develop time bound plan and ULB takes highest responsibility to execute plan.	**Infra (infra and O&M)**
			► 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 town, such as local colleges, high schools, bar associations etc. ► Ensure active participation of citizen groups at across level starting from planning, monitoring, and reviewing process.	**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 & quality check control for a sustainable greener environment ► 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	**Governance reforms**

S.No.	Key issue/observation	Supporting data	Proposed interventions / Action point/	Thrust area
10	Disposal of faecal sludge	► Baripada has a designated faecal waste dumping site at Raghunathpur which is around 6 km away from the town. All cesspool vehicles, operated both by the private and ULB contractors, dump the sludge collected from individual HH units. ► There is no monitoring mechanism in place to track dumping of faecal waste. ► There is a specific location at the dumping ground where all the mixed faecal matters are disposed.	► Regulation at ULB level to enforce disposal of faecal waste at only designated site by preparing a deep row entrenchment ground for separate disposal of faecal matters near the dumping zone (separate from solid waste zone)	**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 ► Promote and recognize the best practices/Innovation to scale up programme outreach	**Capacity building**
			► Communicate the harmful impact of indiscriminate dumping non-mechanized emptying to relevant stakeholders - citizens, leaders, community groups, sanitation workers and ULB staff ► Develop grievance system effective functioning of helpline number ► Develop penalty system for non-compliance.	**IEC/BCC**
			► 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.	**Governance reform**
11	Re-use of treated waste	► Potential for re-use of treated waste water and dried manure generated post-treatment is not yet explored	► Future planning to set up private enterprises for preparation of bio-fertilizers and bio-manures extracted from sludge drying beds from the proposed SeTP ► 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)**
12	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	► 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**

		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 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	► The ULB should tap funding from the DMF and CSR funds.	**Governance Reforms**

		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.		

9 Annexures

Annexure 1 – Questionnaire for Household Survey

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

ସହରାଞ୍ଚଳ ରେ ପରିମଳ ବ୍ୟବସ୍ଥା ଏବଂ ସ୍ପଷ୍ଟ/ନିର୍ଦ୍ଦିଷ୍ଟ ଭାବେ ନର୍ଦମା ମଳ ର ଅଭ୍ୟାସ ଏବଂ ଏହାର ସଫା ପରିଚାଳନା ବିଷୟରେ ସର୍ଭେ

ସର୍ଭେ ପ୍ରଶ୍ନାବଳୀ

Form ID:
ସୂଚନାପତ୍ର

ଅନୁସନ୍ଧାନର ଅଭିପ୍ରାୟ: 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।

ସମ୍ମତି / ଅନୁମତି ପ୍ରମାଣପତ୍ର

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 ବ୍ୟକ�ତିଙ୍କ 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 ତଦୁର୍ଦ୍ଧ 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 commercial)	Industryଶିଳ୍ପ Shop/private officeଦୋକାନ/ବେସରକାରୀ ଅଫିସ

ବ୍ୟବସାୟୀକ ସଂସ୍ଥାଟି କି ପ୍ରକାର ବାଛନ୍ତୁ (କେବଳ ଯଦି ପ୍ରଶ୍ନ 2 ରେ ଉତ୍ତର ବ୍ୟବସାୟୀକ ଥାଏ)	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 ସେପ୍ଟିକ ଟ୍ୟାଙ୍କକୁ ପହଞ୍ଚିବା ରାସ୍ତା	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 Depth_____ft.ଗଭୀର.....ଫୁଟରେ	

	Type of the bottom ତଳ ଭାଗ ଟି କି ପ୍ରକାର ର	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	Yesହଁ Noନାହିଁ	
23	If yes who are the members from other family use it	Male Female	

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 ରୁ ବାହାରୁଥିବା ମଇଳା ପାଣି ଏବଂ	Drainନର୍ଦ୍ଦମା / ଡ୍ରେନ Sewer system ଭୂତଳ ନର୍ଦ୍ଦମା / ମାଟି ତଳେ ଯାଇଥିବା ଡ୍ରେନ Soak pitପାଣି ଶୁଖିବା ଖାତ Any other, please specifyଅନ୍ୟାନ୍ୟ ଦର୍ଶାନ୍ତୁ	

	ଆବର୍ଜ୍ଜନା କେଉଁଠିକି ଯାଏ ?		
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 ଉଦେଶ୍ୟ 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 ଉଦେଶ୍ୟରେ (ଗାଧୋଇବା,ଲୁଗା ସଫା କରିବା ଇତ୍ୟାଦି) Any other (specify) ଅନ୍ୟାନ୍ୟ (ଦର୍ଶାନ୍ତୁ)	
34	Do you think the water from the well can get contaminated due to	Yesହଁ Noନାହିଁ	

	proximity to toilet? ପାଖରେ ପାଇଖାନା ରହିଲେ କୂଅର ପାଣି ଦୂଷିତ/ସଂକ୍ରମିତ ହେବ ବୋଲି ଆପଣ ଭାବୁଛନ୍ତି କି?		
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 ଉନ୍ନତପାତି / 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 FSTP is being set up in your city to treat FSS for safe disposal?	1.Yesହଁ 2.Noନାହିଁ	
48	Do you know that faecal 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 faecal 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 ହେଉଥିବା ପାଇପ କାମ ର ଖର୍ଚ କରିବା ପାଇଁ ଆପଣ ସକ୍ଷମ କି ?	Yesହଁ Noନା NA ପ୍ରଯୁଜ୍ୟ ନୁହେଁ	

