# Independent Evaluation of The Proof of Concept of The 'Sanitation Impact Bond'

submitted to WASTE



M-CRIL Limited – Incorporating EDA Rural Systems Inclusive microeconomics

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BM	Branch Manager	MIS	Management Information System
CHIB	Cluster Head Impact Business	MFI	Micro Finance Institutions
СМ	Centre Manger	MGNREGS	Mahatma Gandhi National Rural
FGD	Focus Group Discussions		Employment Guarantee Scheme
FSP	Financial Service Provider	OBC	Other Backward Class
FINISH	Financial Inclusion Improves	OSS	On-Site Sanitation Systems
	Sanitation & Health	SIB	Sanitation Impact Bond
HESM	Health And Education Service	SC	Scheduled Caste
	Manager	ST	Scheduled Tribe
нн	Household	WATSAN	Water And Sanitation

IDI In-Depth Interview

## Context

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New toilet with tin sheet door and cement roof, constructed just outside the house of a CASHPOR client in Chandauli, UP

- The Government of India's Swachh Bharat Mission was launched in 2014 with the objective to make India Open Defecation Free.
   With this impetus, sanitation in India reportedly rose to 99% by 2019 from 38% in 2014.<sup>a</sup> Such a rapid apparent gain was likely difficult to sustain.
- Micro-credit to support retrofitting needs for safely managed sanitation has been a response to a continuing sanitation challenge, particularly in northern, rural areas of India.
- WASTE and its partners developed a programme 'Financial Inclusion Improves Sanitation & Health (FINISH) Mondial' to meet vital sanitation and waste management needs through demand generation, an efficient supply chain and localized financing. Under the FINISH programme, Safe sanitation systems (toilets) are paid by individual households, either through their own funds, government and also through loans (via banks or microfinance institutions (MFIs)). The approach has been unique due to its continued potential for scalability. However, FINISH reached a scale that liquidity in MFI's for toilet loans became a bottleneck for further scaling.
- Thus, as a response ACTIAM, together with international and local financial institution partners and programme founder WASTE developed a financial tool, the Sanitation Impact Bond (SIB) to provide liquidity to partner MFIs (or NBFCs, banks) and further address crucial financial gap for sustained sanitation.



<sup>a</sup> Ministry of Jal Shakti, Government of India, July (2019) (Rural sanitation coverage jumped to 99% from 38% in 2014 – KRC Times)

## **Sanitation Impact Programme**

- The Sanitation Impact Bond (SIB) is a 'new generation' tool to support social impact investment, involving independent evaluation of social impact. It outlines the contractual and legal issues and tests the willingness of investors to buy bonds for a return of 3 4%.
- The SIB creates a sanitation loan portfolio for financial service providers to lend to clients for the construction or repair of toilets in their household.
- Stakeholders in the SIB are an investment fund manager, ACTIAM, a Microfinance Institution (MFI) in north India, Cashpor, a Technical support partner, FINISH Society and an Outcome Funder WASTE Netherlands.





Sanitation Impact Bond Structure

FINISH,December(2019),BriefonSanitationImpactBond(201909\_Sanitation\_Impact\_Bond-2pager.pdf (finishmondial.org)

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- Started in 2002, Cashpor Micro Credit (Cashpor) is a Micro Finance Institution (MFI) that provides microcredit targeting women in Below Poverty Line (BPL) households.
- Cashpor started operations in eastern Uttar Pradesh and Bihar and has expanded to serve Chhattisgarh, Jharkhand, and Madhya Pradesh (MP) – in the poorer regions of north India.
- Cashpor introduced its first Water and Sanitation (WATSAN) loan programme in 2012 with support from Opportunity International and alongside this has developed a cadre of Community Health Facilitators (ex-clients) with the support of the NGO Healing Fields.
- Under the SIB Cashpor has since 2019 disbursed WATSAN loans to its clients in 4 states (mainly UP and Bihar, also in Chhattisgarh and MP, as shown in the Table). Loans are ₹15,000 for new toilets, ₹5,000 for toilet repair or improvement. The loan terms (Table) are similar to the usual group loan, with a slightly lower rate of interest.

SIB WATSAN loans disbursed by Cashpor, 4 states, 2019-2022

States,	Total loans
UP	16,826
Bihar	15,189
Chhattisgarh	3,716
Madhya Pradesh	1,112
Total	36,843
For new toilets	34,460
For toilet repair/improvement	2,383

[Data from Cashpor's SIB WATSAN loan portfolio, Feb 2019 – Mar 2022]

Loan terms	Details
Loan range	₹5000 to ₹15,000
Rate of interest	18%
Repayment	52 weekly instalments

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Cashpor promotes the need and use of toilets through its cadre of local women Community Health Facilitators (CHFs) and provides microcredit to households to construct or repair toilets. FINISH builds the technical capacities of CHFs, Cashpor branch staff and local masons; its team also monitors field data and provides feedback for improvements.





The SIB target for WATSAN loan disbursement was 35,000. Under the SIB programme, Cashpor has disbursed 36,843 WATSAN loans against the target of 35,000 WATSAN loans from Feb 2019 to March 2022.

The overall objective of this study is to conduct an impact evaluation of the 'Sanitation Impact Bond (SIB)' piloted by Cashpor Micro Credit.

