PUSH
PROJECT

**A BEHAVIORAL SCIENCE APPROACH
TO URBAN SANITATION**

USAID
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CENTRE FOR
URBAN AND REGIONAL
EXCELLENCE

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PUSH
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TO URBAN SANITATION**

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EXECUTIVE SUMMARY

Toilet usage is not an automatic choice, but rather an active decision that the people have to make on a daily basis.

India is home to about 600mn open defecators, the largest such cohort in the world. The urban component of India's sanitation problem is under-studied. The Promote Urban Sanitation (PUSH) project addresses this gap by studying the problem through a behavioral lens in slum settlements in Delhi and Agra. This report documents the life cycle, insights, implementation, and the conclusions of the PUSH project.

To frame the problem of urban sanitation, the immersion research consisted of sanitation literature review and in-depth interviews with various stakeholders - settlement-dwellers, infrastructure providers, maintenance contractors and staff, sanitation experts, and urban planning experts. The framing phase identified two key challenges to be tackled: open defecation (OD) and hand-wash post defecation.

Research indicated that lack of control and certainty regarding time for morning routine activities hinders toilet-habit formation. Moreover, community toilet complexes (CTC) fare poorly compared to open defecation on disgust-generating factors - sight, smell, and social. Daily exposure to disgust generating stimuli at community toilets, especially odor, leads to the belief that community toilet usage causes diseases. Risk perceptions of mishaps involving children during toilet use drive anxiety and avoidance among parents.

In this context, four levers were identified to influence behavior: to provide more control and certainty to people who are waiting to use the toilets, to reduce chances of three factors of disgust, to make toilet usage more relevant and goal conducive, and to reduce perception of risk of children using the toilet.

Informed by these four levers, interventions were designed and implemented in 8 settlements in Delhi - Shastri Market, Bhanwar Singh Camp, Kali Bari, Bhaiya Ram Camp, Vivekanand Camp, Sanjay Gandhi Camp, Khichdipur, and Indira Camp. Interventions to reduce control and increase goal relevance were not tested because of logistical issues. Among the interventions that were implemented, the ones that addressed disgust, incentivized long term use, and the ones that addressed parents' perception of risk fared very well. The poster interventions designed to invoke disgust and shame succeeded in eliciting those emotions, while the ones designed to invoke embarrassment and guilt did not. Interventions designed to address parents perception of risk was also received well.

Options for defecation range from open defecation, community toilets, clustered toilets, private pit toilets, private toilets connected to sewer systems. While private toilets connected to sewer systems may be the ideal option, urban slum communities have to cope with shared toilets because of financial constraints and poor infrastructural services. In this situation, it is imperative that service providers deliver services of quality regardless of the level that people are at.

BACKGROUND

India is home to about 600mn open defecators, the largest such cohort in the world. Disease burden arising from this habit costs the Indian economy about Rs 2.44 trillion (USD $53.8 billion) – a per capita impact of Rs 2,180.

India is home to about 600mn open defecators, the largest such cohort in the world. Disease burden arising from this habit costs the Indian economy about Rs 2.44 trillion (USD $53.8 billion) - a per capita impact of Rs 2,180[1]. Since open defecation is largely a rural phenomenon, it is well studied from a rural perspective; the urban component is neglected. Because of the rapid urbanization in the country, open defecation in urban slums will be a key challenge for a modernizing India.

Urban slums are irregular settlements which lack basic amenities. A disenfranchised population shares access to the few sanitation amenities provided - community toilet complexes, infrequent water stand-posts etc. Toilet usage is, therefore, not an automatic choice, but rather an active decision that the people have to make on a daily basis. Washing hands after toilet use also suffers due to a similar lack of amenities.

Open defecation and lack of hand-washing lead to poor sanitation and hygiene causing stunting, wasting, and underweight in children. With nearly 50% of all children under three years either stunted or underweight, India has about 40 million stunted and 17 million wasted children[2]. To address the gap in understanding urban sanitation issues, USAID instituted the PUSH project. The project studies urban sanitation problems from a behavioral science perspective, and uses non-conscious design principles to influence toilet use and hand-wash behaviors.

USAID selected Centre for Urban and Regional Excellence (CURE) and Final Mile Consulting for this project. CURE brought their long-standing experience working in urban informal and low-income communities, and Final Mile the behavioral science expertise.

PROCESS

The project process is designed to understand the non-conscious drivers of decision making. The report layout mirrors the project process.

FRAMING

A deep immersion via primary and secondary research to frame the problem

ETHNOLAB

A research tool, that allows insights into the non-conscious drivers of behavior

STRATEGY & DECISION LEVERS

An analysis & synthesis of ethnolab results explained through a framework of context, emotions and mental models

DESIGN PROTOTYPES

Interventions informed by the
strategy, their implementation,
and insights gained

CONCLUSION

Final thoughts on the project,
and recommendations for
next steps, scaling and policy
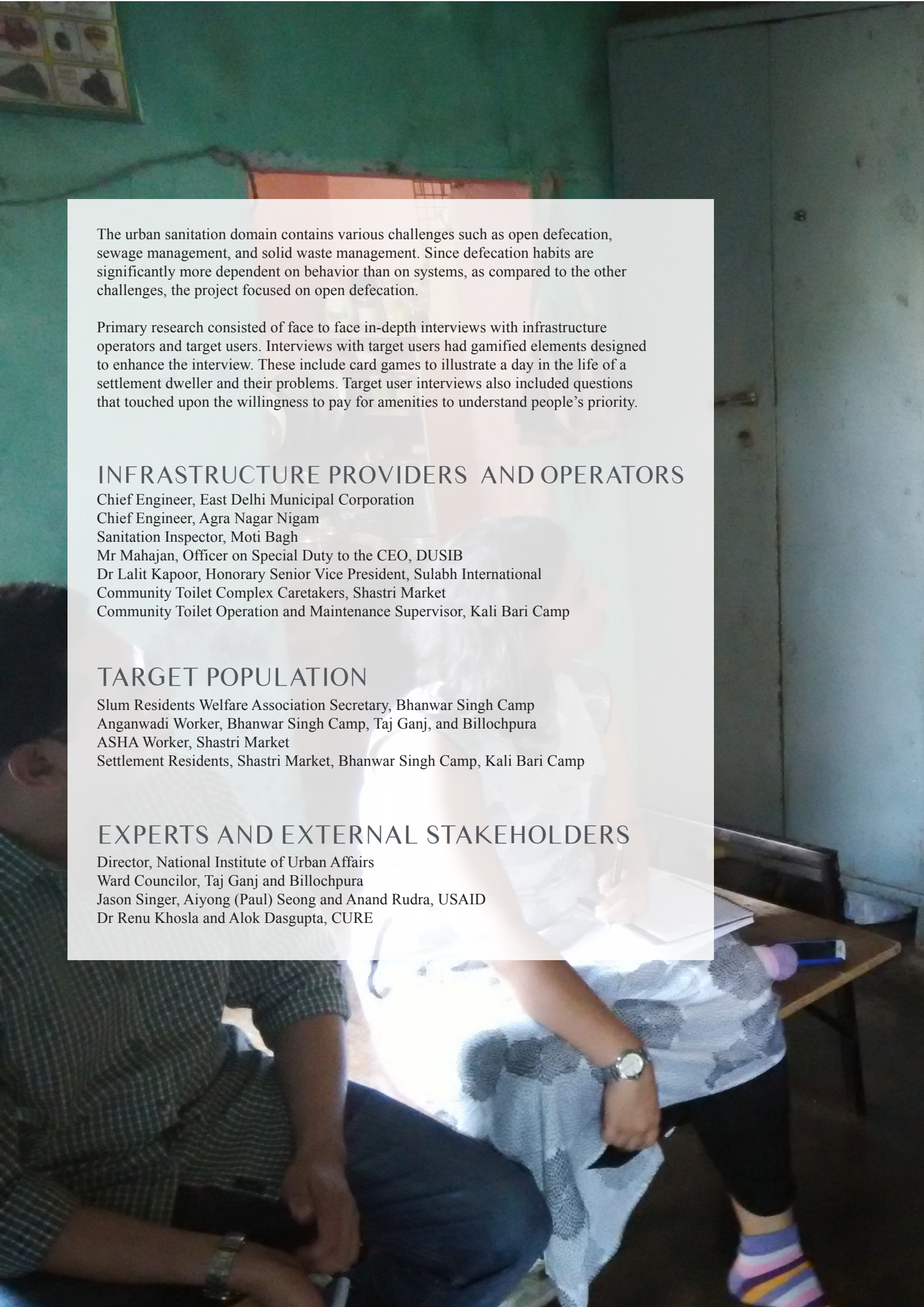changes

MEASUREMENT FRAMEWORK

Examples of the questions used
to test the interventions, and the
principles behind their design

FRAMING

The urban sanitation domain contains various challenges such as open defecation, sewage management, and solid waste management. Since defecation habits are significantly more dependent on behavior than on systems, as compared to the other challenges, the project focused on open defecation.

Primary research consisted of face to face in-depth interviews with infrastructure operators and target users. Interviews with target users had gamified elements designed to enhance the interview. These include card games to illustrate a day in the life of a settlement dweller and their problems. Target user interviews also included questions that touched upon the willingness to pay for amenities to understand people's priority.