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 ଗୋଷ ୀ 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 toiletଗୋଷ ୀ 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 is1ସର୍ବସାଧାରଣ ପାଇଖାନା ଟି ର ସଫା ସୁତୁରା /ଦେଖାରଖା କିପରି	Very Goodବହୁତ ଭଲ Goodଭଲ Averageମଧ୍ୟମ ଧରଣର / ଚଳିବ Poorଖରାପ	

	ହୁଏ – ଯଦି ପ୍ରଶ୍ନ 54 ରେ ଉତ୍ତର 1 ହୁଏ	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 ଅଧିକା	
66	How satisfied are you with community toilet? ଗୋଷ୍ଠୀ ପାଇଖାନା ବ୍ୟବହାର ରେ ଆପଣ କେତେ ସନ୍ତୁଷ୍ଟ	Highly Satisfied ଅତି / ବହୁତ ସନ୍ତୁଷ୍ଟ Satisfiedସନ୍ତୁଷ୍ଟ Neither satisfied or dissatisfied	

	If the option of Que 54 is 2ଯଦି ପ୍ରଶ୍ନ 54 ରେ ଉତ୍ତର 2 ହୁଏ	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/liquid soap 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 defecation?ଆପଣ କିମ୍ବା ଆପଣଙ୍କ ପରିବାରର ସଦସ୍ୟ ମାନେ ଖୋଲା ରେ/ ବାହାରକୁ ମଳତ୍ୟାଗ କରିବାକୁ ଯାଆନ୍ତି କି ?	Yes, Alwaysହଁ ସବୁବେଳେ 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, pleasespecify: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 କରିବା ସମ୍ଭବ ନୁହେଁ ତେବେ ଆପଣ ଗୋଷ୍ଠୀ /ସର୍ବସାଧାରଣ ପାଇଖାନା ବ୍ୟବହାର କରିବା ପାଇଁ ଆଗ୍ରହୀ ହେବେ କି ? ଏକାଧିକ ଉତ୍ତର ସମ୍ଭବ)	Yesହଁ Noନାଁ If no, give reasonsଯଦି ନାଁ ତେବେ କାରଣ କୁହନ୍ତୁ Not hygienicସ୍ୱାସ୍ଥ୍ୟକର ନୁହେଁ 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 of a community toilet?ଆପଣଙ୍କ ଅଞ୍ଚଳର ଲୋକମାନେ ଗୋଷ୍ଠୀ ପାଇଖାନା ର ଦେଖାରଖା ଦାୟିତ୍ୱ ନେବେ ବୋଲି ଆପଣ ଭାବୁଛନ୍ତି କି	Yesହଁ Noନାଁ	
79	Will you be interested in constructing individual	Yesହଁ	

	toilet in your house? ଆପଣ ଘରେ ଗୋଟେ ନିଜସ୍ୱ ପାଇଖାନା ତିଆରି କରିବା ପାଇଁ ଆଗ୍ରହୀ କି ? ଏକାଧିକ ଉତ୍ତର ସମ୍ଭବ)	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	YesହଁNoନା	
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

Annexure 2 – Questionnaire for In-Depth Interviews

- **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 faecal 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 FSTP 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 faecal 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?

- **Interview 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, SeTP?
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 SeTP 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 faecal 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?

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 faecal 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 faecal sludge? Provide locations.

S.No	Location	Land use

42. Do you have a dedicated faecal 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 faecal 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 faecal 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?

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

S.no	Name	Organization	Position held	Date of interaction
In-Depth Interviews				
1	Ms. Babita Das	ULB	Chairperson	24/04/2017
2	Sri Jyoti Sankar Ray (OAS.)	ULB	Executive Officer	20/05/2017
3	Mr. Krushna Kr. Behera	ULB	Municipal Engineer	20/04/2017
4	Mr. Gourisankar Nayak	ULB	SBM Nodal Person	20/04/2017
5	Mr. Sanjay Kr. Das	ULB	Accountant	20/04/2017
6	Mr. Biju Mukhi (Driver_2)	ULB	Cesspool Manager	20/04/2017
7	Ms. Kuniya Sahoo	ULB	Community Organiser	20/04/2017
8	Ms. Taramani Mahapatra	ULB		20/04/2017
9	Ms. Suchitra Das	ULB		20/04/2017
10	Ms. Dipti Rekha Mishra	ULB		20/04/2017
11	Mr. Santhosh Kr. Mohanty	ULB	Sanitary Inspector	20/04/2017
12	Mr. Santhosh Kr. Mahabhoy (Driver_1)	ULB	Cesspool Operation Coordinator	20/04/2017
13	Smt. Charulata Mahapatra	DSW	DSWO	20/04/2017
14	Mr. Pramod Kumar Sahu	OWSSB	Project Engineer	20/04/2017
15	Sri Parbati Mohan Parida	PHED	Executive Engineer	20/04/2017
	Mr. Manmohan Murmu	PCB	Asst.Env. Engineer	20/04/2017
Focus Group Discussion				
1	Masons			20/05/2017
2	Councilors			05/05/2017
3	Community Based Organization			05/05/2017

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