The achieved outcomes of the SIB programme are to be verified against two core indicators:

- Number of loans used for sanitation facilities construction or repair (toilet availability)
- Use of the sanitation facilities (toilet)

This verification of impact will provide the evidence for achievements of expected outcomes, as the basis for potential impact incentives based on the conversion of loans into sanitation facilities and their use.



# Research Approach



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## **Mixed Methods**

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The research involved mixed methods: quantitative ('Quant.') and qualitative ('Qual.') interviews with WATSAN clients of Cashpor and qualitative interviews with other stakeholders, as shown below.

Tools	Scope
Quantitative	
Household Survey Clients of Cashpor who have borrowed WATSAN loan during SIB programme	<b>Structured questionnaire:</b> Demographic details, loan details, loan utilization, toilet functionality, and toilet usage
Qualitative	
Focus Group Discussions (FGDs) Cashpor clients - WATSAN and Non-WATSAN Loan clients	Semi-structured checklist: Behaviour change, motivation to use toilets, toilet loan, health and hygiene, waste management, benefits and challenges
<ul> <li>Individual Interviews</li> <li>Branch Managers</li> <li>Health and Education Service Managers</li> <li>Community Health Facilitators</li> <li>Masons</li> </ul>	Semi-structured checklists: Qualitative aspects around toilet construction or repair using the sanitation loan, usage of the toilet, behaviour change, capacity building, and challenges.

The household survey was implemented by local field teams of experienced men and women enumerators using the Mwater app for Computer Assisted Personal Interviewing, with real-time monitoring of data capture. Adopting the 'lean approach', the questionnaire interviews took 30-40 minutes. Qualitative interviews by members of the M-CRIL team took 50-60 minutes. Excel was used for tabulation of quantitative data and thematic analysis of qualitative data.

## Sample selection

#### Clients for quantitative survey – UP and Bihar, ~210/state

- Cluster based sampling was used for selecting clients from the regions and branches in each state, with the highest number of WATSAN loans.
- 2 regions were selected in each state with highest number of WATSAN loan clients
- Within 4 selected branches, centres that had the highest number of WATSAN clients (both construction and repair loan) were selected with the condition that there should be at least 10 WATSAN toilet repair loan clients in each branch.
- On average, 15 centres were selected from a branch.
- The target sample size was 210 in each state, 53 in each branch (see Annex 3 for the sampling formula)
- Where the number of WATSAN clients fell short of the target, the balance number of respondents was selected at random from the nearest centre.
- All the respondents were women and belonged to rural areas.

#### Qualitative discussions with Cashpor staff – in 4 branches

- Key informant interviews were conducted with BMs (4) and HESMS (4), one in each branch.
- In-depth interviews were conducted with CHFs (4), one in each branch.

#### Qualitative discussions with Clients, Masons – in 4 branches

- 4 FGDs with Cashpor clients (WATSAN loan and non-WATSAN)
- Masons (2) who attended FINISH society training
- Participants were identified with the assistance of the CHF.

## Sample geographic - 4 regions in 2 states



## Challenges

- There was considerable delay in mapping villages/centres as the basis for sampling due to the nature of the information shared by Cashpor.
- Due to Cashpor's expectation to approve the branches and centres for the research team's visit, we were not able to ensure an element of surprise. All the households surveyed were already expecting the evaluation team's visit and were nicely dressed for the occasion. This may have led to some optimization of the findings. Ways to avoid this in future are suggested in the recommendations.

# Household profile



- All sampled Cashpor clients had completed at least one loan cycle, with up to a maximum of 20 loan cycles in UP.
- **Purpose of WATSAN loan** Toilet construction or Toilet repair was recorded as per the Client. It was also cross-checked with the MIS list shared by Cashpor. Those who had completed one loan cycle earlier were eligible to take a WATSAN loan.
- Majority of the sample in each of the two states have borrowed for toilet construction. More households in UP have borrowed for toilet repair than in Bihar. Out of 432 clients, only one has reported having taken **two WATSAN loans** and the purpose of taking such loans is explained in the box.
- Amongst the different social groups, Scheduled Caste (SC) respondents reported having taken smaller WATSAN loans of ₹10,000.

#### Loan details

	UP [N=219]	Bihar [N=213]	
Loans taken from Cashpor till date (median)	5	4	
Toilet construction Clients (%)	83%	96%	
Toilet repair Clients (%)	17%	4%	
WATSAN loan (₹) (Median)	₹10,000	₹15,000	
Toilet Construction loan	₹ 15,000		
(Median amount and range (₹))	(Min ₹5000 - Max ₹15000)		
Toilet repair loan	₹ 5,00	0	
(Median amount and range (₹))	(Min ₹5000 - Ma	ax ₹15000)	

" Only 1 client has taken two WATSAN loans. She used the first loan to construct a new toilet and the second one to make toilet improvements."

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[IDI - HESM, Bihar]

## Socio-economic profile

- A majority of the households in UP are Scheduled Caste (SC), in Bihar 'Other Backward Caste' (OBC). Very less uptake of loans by the General category sample. The Muslim community is well represented, particularly in Bihar.
- The main Income source is mostly casual labour reflecting the low income of these households.
- Across both states, 14% of the sample have *kuccha* houses.
   In the UP sample the majority have *pucca* houses.
- Cashpor clients are aged 18-50 years, mainly 36-50 in the UP sample, almost evenly spread between 18-35 and 36-50 in the Bihar sample.
- More than 40% of the respondents had family members, (husbands or sons) present at the time of the survey.