INFRASTRUCTURE PROVIDERS AND OPERATORS

Chief Engineer, East Delhi Municipal Corporation
Chief Engineer, Agra Nagar Nigam
Sanitation Inspector, Moti Bagh
Mr Mahajan, Officer on Special Duty to the CEO, DUSIB
Dr Lalit Kapoor, Honorary Senior Vice President, Sulabh International
Community Toilet Complex Caretakers, Shastri Market
Community Toilet Operation and Maintenance Supervisor, Kali Bari Camp

TARGET POPULATION

Slum Residents Welfare Association Secretary, Bhanwar Singh Camp
Anganwadi Worker, Bhanwar Singh Camp, Taj Ganj, and Billochpura
ASHA Worker, Shastri Market
Settlement Residents, Shastri Market, Bhanwar Singh Camp, Kali Bari Camp

EXPERTS AND EXTERNAL STAKEHOLDERS

Director, National Institute of Urban Affairs
Ward Councilor, Taj Ganj and Billochpura
Jason Singer, Aiyong (Paul) Seong and Anand Rudra, USAID
Dr Renu Khosla and Alok Dasgupta, CURE

KISHORE

Kishore wants to be a regular community toilet user. However, the long waiting time discourages him. If he expresses his urgency in line, he is often chased away. With no other option, he chooses to defecate in the open.

SUNITA

The community toilets are too far away from Sunita's house. She worries about leaving her kids behind alone, they are too young.

SUNIL

There are about 24 stalls at the community toilet complex. Only a maximum of 10 are clean and in a usable condition at any given time. At peak times, about a 100 people show up to use them. This is why, Sunil says, people prefer going in the open.
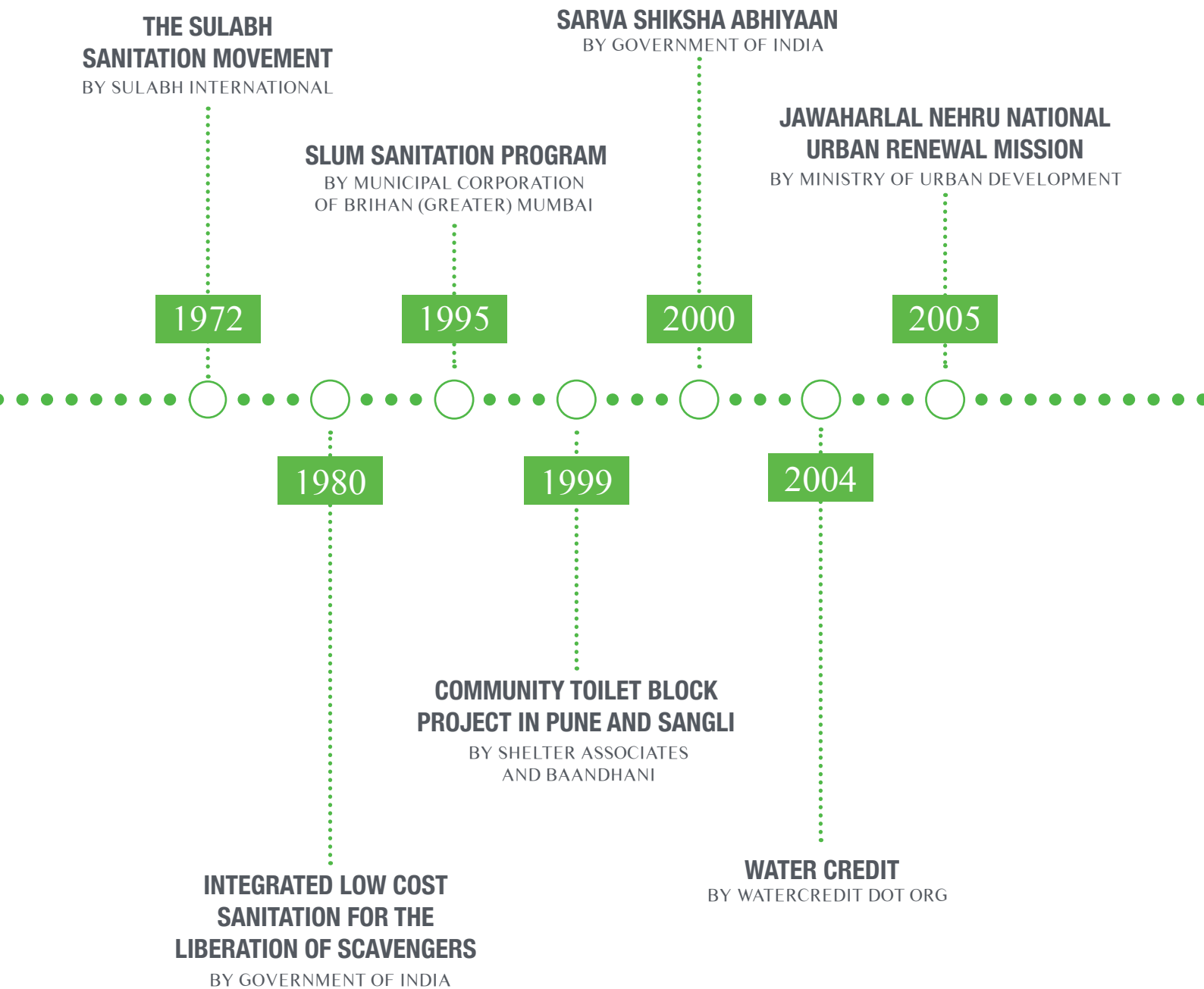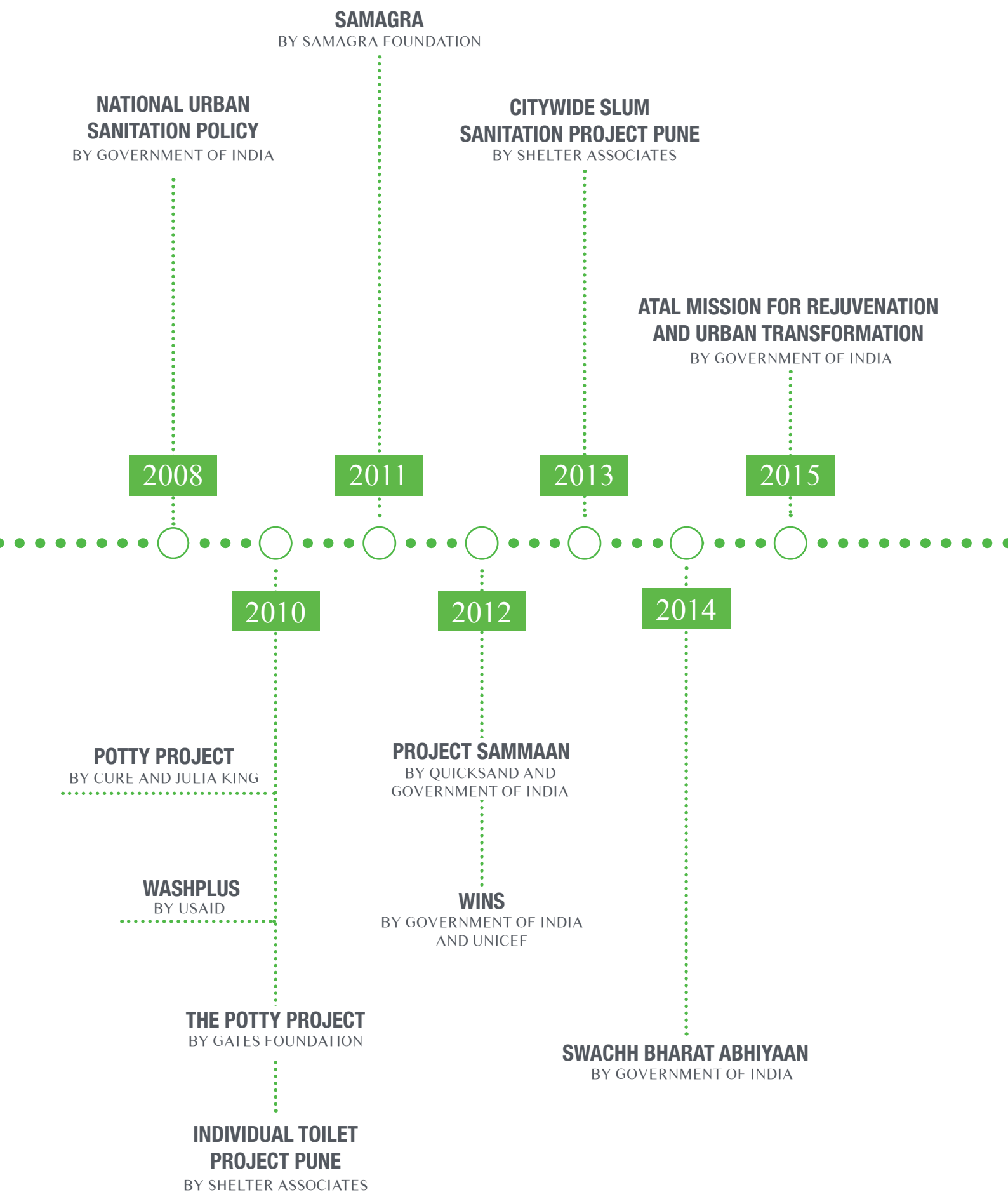
MUKTAMMA

Muktamma is especially disgusted by the smells at the community toilets. She feels nauseous at the toilets, and therefore prefers going out in the open space.

SECONDARY RESEARCH

The project builds on insights and learnings from literature and on-ground efforts in India. A timeline of the urban sanitation efforts is captured below.

