water for people

Indian Grameen Services

Promoting Sanitation As A Business Proposition

A Study to Explore Social Marketing of Sanitation Products and Services at Sheohar District of Bihar: A Report by Indian Grameen Services

Executive Summary

India has a population of almost 1.2 billion people. 55% of this population (nearly 600 million people) has no access to toilets. A new census data revealed that half of Indians do not have toilets at home while over a half owns cell phones[1]. It clearly indicates the low awareness and hence low demand about sanitation for half of the population of the country. Most of these numbers are made up by people who live in urban slums and rural areas. A large populace in the rural areas still defecates in the open. Water for People (WfP) (which helps people in developing countries improve quality of life by supporting the development of locally sustainable drinking water resources, sanitation facilities, and hygiene education programs) wanted to work at Sheohar district of Bihar which ranks very low in the status of sanitation. With preliminary studies and understanding, WfP believes that out of the total population at Sheohar who do not have access to toilets there are good number of households who have capacity to pay. They do not have toilets at home because of lack of awareness and lack of availability of better models of toilets. This encouraged WfP to plan for conducting a Landscaping Study to understand how Sanitation as Business (SaaB) model can work and it approached Indian Grameen Services (IGS)- a not for profit company of BASIX Social Enterprise Group for the study.

The study identified the existing gaps on why people who have affordability to construct toilets do not have one. The study conducted by IGS clearly indicates that there is demand for toilets. The study aimed at comparing those households with toilets and those without across several variables (socio-economic status, income level, education etc.) for the purpose of drawing conclusions about the responses of community towards sanitation issues. It offers statistical inferences from the study about the preferences by different socio-economic groups for one design over the other. It confirms the intuitive direct correlation between economic well-being and willingness to pay for toilet construction. Similarly, the inability of the poor to invest for the toilet construction was also quite evident. A counter-intuitive finding is the insignificant correlation between economic class and appreciation of the importance of toilets as a necessity for hygiene. Both the poor and non-poor reported marginal difference in the incidence of having toilet or not.

1. Source: Census of India's House listing and Housing Census Data Highlights-2011

The factors such as privacy, social stature, security and comfort weighed more heavily than sanitation and hygiene considerations by the households having toilets at home and those who have willingness to construct. It clearly indicates that the extension work that communicates to the community and the linkage between open defecation and water borne disease is less effective than required. This partially explains why the push for "total sanitation campaign" is diluted.

Cost is a major issue in rural sanitation. The dissatisfaction of consumers of leach pit model (promoted by government under TSC) is primarily due to lack of privacy owing to badly designed, or a complete absence of, doors/gates and roofs. Additionally, there is the common complaint about the size of the tank being inadequate for prolonged use.

Innovative financial products and toilets models need to be introduced by which the capacity to pay of the households can be converted to willingness to pay. There appears to be no substitute for the much-needed education and training of people on the subject of sanitation – not only people without access to toilets but also those with it. The study has clearly stated that a considerable number of people, mostly men, defecate in the open despite having access to a toilet at home. This indicates a lack of understanding and awareness about the importance of cleanliness and hygiene that features in daily sanitary activity. There is a need to address the clear and obvious knowledge gap between the more urban society that has inculcated and practiced proper sanitation techniques for years and the poorer rural masses that seem ignorant of it.

Any extension activity and toilet construction activity should be preceded by a more in-depth study of the economic, cultural and social dynamics that prevent larger adoption of toilet as a part of sanitation and hygiene intervention. So this Landscaping Study will be an assessment of the extent of knowledge and attitude of the community towards health, hygiene, sanitation and health care costs. These information and analysis can help decide what kind of financial, technical and extension support services are required to overcome the persistent barrier that

seems to keep large number of households without toilet, and by extension highly prone to disease and high health care costs.

1. Background

Water for People (WfP) has started its interventions in India in 1996 with the broad goal of helping to put an end to needless suffering and death from water related diseases. Working on this endeavor, WfP wanted to conduct a Landscaping Study about Sheohar which ranks very low in sanitation although the preliminary study and understanding about the district suggest that there are large number households who have capacity to pay but they do not have toilets at home. To understand how the capacity to pay can be converted into willingness to pay to construct toilets, WfP planned to conduct a study to explore if the households are made aware about the need to construct toilet and are presented with good models of toilets whether Sanitation as a Business (SaaB) model is effective. The proposed model aims to integrate the important actors of the value chain i.e. the segment of population having capacity to pay for toilet construction, the entrepreneurs who can be promoted within the district to take it as a long term business proposition, the service providers and the suppliers of sanitary items.

Indian Grameen Services (IGS) is a registered not for profit company under Section 25 of Companies Act and is a part of BASIX Social Enterprise Group (BASIX SEG). Since its inception in 1987, IGS has been working on livelihood promotion in different geographical and mostly difficult areas of the country. It has significant presence in Bihar and has been working in the state almost since inception and has good understanding on the development dynamics of the state.

When WfP requested IGS to conduct this Landscaping Study, IGS considers it a privilege and great opportunity to work with WfP on issues of sanitation which has very important role in promoting livelihood of people.

1.1 Sheohar at a glance:

1.1.1 SHEOHAR DISTRICT DENSITY 2011

The initial provisional data released by census India 2011, shows that density of Sheohar district for 2011 is 1,882 people per sq. km. In 2001, Sheohar district density was at 1,478 people per sq. km. Sheohar district administers 349 square kilometers of areas.

1.1.2 SHEOHAR LITERACY RATE 2011

Average literacy rate of Sheohar in 2011 was 56.00 compared to 35.27 of 2001. If things are looked out at gender wise, male and female literacy were 63.72 and 47.25 respectively. For 2001 census, same figures stood at 45.28 and 23.86 in Sheohar District.

Table-1: Census data 2011

Description	Rural	Urban
Population (%)	95.72 %	4.28 %
Total Population	628,821	28,095
Male Population	332,738	14,876
Female Population	296,083	13,219
Sex Ratio	890	889
Child Sex Ratio (0-6)	924	948
Child Population (0-6)	119,822	5,097
Male Child(0-6)	62,276	2,616
Female Child(0-6)	57,546	2,481
Child Percentage (0-6)	19.06 %	18.14 %
Male Child Percentage	18.72 %	17.59 %
Female Child Percentage	19.44 %	18.77 %
Literates	282,966	14,972
Male Literates	171,181	8,973
Female Literates	111,785	5,999
Average Literacy	55.59 %	65.10 %
Male Literacy	63.29 %	73.19 %
Female Literacy	46.86 %	55.87 %

1.1.3 ECONOMY

Agriculture is the main livelihood for 90% of the total population in the district. All types of crops are produced here including varieties of rice, wheat, and a number of rabbi crops. However, about 40% of the total communities do not have their own agricultural land and work as agricultural labor. The remaining