\* Other income sources- MGNREGS, pension, salaried (govt), salaried (private) and remittances. This was a multi-response question wherein different income sources were captured.

#### Sample profile

Household Segments	UP [N=219]	Bihar [N=213]
Social groups		
Scheduled Caste (SC)	67%	22%
Scheduled Tribe (ST)	[1]	[23]
Other Backward Caste (OBC)	29%	58%
General	[8]	[19]
Religious groups		
Hindu	80%	66%
Muslim	19%	34%
Buddhist	[2]	[0]
Income Source		
Casual Labour	54%	40%
Own Business	26%	34%
Skilled Labour	22%	10%
Livestock (big and small animals)	1%	38%
Agriculture (own)	2%	27%
Other*	7%	27%
Type of house		
Kuccha	14%	13%
Semi-pucca	22%	71%
Рисса	64%	16%

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## Housing characteristics – family size and space

- Around 60% of the clients in both the states have reported a higher family size ٠ (more than 6 members). Higher proportion of clients reside in 2 rooms irrespective of the family size, followed by 1 room. This indicates housing congestion experienced by clients having bigger family size.
- More than 65% of the respondents dwell within a 2 room house across states. A relatively higher proportion dwell in bigger houses (more than 3 rooms) in Bihar than in UP.
- Majority of the respondents in both the states have a small to large homestead ٠ area. Majority have toilets – inside/alongside the dwelling unit irrespective of the type of house or homestead area. This indicates a preference for having a toilet in the vicinity.

None

"All families in this village have toilets. I have constructed a second toilet using the loan because of the increase in the family size"

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[FGD - clients, Bihar]



Small

Homestead area across states, %



Large



Number of rooms by states, %





### **Toilet construction**

- All respondents reported to have toilets and the same was validated through observation checklist.
- The year 2019, saw the construction of a significant number of toilets in both the states. This is attributed to the SIB programme which started in the same year. A dip is visible in the year 2020 due to COVID-19 outbreak, with a subsequent increase as we progress through the years indicating a rise in the toilet repair loan clientele.

"The best part of the SIB programme is that it provides loans for toilet repair as well. The government-constructed toilets are not of very good quality, thus there is a need for repairs. Before the SIB programme was launched, if there was any repair needed in the toilet, people would just stop using it and start going out in the fields."

[IDI - CHF, UP]



#### Year-wise toilet construction and repair loans %





# Evaluation Result

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WATSAN loan client constructed toilet cubicle with a tin door, asbestos sheet roof and brick walls in Aurangabad, Bihar

## Framework for proof of impact



Evidences – Directly linked to the sub-indicator score

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Evidences

## **Evaluation result**

Evaluation Result		Indicators	Score	Sub-indicators	Score	CLs*	Evidence	Score	CLs
		1. Loan has been used for toilet construction or repair	100%	1.1 Financing from WATSAN loan towards new construction or repair of toilet	100%	-	1.1.1 Percent of loan spent for construction or repair of toilet	100%	-
		97%		2.1 Toilet is functional,	97%	96%-99%	2.1.1 Water is available for flushing and washing	97%	96%-99%
Overall Score	97%						2.1.2 Toilet seat is functional, not cracked	98%	96%-99%
	2. l	2. Use of toilet 97%				2.1.3 No blockage or overflow (inside or outside the toilet)	99.50%	99%- 100%	
				2.2 Used by at least one HH member regularly	99%	98%-100%	2.2.1 Used by at least one HH member regularly	99%	98%- 100%

#### Method for arriving at overall score

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Overall score= Min (Indicator 1 score, Indicator 2 score) Indicator score = Min (Sub-indicators score) Sub-indicator score= Min (Evidences score) \*CL - Confidence Limit at Confidence Level of 95%

## Indicator 1: WATSAN loan use for

## toilet construction or repair



## Indicator 1: WATSAN loan used for toilet construction or repair

Indicator 1	Sub indicator 1.1							
Loop has been used	Financing from WATSAN loai			N loan towards new toilet construction or repair			of toilet n or repair ge	Loan used to repay earlier
for toilet construction and repair (%) (N=432)	Clients who have used WATSAN loan	WATSAN loan spent for construction or repair of toilet(%)	Clients who have used additional sources along with WATSAN loan	Clients who have spent more than WATSAN loan (%)	Share of WATSAN loan in total expenditure (those who have used additional sources) (%)	Minimum (₹)	Maximum (₹)	loans used for toilet construction and repair(₹) (n=2)
100%	432	100%	367	85%	60%	₹ 5,000	1,50,000*	₹ 15,000

- All the sample have reported having used entire WATSAN loan for toilet construction or repair. 85% of the clients used other sources of funding besides WATSAN loans for both toilet construction and repair.
- Over 90% of toilet construction clients have spent more than WATSAN loan amount. In comparison, only about 30% toilet repair clients have spent more than WATSAN loan.
- The median cost for toilet construction is ₹25,000. The median cost for toilet repair is ₹5,000

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\* Only 2 respondents have reported toilet construction cost as ₹1,50,000. This is an outlier and in no way impacts evaluation result. This is because we have used median value for all numerical analysis in the study.

