Assessing citizens' feedback on municipal water and sanitation services

Citizen survey in **Mehsana Municipality** using Information Communication Technology

Prepared by Urban Management Centre under the Performance Assessment System (PAS) Project

with support from Water and Sanitation Program and Mehsana Municipality,

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pas performance assessment system

UMC URBAN MANAGEMENT CENTRE

This study has been undertaken by the Urban Management Centre under the Performance Assessment System Program (PAS)

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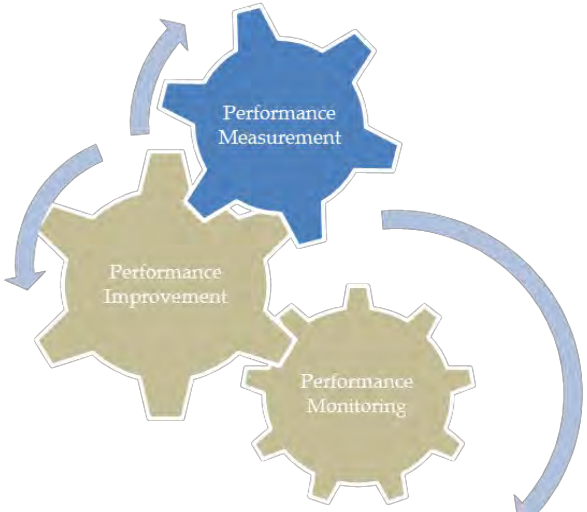
About the PAS program



(Read more about PAS at www.pas.org.in and at http://www.umcasia.org/content.php?id=57

Performance Assessment System (PAS), is a seven-year action research project, being implemented by Urban Management Centre in Gujarat in partnership with CEPT University. with funding from the Bill and Melinda Gates Foundation.
The PAS program funded by The Bill and Melinda Gates Foundation, has three main components: Performance Measurement, Performance Monitoring and Performance Improvement.

The aim of the PAS program is to measure, monitor and improve performance of **municipal water supply and sanitation** services in 400 ULBs in the states of Gujarat and Maharashtra.
The project is monitoring and assessing the performance of all 167 cities in Gujarat over the last five years. UMC is working with the ULBs on various performance improvement and information system improvement initiatives.

We believe that the comprehensive database and management system prepared under the PAS program will help decision makers and local governments bring efficiency in service delivery, effective budget allocation and inclusive coverage.

1. Background to the study

Towns and cities in India are seeing rapid expansions as increasing numbers of people are migrating to urban areas in search of economic opportunity. As per Census 2011, more than 33% of population in India lives in urban areas. This rapid growth in urban population has outpaced the provision of environmental and health infrastructure.

Level of basic services such as water an sanitation remain well below desired levels. While huge investments are being made towards urban infrastructure under various centrally sponsored schemes such as JNNURM and UIDSSMT, there is also a parallel need to increase accountability of service delivery in urban local bodies (ULBs).

The Ministry of Urban Development (MoUD), Government of India launched the Service Level Benchmarking (SLB) in 2009 to identify a minimum set of standard performance parameters for water and sanitation sector that are commonly understood and used by all stakeholders across the country. The principle of benchmarking has been further endorsed by the 13th Finance Commission which has included SLB as one of the nine conditionality's for allocation of performance based grants to ULBs.

The PAS program has established synergies with the Government of India's SLB initiative and has been successful in developing a robust framework for assessing municipal service delivery from the ULB's perspective.

The PAS program in Gujarat also aims at increasing social accountability to improve municipal delivery. We are working with ULBs on developing citizens charters and public grievance redressal systems which will allow citizens to engage with the governments and demand better services. This citizen feedback study highlights one of the methods that can enable ULBs to assess the level of satisfaction among citizens and use their feedback in setting service delivery standards.

2. Why Citizens' Feedback?

"From being process centric to becoming citizen centric"

Currently municipal performance in most Indian cities is assessed primarily based on qualitative and quantitative information provided by the ULB's and service providers.

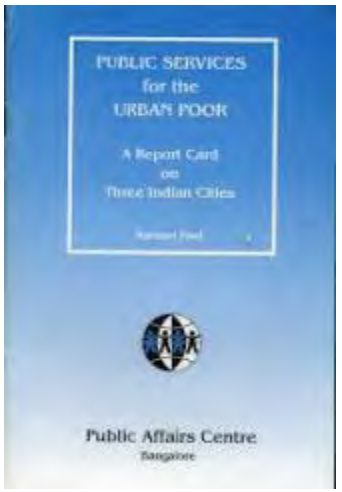
Citizen feedback surveys can act as additional diagnostic tool that can measure the level of satisfaction of actual users of municipal services. Citizen feedback can also allow ULBs to assess the level of awareness among citizens about their rights and responsibilities. Citizens feedback has become a major data collection tool for "program evaluations" and "performance-based budgeting systems" in many countries.

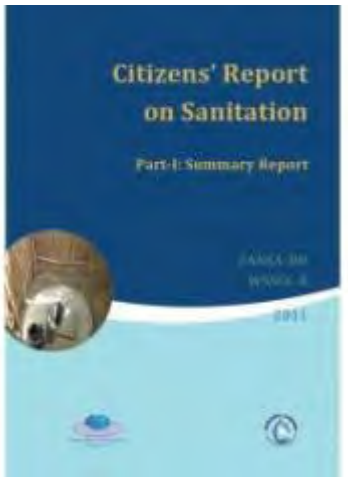
3. Methods for assessing citizens' feedback

- Citizen / public hearings
- Focus groups discussion
- Voluntary Feedback
- Interviews
- Citizens' committees
- Citizens' report cards
- Complaint analysis
- Feedback on websites

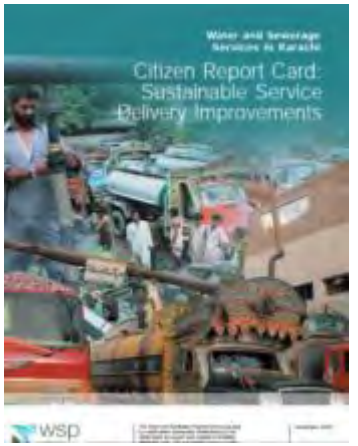
The Citizens Report Card(CRC) is one of the tools to assess citizens' feedback. It allows municipal governments and other service providers to receive systematic feedback from citizens on various quantitative and qualitative aspects of their performance. The Citizen Report Card approach in India was developed by Public Affairs Centre in Bangalore in 2009. CRC was a pioneering exercise in providing service delivery agencies with feedback from citizens as well as in motivating citizens to voice their demand for improved service delivery. Conducting citizen surveys at regular intervals and using the feedback to improve service delivery resulted in better satisfaction levels among citizens. The graph below shows the increasing satisfaction levels of citizens in every consecutive feedback survey carried out in Bangalore.