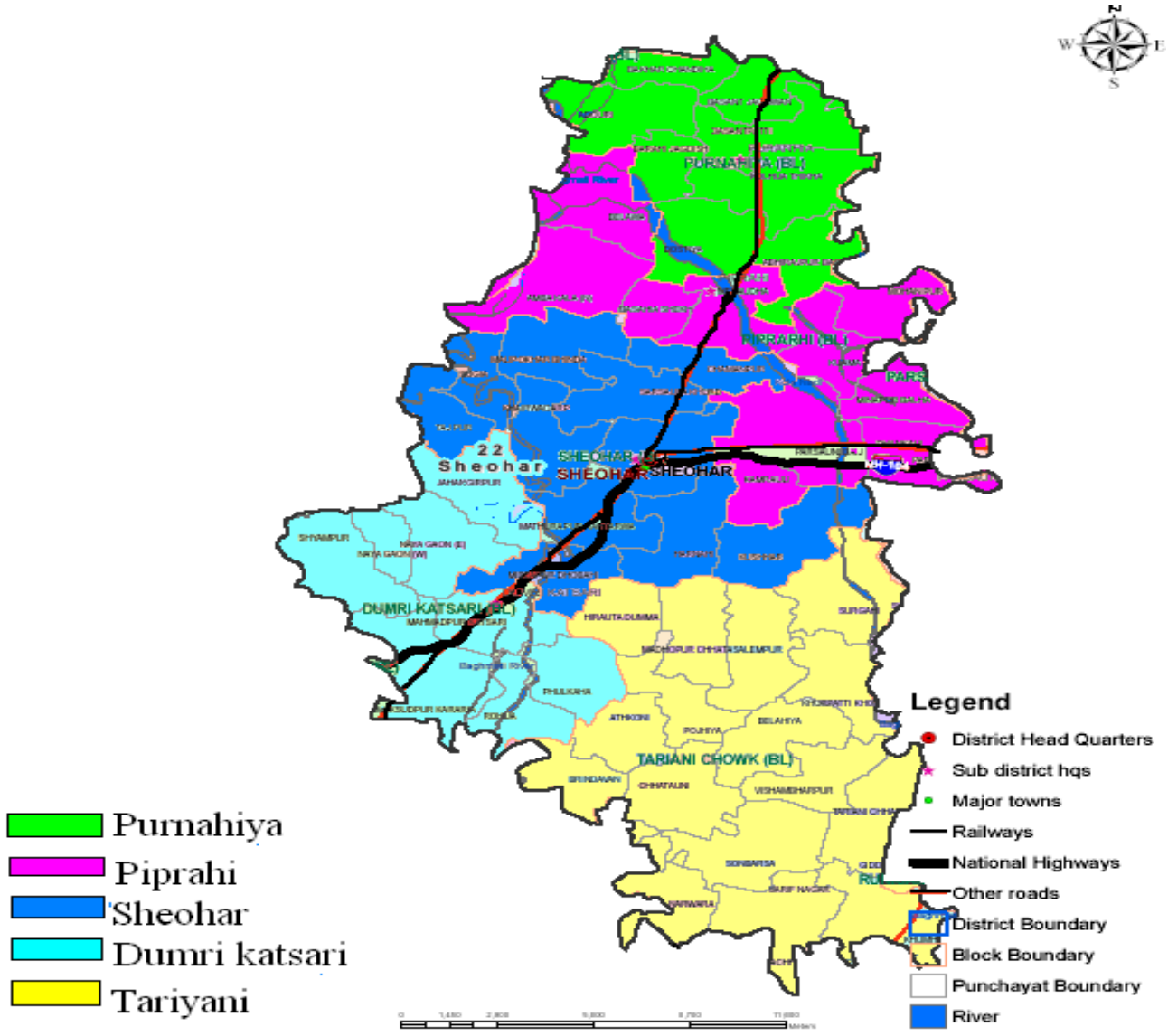
10% of the population migrates to nearby cities to work as daily wage laborers in the construction field.

In 2006 the Ministry of Panchayati Raj named Sheohar one of the country's 250 most backward districts (out of a total of 640). It is one of the 36 districts in Bihar currently receiving funds from the Backward Regions Grant Fund Programme (BRGF). It is one of the most flood affected district in Bihar due to over flooding of the Bagmati and Budhi Gandak rivers.

1.1.4 GEOGRAPHY

Sheohar district occupies an area of 349 square kilometres (135 sq mile). It is around 150 km in the north and east from Patna, the capital of Bihar.

Sheohar is located at 26.52N, 85.3E. It has an average elevation of 53 meters (173 feet). It is divided into five blocks-Piprahi, Purnahiya, Sheohar, Taryani and DumriKatsari. It is 55 km from Muzaffarpur. Sheohar is connected to the adjoining districts by road. Sitamarhi lies to the east of Sheohar, to the west is East Champaran and to the south-east is Muzaffarpur.



1.4.5 STATUS OF SANITATION AT SHEOHAR

Sheohar is mostly an agriculture district where 95.72% of the population is from rural hinterland. The district is viewed as one of the most vulnerable districts of Bihar as per A Vulnerability Index for Bihar. The backwardness of the district is also reflected in terms of its poor sanitation coverage.

Based on the data available with the government of India, the district of Sheohar has been found to be the most vulnerable in terms of water and sanitation coverage. Only 14% of the total families in the district have sanitation facilities in their home and the rest practice open defecation. Banks of rivers, ponds, agricultural fields and roads are the place used for open defecation for 86% population due to which the instances of diarrhea among the children in the district is prevalent.

Following tables gives an idea of the status of poor coverage of sanitation in Sheohar district:

Table-2

S. No.	Name of Block	Nos. Of GP	Nos. Of Villages	Total HHs	Total BPL HHs	Total APL HHs	HHs having Toilets	Toilet-BPL HHs	Toilet-APL HHs	Block wise % Coverage
				(in thousand)						
1	Sheohar	10	42	23.3	13.1	10.2	6.35	4.51	1.83	27.1
2	Tariyani	16	71	37.7	22.4	15.3	9.14	7.18	1.96	24.0
3	Piprahi	11	23	26.9	13.9	12.9	6.31	3.47	2.84	23.4
4	Dumari	8	27	20.5	11.2	9.2	3.00	1.72	1.27	14.5
5	Purnahiya	8	26	20.9	12.8	8.0	3.14	2.28	0.85	15.0
Total		**53**	**189**	**129576**	**73701**	**55875**	**27962**	**19185**	**8777**	**20**
As per District Profile- Sheohar							38668	29136	9532	29

Source: http://tsc.gov.in/RuralSanitationNew/State.aspx

It is evident from the table that availability of toilets is low irrespective of the comparative economic status. The comparatively higher percentage of toilets for BPL households (26%) than APL households (15.7%) should be attributed to the

construction of toilets built under TSC but most of them are abandoned by the users due to quality issues. So, the overall low coverage of toilet irrespective of economic classes is truly an indicator that the low coverage has more to do with mindset of the people, poor acceptance, non understanding of utility of toilets linked with health and hygiene.

Table-3

Components	Total	Component	Coverage	% covered
No of Block	05	Clean Block	0	0%
No of GP	53	Clean GPs	1	2%
No of village	208	HH with toilet	15400	14%
No of primary and upper primary school	279	Primary & Middle schools with water and sanitation facility	22	8%
No of high school	13	High schools with water and sanitation facility	3	8%
No of college	01	Water and sanitation facility in college	0	0%
No of Habitation	438	Habitation having access to drinking water with 1.5 Kms	250	57%
Health Centres (PHC-5, APHC-17, Sub-centre-103)	125	Health centres with water and sanitation facility	22	17.5%

(Source: DDWS, Ministry of Rural Development, Government of India. Health Centre Data Source: District Health department, Sheohar, Bihar as on 19th November 2011)

The data in Table-3 further corroborates the fact discussed in table 2 that availability of health and sanitation services is abysmal in the district.

Due to the overall poor indicators of development in general and extremely poor coverage of sanitation in particular, Sheohar became natural choice for WfP to conduct a Landscaping Study to understand the socio-economic and psychological reasons for the low acceptance of sanitation among the people and their willingness to accept and pay for improved product/services for sanitation.