#### Clients who spent more than WATSAN loan, %



## Use of WATSAN loan for toilet construction or repair work

- All clients have used the loans to either build a new toilet (toilet construction) or repair or repay an earlier loan used for toilet construction or repair
- UP has a higher proportion of sample who have taken WATSAN loans for toilet repair when compared to the Bihar sample.
- The median amount for toilet construction cost is ₹20,000.
   The median amount for toilet repair cost is ₹5,000.
- Bihar has a median amount of nearly 2.5 times of UP in toilet repair cost category.
- A higher proportion of SC clients have used loans for toilet repair when compared to other caste categories. This could be possible because SC clients (mostly from low income categories)struggle in building proper toilets in the beginning and were taking SIB loan (repair) to make them functional.

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States	Build new toilet (toilet construction)	Repair toilet	Repay earlier loan (sanitation purpose)		
UP (N=219)	84%	16%	0%		
Bihar (N=213)	95%	4%	1%		
Total( N=432)	90%	10%	0.5%		

#### WATSAN loan use purpose, %

#### Amount spent for different purpose, ₹ (median)

States	Build new toilet (toilet construction)	Repair toilet	Repay earlier loan (sanitation purpose)
UP (N=219)	20,000	5,000	-
Bihar (N=213)	25,000	14,500	15,000
Total( N=432)	25,000	5,000	15,000

## WATSAN loan – specific uses



- Majority of the toilet constructions clients used cement (61%) for roof construction followed by corrugated iron, while toilet repair clients heavily relied on cement.
- There is no significant difference between toilet construction and repair clients in terms of material used for walls and doors.



## **Funding for WATSAN**

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- 77% of the sample in both states have supplemented the WATSAN loan from Cashpor with their own savings. Some clients, mainly (SC households) in UP, have been able to access Government schemes.<sup>a</sup> In Bihar, clients have also gone to high cost informal moneylenders, or borrowed from another formal financial service provider (FSP), an MFI or NBFC.<sup>b</sup>
- For these households, the additional funds represent 50% to 100%, sometimes more, of the WATSAN loan amount obtained from Cashpor.

#### Sources of finance, %

States	Savings	Other FSP	Govt scheme	Money lender	WATSAN Ioan
UP (N=219)	77%	0%	6%	0%	100%
Bihar (N=213)	77%	2%	1%	12%	100%
Total (N=432)	77%	2%	4%	6%	100%

#### Funding from different sources, ₹ (median)

States	Own savings (N=333)	Other loans from FSPs (N=5)	Govt schemes (N=16)	Money lenders (N=26)	WATSAN Ioan (N=432)	Total amount spent
UP	10,000	-	12,000	-	10,000	20,000
Bihar	15,000	20,000	8,000	11,500	15,000	25,000
Total	10,000	20,000	12,000	11,500	15000	22,500

"The WATSAN loan from Cashpor was up to a maximum ₹15,000 but this was not enough to cover the toilet construction cost"

[FGD - clients, UP]



## Indicator 2: Toilet use



Indicator 2	Sub-indi	Sub-indicator 2.2 Used by at least one HH member regularly			
Use of toilet (N=432) (Min of 2.1,2.2 )	2.1 Toilet is functional, in usable condition (Min of 2.1.1, 2.1.2,2.1.3)	2.1.1 Water is available for flushing and washing	2.1.2 The toilet pan is functional, not cracked	2.1.3 No blockage or overflow (inside or outside the toilet)	2.2.1 Used by at least one household member regularly
97%	97%	97%	98%	99.5%	99%

- More than 95% of clients use toilets across different categories, indicating high toilet usage for clients who constructed or repaired toilets.
- Though toilet usage by different age groups is varying, 99% of the households have at least one member who uses the toilet regularly.
- Only 4 respondents reported using the toilet as a bathing space or a storehouse or not in use (due to damage caused in the last flood)

#### Method of arriving at score



#### Toilet usage across different categories, %



## Indicators 2.1 – Water availability, Functional toilet pan and No backflow/overflow

Indicator 2.1 Summary					
Evidences	Observation	Bihar (N=213)	UP (N=219)	Total (N=432)	
	Bucket/mug availability - Yes	94%	94%	94%	
2.1.1 Water is available for flushing and washing	Water tap inside the toilet - Yes	0.5%	6%	3%	
	Bucket/mug/ water tap inside the toilet - No	4.5%	0%	3%	
2.1.2 The toilet pap is functional not	Yes	97%	98%	98%	
cracked	No	3%	2%	2%	
	Yes	0.5%	0.5%	0.5%	
2.1.3 No backflow/overflow (inside or outside the toilet)	No	99.5%	99.5%	99.5%	
Sub-indicator 2.1 ( Min of above three evidences)		94.5%	98%	97%	

• 95% of the households in Bihar and 98% in UP have realized all three evidences of sub-indicator 2.1. There is not much variation observed across different social categories.



## Indicators 2.2 – Usage by at least one HH member regularly



Regular toilet usage by household members, %

• Regular toilet usage by the adults is reported highest while it was lowest for elders. However, only 50% of clients have reported children using the toilet regularly.

"Mothers are concerned that very young children could slip and hurt themselves using a toilet. Mothers are always afraid for their young children and prefer that they use the fields." [FGD - Clients, UP] "Some clients shared that elders or the handicapped members or sometimes children with some injury are unable to use the toilets so they go out in the fields."