**THE SULABH
SANITATION MOVEMENT**
BY SULABH INTERNATIONAL

SARVA SHIKSHA ABHIYAAN
BY GOVERNMENT OF INDIA

SLUM SANITATION PROGRAM
BY MUNICIPAL CORPORATION
OF BRIHAN (GREATER) MUMBAI

**JAWAHARLAL NEHRU NATIONAL
URBAN RENEWAL MISSION**
BY MINISTRY OF URBAN DEVELOPMENT

1972   **1995**   **2000**   **2005**

1980   **1999**   **2004**

**COMMUNITY TOILET BLOCK
PROJECT IN PUNE AND SANGLI**
BY SHELTER ASSOCIATES
AND BAANDHANI

WATER CREDIT
BY WATERCREDIT DOT ORG

**INTEGRATED LOW COST
SANITATION FOR THE
LIBERATION OF SCAVENGERS**
BY GOVERNMENT OF INDIA

SAMAGRA
BY SAMAGRA FOUNDATION

**NATIONAL URBAN
SANITATION POLICY**
BY GOVERNMENT OF INDIA

**CITYWIDE SLUM
SANITATION PROJECT PUNE**
BY SHELTER ASSOCIATES

**ATAL MISSION FOR REJUVENATION
AND URBAN TRANSFORMATION**
BY GOVERNMENT OF INDIA

2008　　**2011**　　**2013**　　**2015**

2010　　**2012**　　**2014**

POTTY PROJECT
BY CURE AND JULIA KING

PROJECT SAMMAAN
BY QUICKSAND AND
GOVERNMENT OF INDIA

WASHPLUS
BY USAID

WINS
BY GOVERNMENT OF INDIA
AND UNICEF

THE POTTY PROJECT
BY GATES FOUNDATION

SWACHH BHARAT ABHIYAAN
BY GOVERNMENT OF INDIA

**INDIVIDUAL TOILET
PROJECT PUNE**
BY SHELTER ASSOCIATES

ETHNOLAB

Project stakeholders realized that standard research methods could not elicit a deep understanding of the human behavior due to the sensitivity of the issue. A fear of being judged would cloud responses. Imagine being directly questioned about your toilet habits — fear of being judged by the interviewee will moderate your answers. Even when people admit to not using the toilet, the urge to rationalize this behavior generates excuses rather than real reasons.

The prevalent research tools typically depend on respondent's ability to introspect, deliberate and consciously provide responses and analysis. However, because the conscious is unaware of the non-conscious processes that influence behavior and decisions, say-do gaps are highly prevalent. What people say, what they mean and what they do is often poles apart. To truly understand and influence decision making, one needs to understand the non-conscious processes. Therefore, a new research platform that explores the role of non-conscious brain overcomes fear of judgment, and eliminates biases, was required.

Even though the non-conscious is fairly complex, decision making can be evaluated by exploring three components: context, mental models and emotional appraisal.

CONTEXT

Multiple contexts coexist in a situation, only a few of which mediate the decision making process. The role of research is to identify amongst these multiple contexts, those subtexts that most easily presents itself in the decision making situation.

MENTAL MODELS

The human brain evolves decision making ability by constantly shifting from a deliberative-analytical method to an intuitive-automatic mechanism. This intuitive-automatic mechanism is guided by a strict set of compression models that provide the brain with the ultimate short-cut to reach a decision.

These are hardwired as mental reflexes and manifested as beliefs and cultural idioms. Mental models evolve over ages, because of which, in most situations, they allow us to make quick, appropriate decisions. The role of research is to elicit these mental models that people use non-consciously to make decisions.

EMOTIONAL APPRAISAL

Emotion is the currency of the mind. Emotions guide our attention, motivate our behavior and determine the significance of everything. Emotions are a consequence of our evaluation of events. This evaluation, read as appraisal, takes into account aspects like goal relevance, goal conduciveness, novelty of experience, control and power available to cope with the experience and compatibility with external and internal norms[3]. This appraisal guides our affect-based response to the experience. Research can identify the emotion's source, thus providing opportunities for intervention which effects appraisal and consequently the affect-based response.

ALL DECISIONS
ARE EMOTIONAL

95% BEHAVIOR IS DRIVEN
BY NON-CONSCIOUS

CONTEXT ALTERS
DECISIONS AND
BEHAVIOR

HEURISTICS ARE
EFFICIENT SHORTCUTS

HYPOTHESES

The interviews with settlement-dwellers, infrastructure providers, maintenance contractors and staff, sanitation experts, and urban planning experts, led to a deeper understanding of the goals, motivations, and barriers which were converted to hypotheses for further testing.

- Relevance of community toilets may be low because of unfamiliarity, bad odor, claustrophobic nature, and high waiting time. For women, however, relevance may be higher because of safety and security provided.

- People may have an avoidance tendency towards community toilets because there is no intrinsic motivation to use toilets, uncertainty about wait time and discrepancy with expectations (of cleanliness and wait time) combined with biological urgency.

- People may be able to cope well in the absence of community toilets - since the option of open defecation is always present. On the other hand, coping with community toilets may be a harder task because of habits (open spaces).

- Norms in the community (internal and external) are aligned with open defecation, so people may not feel any shame regarding open defecation practices. The same feeling leads to lack of indignation or outrage when others adhere to open defecation practices even though one may not.

RESEARCH TOOL: CONUNDRUM LAB

Conundrum Ethnolab is a platform through which participants engage in a game-like environment to make decisions related to the topic of study. The game platform helps in eliciting non-conscious drivers of decisions and behaviors in several different ways:

- Obviates need for conforming to opinions of other people by asking people not for 'their' responses, but by asking people to guess what the group is likely to choose
- Masks the topic of study with other relevant topics and distractions. For example, the game was presented as a 'research to understand routine decisions of settlement-dwellers' . It was called 'Kahani Ghar Ghar Ki' (The story of every house)
- Eliminates deliberations by timing responses, forcing people to respond based on emotions, mental models and context

The conundrum game for the project was run with homogenized sets of settlement-dwellers - men, women, boys and girls - across Delhi and Agra. Participants were exposed to different audio-visual scenarios, each ending with a decision conundrum having multiple possible outcomes.

Participants won points in each round of the game if their choice of decision outcomes matched the choice of the majority of people playing in the group. The winner of the game was given a prize. Gamification ensured a healthy competition and dissuaded collusion. The data generated from participants' responses helped steer the post-game conversations and ensured that respondents were talking about specific decisions made during the game.

In all, 150 participants - 54 men, 45 women, 31 boys, and 20 girls - played the game. 48 respondents were from Agra and 102 respondents were from Delhi. 31 respondents had private toilets in their home while 119 respondents only had access to community toilets.
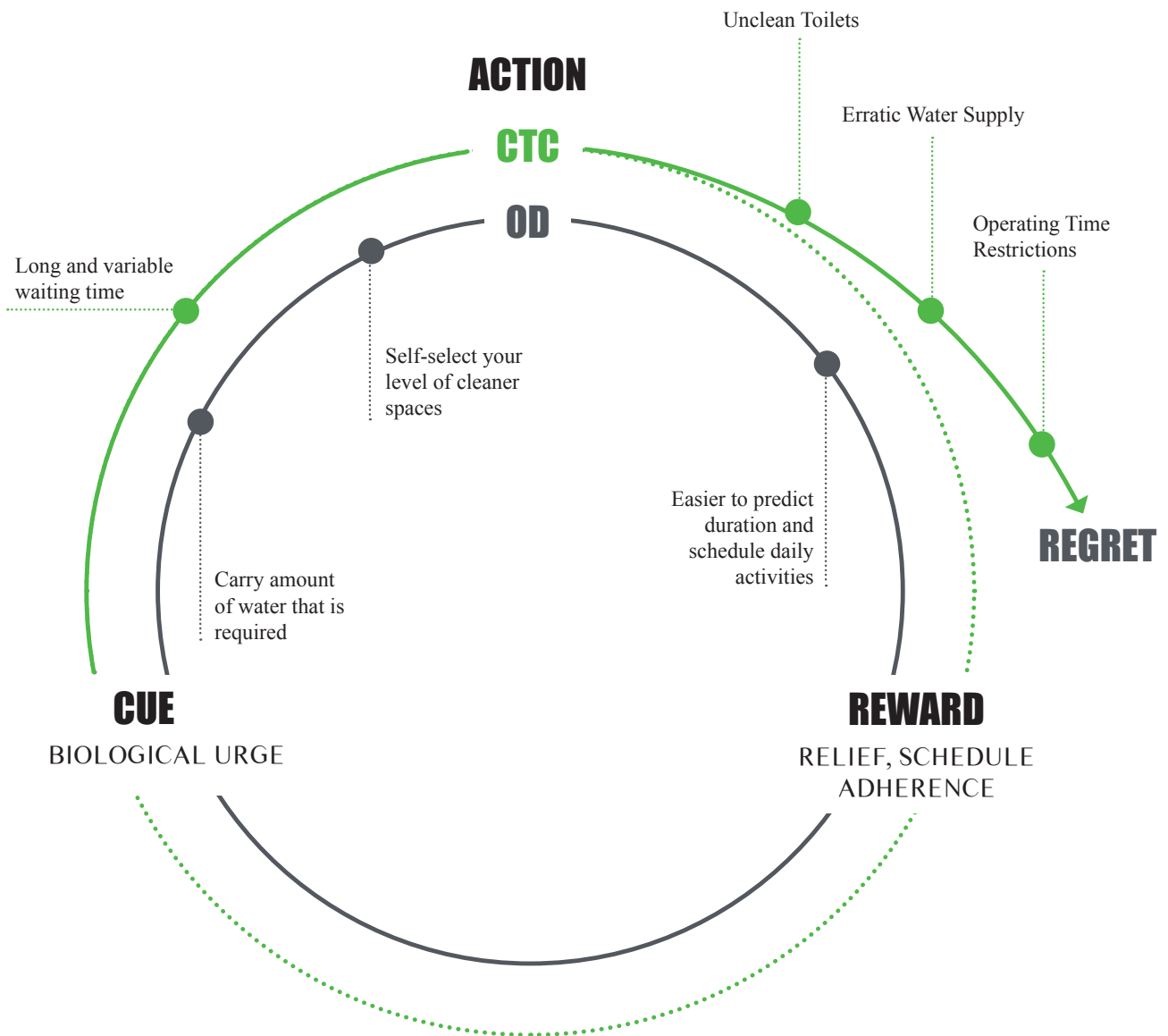
STRATEGY & DECISION LEVERS

CONTEXT

Lack of certainty and control drives decisions that encourage open defecation. Time-stressed people prioritize options that give them the certainty of schedule - community toilets lose out to open defecation on these factors.