2. Objectives, expected outputs and scope of the Landscaping Study

2.1 Objectives

- To explore possibilities of sustainable business models for increasing supply of sanitation products and services through the private sector.
- To explore strengthening the value chain for improved sanitation products and services offered by the private sector.
- .To explore potential entrepreneurs who would be willing to take up sanitation as a business proposition

2.2 Expected outputs

- Understanding about key stakeholders and their capacities to undertake sanitation as a business model.
- Narratives of existing environment in terms of ongoing programs in sanitation market segmentation.
- Need assessment of individual households for toilets and preferences for features of toilets.

2.3 Scope of the study

- To understand all the stakeholders along with their central idea of interest in this program.
- Understanding existing environment for promoting sanitation program.
- Understand existing Stake holders , supply chain, business models
- Understand skills and capacity of potential entrepreneurs in undertaking it as business model
- Market segmentation
- Need assessment of individual households for specific types of toilets.

3. Methodology

3.1 An exploratory field visit by the team of WfP and IGS

To develop a firsthand comprehensive understanding of the area and to determine the study design, a field visit was undertaken by a team comprising representatives from WfP: Mr. Satya Prakash Choubey-BDM and from IGS: Dharmendra (State Head -BASIX), Sanjeev (Consultant-BASIX), Navneet Naik (Program Manager- BASIX), Dilip Mishra (Marketing Executive- BASIX).

The team had visited all the five blocks of Sheohar and spent time with five CSOs working in the respective regions to know more about the sanitation activities and demand in the Block level. The team had also visited households to know about their preferences in toilet constructions and investment required for that. The team had interacted and discusses with the masons, brick kiln owners and tried to understand their involvement in sanitation value chain stakeholders. The team has also visited a production centre in bordering area (in Muzaffarpur) situated 25 KM from Sheohar doing sanitation business since last 6 years.

The team had a interactive session with the WfP officers at Sheohar about the sanitation situation in Sheohar and their perspective.

The field visit had given a good understanding of the status of sanitation, demand and willingness to pay for toilet construction, economic classification of households, stakeholders, value chain, market approaches and sampling design for the proposed study.

3.2 Transect Walk

The study team conducted transect walk of the area to develop an overall understanding of community, sanitation practices, status of sanitation services etc.

3.3 Review of secondary data sources

All relevant data sources viz. Census 2011, published reports on status of sanitation in Sheohar by different agencies was referred for the study.

3.4 Designing Sample size

Stratified purposive sampling method was adopted to decide on the sample size for conducting household survey. 15 HHs per village from 39 villages of 5 blocks constituted the sample size of 555 households (192 households with toilets and 363 without toilets). It was derived using statistical table (95% accuracy with 5% margin of error).

The interview / interactive discussion were conducted with sanitary ware shop/ hardware traders at Muzaffarpur, Sitamarhi and Sheohar. The number of respondents was three. Similarly three brick kiln owners were interviewed along with five masons, five semi skilled masons, five pit emptier and five labours.

One production centre owner engaged in producing rings to be used in leach pit was also consulted and interviewed.

One to one interaction and discussion with all the five CSOs working with WfP about their experiences were conducted by the program manager and marketing executive of IGS.

3.5 Household Survey

Structured interview were conducted with the sampled households, the surveyor were hired from the local areas and trained by IGS at Sheohar and under the supervision of program manager and marketing executive of the IGS survey work completed.

3.6 Interview of stakeholders

The interview with all the stake holders starting from WfP, CSOs, Brick Kiln, sanitary suppliers / hardware shops, production center, skilled masons, semi skilled masons and pit emptier were conducted by the program manager and marketing executive of IGS.

3.7 Focused Group Discussion with community:

Focus group discussions were used to verify and probe, in a more qualitative way, a number of topics touched by the interviews of individual market actors. During each discussion, the lead surveyor acted as facilitator and was assisted by the survey team members who took notes.

3.8 Customer satisfaction survey on use of existing toilets constructed under TSC

The questionnaire had been designed and interview of 50 households having TSC toilets was conducted by the marketing executive and program manager of IGS. The questionnaire is attached as an annexure with this report

4. Analysis and Results

4.1 Value chain analysis

4.1 CONSUMER:

As a primary link in the sanitation value chain, the consumer perception about possessing toilet is linked with the toilets constructed under Total Sanitation Campaign (TSC). The willingness to pay and construct toilets was found in the middle class and upper middle class households. Poor households have complete dependence on subsidy under TSC while for the ultra poor household, toilet is not a priority and they do not have affordability to avail even through TSC.

There are three categories of consumers in the sheohar market for toilet construction at household level.

4.1.1 Rich class:

They have pucca houses (brick house) and are well established in the villages. They have good income sources and monthly income level is approx. Rs 15,000 in a month. Most of them are working in government jobs or have good agriculture land with them. They also belong to socially effluent class in the village society and mostly well educated. They comprise not more than 5% population of the block and most of them already had toilets at their household.

They aspire for septic tank toilet in their household. It was observed during the meeting and discussion with them that they want a good septic tank toilet which can be used for next 50-90 years without any problems. Most of them had also invested Rs. 40,000 to Rs. 1, 00,000 for construction of septic tank depending upon the total family members. Due to which, a general practice is to construct a huge septic tank (12 ft x 10 ft x 10 ft) with a view of durability for more than 50 years. They used to hire mason by their own and understand the design, do variation in the design at their level and go for the construction under their own supervision. They have no faith on contractors. They never approached CSOs or don't like them due to their bad quality and bad reputation in the villages.

This segment of consumer does toilet construction during house construction. The house construction may take 6 month-5 years depending on the availability of cash inflow to the family. They feel that it is long terms investment and would like to involve fully at the time of construction.

4.1.2 Middle class:

They have pucca houses (brick houses) with limited size and facilities. Most of them worked in private job or have limited agriculture activities or have shops in markets. They also migrate to earn for their family living here. They have good cash flow of approx Rs 5,000 to Rs 15,000 per month from different sources such as jobs, their shops, tuitions etc. They also got a good cash flow of Rs. 50,000 – Rs. 4,00,000 in September-November (festival months) from their employers. They are not well educated but understand the importance of toilets in their houses. They comprised of 10-20% of the total block populations.

They don't like government subsidy toilets constructed under TSC due to its low durability and poor quality. They want good quality toilets but with minimum durability of 10-25 years. They also aspire for low cost septic tank toilets or leach pit toilets of more than 8-10 ft depth. They like the model toilet super structure but not the depth of its pit. They can also invest Rs. 10,000 to Rs. 30,000 for toilet constructions. One of the limitation with these segment that mostly they don't have time and expressed that if they got some easy option so that the toilet is constructed within a day or two without moving here and there for arranging materials.

Few went of low cost septic tank model (they call it sulabh septic model) costing Rs. 25,000/- with good durability of 10-25 years. Constructed in 10 ft x 10 ft x 7 ft dimension. Its like a septic tank design with soak pit kind of arrangement in the tank floor. A outlet is there to ooze out access of water. People are happy with this design.

This segment of consumer does toilets construction after accumulating savings and anytime after the construction of their houses. Most of them do it during high cash flow season (harvesting, festival etc). The production center run by a private entrepreneurs in Minapur (Muzzaffarpur) says that he sells most toilets in marriage season i.e. 25-40 toilets per months (Rs. 60-80,000 ~ $1500).