"Citizen Report Cards entail a random sample survey of the users of different public services (utilities), and the aggregation of the users' experiences as a basis for rating the services"





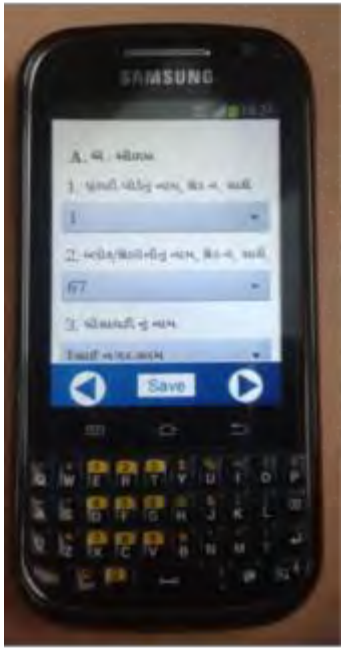
The report card method has been used to assess water and sanitation services in various cities across the world

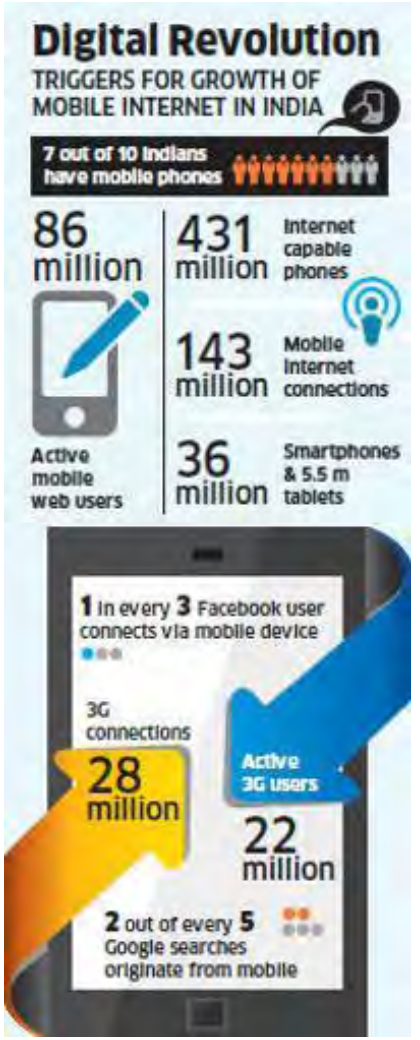


4. Use of Information and Communication Technology (ICT)

The rapid penetration of mobile phones throughout India presents a new and efficient means of data collection, monitoring and assessment. Conducting feedback surveys using mobile technology offers the following advantages over traditional paper-based surveys.

- **Real time data sorting and its analysis:** Traditional paper based surveys require time to collect, sort, correct and analyze data. Use of ICT eliminates these time lags.
- **Accuracy and quality control**: The ICT based surveys are designed to flag errors, anomalies and exceptions in the data collected. The data being collected can be monitored offline in real time by trained supervisors.
- **Enable replicability** : Mobile applications developed for on field surveys can easily replicated/ used in other cities. This allows comparison between performance of various cities.
- **Data analysis and visualization:** Mobile based survey applications often have a dashboard interface that allows various stakeholders to analyze and visualize data based on different themes.
- **Spatial analysis of data:** Mobile based surveys also allow geographical tracking. Surveys can be conducted in different regions/ areas of a city to analyze any geographical/ regional variations.



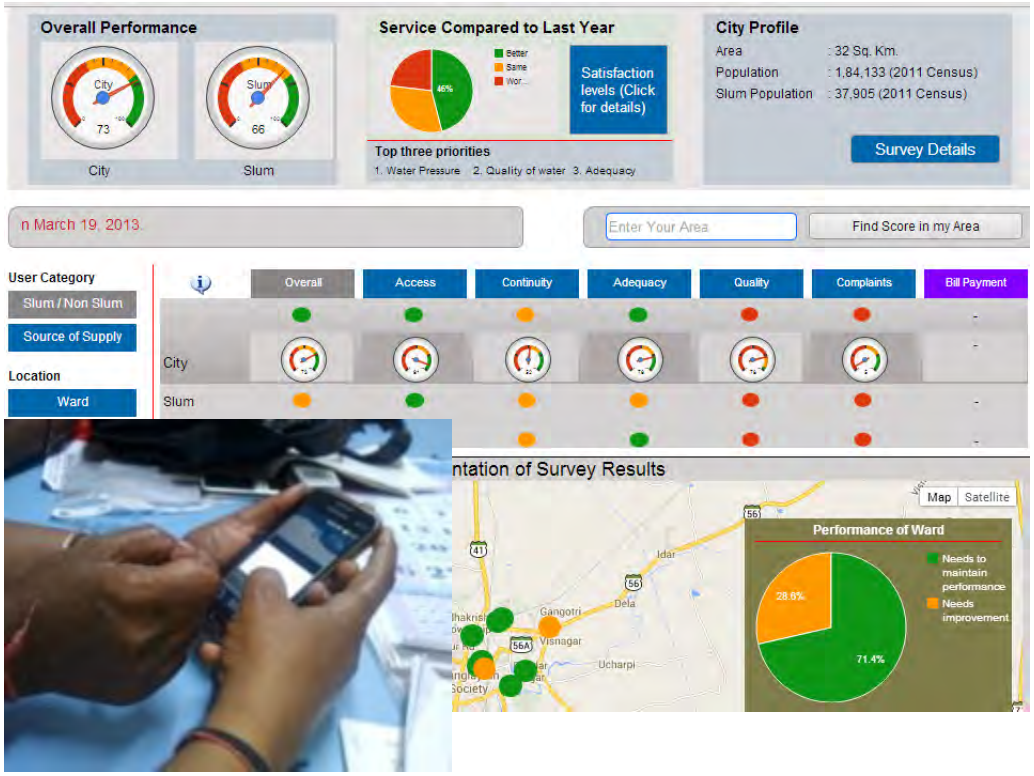


Source: http://m.economictimes.com/tech/hardware/advertising-and-apps-to-drive-new-business-triggered-by-rapid-mobile-penetration/articleshow/22689420.cms

4a. Using a mobile-web system for tracking performance in water-sanitation sector

One of the mobile-web systems for tracking performance of city governments in water-sanitation sector is the SLB Connect tool.

This is an initiative by the Water and Sanitation Program (WSP)[1]aimed at strengthening citizen engagement for delivering improved service outcomes. Designed as an extension of the Service Level Benchmarks (SLB) program rolled out by the Ministry of Urban Development, it uses Information and Communication Technology (ICT) to track service delivery from the citizen's perspective i.e. the "service experience". The mobile-web system has been successfully implemented in Pimpri Chinchwad Municipal Corporation (PCMC) , a city of 1.7 million population in the state of Maharashtra. After the pilot in PCMC, UMC partnered with WSP to use SLB Connect *to assess the performance of water and sanitation services in Mehsana Municipality*



The mobile-web system allows data capture on field using mobile phones and data monitoring and analysis through a web server and dashboard

[1]*The Water and Sanitation Program (WSP) is a multi-donor partnership administered by the World Bank to support poor people in obtaining affordable, safe and sustainable access to water and sanitation services. Read more at : http://www.slbconnect.in*

4a. SLB Connect- Parameters

SLB Connect is designed to capture citizen feedback in an unbiased manner on selected aspects of municipal services like a availability, usage, quality, reliability and satisfaction.

SLB Connect is aligned with the SLB framework of MoUD, and provides feedback on SLB indicators which address customer service aspects. The survey application includes the following parameters

Demographic Profile

- Age
- Gender
- Address
- Ward Number

Water Supply

- Access to water
- Continuity
- Adequacy
- Water quality
- Complaint redressal
- Ease of Bill payment

Sanitation

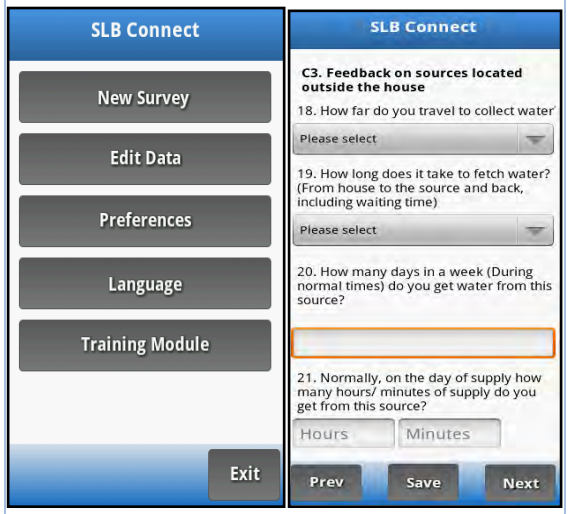
- Access to Toilets
- Access to sewerage network
- Mode of disposal of wastewater