# Toilet construction and repair experience



WATSAN loan client from Mirzapur, UP constructed a toilet cubicle with a corrugated iron door, cemented walls and bamboo/wood roof

## Time taken – to start and complete toilet construction/repair

- **Starting**: Most clients said they were able to start the work within a few days or one week of receiving the loan (Figure). It took longer to start, particularly for clients in Bihar, due to masons not being available, the weather, or a need to arrange additional funds.
- **Completing**: Usually it has taken a minimum of 1 week (mainly for repair) up to to maximum of one month (mainly toilet construction, longer in the monsoon).
- Qualitative interviews suggest that the decision on design and cost follows the loan approval, rather than the other way around.



#### Process

"A client first requests a WATSAN loan in discussion with the CHF. Then there is the usual process of loan appraisal with a visit by the BM before approving the loan. Loan approval usually takes a week, and once we know the loan is approved, then the mason is called, and we find out what design that will fit the space and the budget we have.

Once the work starts, in summer it takes 10-12 days, in winter it can take 15-20 days."

- For design of toilet construction work there is greater reliance on men of the family, however, it is mostly masons for design of toilet repair work. In case of toilet construction work 40% of the respondents reported women to be the ones who suggested design while it was only 20% of the sample for the repair work.
- While men and women of the family were more involved in suggesting design in Bihar, it was masons and men of the family in case of UP.
- There is not much variation seen across toilet construction or toilet repair work when it comes to who decides for the design. It resonates with the overall data – for 83% of the respondents masons decide on the design while for 55% and 35% of the sample men and women in the family respectively are the decision makers.
- Higher proportion of respondents engaged masons followed by men of the family involved in toilet designing, in both the states. Amongst the social categories, ST respondents have involved higher proportion of mason followed by women, while the other categories relied on men for designing.



Involved in suggesting and deciding design, %

"The family members including son and husband decide on the type of toilet work. Sometimes we involve masons but he has to be guided throughout." [FGD - clients, UP]



## Mostly brick walls and corrugated iron doors



- Toilet construction involves 3 walls for the cubicle, which are usually made of brick (97% of the sample). Some ST households have only cloth.
- Most of the cubicles have a door. This is sometimes a wooden or aluminum door. Mostly it is makeshift from corrugated iron. However, some households (SC, Muslims) just use cloth or nothing at all (21% in Bihar, 11% in UP)
- Only 30% of households have light connectivity in toilets for both the states, higher proportion reported for Bihar sample. Higher proportion of toilet construction clients have light connection than toilet repair clients which may indicate that those who have constructed toilets in recent years view the light connection as a priority. Majority of SC sample have light connectivity.



## Walls and doors

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### Roofs made of Cement, Tin or Corrugated Iron

- The material used for roof construction varies across both states. In Bihar, 'Corrugated Iron' is an extensively used material in the construction of roofs whereas in UP cemented roofs are predominant.
- Respondents who took toilet repair loans are reported to use more cement in the roof construction than toilet construction clients. This suggests that cement is used for improving the infrastructure but not for toilet construction as that would inflate the cost.
- There is a significant difference between ST sample and other social groups. General, OBC and SC respondents have largely used cement, but the ST sample preferred corrugated iron for roof construction. This can be attributed to the fact that cement is an expensive choice and ST respondents belong to low-income households.



"The material cost, as well as the cost of mason have risen. Five years back we used to get a cement bag (45kg) for ₹ 200, now we get it at ₹ 450. The cost of mason has increased from ₹ 350 per day to ₹ 600 per day. It has become an expensive task to get a toilet constructed. The cost has become almost double what it used to be and thus a concern for low income HHs ."

[FGD - clients, UP]



## **Toilet roofs – mostly asbestos sheet or cement**







Photos - UP and Bihar

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- In both state samples, majority of the toilets have been installed within or beside the house.
- At least 70% of the respondents in both the states have a small to large homestead area indicating some space available in the periphery of their house. Having a toilet away from the house within the homestead area (up to 10-15 metres away from the house) depends on the space that the household has, as well as some traditional views around cleanliness.

"I came to know that people have various kind of superstitions regarding having a toilet in their home. I once met a client who was told by a Tantrik (Godman) not to build a toilet inside her house."

[KII - HESM, Bihar]



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### Water for sanitation

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- The need for water alongside a toilet is for flushing and washing. Access to water is quite different in the two states, as shown in the Figure.
- In UP, nearly half the sample have a water supply within the home (mainly from a handpump; a small number have a piped connection). And a similar proportion depend on a village handpump outside the homestead,
- In Bihar, 94% of the sample have water supply in the home, mainly from a handpump. This finding may reflect the State Government's programme ("*Mukhyamantri Grameen Peyjal Nishchay Yojana*") to provide clean drinking water to rural households of Bihar.
- Thus, <u>convenient access to water is a significant constraint for a number of Cashpor clients</u>, where a village handpump involves queuing and may not work (see quote). This is the case <u>particularly in UP</u>, where 5% reported having to fetch water from village pond or well.