4.1.3 Poor class:

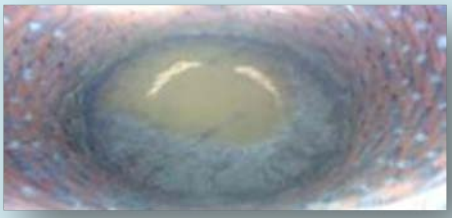
They are mostly wages labourers and have thatched roofs/mud houses. They have no education and lack limited facilities in their home. In fact, sanitation is not in their priority list of their family's requirement. Many of them may struggle for even two square meals in a day. In many cases they don't have land for toilet construction. They comprised of 70-80% of total block population.

They also don't like govt. subsidy toilets but have no choice. They only want something free of cost for them. They have no/limited money to invest for the toilet constructions. This segment of consumer is approached by local contractor to do toilet construction in their household with govt. subsidy.

Besides all this there is a segment of consumer falls under mahadalit / ultra poor category, they are landless people living in thatched roof / kaccha houses hardly got square meals for their family.

4.1.4 Existing Toilet Options

S. No	Toilet options	Characteristics
1	Septic tank 	Big tank size 12 ft x10 ft x 10 ft Cost: INR 40,000 to 1,00,000 Require skilled masons.
2	Sulabh tank 	Average tank size 10 ft x 7 ft x 7 ft. Cost approximately INR 25,000. Require skilled mason.

3	Deep leach pit toilet 	Cost INR 8,000 This type of toilet is mostly preferred by middle class and some upper middle class households.
4	Leach Pit (TSC toilets) 	Low cost toilets, usually constructed under TSC. Cost approximately INR 4,600.Quality of these type of construction has not been good and even the poor households have abandoned using it.

4.2 Mason:

Masons are two types of masons readily existing in the villages one is skilled and second is semiskilled. Skilled masons are those whom had skills for house construction along with septic tank construction, where as semi skilled masons usually work under the guidance of skilled one for house construction as well as septic tank construction or used by CSOs for TSC toilet construction. Normally a skilled mason hires 3 to 5 semi skilled masons to work under him. In many cases semi skilled masons worked under the skilled to learn the skills and gradually developed as skilled masons. Skilled mason had their own market segment because of their good reputation and approached by rich class or middle class for their services and advice for house construction as well as toilet construction. They usually prefer to be available within 5-10 km from their native villages. Approximately 5-8 masons found to be available in every gram panchayat. They charge INR 250-300 per day and can be approached by individuals, CSOs, Panchayat. On an average the masons usually found the work for 20 –25 days in a month. One of the problem masons are delayed payments even after construction work is finished. Skilled masons normally

avoid to be engaged in TSC construction work, as previously constructed toilets are of very poor quality and poor reputations of mason engaged in TSC toilet construction.

4.3 Pit emptier:

They belong to specific community (mahadalits) and each pit emptier caters to 8-10 villages for leach pit toilets. They are existed in small numbers and confined to corner of village with very poor living condition. They are dependent on any kind of wage labor under MGNREGA or any other wage labor work. Normally they are not hired for doing agriculture works. They get labor of 4-5 days a month with earning of INR 400-500 per day. Their main occupation is bamboo crafts making and pig rearing in traditional manner. While discussing with the household we have also come across of the incidents of pit emptying practices in few villages. These people had been hired for emptying pits that cost them Rs. 300/- specifically after the rainy season. The pit emptying is done manually. Septic tanks pit emptier are done manually and no pumps or tankers are available in Sheohar. They are also hired to clean drainage in market place or Sheohar town.

4.4 Brick kilns:

Brick kilns are generally available in the vicinity of Sheohar district and are available in good numbers in every 2 to 5 kms. The brick kiln can be found all the blocks of the Sheohar. They are not able to fulfill the latent demand of bricks in Sheohar district itself. The brick production season is usually from April to November. It requires an investment of INR 5-10 million. Production capacity of brick kiln varies in the range of 10 to 20 lakh bricks. The cost of brick production was estimated to be Rs 3.5 to Rs 5 per brick. Also 25% of production loss was observed. Normally three grades of bricks are produced in a brick kiln. The very high fluctuation in price of brick was observed.

Brick Grade	Cost/1500 bricks (Rs)	Cost/ Bricks (Rs)	Grade wise Production
I	10500	7	70%
II	9500	6.35	20%
III	8500	5.65	10%
Breakage (loss)	3000	-	

The major cost is of coal which they had to purchase from Jharkhand through brokers (Rs 12000/- per ton).

4.5 Sanitary material production centers:

Production centers are not available within Sheohar district but in the neighboring i.e. Muzaffarpur. The owners of production centers had taken training from UNICEF, Ramakrishna Mission, Mahatma Gandhi Ashram-Gujarat. The average investment is INR 3-4 lakh. At the time of study this production centre was hiring two to three labours with the capacity to produce 50 rings / month. The peak business season was found to be March to June. The margin of 20% over the retail sales price was estimated during the course of study. The risk involved in breakage of rings during transportations.

Particular Items	Unit (Dimension)	Retail Price (Rs)
RCC Ring	1 (1ft x 1.5” x 10 ft)	350
RCC Beam	11ft/9ft	850/650
RCC Plate	1	550

4.6 Sanitary Material Supplier:

Sheohar district has counted numbers of sanitary material suppliers and the need is usually catered by the neighboring districts. The long supply chain result into increased cost of materials. Comparative market rate of sanitary items (in INR) in different districts:

Table 4:

Items	Sheohar	Sitamarhi	Muzzafarpur
Pan-Hindustan	250	225	180-200
Pan- Parryware, Hindware	850	800	800
Syphon- Local	70	45	30-55
Syphon- ISI (Prince)	160	150	120-135
4” Pipe- ISI (Prince)	250	245	240

The sanitary suppliers make an average investment of INR 25 lakh. The customers do not have awareness of brands so there is no brand loyalty for the products. The peak season for these suppliers is March to June.

4.7 Civil Society Organizations (CSOS):

CSOs working in the area of sanitation are well connected with WfP and dependent for the administrative fund while they have to approach Public Health Engineering Department (PHED) to get the fund for toilets constructed under TSC. It is a big constraint for the CSOs to receive timely fund from PHED even after constructing the toilets on time and if the support from WfP is withdrawn they are not capable to take up this project. They purchase raw material on credit from local supplier and settle payment after receiving funds from PHED.