Citizen feedback

- Satisfaction levels
- Willingness to provide feedback in future
- Mobile number

4b. Major Components of “SLB Connect”

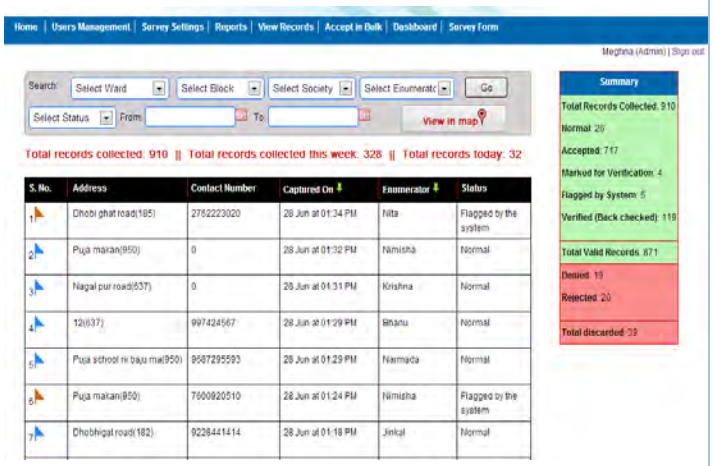
1.MOBILE APPLICATION FOR SURVEY



On-field detailed households survey is conducted based on android-base mobile survey tool through equitable sample.

- Data submitted on real-time basis
- Authorized user is assigned a unique login ID and password
- Greater accuracy through geo tagging and time stamping of data

2.SURVEY MANAGEMENT MODULE



A web-based real-time monitoring of survey progress by survey managers or supervisor.

- Pre-defined validation checked give higher quality control in survey.
- Ensuring proportionate representation of data
- Reporting drop-out sample and implementation of replacement strategy on same day.
- Participation in final acceptance of data for excellence survey.

3.DASHBOARD FOR RESULTS ANALYSIS

- Results of survey make simple to understand through graphical as well as spatially with the help of dashboard on real time.
- Analysis on dashboard seen through very simple representation of Traffic light color, i.e. Red shows poor performance and green shows good performance. Dashboards also provide grid and map views too. Results can be analysis as per customized requirements and also provide customized views for city managers.

5a Assessing Citizens' Feedback in Mehsana, Gujarat

Mehsana is a class A municipality in Gujarat with a population of 1,84,000 (census 2011). The population growth rate of the city in the last decade was at 83.35%, the **highest among cities in Gujarat**. 25,900 people or 15% of the total population of the city lives in slums. Municipal services in the city including water supply, drainage and solid waste management are provided by Mehsana Municipality. The SLB indicators for the city for 2012-2013 collected under the PAS project indicate that 80% of households in the city are connected to municipal water supply and 11% households are connected to underground drainage network.

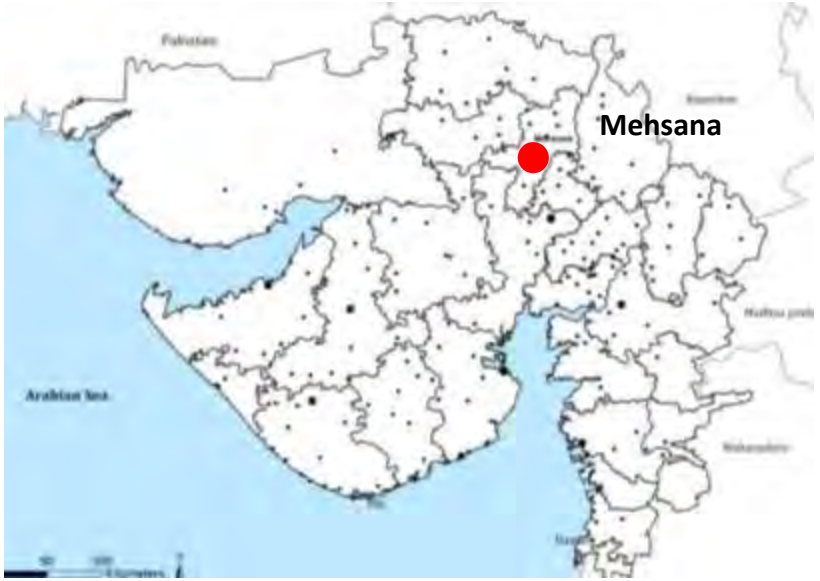
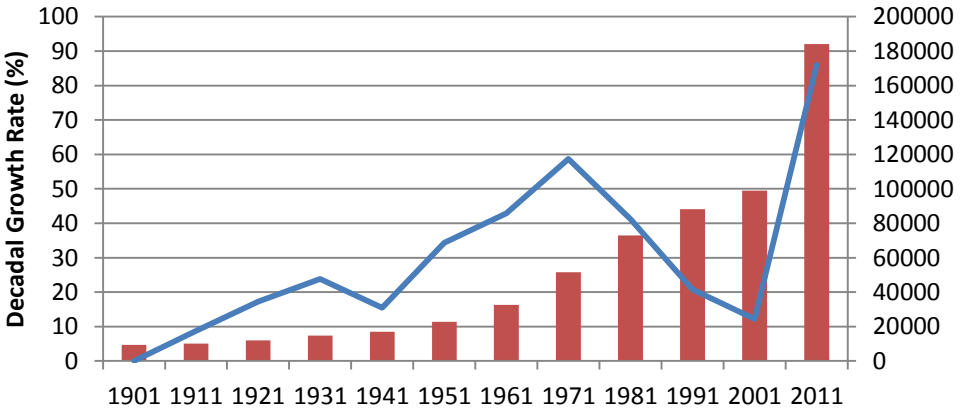


Figure : Location Map of Mehsana (Gujarat)

The Mehsana Municipality showed keen interest in undertaking a citizen feedback survey to understand the citizens perspective on the services being provided and use the feedback to improve service delivery in the future. The citizen feedback survey was conducted in Mehsana by UMC in June 2013 with active support and engagement of the municipality staff.



Mehsana exhibited the highest growth in Gujarat between 2001-2011

5b Citizens feedback survey in Mehsana- Methodology

The following methodology was adopted to conduct citizen feedback surveys using SLB Connect:

1. Meetings and consultations with Chief Officer and staff of Mehsana Municipality to establish the goals and objectives of the survey, identify timelines and chart out roles and responsibilities of ULB staff and UMC team.
2. Adaptation of SLB-Connect application to meet local survey requirements and translation of the mobile survey questionnaire into local language.
3. Training of enumerators
4. Conducting citizen feedback surveys in field
5. Real time data monitoring
6. Analysis of survey results
7. Sharing of findings with ULB staff

Photo : Enumerator during survey

5b. Methodology- Meetings and consultations with ULB Staff

Photo : Meetings with Chief Officer and Councilors of Mehsana Municipality

UMC is working hands-on with Mehsana Municipality since 2009 providing technical support on performance measurement and improvement of water and sanitation services and has extensive experience working with chief officers, engineering and planning staff. The Municipality staff showed keen interest in undertaking the citizen feedback survey and offered their full support.

Several meetings were conducted with ULB officers to establish the goals and objectives of the survey, identify timelines and chart out roles and responsibilities of ULB staff and UMC team.

UMC team also met with local elected representatives to inform and update on the importance of citizen feedback processes and how they can be leveraged to empower people to demand better services.

Once the feedback survey was agreed to be undertaken, UMC team worked closely with ward level officers and engineers of Mehsana Municipality to understand the service delivery processes in the city. This information was then used to customize the SLB Connect application to suit local needs.