In typical families, men and children wake up later than women and have the hard deadline of work/school to adhere to. Women wake up earlier than men and children, but have additional tasks of getting men and children ready for work/school. This situation manifests as extreme time crunch in the morning for all concerned. Add biological urgency to this mix and you have a low-control situation which leads people to prefer open defecation because it provides certainty and control - on water consumption, duration - and allows people to self-select the level of disgust that they are comfortable with.

In open defecation, these positives lead to a reward (schedule adherence), and therefore, a reinforcing loop that builds habit. In contrast, in community toilet usage, the lack of positives on these attributes, doesn't lead to a reward. Community toilet usage, thus, has a broken loop which is not conducive for habit formation. Toilet usage feels like a 'task' over and above user's daily work - an activity that one has to consciously plan for and manage.

ACTION

CTC

OD

Unclean Toilets

Erratic Water Supply

Operating Time
Restrictions

Long and variable
waiting time

Self-select your
level of cleaner
spaces

Easier to predict
duration and
schedule daily
activities

REGRET

Carry amount
of water that is
required

CUE

BIOLOGICAL URGE

REWARD

RELIEF, SCHEDULE
ADHERENCE

HABIT LOOP
[CHARLES DUHIGG, 2012]

EMOTIONS

Emotions are a consequence of our evaluation of events. This evaluation, read as appraisal, takes into account aspects like goal relevance, goal conduciveness, novelty of experience, control and power available to cope with the experience and compatibility with external and internal norms. This appraisal guides our affect based response to the experience.

DISGUST

The emotion of disgust is a powerful driver of behavior. It arises from extreme low 'intrinsic pleasantness' of the situation/stimulus being appraised. It is believed that the emotion of disgust evolved as a defense mechanism against unpleasant and harmful substances that can lead to diseases. Defecation, whether in the open or in community toilet centers, presents itself with disgust generating stimuli, but a deeper look at the factors of disgust show variance between how a person appraises the two situations.

Disgust has three distinct dimensions - sight, smell and social. In all three aspects, community toilets lose out to open defecation. Community toilets, because of their shared space and a lack of regular water supply, tend to degrade quickly over time. Visible remains of previous occupant, the ever present smell, and the very public nature of using community toilet (for a very private act) increases disgust. In contrast, when defecating in the open, people can self-select their level of disgust-generating stimuli (a few steps further can take people to a slightly cleaner space), wind reduces foul smelling odor, and paradoxically, open defecation seems like a more solitary act than the public nature of community toilets.
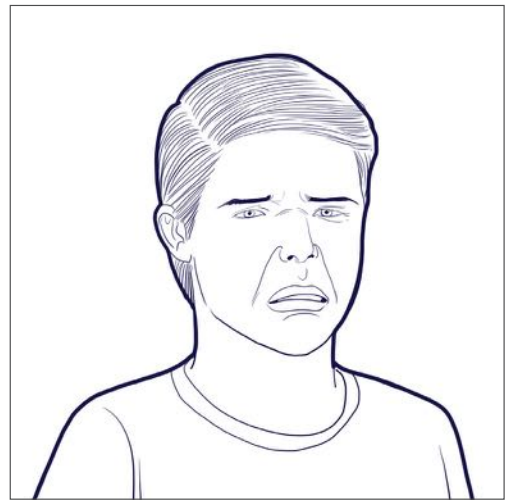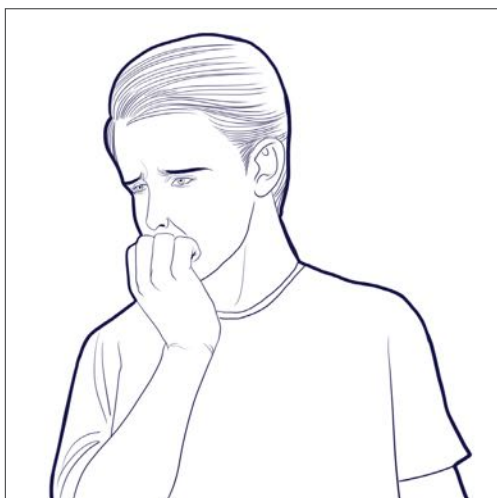
ANXIETY

Perception of risk plays out differently for two distinct user groups - old people and children.

Regarding children's use of toilets, parents prefer not to send children alone to toilets. The perceived risk of children using toilets (slippage, fall are very evocative and such stories spread among the settlement-dwellers) leads to anxiety and causes parents to make their children to defecate out in the open. It is important to acknowledge that this is an issue of perception of risk and not actual risk.

For old people, the perception of risk is more accurate. As people age, Indian toilets become more and more difficult to use, especially given the abundance of slippery surfaces in community toilet complexes. This leads to anxiety of using community toilets which manifests as anxiety which drives preference for open defecation.
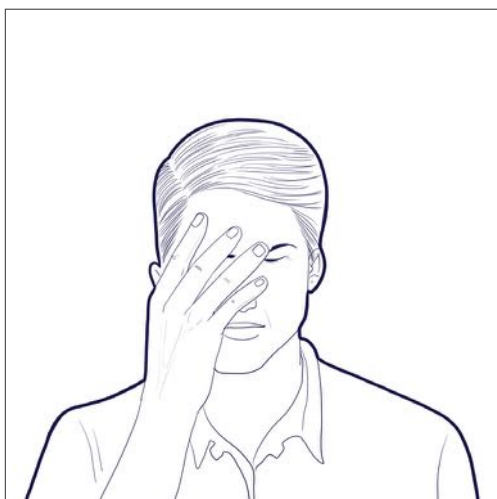
GUILT / SHAME

Open defecation, being an age old practice and one which almost everyone in settlements have some exposure to, is aligned with people's internal standards. This ensures that there is no guilt in open defecation.

There is shame when confronted by a person from the out-group (someone from the Government, school, non-governmental organizations) about open defecation practices. But if the source of shame - the person from the out-group - is removed from the context, there is no shame. This explains why within the in-group of people from the settlement, there is no shame or embarrassment of open defecation.

MENTAL MODELS

The three kinds of disgust that people face on a daily basis at community toilet are sight, smell and social (people in close contact with other people for an activity thats considered inherently unpleasant).

Though all three kinds of disgust have to be addressed individually, smell is particularly problematic. Smell, carried by olfactory nerves, bypasses the thalamus and directly connects to the olfactory cortex - it is processed unconsciously. When inhaling foul-smelling stimuli, people get the sense that they have ingested something unpleasant and it invokes the feeling of being contaminated. This creates the mental model that toilets cause diseases. In contrast, at open defecation spaces, the wind takes care of the foul smell and therefore, the mental-association between open defecation and diseases is not strong regardless of multiple information, education, and communication efforts from administration, schools, and non-governmental organizations.

DECISION LEVERS

Decision Levers™ are the scientific principles that have the best chance of influencing behavior in the desired manner. Decision levers identified, based on the context, mental models, and emotions as described above, are:

- Reduce the three drivers of disgust - sight, smell, and social: While smell leads to the mental model that toilets cause diseases, it is important that interventions to reduce disgust also ensure that visible remains are cleared and bad odors are eliminated. It also should minimize the feeling of following another person.
- Provide more control and certainty to toilet users: Community toilet usage suffers from low control and certainty - over waiting time, water availability or the state of the toilets. It is important to incorporate designs that heighten a sense of control.
- Reduce the perception of risk of children using the toilet: Mothers have a perception that toilets are risky for children in the age group of 4-8. While this is just a skewed perception - children at open defecation spaces can be in more precarious positions at far higher risk. Provision of cues that lower their perception of risk may lead to more children being allowed to use toilets on their own.
- Make toilet usage more relevant and goal conducive: Interventions that increase toilet trial must sustain behaviors to make toilet use a non-deliberative activity.
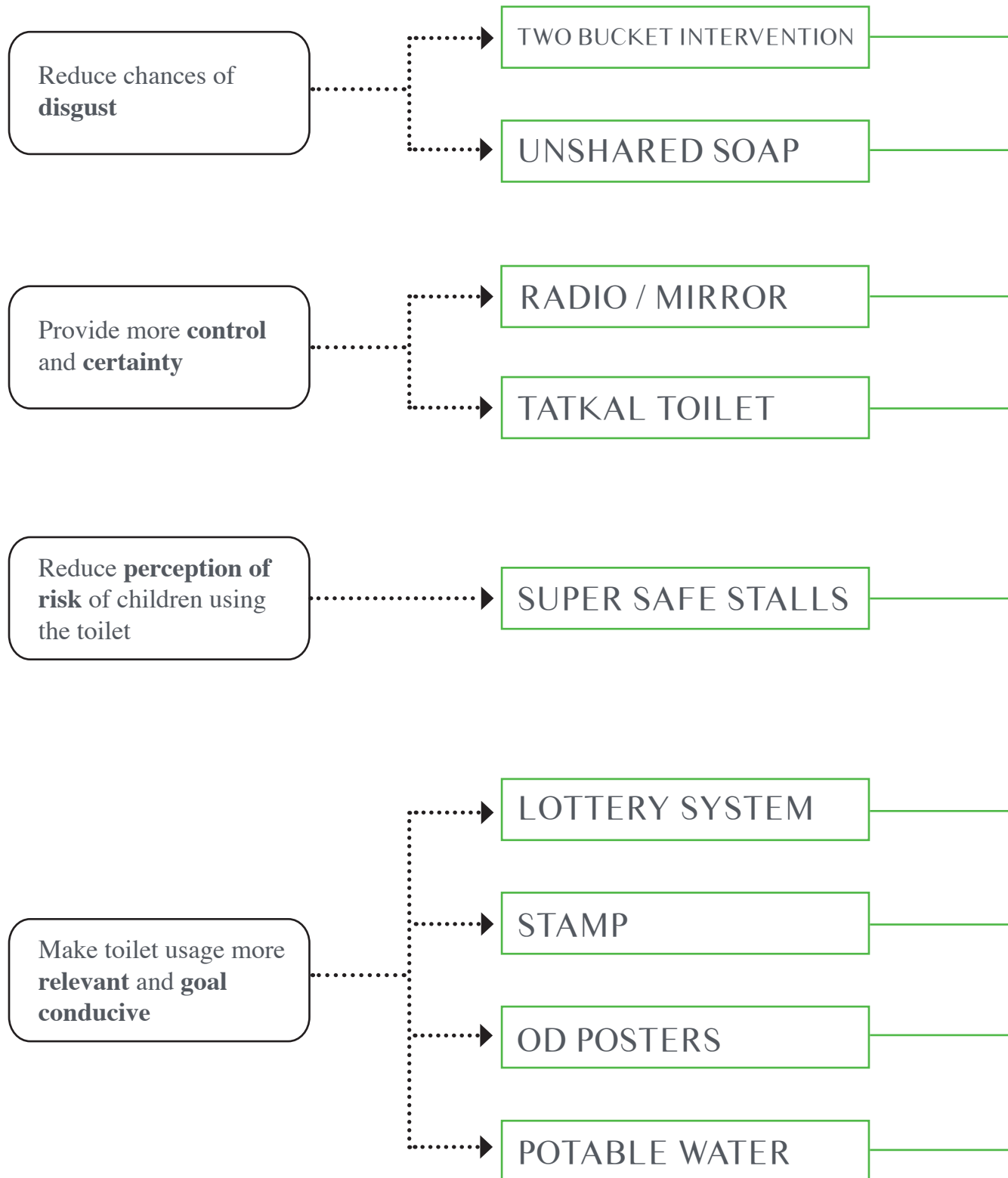
DESIGN
PROTOTYPES

On ground experiments translate the decision levers to testable interventions which are customized to the context they are deployed in. These experiments are an attempt to quickly validate or discard intervention directions. For the pilot, interventions were tested in at least two settlements.

The project team collaborated with Social Behavioral Sciences Team for intervention design and pilot.

| Reduce chances of **disgust** | → | TWO BUCKET INTERVENTION |
| | → | UNSHARED SOAP |

| Provide more **control** and **certainty** | → | RADIO / MIRROR |
| | → | TATKAL TOILET |

| Reduce **perception of risk** of children using the toilet | → | SUPER SAFE STALLS |

Make toilet usage more **relevant** and **goal conducive**	→	LOTTERY SYSTEM
	→	STAMP
	→	OD POSTERS
	→	POTABLE WATER

BSC	BHANWAR SINGH CAMP	BRC	BHAIYA RAM CAMP	VC	VIVEKANAND CAMP	SM	SHASTRI MARKET
SGC	SANJAY GANDHI CAMP	IC	INDIRA CAMP	KC	KHICHDIPUR CAMP		

Availability of dettol water at the community toilet — SM KC

Availability of unshared soap at the community toilet — VC IC

Mirrors installed on the front of toilet doors — SM KC

An emergency toilet that can be used at a small extra fee

Footprints and a handle bar to make toilets child appropriate — BRC SGC SM

A lottery ticket is retrieved at every visit to the community toilet — BSC IC

Children receive a colorful stamp after using the toilet — SM KC

Posters to reframe the OD space — BSC SM IC KC

Availability of drinking water near the community toilets

ELIMINATE DISGUST

TWO BUCKET INTERVENTION

WHY

Remove sensory markers of primary use - sight, social and olfactory

WHAT

People care most about cleanliness before using a toilet. This motivation diminishes after use. Therefore, for this intervention CTC caretakers supply a mug full of diluted antiseptic to each user to clean the toilet before use. The mug is returned to the caretaker after use. Users are not expected to make any additional payments for this service.

WHERE

The two bucket intervention was implemented in Shastri Market and Khichdipur. A twenty liter drum, a hundred mugs, and an abundant supply of dettol solution was supplied to the CTC caretakers in both settlements.

The caretakers were incentivized to run the two bucket rule for 2 weeks.

People prioritized disgust-eliminating interventions. However, these interventions can only be successfully scaled if the caretakers are invested and responsible.

A CTC caretaker prepares the two bucket intervention for a busy morning

ELIMINATE DISGUST

UNSHARED SOAP

WHY

Build hand washing habit by providing soap in forms that are not shared and thus do not elicit disgust

WHAT

Bars of soap hung in net, and a tub of soap powder was readily available for toilet users to wash hands with.

WHERE

Soap options were made available in Vivekanand Camp and Indira Camp. Each of the options ran for two weeks.

INCREASE CONTROL

DON'T RUSH POSTER

WHY

Create empathy among users waiting in line for the person using the toilet

WHAT

A poster encourages patience while other use the toilets

WHERE

Posters to encourage people not to rush the toilet users by creating empathy, were put up on the inside and outside of the toilet stalls at Shastri Market and Khichdipur camp.

खटखटाने की शुरुआत आपस

और शांति की भी।

INCREASE CONTROL

RADIO / MIRROR

WHY

Reduce perception of waiting time in line by distracting users

WHAT

A radio is played by the community toilet caretaker at peak times.

Mirrors are installed on toilet doors facing the users waiting in line

WHERE

The mirrors and radio were installed in Shastri Market and in Khichdipur camp.

The mirror and "don't rush" poster were alternated between stalls.

INCREASE CONTROL

TATKAL TOILET

WHY

Increase sense of control regarding queue and waiting time

Introduce aspirational character due to price difference and conditional access

Model for Cleanliness: As an outcome of limited use, Tatkal toilets may be cleaner, thus inducing lower levels of disgust.

WHAT

Tatkal toilets (meaning instant toilets) are toilets that can be accessed quickly by paying a higher fee of 5 rupees per use.

A portable prefab toilet is placed near the CTC to be used as Tatkal toilets.

The end user gets a Tatkal toilet token on payment from the caretaker. He produces this token at the Tatkal toilet maintenance person to access the toilet.

WHERE

Tatkal Toilets were not installed due to logistical issues
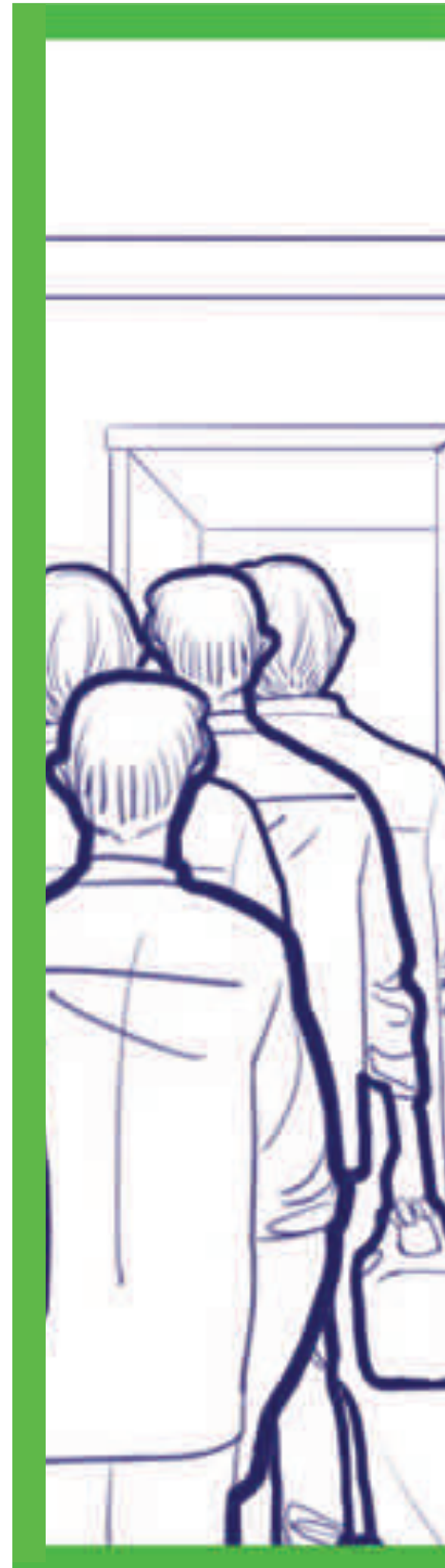
तत्काल टॉयलेट

₹5

REDUCE RISK PERCEPTION

SUPER SAFE STALLS

WHY

Increase perception of safety for use by children alone Increase goal conduciveness for women (by allowing them more time for work).