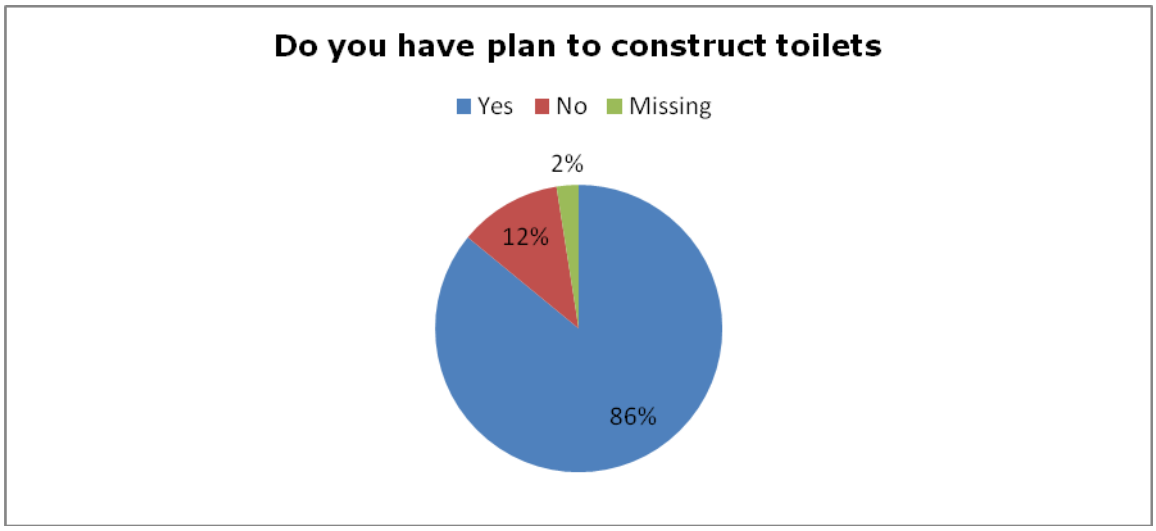
5. Household Level Findings

5.1 Willingness to construct toilets

The household survey revealed that 86% of the total households without toilets (363 households) of the total sample size of 555 households expressed their clear willingness to construct toilets. It was further substantiated with the expressions of the households when they mentioned that they have clear intentions to build toilets within a stipulated time frame.

Table 5: Willingness to construct toilets

Do you have plan to construct toilets	Number of HHs without toilets	% of HHs without toilets
Yes	312	86%
No	42	12%
Missing	9	2%
Total	363	



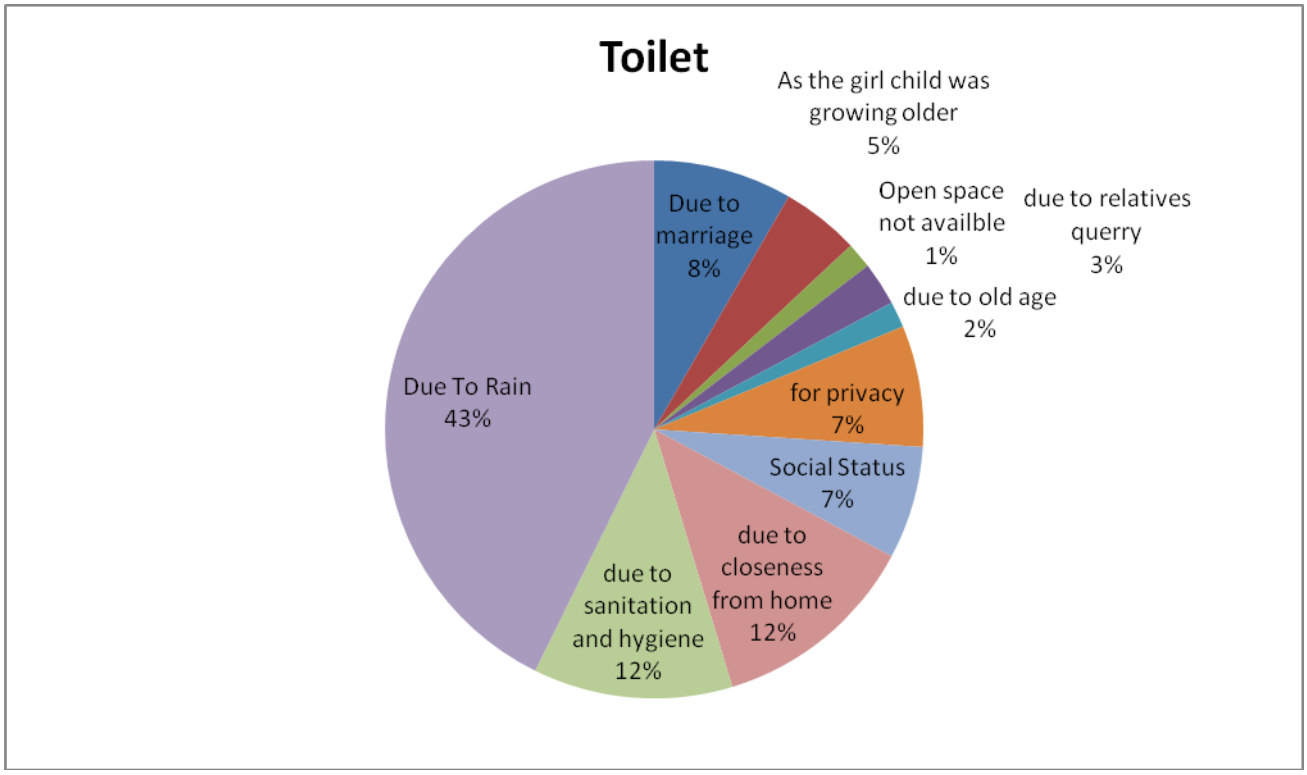
The data clearly suggest the need of toilets is realized among the households without toilets and the important reason for this realization is unfortunately not due to want of sanitation but the trend suggest other reasons were considered more important for the households with toilets(192 households surveyed). Moreover, the inconvenience caused (especially for women and girls) due to distance covered for open defecation should also be the driving factor for the households without toilets to express willingness to construct toilets.

Table 6: Distance of place for open defecation from houses

Distance in Km	Number of without toilets HHs	% of without toilets HHs
0	1	0%
0.5	190	52%
1	160	44%
1.5	1	0%
2	2	1%
3	1	0%
Missing	8	2%
Total	363	100%

Among the 363 households surveyed without toilets, 96% of them had to travel 0.5 to 1 km for open defecation which was considered very inconvenient for women and girl child especially during rain and winter as they have to go very early in the morning.

Reasons to construct toilets for the 192 HHs surveyed with toilets



It was evident from the data collected from 192 households with toilets that sanitation is never given a top priority for toilet construction but other factors like convenience, social status, privacy etc. were considered more important.

The willingness to construct toilets was also expressed in terms of the thinking of the households without toilets (363 HHs) that if they can arrange resources they have a clear time frame for construction of toilets.

Table 7: Planning to construct toilets

When are you planning to construct toilets	Number of HHs without toilets	% of HHs without toilets
This month	11	3%
In next three months	59	16%
In next six months	155	43%
After a fixed duration	88	24%
Missing	50	14%
	363	100%

5.2 Willingness to pay and preferences for toilets types

The survey suggested that most of the households (without toilets) around 36% preferred to spend INR 1,000 to 10,000 while the next category 23% of them planned to spend INR 20,000 to 60,000. The preference for types of toilets matched with the willingness to pay brackets of the households. Most of the households (without toilets) - 67% preferred leach pit toilets while 31% preferred to construct septic tanks.

Table 8: Willingness to pay to construct toilets

How much you are planning to pay to construct toilets in INR	Number of HHs without toilets	% of HHs without toilets
Between 1,000-10,000	130	36%
Less than 1,000	86	13%
Between 11,000-20,000	61	17%
Between 20,000-60,000	85	23%
Above 60,000	6	2%
Missing	35	10%
Total	363	100%

Table 9: Preferences for toilet types

Which type of toilets you want to construct	Number of HHs without toilets	% of HHs without toilets
Leach Pit	245	67%
Septic	114	31%
Any other	4	1%
Missing	0	0%
Total	363	100%

5.3 Instances of diseases and open defecation

It is a well researched fact that there is a direct correlation between open defecation and the occurrence of diseases as the places of open defecation contaminates the sources of water to be used for cooking, drinking and results into diseases. The information gathered from the households without toilets also suggest that the places used for open defecation are those which contaminate the sources of water for drinking and cooking (please refer table-10). It was observed that the sources of water used for cooking and drinking irrespective of the households with or without toilets are almost same (please refer table-11). So, the occurrences of diseases were also found across the households irrespective of those with or without toilets. The fact strongly suggest that unless open defecation is totally stopped the instances of diseases due to contamination of water sources would be prevalent irrespective of the households have constructed toilets because the sources of water i.e. hand pumps, wells would mostly be the same for all the households (please refer table 12).