5b. Methodology- Adapting SLB Connect to meet local survey

The adaptation of SLB Connect to meet local requirements involved the following steps:

- **Translation of survey questionnaire into Gujarati language :** The citizen feedback survey in Mehsana was carried out in Gujarati language to allow for more engagement with the communities. The survey questionnaire hence was translated into Gujarati to make it convenient for the enumerators to solicit feedback from citizens.

- **Selection of mobile instruments compatible with Gujarati fonts:** SLB connect is compatible with all android based mobile phones. However not all android phones offer the flexibility to load regional language fonts. It was ascertained that instruments to be used for the survey load the Gujarat fonts correctly and clearly.

- **Modification of system architecture of the software : The** SLB Connect application was designed for three levels- whole city, water zones and blocks. However, in case of Mehsana, water supply and sanitation systems work at the city or the ward level. The application was hence modified to reflect the local administrative structure.

SLB Connect Application translated to Gujarati and adapted to suit local needs

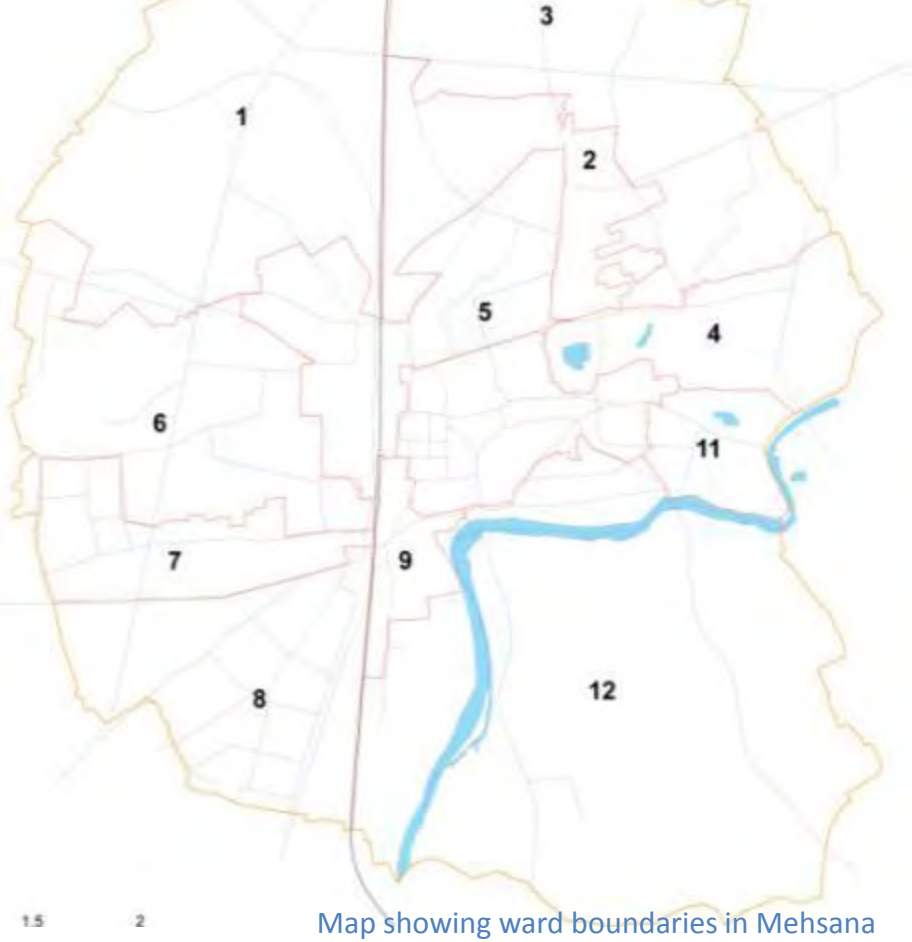
5b. Methodology- Survey Preparation and Sample Selection

Prior to beginning the survey, UMC team created base maps of the city identifying administrative ward boundaries, slum locations, neighborhoods societies, water bodies , *nallahs* etc.

The team then worked closely with ward level officers to identify areas where the citizen feedback survey would be carried out. The table be low shows the wards in Mehsana and the number of households surveyed in each ward.

Ward No..	Ward Population	Samples from non slum households	Samples from slum households	Total households surveyed
1	9237	70	30	100
2	10483	100	0	100
3	9286	67	33	100
4	9277	70	30	100
5	9299	50	50	100
6	11118	45	55	100
7	10439	100	0	100
8	10316	100	0	100
9	10689	100	0	100
10	10945	100	0	100
11	11122	70	30	100
12	10121	64	36	100
13	9900	64	36	100
14	11000	100	0	100
TOTAL	143232	1100	300	1400

Slums and non slum neighborhoods were identified on a base map that shows the administrative boundaries in Mehsana



Map showing ward boundaries in Mehsana

5b. Methodology- Survey Preparation and Sample Selection

Focus on Equity

A large urban population lives in slums/ informal settlements in Indian cities, and inequities in provision of water supply and sanitation services in slums is often prevalent. Hence, UMC believes that it is critical to include slum households in citizen feedback surveys. Other than providing decision makers data to address inequalities in service provision, Such surveys also provide slum-dwellers with an opportunity to engage with local governments and service providers.

UMC in 2010 had conducted pocket level slum surveys in all municipalities in Gujarat to assess the level of municipal services in slums. As part of the survey, extensive feedback was sought from slum dwellers through focus group discussions (FGDs).

The slum survey for Mehsana (2010) revealed that all slum settlements in have access to piped water supply but only 38% slums had access to underground drainage. The citizen feedback exercise allowed UMC to revisit the slums and assess the difference in provision of services (if any). 300 slum households in the city were surveyed.

5b. Methodology- Training of enumerators

UMC trained women enumerators from the Mahila Housing Trust (MHT) [2] to conduct the survey on field. MHT has a vast experience of working in slums towards infrastructure and housing provision. Enumerators from MHT are experienced in carrying out various kinds of surveys in slums, but the citizen feedback survey in Mehsana was their first time conducting mobile based surveys.

UMC organized a series of meetings and workshops to train MHT workers on using android based smart phones and filling the questionnaire online. UMC team also conducted pilot surveys to train and guide the women enumerators to use the application on field. The women were enthusiastic and fast learners and were able to independently conduct the survey on ground at the end of the training. UMC also provided special training for supervisors on real time data monitoring, error correction and use of supervisors tool and dashboard.

Mahila Housing SEWA Trust (MHT) was established by Self Employed Women Association (SEWA) in 1994 with the overall objective of improving the housing and infrastructure conditions of poor women in the informal sector. After the training received from UMC for Mehsana Survey, MHT has conducted several household level surveys using mobile phones for urban local bodies.

5b. Methodology- Field Survey Process

1. Six teams of two enumerators each were identified for the survey and were provided with mobile phones with pre-installed application.

2. The supervisors made a list of slum and no slum areas to be surveyed in each ward in Mehsana. Each team was allocated 2 or more wards in the city. Tentative locations and addresses of slums and non slum neighborhoods was also provided to them.

3. Once the surveying team was assigned a ward, they went to the neighborhoods and slum areas listed and randomly selected households in those areas for conducting the feedback survey. Where possible, joint interviews were conducted with both men and women heads of households.

4. In cases where the household members were unwilling or unavailable, the the enumerators proceeded to the neighboring household to conduct the survey.

5. The enumerators then conducted the interview based survey, entered the data in the mobile application, and saved and submitted the completed form after each survey. The data entered in the field was directly synced to the server.