WHAT

Paint footmarks on toilet seats towards the front of the toilet where the gap is perceived smaller and therefore, safer to sit on. Increase perception of safety by installing a pole they can hold onto while squatting.

Poster/cut-out of an out-group and authoritative member (teacher) declaring the stall a super safe stall for children.

WHERE

Super safe stalls were successfully installed in Sanjay Gandhi Camp, Shastri Market & Bhaiya Ram Camp.

In Bhaiya Ram Camp, the design of the existing toilets did not allow for the poles to be installed, so the footprints alone were painted and tested.

Apart from children, super safe stalls also appealed to a new cohort of users – senior citizens. The poles proved especially helpful for them.

Super safe stalls ready for use at Sanjay Gandhi Camp

INCREASE RELEVANCE

LOTTERY SYSTEM

WHY

Build habit by rewarding repeat toilet use

WHAT

CTC caretakers dispense lottery coupons (separate for men, women & children) post toilet use. At the end of the week, five winners in each category are drawn.

WHERE

The lottery was rolled out in Indira Camp and Bhanwar Singh camp, settlements where open defecation habits are rampant. The lottery was drawn once in each camp.
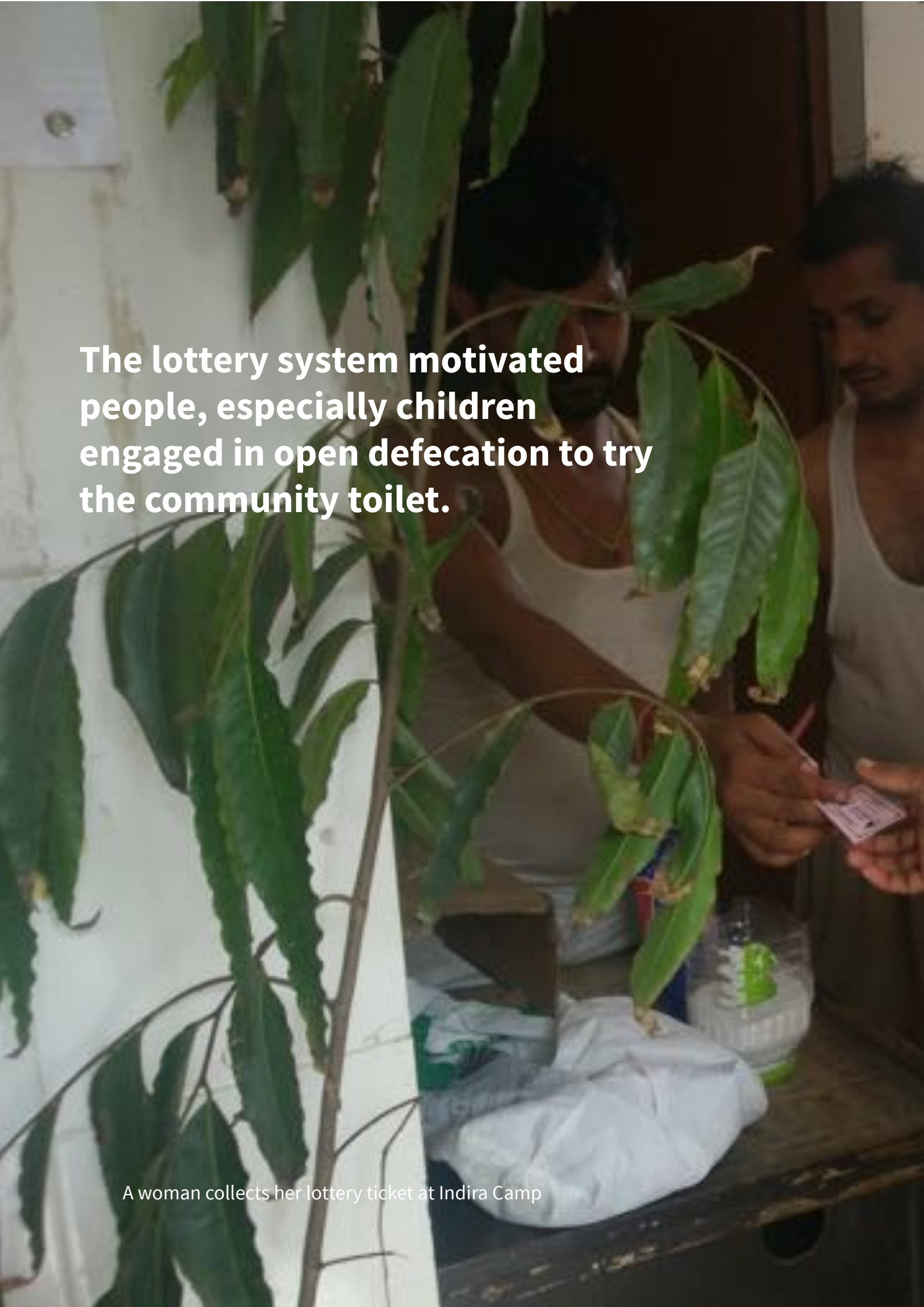
The caretaker was incentivized to hand out the lottery coupons.

The lottery system motivated people, especially children engaged in open defecation to try the community toilet.

A woman collects her lottery ticket at Indira Camp

पुरुष →

STAMP

WHY

Reward correct behavior to encourage repeat use

The peak (worst phase) becomes diminished in long term memory because of a pleasant end, thus driving positive association with the toilet.

WHAT

The caretaker stamps each child, that uses a toilet, a fun colorful stamp on their hands when they exit.

WHERE

The stamp was given to children in Shastri Market, and Khichdipur Camp.
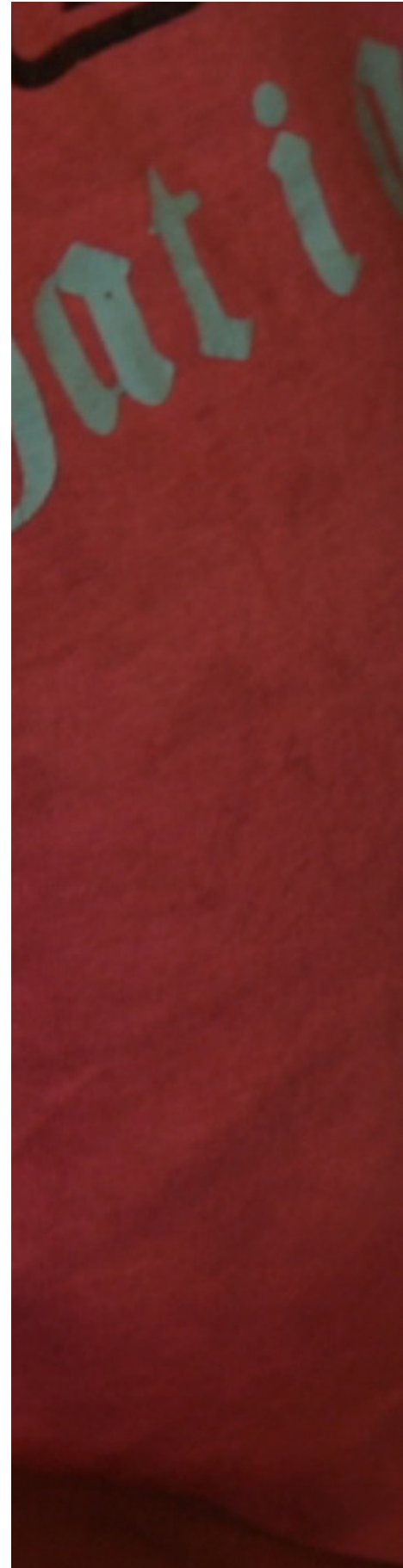
OD POSTERS

WHY

Creating shame, guilt, disgust will lead to reduced open defecation.
Social proof will encourage toilet use.