"There is only one handpump in our village and bringing water from there is time consuming. It takes 1 hour to fetch 2 buckets as there is a always a long queue at the hand pump. And whenever the handpump stops working, repairs take a lot of time. Then we have to go to a pond to fetch water, which is very far." [FGD - clients, UP]

### Time taken to collect water

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- Majority of the clients reported 'self' to be involved in procuring water when compared to other family members.
- There is a significant difference observed across the states as far as the involvement of males is concerned in fetching water. In UP a significant male population is involved in fetching water which is much lower for Bihar.
- There is a significant difference visible across the states in the amount of time spent fetching water. In UP on average, clients spend 10 minutes fetching water while Bihar respondents take half the time. This is attributed to the fact that Bihar clients have greater access to personal handpumps whereas UP clients use public handpumps or wells. One of the clients in UP mentioned that it takes two hours to fetch water from the only public handpump in the village, due to the long queue at the hand pump.



Water collection from far away source by family members, %

"Some of us fetch water once in the morning and once in the evening. Some of us fetch it from a well so it takes an hour for us to fetch water." [FGD - clients, UP]

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## Challenges and delays during toilet work

- One third of households said they did not face any challenge. Over 70% did, in both Bihar and UP as shown in the figure.
- For both Bihar and UP respondents arranging additional funds was a challenge. This was further corroborated by the finding that more than 85% took the additional source for financing as presented in the initial slides.
- Higher proportion of toilet construction clients faced challenges compared to toilet repair clients. This further implies that toilet construction calls for greater funding than repair or improvement work.

"You can get a mason when you have money. If one has money, then everything is easily available here."

"We asked for more loan, but we were told that we will receive only ₹15,000. The loan amount was very low. Most of us have large families so we need to build a toilet with twin pits or septic tank. We have space but money is an issue despite using our family savings."

[FGD - clients, Bihar]





## Satisfaction with toilet

-CRI

- All the sample are pleased with their toilet: on a scale of 1 (not pleased) to 5 (very pleased) 91% rated at 5, and the rest at 4
- Respondents were asked an open-ended question of why they are pleased. The responses (shown in the figure) mainly relate to being 'easy for women, children and elders". Over half mentioned it to be 'clean and safe to use". Around half mentioned that it saved time. In FGDs, women also mentioned the health benefits, and safety – particularly during the monsoon.
- Majority of toilet construction clients were reported to be more satisfied than toilet repair clients. Moreover, SC and OBC respondents were found to be less satisfied with toilet work than their ST and General counterparts.



"We use toilets to prevent infection from diseases such as typhoid, diarrhoea, dysentery. It is also very difficult to go to field during the rainy season because snakes and insects come out during that time."

[FGD - clients, Bihar]





# Sanitation behaviour/ practices



Hand pump in close vicinity to the toilet ensuring availability of water for sanitation throughout the year - Chandauli UP

CRI

On-site Sanitation System (OSS)	Design	Cost of construction	Need for emptying and Costs associated
Single Pit	The single pit is the most widely used sanitation technologies as it can be built and repaired with locally available materials. The capital cost is low, and area required is small.	₹3,000–₹ 6,000	Generally single pits are absorbent pits and after 2 years the waste reduces significantly and then it is either emptied or another pit is dug. If there is no space to dig another pit then it is emptied but such cases are very rare. If it is not absorbent then it is covered with a cemented slab with holes and a different pit is dug. Cost of emptying: $1,500 - 3,000$ , depending on the size of the pit.
Twin Pit (With absorbent lining)	The twin pit consists of two pits with absorbent lining made of absorbent bricks which help in absorbing the waste which is converted into manure over a period.	₹8,000–₹15,000	A pit needs emptying after a period of time, after it is decomposed into manure. When the first pit is full, it is covered, and the second pit is opened. Over 2 years waste from the first pit can be dug and used as manure, meanwhile, the second pit can be used to store the waste. Pits can be used alternatively. Cost of emptying: ₹1,500 – ₹3,000, depending on the size of the pit.
Septic tank	Septic tank is an underwater sedimentation tank which uses biological decomposition for waste treatment. This technology requires huge capital and large space.	₹40,000-₹ 1,50,000	Waste which is not decomposed by the anaerobic decomposition must eventually be removed from the septic tank. A septic tank needs emptying in 10-20 years. The cost of emptying varies between ₹500 – ₹5,000, depending on the size and the operator.



## Managing waste

- Twin pits are predominant On-site sanitation system (OSS) followed by single pits and septic tanks. This can be attributed to the higher uptake of twin pits or single pits (promoted under SBM programme) vis-à-vis septic tanks due to several factors including cost and space.
- Emptying of absorbent single pits and twin pits is usually done by the family members themselves. If a sanitary worker
  or private operator empties the pit, average cost is between ₹ 1,500 to ₹ 3,000. The emptying happens over a period of
  two years. There is less awareness on the need of emptying twin and single pits.
- 94% of clients were not aware on the need to tank emptying. In UP, tank emptying work is predominantly done by sanitary workers (working with Govt.) whereas in Bihar it is done by private operators. Majority in Bihar are of the view that the tank needs emptying every year whereas, in UP, people believe that the tank should be emptied every 6 months. However, the awareness of tank emptying is very much linked to its size and technology, which is still missing.







- **Type of sanitary cloth used**: In the majority of households, women are using sanitary napkins and clothes for maintaining menstrual hygiene. None of the women reported using make-do pads stuffed with ash, husk or sand. This development can be partially attributed to the distribution of free sanitary napkins in schools.
- Water for cleaning: Women reported having access to water for maintaining sanitary health and hygiene. Women in UP mentioned that despite the water scarcity during some months of the year, they make sure that water is always available in the toilet during menstrual cycles. Women mostly use the toilet or bathing room for changing sanitary cloth.
- **Disposal of Sanitary cloth:** In some areas, CHFs recommend a disposal practice (as described in FGDs). Women seemed to be vigilant about the safe disposal in some villages whereas in other villages pads were disposed of near homes and water bodies.