5b. Methodology- Real Time Data Monitoring

1. The first level of data verification is in-built into the SLB Connect application where the server automatically flags incomplete/ inconsistent entries. The supervisor monitored the survey process in real time and verified/ rejected all the flagged entries.

2. During the second level of data verification, the supervisor verified 10% of all entries made by making phone calls at the numbers provided by the respondents. At this stage the supervisor was only allowed to reject or accept the survey form and not modify it.

3. The data entries filtered and verified after the two step verification process were accepted as valid data entries and were used in the analysis of results and findings, conducted using the dashboard interface.

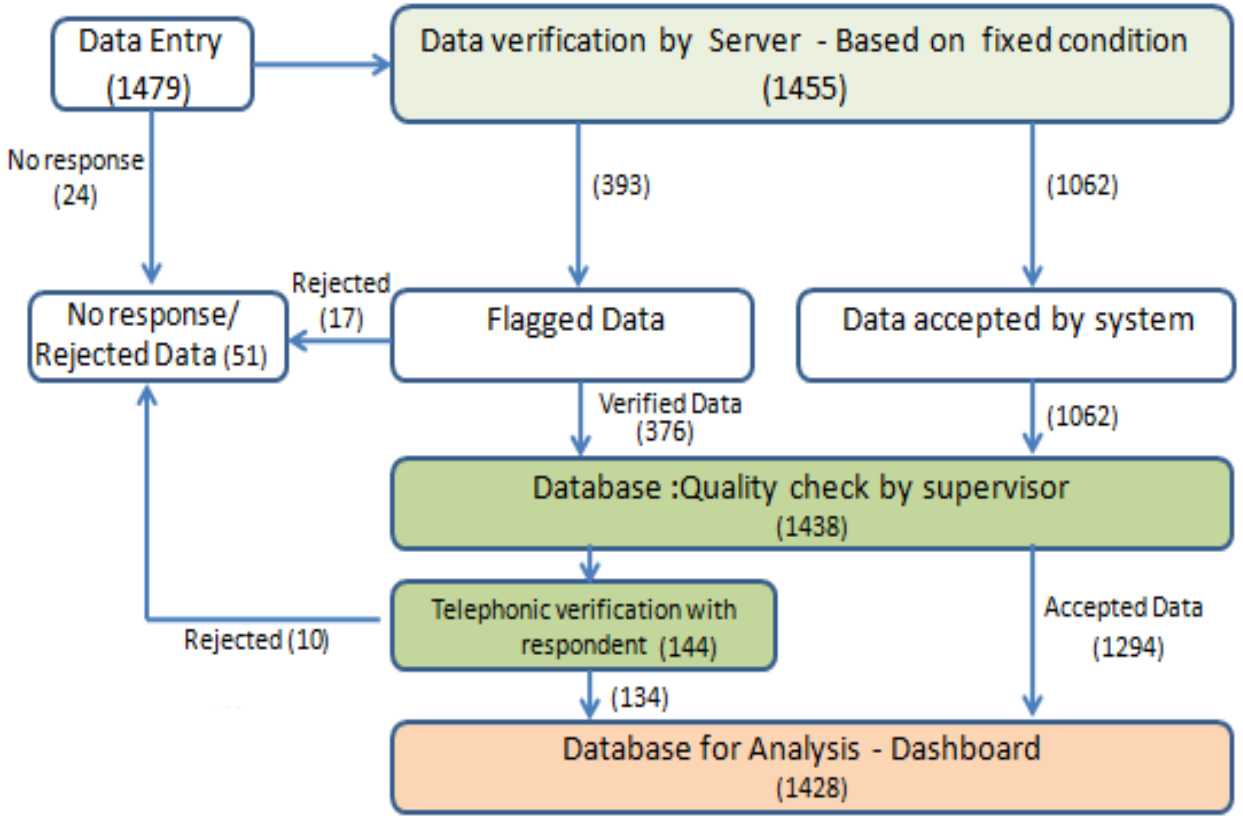


Image : Representation of data flow and monitoring mechanism of the web based server.

Numbers in parentheses indicate the number of data samples at each stage.

5b. Methodology- Real Time Data Monitoring

Other than flagging inconsistent entries (entries that took less than 5 minutes to be filled and uploaded or survey entries conducted in late nights etc.), the real time data monitoring in the survey management module also allows the supervisor to identify the locations where the surveys are being conducted using the geo-tagging feature on the dashboard.

Survey Snapshot

- 1479 Households including 300 slum households were surveyed
- Survey team included 6 enumerators and three supervisors (one field supervisors and two off site supervisors.)
- The survey was completed in 24 working days or 720 working hours
- Average time per survey entry was 30 minutes
- Only 27% of the entries were flagged by the server
- Of the 12% entries verified by telephone call, only 2% were rejected .

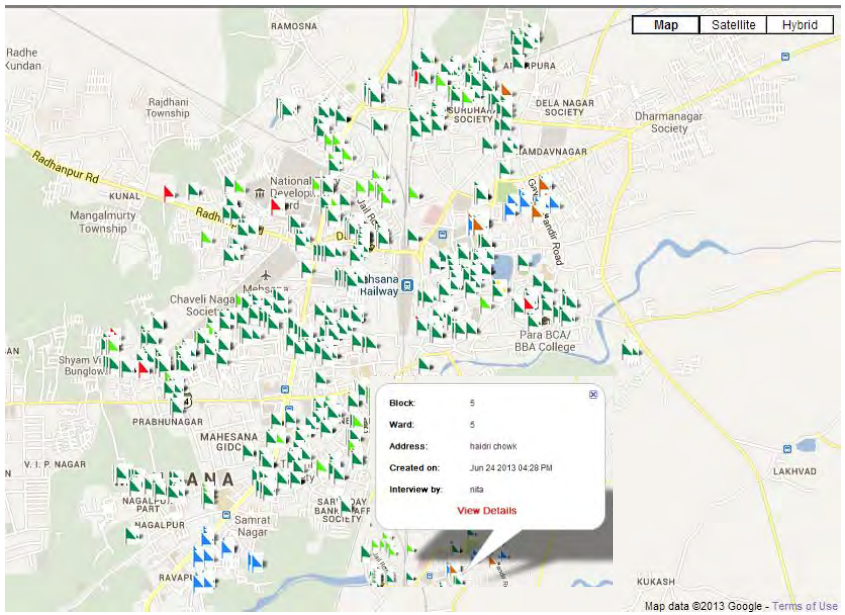
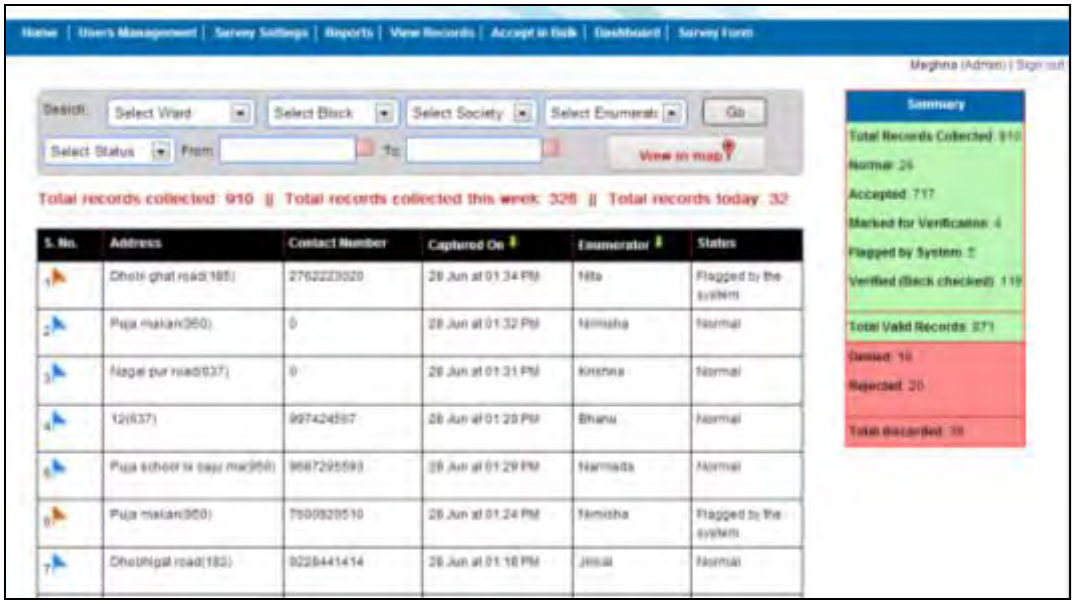


Image 8 : Geo-tag information about survey and enumerators



System's flags for first level of scrutiny of records

5b. Methodology- Data Analysis

1. The Dashboard interface of SLB Connect allows for easy data analysis and visualization.

2. Data can be aggregated and analyzed for pre-customized parameters such as the whole city, for individual wards or for slum and non-slum households etc.