Table 10: Places used for open defecation

Places used for open defecation	Number of HHs without toilets	% of HHs without toilets
Road side	35	10%
Pond side	8	2%
Agriculture field	298	82%
Open field	16	4%
Any other	0	0%
Missing	6	2%

Total	363	100%

Table 11: Sources of water used for cooking, drinking and washing

Sources of water	Number of HHs with toilets	Number of HHs without toilets	Total
Hand pump	181	349	530
Boring	0	1	1
Well	2	0	2
Tap water	6	10	16
Any other	3	1	4
Missing	0	2	2
Total	192	363	555

Table 12: Occurrence of diseases and HHs with & without toilets

Dysentery	HHs without toilets	HHs with toilets	Total
No	92.8%	94.8%	93.5
Yes	7.2%	5.2%	6.5
Total	100.0%	100.0%	100.0

Diarrhea	HHs without toilets	HHs with toilets	Total
No	46.3%	34.9%	42.3
Yes	53.7%	65.1%	57.7
Total	100.0%	100.0%	100.0

Typhoid	HHs without toilets	HHs with toilets	Total
No	68.3%	69.8%	68.8
Yes	31.7%	30.9%	31.2
Total	100.0%	100.0%	100.0

Jaundice	HHs without toilets	HHs with toilets	Total
No	89%	91.7%	89.9
Yes	11%	8.3%	10.1
Total	100.0%	100.0%	100.0

5.4 Household types and toilet types

It was understood from the household survey that willingness to construct toilets came mostly from the upper middle class and middle class and poor households shown apathetic approach towards construction of toilets. The household survey of with toilets and without toilet households (192 and 363 respectively) suggest that there is demand of toilets and many households from the middle class and even some upper middle class households do not have toilet and if counseled properly they constitute a good potential for considering sanitation as a business proposition provided the quality of toilet is ensured. Following information from the survey substantiate this:

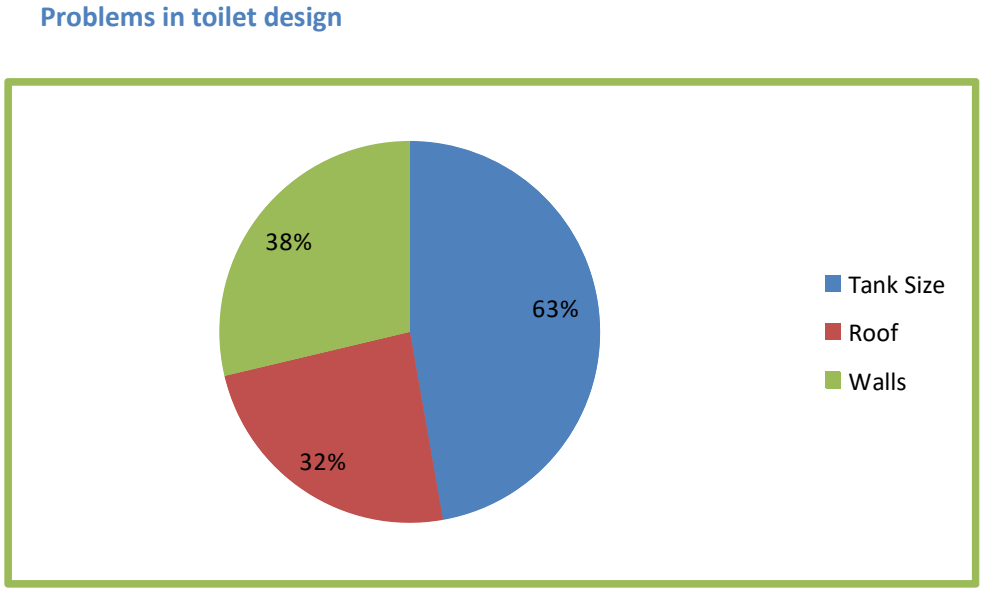
- 78.1% HHs who have toilets live in semi pakka/pakka houses
- 31.4% HHs who do not have toilet live in kaccha houses
- 54% HHs who do not have toilet live in semi pakka houses
- 14.6% HHs who do not have toilets live in pakka houses

5.5 An analysis of existing approaches in sanitation

When Central Rural Sanitation Program (CRSP-1986 to 1998) was restructured Total Sanitation Campaign (TSC) was launched as a part of reform in 1999. A key learning that informed TSC design was: toilet construction does not automatically translate into toilet usage, and people must be motivated to end open defecation if rural sanitation outcomes are to be achieved. A second key learning was the recognition of the 'public good' dimensions of safe sanitation and the realization that health outcomes will not be achieved unless the entire community adopts safe sanitation. Accordingly, the TSC introduced the concept of a "demand-driven, community-led approach to total sanitation" (DDWS 1999). This was further strengthened with the introduction of the Nirmal Gram Puraskar (NGP) in 2003. In spite of all good intention in TSC the results could not come as expected. India Human Development Report 2011 revealed that the country has a long way to go before ensuring toilet access for all and before improving basic health determinants followed by which the Rural Development minister slammed TSC as an absolute failure.

5.6 Customer satisfaction survey at Sheohar about existing TSC toilets:

A customer satisfaction survey conducted with 80 respondents in Sheohar district also confirmed very low level of satisfaction of people. Severe problems were observed with design and construction of TSC toilets.



6. Conclusion

The landscaping study evidently revealed that there enough reasons to believe that households without toilets have latent need to construct toilets. It was also obvious that it requires a lot of activities like campaigning, counseling and informing the households without toilets that why use of toilets has direct link with their health and hygiene. Moreover, one of the reasons of apathy towards toilet construction was understood as lack of options in terms of variety of toilets and quality of toilet construction. The toilets constructed during TSC have definitely lowered the confidence of the masses about ensuring quality of construction. It is also important to note that at present the upper middle class and middle class households constitute potential market to consider sanitation as a business proposition it is important to innovatively design cost effective toilet models and work on awareness generation about sanitation in a mission mode.

Based on the Landscaping Study the strategies to approach the present market for considering Sanitation as a Business (SaaB) proposition should be as follows:

- Identification of entrepreneurs and their orientation and training for them to develop understanding on the potential of SaaB.

- Strengthening supply chain of sanitation business and facilitating financial linkages for entrepreneurs to compete with the markets in the neighboring districts of Sheohar: While developing supply chain and its management the focus should be on dealing with material required for the construction of not only sanitary latrines but also sanitary facilities required for individuals, families and the environment in the rural areas. The main objective of having a delivery system is to provide materials, services and guidance needed for constructing different types of latrines and other sanitary facilities, which are technologically and financially suitable to the area. Any private entrepreneurs can operate the supply chain. The stress will be on regular training to masons, labours and entrepreneurs on quality control system and adhering to minimum quality standards.
- **Adopting social marketing approaches:** Since this is about the concept of sanitation as a business so focus is both on generating demand and fulfilling

the supply requirements on a market driven approach. The focus of this concept is on promotional strategy to address the need of community so that they will adopt the good sanitation practices and expressed their willingness or desire to construct the toilets. For this communication method such as individual contacts, sensitizing the community with the help of opinion leaders, awareness generation events such as playing zingles in local shops, video shows in villages, village meetings, haat(market places in and around villages) demonstrations, organizing health checkup camps, customer registration schemes such as incentives to customers by way of prize distribution schemes. A suitable awareness program by means of wall writing about minimum quality specifications should be made for individual household constructing the toilets.