WHAT

Reframe the OD space by creating messaging, visuals, posters using the following principles:

- Dehumanize open defecation to induce disgust
- Use the in-group to induce guilt
- Create a feeling of being watched to induce shame
- Use social proof to encourage toilet use

WHERE

Four different posters were tested across four settlements: Shastri Market, Bhanwar Singh Camp, Indira Camp and Khichdipur. Two copies of each poster was tested in a camp for a week. Every 7 days the posters were rotated among the camps.
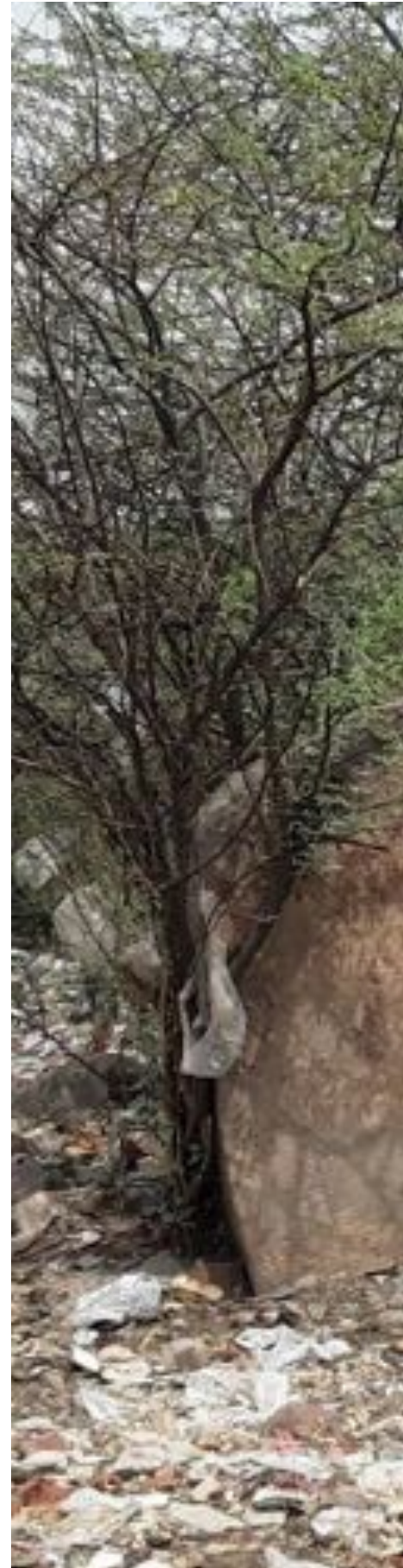
कुत्ता तो सही,

Reframing the open defecation space by
dehumanizing the activity

आप भी यहीं ?

Most people reported a feeling of disgust as a result of seeing this poster in open space

People had a wide variety of responses to this poster because it was confusing

A school going girl, with a look of disgust tells her mother that open defecation is wrong [4]

टीचर
खुले

का कहना सही,
में शौच नहीं!

Induce shame: A set of eyes create the feeling of being watched

This poster induced shame and anxiety. Some people also reported feeling fearful.

Most people were unresponsive because they did not understand the message from this poster

Using social proof to encourage toilet use: settlements with low toilet usage are shown that Delhi is fast becoming free of open defecation

दिल्ली में करीब

85%

लोग अब शौचालयों का उपयोग कर रहे हैं।

अब आपकी बारी

INCREASE RELEVANCE

POTABLE WATER

WHY

Increase relevance for community toilets

Change mental models regarding community toilets
from 'waste' or 'disgust' to 'personal utility and value'

WHAT

Potable water is usually purchased from outside or
delivered at home. For people who have to walk
to a shop to purchase water, having a stall near the
community toilets will reduce their effort, and in turn
make toilets more relevant.

Water is drawn from local sources and a water purifier
is placed to provide safe drinking water to the users.

WHERE

Potable water was not installed due to logistical issues
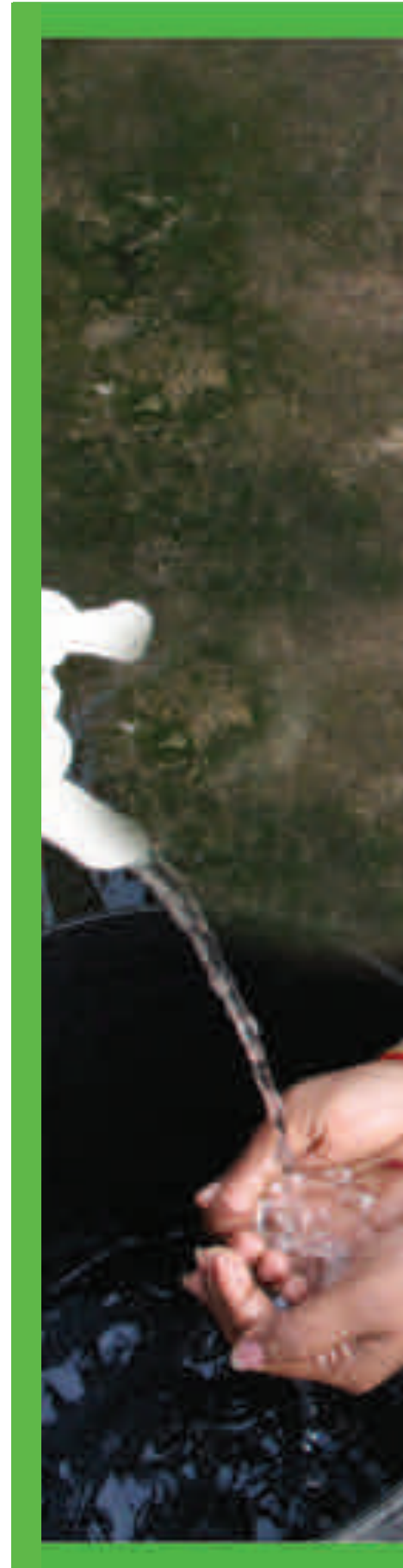
आएं,
राहत पाएं,
पीने का पानी भी,
यही से ले जाएँ ।

REFLECTIONS

Direct interviews and group discussions were used to understand the effectiveness of interventions. In Shastri Market, Bhanwar Singh Camp, Khichdipur and Indira Camp, discussions were held with four groups each of men and women.

Conversations focused on the interventions that were deployed in the respective camps to understand their inconvenience, relevance and effectiveness.

A quick game was used to test user willingness to pay for the interventions. The group was asked to imagine having hundred rupees to divide among the interventions they had experienced, giving the largest amount to the one they thought would be most effective. The group was also asked to arrive at a unanimous decision, so that inter-user discussions leading to convergence would offer more insights.
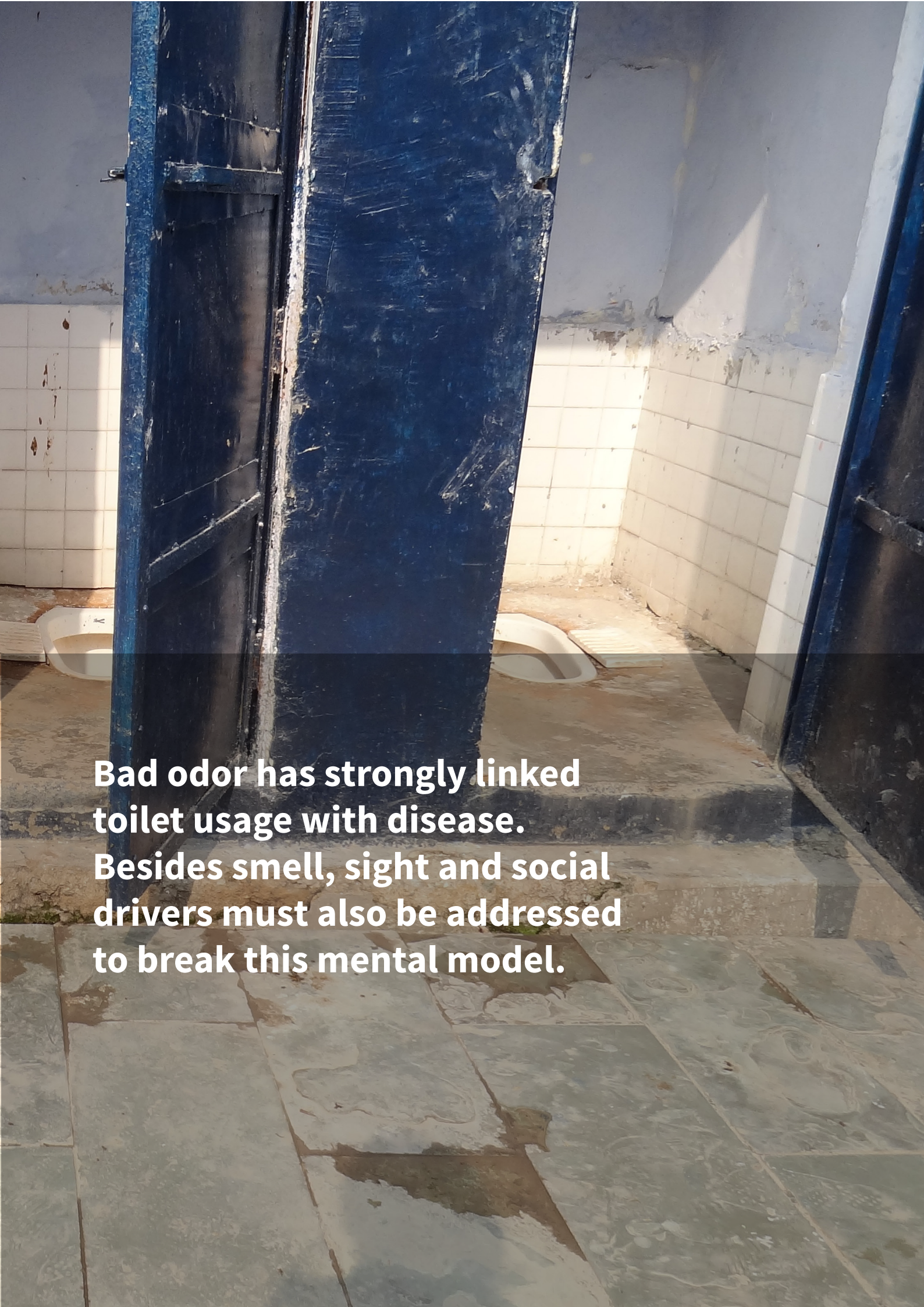
CONCLUSION