3. The feedback from citizens is compiled into a score card. Detailed analysis is also made available to interested stakeholders in the form of measured service outcomes.

4. Values for various SLB indicators are analyzed and represented using traffic light symbols. (Red indicating poor performance, yellow indicates average performance and green indicates good performance.

5. The data can be visualized in a grid or a map view

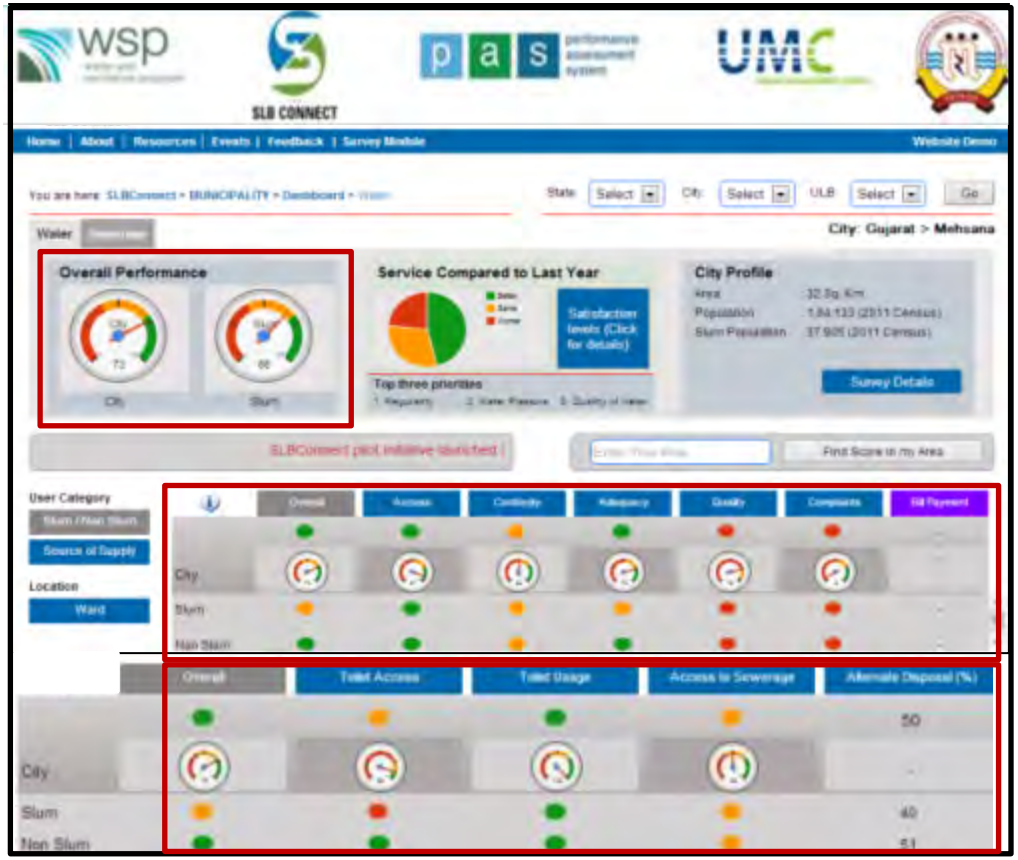


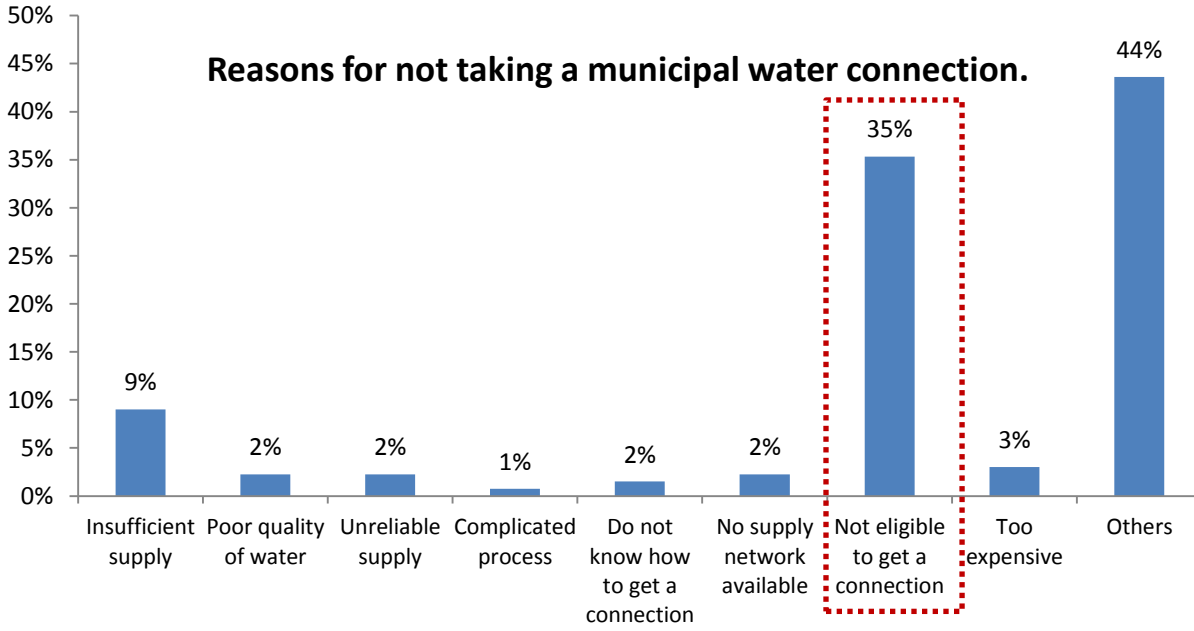
Image 9 : Dashboard of SLB Connect showing results analysis.

5c. Results of citizen's feedback survey : Water Supply

- Overall good performance in the water supply sector with a high level of penetration of piped municipal water supply.
- Level of satisfaction with quality and adequacy of water was high
- Level of satisfaction with water pressure and timings of water supply was poor indicating need for improvements.
- 77% of slum households have access to municipal water supply as against 96% non-slum households. The prime reason cited by citizens for not having a piped water supply connection was ' not eligible for getting a connection). The results indicate some level of inequity in service provision.
- Citizen satisfaction on redressal of water supply related complaints was rated to be poor.