- **Explore developing different cost effective toilet models suiting to the needs of potential customers:** Focus should be given on developing a brand of toilets to be constructed under this concept of SaaB.

6.1 Intervention activities and objectives of interventions

The intervention should have following activities:

- Take promotional measures to counsel, generate awareness and motivate the potential customers to construct toilets.
- Identification, Selection, orientation and motivation of entrepreneurs to adopt it as business models.
- Capacity building of masons to take up the innovative models of cost effective toilets by ensuring quality in construction.
- Defining margins and incentives structure of all stake holders.
- Defining a sustainable margin for all stake holders and their contribution in developing it as sustainable business models.

Objective 1: Develop and support sustainable business models for increasing supply of sanitation products and services through the private sector.

Objective2: Strengthening the value chain for improved sanitation products and services offered by the private sector.

Objective 3: Financial linkages of the consumers and the private players through microfinance to meets its requirements for sanitation and business need respectively.

7. Way forward:

The present approach is to explore the existing market to promote SaaB by converting the latent need of the potential households (middle class and upper middle class) but it is equally important to design strategies and roadmap to include the poor households with the SaaB approach.

Providing easy options for getting all items of toilet construction should be used as a promotional activity, so that if someone wishes to construct the toilet he needs not to move here and there. The publicity about such one point shop should be carried out using campaigning and suitable IEC materials.

It would be important to weave in the government policies of total sanitation in the proposed strategies to include even the poor households. This is very important to promote total sanitation and end the practice of open defecation otherwise the outcome of open defecation in terms of occurrence of diseases like diarrhea (especially in children). ……..……..

Annexure-1: HOUSEHOLD LEVEL SCHEDULE (With Toilet)

Date of Survey: **Household No.**

I IDENTIFICATION

Name of Respondent: **Mobile No:**
Name of Village: **Name of Tola/Ward:**
Name of GP: **Name of Block:**

II RESPONDENT HOUSEHOLD' PROFILE

2.1 Family Composition

ID	Name	Age	Gender (M/F)	*Education	**Occupation	Toilet usage (Y/N)
I						
II						
III						
IV						
V						
VI						
VII						
VIII						
IX						
X						

***Highest Education** *(Illiterate - 1, Literate - 2, Primary - 3, Middle school - 4, Secondary - 5, Sr. Secondary - 6, Graduate and above – 7, Technically Qualified - 8)*

****Current Principal Occupation** *(Agricultural Wage Earners - 1,Non-agricultural Unskilled Wage Earners - 2, Farmer -3 , Live stock, Poultry etc - 4., Mining and Quarrying - 5, Construction labour - 6, Trading/Shop keeping - 7,Traditional Artisan - 8, Govt. Service - 9, Pvt. Service - 10, Housewife - 11, Student - 12, None - 13, Others - 14*

2.1a No of Children in the household (below age 15 years)- --------

2.3 Type of House of the family:

Type of House	***Kachcha (thatch)***		***Semi Pucca***		***Pucca***	
No of Rooms						

2.4 Livelihood Profile:

Major source of Income	**Annual income**	**Peak Period Start (Jan to Dec)**	**Peak Period End (Jan to Dec)**

	(Rs)		
Labour wage			
Agriculture			
Govt. Service			
Private Service			
Business			
Migration			
Other			

2.5 Health (Major Water born diseases)

Diseases	Dysentery	Diarrhoea	typhoid	Cholera
No of Person suffer from disease (last one year)				
No of attack				
Medical expenses for treatment				

2.6 Source of water for using the toilet:

(a) Hand pump **(b) tube well**

(c) Open well **(d) Tap water** **(e) Other**

III Sanitation Facility

3.1 Reasons of toilet construction in household: (rank 1,2,3,4)

A-Privacy ---------- B-Social Status ----------

C-Proximity ---------- D-Sanitation ----------

3.2 When did you first think of constructing the toilet: ----------

3.3 In which year was the toilet constructed: ----------

3.6 Who motivated you to construct the toilet?

(a) Relatives **(b) Neighbour**

(c) Self /family member (d) Mason (e) Other (NGO/GO)

3.7 Who advice you during construction of toilet:

(a) Mason (b) Sanitary trader

(c) Others

3.8 Type of toilet tank constructed:

(a) Leach (Soak) pit (b) Septic tank (c) others

3.9 How many days to complete the toilet: ----------days

3.10 Tank details:

Type of Tank	**Depth (feet)**	**Length (feet)**	**Width(feet)**
Leach (Soak)Pit		**X**	**X**
Septic Tank			

3.11 Total cost of construction of toilet: Rs ---------

3.12 From where did you purchase the materials

S. No.	Materials	Unit Quantity	Retail Rate(Rs)	Source (Supplier/trader Name)	Place of Shop
1	Cement				
2	Sand				
3	Brick				
4	Toilet Seat set				
5	Iron (*Sariya*)				
6	Plastic Pipes				
7	Door				

3.13 Reason for choosing the supplier/trader-

A----------

B----------

C----------

3.14 Any problem faced during construction of toilet :----------
----

3.15 Have you thought to construct the bath room.

3.16 Experience using the toilet:

Good	Bad

3.17 How many members using the toilet: Male -------- **Female** --------

3.18 If Not using it, What are the reasons for not using the toilet:

A----------
-

B----------
-

C----------
-

3.19 Flooding during rainy season in their house: *(Yes - 1,No - 2)* --------

WOMEN RELATED SCHEDULE

IV. Preferences of Women (only ask by female Surveyor)

4.1 Reason for going to toilet in open space:

A----------

B----------

C----------

4.2 Problem faced during going to toilet in open space:

A----------

B----------

C----------

4.3 Problem faced during rainy season by women:

A----------

B----------

C----------

4.4 Parameters for choosing toilet by women, (Rank1,2,3,4,5)

A-Privacy ---------- B-Social Status ----------

C-Proximity ---------- D-Sanitation ----------

E- Opportunity to dialogue ----------

Name of Investigator:
Mobile No.-

Signature of Investigator

Annexure-2: HOUSEHOLD LEVEL SCHEDULE (without toilet)

Date of Survey: **Household No.**

I IDENTIFICATION

Name of Respondent: **Mobile No:**
Name of Village: **Name of Tola/Ward:**
Name of GP: **Name of Block:**

II RESPONDENT HOUSEHOLD' PROFILE

2.1 Family Composition

ID	Name	Age	Gender (M/F)	*Education	**Occupation
I					
II					
III					
IV					
V					
VI					
VII					
VIII					
IX					
X					

***Highest Education** *(Illiterate - 1, Literate - 2, Primary - 3, Middle school - 4, Secondary - 5, Sr. Secondary - 6, Graduate and above – 7, Technically Qualified - 8)*

****Current Principal Occupation** *(Agricultural Wage Earners - 1,Non-agricultural Unskilled Wage Earners - 2, Farmer -3 , Live stock, Poultry etc - 4., Mining and Quarrying - 5, Construction labour - 6, Trading/Shop keeping - 7,Traditional Artisan - 8, Govt. Service - 9, Pvt. Service - 10, Housewife - 11, Student - 12, None - 13, Others - 14*