"We wrap the used pad in a newspaper and put it in a mud pot for 5 days and after the cycle is over, we burn the pot. The mud pot has small holes and is covered with a lid. We call it "Gagri". The CHF has asked us to do it. Earlier we used just to throw it somewhere far away or in the pond."

[FGD - clients, UP]



## Handwashing and Toilet cleaning practices

- Regular handwashing procedure is being followed in all the households. The COVID-19 pandemic has made people more aware of the importance of washing hands.
- Soaps like Dettol and Lifeboy are predominantly used in the majority of households. Some households also use cloth washing (Rin) soap.
- None of the clients used ash or soil for washing hands. Hand washing practices vary across socio-economic groups. Liquid handwash is a luxury used by economically sound households.

- Toilet cleaning is primarily done by women in the household across both states.
- Majority of the women shared cleaning the toilet every alternate day or at least twice a week. Harpic, acid, phenyl and detergents are mainly used as toilet disinfectants.
- Clients reported being aware of toilet cleaning hygienic practices like keeping a separate brush for cleaning the toilet, keeping the toilet dry and using a separate pair of slippers for the toilet. CHFs are playing a vital role in making people aware.

"We clean our toilet ourselves or our daughter-in-law does. No, the male members of the family do not clean the toilets. They go out to work so it becomes our job to take care of these things."

[FGD - clients, UP]

"In the training provided, we were taught that if we clean the toilet with salt and hot water, germs will die. I have been sharing this with the clients and this has proved to be very effective."

[IDI - CHF, Bihar]



## Recommendations



FGD with WATSAN loan clients in Aurangabad Bihar



## WATSAN planning

- Affordable quality models for toilet construction and/or repair: The loan amounts provided are well below the actual costs incurred. Whilst Cashpor rightly expects some investment by the client, and that the decision on sanitation options be made by the client, there is scope for developing affordable models for different scales of need, space available and with a recommended quality. This is something that could be within the remit of FINISH's role and would provide good material for interactions with and capacity building of CHFs and masons.
- **Emptying of pits:** waste disposal has not been included in the WATSAN approach, but information on what is required and likely costs can be included in the sanitation model, as a critical aspect that can affect toilet use over time.
- Access to water for sanitation: Access to water for sanitation use is a limiting factor for some households (particularly in UP) who collect water from a village handpump, or a pond or well. Access to water can be an additional product feature of the modelling for WATSAN.



- Refresher training: A single one-time training at the start of the programme needs to be reinforced through periodic refresher training and experience sharing, every 6 months or so. This was articulated in our interviews with different staff involved (including CHFs and masons). This would enable more proactive engagement with clients for appropriate toilet designs and systems.
- To address low toilet usage amongst old and young: Elders, differently abled and young children are less likely to use a toilet due since they are afraid of slipping and hurting themselves, though the alternative of going to the fields, particularly during the monsoon, is equally risky. This aspect can be discussed with CHFs and masons to come up with a practical solution.



We recommend the following to facilitate an independent evaluation:

- A clear protocol agreed between the implementing agency and the research agency, to establish recognition of an ethical research approach (respectful to clients, non-intrusive, the questionnaire is shared, privacy of data/information collected), along with non-interference by the implementing agency (no preparation of clients for the interview, no presence of staff in interviews/discussions).
- As part of the loan agreement with clients, the implementation team (MFI) may already specify that there will be a follow up check on the installation of the toilet. A potential survey to explore experience and use can also be specified – so that clients are aware that this may happen at some stage in the future.
- Branches selected for the survey can be established in advance of the field work and details of clients by location (village) shared with the research team for the selected branches.
- Selection of survey villages should not be shared in advance with the branch. Ideally, the final selection should be made by the research team following the branch level visit. If the clients are ready and waiting for a survey, since they have been informed by the MFI staff in advance, it is more than likely that the clients will have ensured that the toilet is clean and in working order and may have been encouraged by the implementation team (MFI) staff to report regular use.
- Project client details including the client's name, head of the family name, address including village name, panchayat name, block, district and state to be shared in advance with the research team. Field team will be most likely required to support initial introduction in a village. This way research team can contact the client with minimum involvement of the field team (MFI). 52

As the technical support partner, FINISH organised periodic trainings for Cashpor staff, CHFs and masons, as follows:

- 1 day training for selected branch staff Branch Managers (BMs) and Health and Education Service Managers (HESMs) and a half-day session for the Head Office and Senior Management, covering aspects of safely managed sanitation solutions, sanitation technologies, and SIB implementation.
- 2-day training for CHFs selected across 375 branches, covering demand generation, toilet usage, sanitation technologies, and Menstrual Health Management.
- 1 day '**Refresher trainings'** for masons and CHFs twice a year

**Cashpor** also conducted monthly training for CHFs and Centre Managers (CMs) at Centre level. These trainings were given by HESMs, covering aspects of demand generation, benefits of using toilets, negatives of open defecation, toilet designs, and health and hygiene.