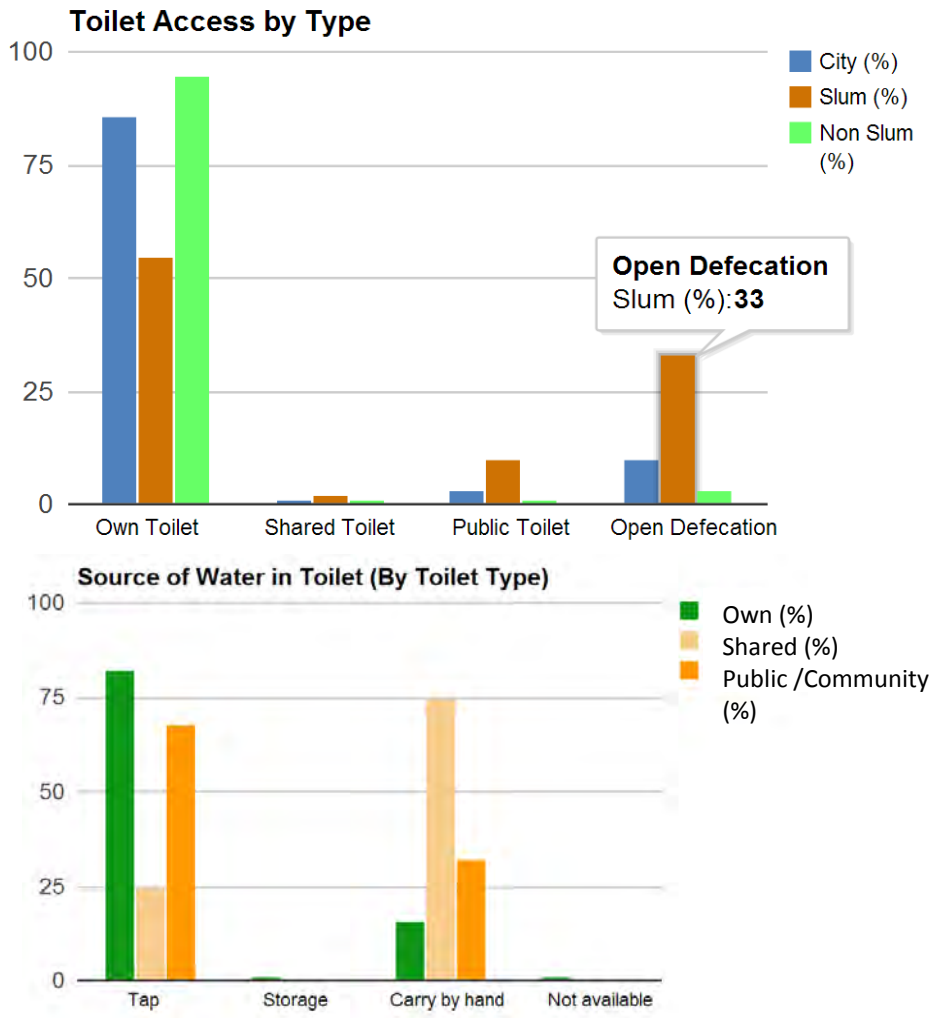
Table 1 : Citizens feedback on performance in water supply service

Parameter	City	Slum	Non Slum
Access to municipal water supply	91%	**77%**	**95%**
Adequacy of water	78%	**69%**	**81%**
Water Supply Pressure and Time	**57%**	**55%**	**60%**
Quality of water	78%	76%	79%
Complaints redressal	5%	3%	6%



5c. Results of citizen's feedback survey : Sanitation (toilets)

- 86% of overall households in the city have individual toilets. However only 56% of slum households have toilets.
- In the households with individual toilets in both slum and non-slum areas, all family members use the toilets.
- About 50% slum households do not have a tap connection into their toilets and have to carry water to use the toilets.
- The dependence on public toilets is low at 3% across the city. This could be attributed to poor upkeep and maintenance of these facilities. 75% community toilets lack functional taps and slum residents have to carry water with them to use these toilets.
- 32% of slum respondents have to resort to defecating in the open

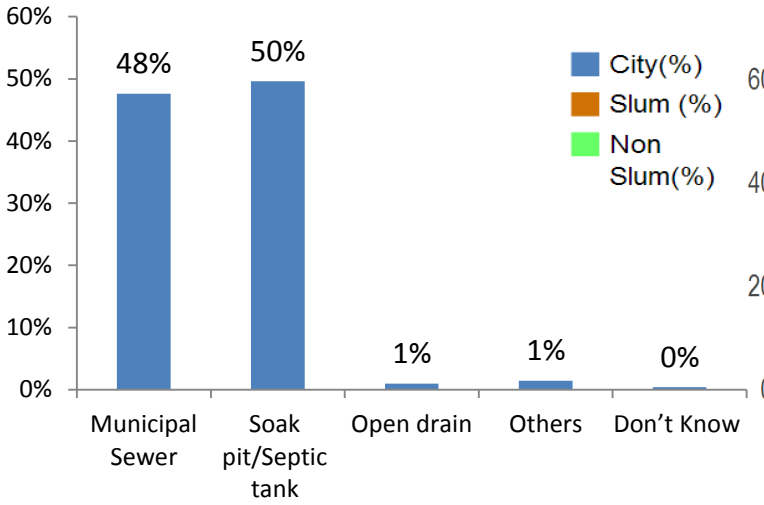


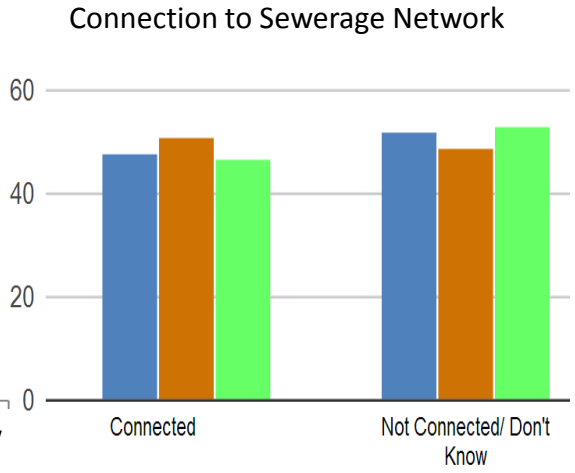
5c. Results of citizen's feedback survey : Sanitation (Sewerage)

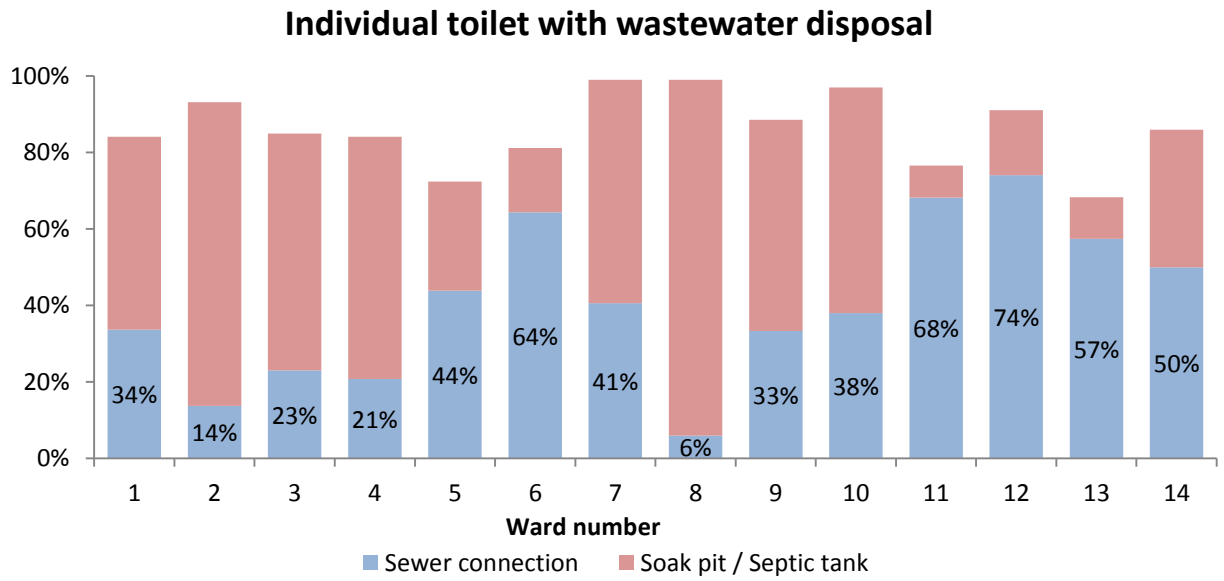
- 48% of the toilets in the city are connected to the underground drainage system and 50% are connected to on site sewage disposal systems like septic tanks and soak pits, however, a majority of these do not get emptied or cleaned on a regular basis

- The level of access to underground drainage is consistent in slum and non slum areas.