2.1a No of Children in the household (below age 15 years)- --------

2.3 Type of House of the family:

Type of House	***Kachcha (thatch)***		***Semi Pucca***		***Pucca***	
No of Rooms						

2.4 Livelihood Profile:

Major source of Income	Annual income (Rs)	Peak Period Start month (Jan to Dec)	Peak Period End month (Jan to Dec)
Labour wage			
Agriculture			
Govt. Service			
Private Service			
Business			
Migration			
Other			

2.5 Health (Major Water born diseases)

Diseases	Dysentery	Diarrhoea	typhoid	Cholera
No of Person suffer from disease (last one year)				
No of attack				
Medical expenses for treatment				

2.6 Source of water for using the toilet:

(a) Hand pump (b) tube well

(c) Open well (d) Tap water (e) Other

III. Capability Assessment for Toilet Construction

3.1 Where do you go for toilet?

(a) Road side (b) Near Pond

(c) In the field (d) open ground

3.2 Distance from house for open defecation:----------KM

3.3 What are the reasons for not constructing toilet:

A----------

B----------

C----------

3.4 Do you plan to construct the toilet in the near future: *(Yes - 1,No - 2)* ----------

3.3 If Yes, When do you plan to construct the toilet: --------

(1- within month, 2- after three months, 3- after six months)

3.4 How much space is available to construct the tank? L: ------ **ft, W:** ------ **ft,**

3.5 How much do you plan to invest to construct the tank? Rs: ----------

3.6 Which kind of toilet, do you plan to construct

(a) Leach (soak) pit (b) Septic tank (c) other type

3.7 Flooding during rainy season in their house: *(Yes - 1,No - 2)* --------

3.8 Will a mason be engaged for construct the toilet? *(Yes - 1,No - 2)* ---------

3.9 If Yes, Name of the mason: ----------

3.10 Are you aware about design aspect of toilet? *(Yes - 1,No - 2)* ----------

3.11 If Yes, then how you have experience of toilet design and estimate: ----------

---

3.12 Are you interested for technical support for designing to construct the tank? --------

(Yes - 1,No - 2)

3.13 Are you interested for hiring any contractor to construct the tank? *(Yes - 1,No - 2)* ---------

IV Resource mobilization

4.1 From where will you purchase the materials for construction of toilet:

Details of local supply materials

S. No.	Materials	Unit Quantity	Retail Rate(Rs)	Source (Supplier/trader Name)	Place of Shop
1	Cement				
2	Sand				
3	Brick				
4	Toilet Seat set				
5	Iron (*Sariya*)				
6	Plastic Pipes				
7	Door				

4.2 Reason for choosing the supplier/trader-

A----------

B----------

C----------

4.3 From where will you get financial support for construction of toilet?

A----------

B----------

C----------

WOMEN RELATED SCHEDULE

VI. Preferences of Women (only ask by female Surveyor)

6.1 Reason for going to toilet in open space:

A----------

B----------

C----------

6.2 Problem faced during going to toilet in open space:

A----------

B----------

C----------

6.3 Problem faced during rainy reason by women:

A----------

B----------

C----------

6.4 Parameters for choosing toilet by women, (Rank1,2,3,4,5)

A-Privacy ---------- B-Social Status ----------

C-Proximity ---------- D-Sanitation ----------

E- Opportunity to dialogue ----------

Name of Investigator:
Mobile No.-

Signature of Investigator

Annexure-3 : Customer Satisfaction Observation Questionnaire

Q1- Who in the family does not uses the toilet & why?

Ans- ----------

Q2- Is there a defect in the toilet?

Ans- ----------

Q3 - Which part of the toilet is most unsatisfactory to them?

Ans- (a) tank (b) sub structure (Walls) (C) super structure (roof)
(d) site selection

Q4- Is there any problem with toilet usage?

Ans- ----------

Q5- Have you contacted the mistri or contractor for this problem? – Yes/No

Q6- if Yes, What has the mistri or contractor suggested?

Ans- ----------

Q7- In your opinion, what is the solution for the problem?

Ans- ----------

Q8- What is the estimated expenditure you plan for correcting the defect/renovation?

Ans- ----------

Q9- Why has the problem not been rectified till now?

Ans- ----------

Q10- Customer satisfaction level with TSC toilet (1 to 5)

Ans-(a) 1 (b) 2 (c) 3 (d) 4 (e) 5

Annexure – IV : check list for value chain study

Check list for sanitary and hardware other *shopkeeper*

District: **Name of Market:**
Name of Supplier/trader:

- From where he purchased the sanitary items-
- Territory of sales-
- Distributer/customer (nos. of shopkeeper , individual)-
- Min order for consideration-
- Items availability in shop-

S. No.	Particular/Items	Unit Quantity	Unit Whole sale Price (Rs)	Unit Retail Price (Rs)
1				
2				

3				
4				
5				
6				
7				

- Daily/monthly demand-
- Retailer/wholesaler-
- Competition (Nos. of shops in that area)-
- Purchasing order capacity/Stock-
- Business seasonality (Peak and lean Period)-
- Branding of item –

S. No.	Items	Name of Brand	Unit Rate(Rs)

1			
2			
3			
4			

- Branding market and promotion activities (if any)-

- Commission/sales agent and criteria (if any)-

- Bulk/Set/volume/ purchasing discount-

- Any discount (item wise)-

- Supply order terms and condition-

BRICK KILN: CHECK LIST

- **District :**
- **Name of Market:**

Name of Supplier/traders-

Investment - (ask from owner, transporter, labour etc)

S. No.	Particular	Coal	Labour	Land	Water
1	Sourcing of item				
2	Unit				

3	Unit Cost (Rs)				
4	Transportation cost (if any)				
5	Total Input required (volume)				

- Kiln size/capacity -

- Transportation pricing base/criteria-

- Brick pricing base/criteria-

- Order pricing- rate criteria (terms and condition)-

- Competition(Nos. of shops in that area)-

- Types of risk involved-

- Business- credit/cash-

- Business seasonality (Monthly demand)-

- Catchment area/coverage-

- Least pricing month trend-

- Customer base- individual/agencies-

- Nos. of person associated in sales-

- Nature of owner -

- Demand (grade wise)-

- Type of customer (grade wise)-

- Uses of bricks (grade wise)-

PRODUCTION CENTRE/LOCAL ENTREPRENEURS- CHECK LIST

- **District :**
- **Name of Market/Production Centre:**

Name of Entrepreneur/traders-

- Training taken from-
- Total days of training to develop entrepreneur himself-
- How you start your business (motivational factors)-
- Any support from any organization-
- Investment on production unit-
- Cost of Production of items

S. No.	Particular/Items	Unit Quantity	Unit Production Cost (Rs)	Unit Whole sale Price (Rs)	Unit Retail Price (Rs)
1					
2					
3					
4					
5					
6					

7					

- Sourcing of items-
- Production capacity-
- Monthly demand-
- Business (credit/cash)-
- Transportation system and pricing-
- Order pricing rate criteria (terms and condition)-
- Competition- nos. of production centres-
- Risk involved-
- Business seasonality (month wise demand)
- Catchment area/coverage-
- Customer base- individual (rich, middle poor class/agencies)-
- Nos. of person associated on field-
- Credit supporter-

Annexure-V : References

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