Bad odor has strongly linked toilet usage with disease. Besides smell, sight and social drivers must also be addressed to break this mental model.
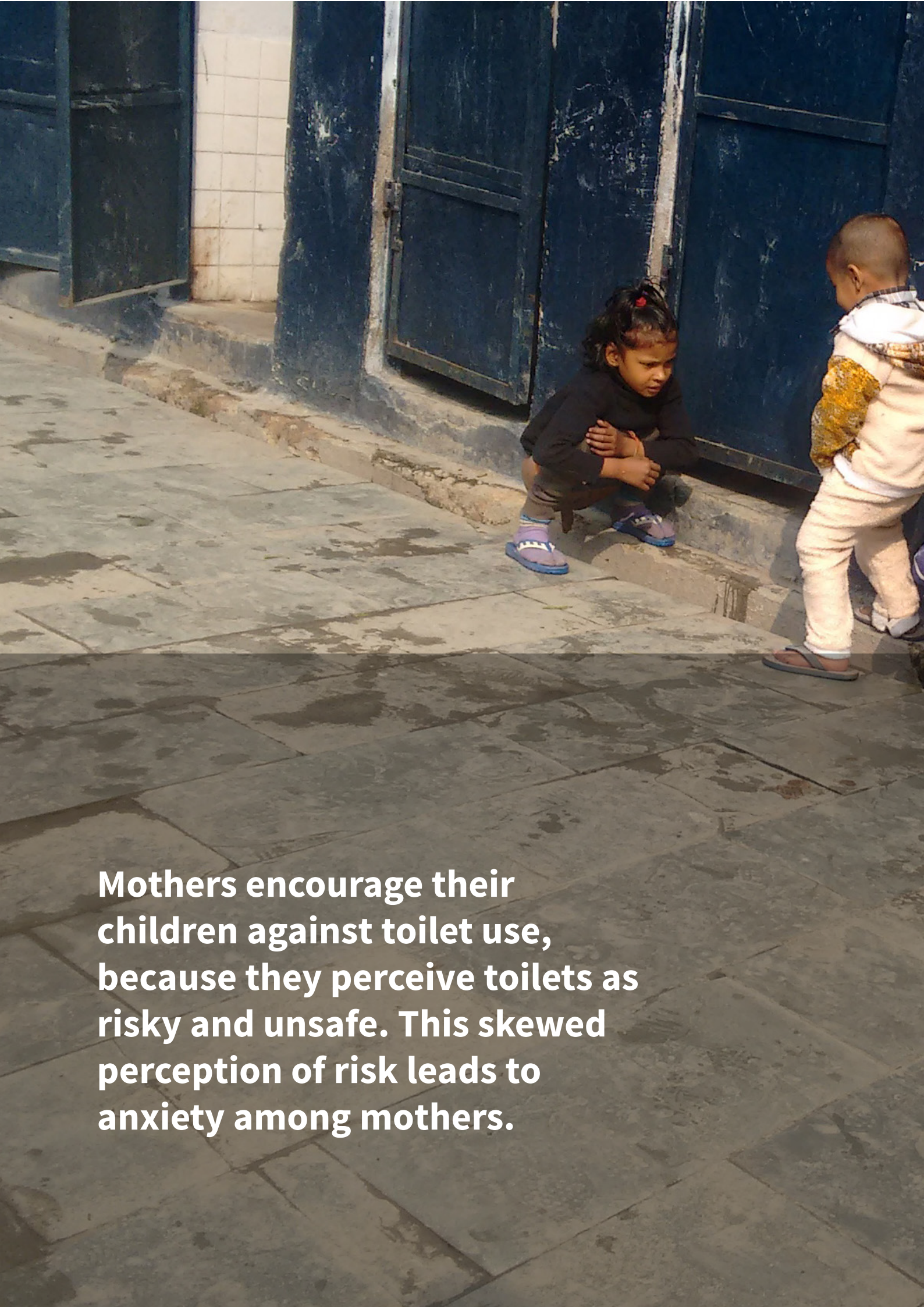
Open defecation is a strong habit because time-stressed people prioritize options that give them certainty of schedule. Interventions that increase perception of control are imperative.

Mothers encourage their children against toilet use, because they perceive toilets as risky and unsafe. This skewed perception of risk leads to anxiety among mothers.

Open defecation is a long standing norm. It has no association with shame. Even regular toilet users do not condemn those engaging in open defecation.

INTERVENTION EVALUATION

The two bucket intervention and unshared soap fared well because adult CTC users prioritize interventions that remove disgust. However, the two bucket intervention created procedural hassles for the CTC caretaker and therefore, was implemented poorly. The success of this intervention depends heavily on the availability of water and a responsible caretaker - factors that must addressed when scaling.

The lottery system drew people to the CTC, especially children. Children who were defecating in the open were motivated by the excitement of winning. Quick rewards and a long term implementation are crucial for this intervention to succeed in forming habits.

Super safe stalls appealed to a new group of users — senior citizens who felt safer because of the handle to hold on to. It is not conclusive if mothers felt a reduction in risk perception of their children going to the toilet because of the redesigned stalls.

While the mirror, radio, and "don't rush" poster did not succeed to distract people who were waiting in line, they added functionality and pleasantness. Several people used the mirrors to get ready and leave directly for work without making a stop at home, thus increasing toilet relevance. Surprisingly, women preferred the radio over mirrors. Women spend a longer time at the CTC than men to do household chores such as laundry. Most women also do not own mobile phones, which serve the purpose of a radio for men. These are possible reasons for women to choose radio over mirrors. While the "don't rush" posters did not directly affect waiting line behavior, many users perceived the toilet complexes to be cleaner because of their presence.

Stamps for children were a novelty when it started, but the effect wore off as the same stamps were repeated for two weeks. The principle behind stamps - to counter the peak negative experience of toilet use by a pleasant 'end' experience worked as long as the novelty factor was present.

The dog and eye posters were successfully able to generate disgust and shame. People took these down quickly, signaling that desired emotions were evoked. The group discussions showed that most people were not able to comprehend the social proof poster, and the poster designed to show in-group disgust.

Tatkal toilets and potable water stand near the CTC could not be implemented for logistic reasons.

We recommend scaling and testing the two bucket intervention, lottery system, super safe stalls, mirror, radio, and tatkal toilet interventions.

POLICY RECOMMENDATIONS

While the PUSH project focused on the behavioral aspects of the open defecation challenge, a number of structural issues must first be addressed for real impact - such as the location and timings of the CTC, population-to-toilet ratio, water and soap supply.

A sense of control and ownership by building community-driven maintenance practices may lead to better management and cleanliness of the toilet complexes.

Smaller decentralized toilet complexes, shared among a cluster of houses, will lead to better population-to-toilet ratios. Smaller toilet complexes are also more likely to have a stronger sense of ownership, leading to better maintenance and cleanliness. Better separation of men's and women's entrances to the toilet complexes may increase the feeling of safety among women users. However, for such design one would also have to also consider the ease of use for caretakers

The current bidding system nudges contractors to quote high returns forcing them to cut costs in maintenance negatively affecting cleanliness. A second price auction system is more likely to return fairer quotes.

FINAL THOUGHTS

Options for defecation range from open defection, community toilets, clustered toilets, private pit toilets, private toilets connected to sewer systems etc. While private toilets connected to sewer systems may be the ideal option, urban slum communities have to cope with shared toilets because of financial constraints and poor infrastructural services. In this situation, it is imperative that service providers deliver services of quality regardless of the level that people are at.

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APPENDIX

MEASUREMENT FRAMEWORK

The pilot phase of the project was also used to trial a test methodology which could be used in further validation testing. This trial was co-created with the Social Behavioral Sciences Team (SBST).

Feedback for all interventions was collected through a three-part survey. A baseline survey was conducted before the intervention installations. Since each intervention was planned for 2 weeks, one set of data was collected at the end of two weeks, and then again at the end of four weeks.

Basic demographic information collected was age, gender, name, contact number, and the number of years they have lived in the settlement.

To address the say-do gap that most surveys encounter, the questions were designed by employing three main strategies.

ELIMINATING FEAR OF JUDGMENT

To receive less biased answers, questions were crafted to remove the spotlight from the person being surveyed. To achieve this, respondents were questioned about others in the community rather than being directly questioned about themselves, thereby reducing self-conscious bias, social judgment and social desirability.

Given 10 men using the CTC, how many feel rushed (by other people) while using the stall?

> १० में से कितने लोगों को शौचालय इस्तमाल करते समय दूसरों की वजह से जल्दी बहार आने का दबाव महसूस होता है

ELICITING EMOTIONAL RESPONSES

To reduce rationalization from survey answers, respondents were asked to choose from a range of emotions to express their feelings towards aspects of the community toilets and interventions. A set of four or five emotions were illustrated for the respondents to choose from.

This poster makes me feel:

WILLINGNESS TO PAY

User willingness to pay was tested through a game. The respondent was asked to imagine having hundred rupees to divide among the interventions they had experienced, giving the largest amount to the one they thought would be most effective.

If you were given a 100 rupees to split among these interventions and increase toilet use, how would you split the money?

> अगर आपको सौ रूपए बस्ती में शौचालय का प्रयोग बढ़ाने के लिए दिए जाएँ, तो आप इन ऑप्शन में, पैसे किस तरह बाटेंगे?
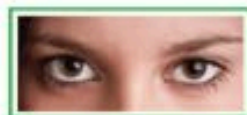
डेटोल की उपलब्धि

बच्चों के लिए सुपर सेफ शौचालय

बच्चों के लिए रंगीन मोहर

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