- Ward level analysis revealed that wards 2,3, 4 and 8 which include fringe areas of the city have a lesser coverage of underground drainage services as compared to wards in the inner city.







5c. Results of citizen's feedback survey : Comparative Analysis

The results from the citizen feedback survey were compared with SLB indicators provide by Mehsana Municipality as well as with water and sanitation data from census 2011 to compare the service providers and the citizen perspective.

Comparison with SLB Indicators (derived from PAS data)

- The results of citizens feedback survey indicate a better access to water and sanitation services than as reported by the ULB. This discrepancy indicates that it is likely that the Municipality does not have current and reliable information about its services and infrastructure networks.

- However on parameters such as quality and continuity of water supply, the ULB is reporting a better performance than as reported by citizens.

- The largest disparity in the ULB reported and citizen feedback data is in the efficiency of complaints redressed. While the ULB reports that more than 90% of the complaints received are resolved, the citizen feedback survey reveals only a 27% efficiency in complaints redressal.

Parameter	SLB Indicators (PAS Data, 2012-13)		Citizen Feedback (2013)		Census 2011
	City	Slum	City	Slum	City
Access to Water Supply	80%	31%	91%	77%	83%
Access to toilets	59 %	70%	86%	66%	87%
Sewerage Network	11%	8%	48%	50%	38%

5c. Results of citizen's feedback survey : Comparative Analysis

Comparison with Slum survey conducted through FGDs in 2010

- The citizen feedback surveys revealed that there have been significant improvements in access to water supply in slum households since 2010.
- However, there seems to be no improvements in access to individual toilets in the city.
- Access to underground drainage network has also seen a marginal improvement.

Parameter	Citizen Feedback (2013)		Slum Survey (2010)
	City	Slum	Slum
Access to Water Supply	91%	77%	66.5%
Access to toilets	86%	66%	67.8 %
Sewerage Network	48%	50%	43 %

6. Summary and Way Forward

The information generated through citizen feedback survey is an on-field assessment of service delivery and provides useful insights into, citizens' view s and concerns which are valuable for the ULBs to undertake service improvements and reforms. The citizens are also empowered in the process and are encouraged to use the feedback regarding gaps in service delivery to demand for qualitative improvements in services.

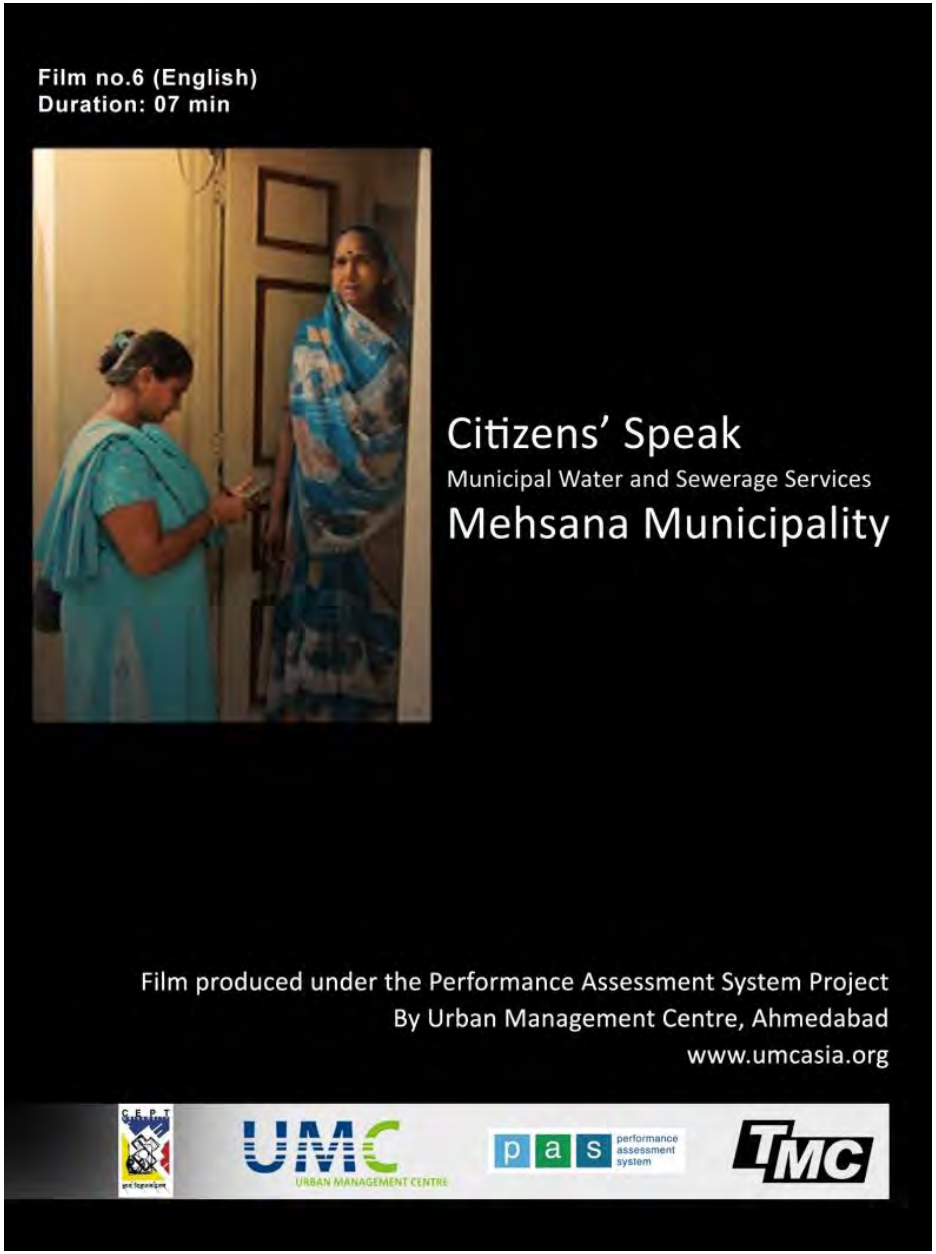
For the citizen feedback process to become truly useful, such surveys should be conducted at regular intervals rather than being viewed as an one-off exercise.

The citizen feedback survey in Mehsana provided the ULB with helpful data regarding the level of their service delivery. The ULB is committed to addressing citizen concerns that were brought to light by this survey.

The citizen feedback survey has been a great experience for the UMC team as well. The survey provided us an opportunity to engage with the ULB, citizens as well as grassroots NGOs such as MHT to work towards improvements in water and sanitation services in Gujarat. We will continue to advocate for more transparent engagement

"The municipality is working towards improving efficiency in service delivery of basic services. The results from the citizen feedback survey will highlight the missing links and the key areas which we need to address. Mehsana Municipality promises to address citizen concerns and issues in the coming years"

- *Mr. Ramesh Joshi,*
Chief Officer, Mehsana Municipality



See more in film "Citizens' Speak"
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