"The training provided by FINISH was very useful. We also received a kit from the FINISH staff, which had booklets and charts which made it easier for us to explain things to the clients."

[IDI - HESM, Bihar]

"The training was given on blackboard through various illustrations. It was a one day and I learnt about three pit systems and gas outlet system in a detailed way" [IDI - Mason, UP]

-CRI

"I have received training from FINISH society two years ago on the benefits of toilets and dangers of open defecation. Going forward, I am keen to learn about more about new sanitation solutions and technologies, health and hygiene" [IDI - CHF, Bihar]



SIB has involved systematic monitoring by both the Cashpor team and FINISH.

- **Cashpor branch staff** monitor WATSAN loan utilisation after loan disbursement and toilet construction.
  - CMs and CHFs visit WATSAN clients after 25 days from the date of loan disbursement. If the construction is still in progress a revisit is made after 2 weeks.
  - BMs, Cluster Head Impact Business (CHIB) and HESMs randomly visit clients on a sample basis to monitor the loan use within 90 days.

"After the loan is sanctioned, the CHF visits the client two to three times to see if the construction or repair has begun. After toilet construction, CM visits the client every week and asks if everyone in the house is using the toilet. CHF checks on toilet usage usually whether the toilet is clean, water is available and in use." [IDI - HESM, UP]

- **FINISH** has provided feedback on the programme through:
  - Concurrent feedback Regular surveys of 5 WATSAN loan clients from a randomly selected branch followed by feedback to the Cashpor team the same day.
  - Periodic monitoring quarterly or six-monthly, of randomly selected branches. Questionnaire of WATSAN clients covering loan use, different funding sources, toilet use, retrofitting, handwashing, and health and hygiene. This was undertaken to validate programme results. Monitoring reports shared with Cashpor. (Examples of reports have not been shared with the evaluation team).



The sample size formula developed by Cochran (1963:75) has been used to calculate the sample size

Formula : Sample size for 
$$n = \frac{n_o}{1 + \frac{(n_o - 1)}{N}}$$
 Where  $n_o = \frac{Z^2 p (1 - p)}{e^2}$ 

- $n_o =$  sample size for infinite population = 385
- Z = z -score = 1.96
- p =expected proportion = 0.5
- e = margin of error = 0.05
- N = population size (total WATSAN loan clients) = 32,015 (UP 16,826 and Bihar 15,189)
- n = project population sample size = 381

Based on above formula, the minimum sample size across 2 states is 381, with 5% margin of error. A higher sample of 420 households in this study, reduces the margin of error.



## **Annex 4 Quantitative survey households**

The survey was done across 2 states, 4 regions and 8 branches. From each branch, 10-20 centres were covered with 3 to 4 centres constituting a village. One centre on average had 25 members including 3-10 WATSAN clients.

State and Regions	Branches	No of Centres	Average WATSAN clients per centre	HHs surveyed
Total	8	122	4	432
Bihar		65	3	213
Aurangahad	Rafiganj	10	5	49
Aurangabau	Navinagar	20	3	56
Muzaffaraur	Pear	18	3	59
Muzanarpur	Mahanth Maniyari	15	3	49
Uttar Pradesh		57	4	219
Mirzopur	Mirzamurad	17	3	56
Mirzapul	Kachawa	14	4	54
Chandauli	Kurauta	12	4	53
Chanudun	Chaubeypur	14	4	56



### **Annex 5 Qualitative Interviews**

- Focus Group Discussions (FGDs), key informant interviews (KIIs) and indepth Individual interviews (IDIs) were conducted across 4 branches, as shown in the table.
- Cashpor staff included 10 men and 6 women. CHFs are all women.
- Cashpor clients included WATSAN and non-WATSAN clients all women.
- Interviews with masons were conducted in 2 branches. In the other branches it was not possible since the time was the peak season for masonry work.

	Branches	IDIs – Masons	IDIs – CHFs	KIIs – Branch managers	KIIs – HESM	FGDs – clients
Total	4	2	4	4	4	4
Bihar		1	2	2	2	2
Aurangabad	Rafiganj	-	1	1	1	1
Muzaffarpur	Mahanth Maniyari	1	1	1	1	1
Uttar Pradesh		1	2	2	2	2
Mirzapur	Mirzamurad	-	1	1	1	1
Chandauli	Kurauta	1	1	1	1	1



## Annex 6 SIB Programme Stakeholders Interviewed at the Management Level

- Ms. Giriraj Singh, Head Health, Cashpor Micro Credit
- Mr. Abhishek Choudhari, Senior Manager FINISH Society
- Ms. Sneha, Programme Officer, FINISH Society

#### **SIB documents**

Cashpor Micro Credit, February 2019 – March 2022, Data on SIB WATSAN loan portfolio

Cashpor Micro Credit, February 2019 – March 2022, Data on SIB Programme coverage (Region, Branch, Centre)

FINISH, (2019), Brief on Sanitation Impact Bond (201909 Sanitation Impact Bond-2pager.pdf (finishmondial.org))

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FINISH Society, Format on HH survey

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#### Secondary documents

M-CRI

University of Florida, (2013), Sample Size estimation (2 Glenn-D.-Israel Determining-Sample-Size.pdf (gjimt.ac.in)) Ministry of Jal Shakti, Government of India, Swachh Bharat Mission – Gramin (Swachh Bharat Mission-Gramin (sbm.gov.in))

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