



USAID/Liberia Sanitation Market Assessment
Research Compendium
September 2021

Context of this Document

Context

- USAID/Liberia, with the guidance, and participation of the Government of Liberia, donor and non-profit community, and private sector, aims to **end Open Defecation (OD) in five counties** (i.e., Montserrado, Grand Bassa, Bong, Lofa, Nimba), and **move households to a basic sanitation facility** (improved, not shared)
 - Sixty five percent of the population that practice OD reside in these counties, with the highest number in Nimba and Bong
- With this objective, USAID/Liberia tasked Water, Sanitation, and Hygiene Partnerships and Learning for Sustainability (WASHPaLS), a five-year USAID-funded project, to undertake a **Sanitation Market Assessment (SMA)** in the five counties, with support from the National Water Sanitation and Hygiene (NWASH) Commission of Liberia
- Over the past eight months, WASHPaLS has collected and analyzed data from primary and secondary sources **to understand the drivers and barriers towards adoption of improved toilets** using market based approaches in the five target counties
- The assessment involved qualitative and quantitative interviews with households, actors in the sanitation value chain (e.g., masons, hardware stores, cement pre-fabricators, transporters, financiers), experts from the Government, funders, and the private sector

Acronyms and Terms

BSS	Basic Sanitation Service	PHA	Promotion de l'hygiène et de l'assainissement (intervention in Benin)
CLTS	Community-Led Total Sanitation	Durable materials	Materials that are more durable and can be used for longer periods of time; e.g., concrete, cement screed, iron sheets
CHOBA	Community Hygiene Output Based Aid (intervention in Cambodia)	Sanitation entrepreneur	Value chain actors that play some focal-point role by aggregating materials, services, and/or information on behalf of the customer
DIY	Do-It-Yourself	SanMark	Sanitation Marketing
EA	Enumeration Area	SMA	Sanitation Market Assessment
GoL	Government of Liberia	SMSU	Sanitation Marketing Scale Up (intervention in Cambodia)
HH	Household	STS	Sustainable Total Sanitation (intervention in Nigeria)
Interface	The surface (e.g., slab, pan, mud flooring, or seated technology) the user interacts with while using a toilet	Substructure	The underground components of a toilet (e.g., pit, septic tank)
LMIS	Liberia Malaria Indicator Survey	Superstructure	The walls, roof, and door components of a toilet
LDHS	Liberia Demographic and Health Survey	Non-durable materials	Materials that are less durable when exposed to elements and can only be used for a short period of time; e.g. grass, mud, wattle
MBS	Market-Based Sanitation	VC	Value Chain
NGO	Non-Governmental Organization	WASH	Water, Sanitation, and Hygiene
OD	Open Defecation	WASHPaLS	Water, Sanitation, and Hygiene Partnerships and Learning for Sustainability
ODF	Open Defecation Free	3Si	Supporting Sustainable Sanitation Improvements (intervention in India)

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Overview | Design of the Sanitation Market Assessment

The objective of the SMA is to understand the drivers and barriers towards the adoption of improved toilets in five target counties, through interviews with household customers, value chain actors, and key informants

		Interviewees		
		Household customers	Value chain actors	Key informants
Research tools and purpose	<p>Quantitative Profile Interviews (n = 3,608)</p> <ul style="list-style-type: none"> Understand sanitation context and HH profiles Select HHs for detailed interviews, and size the resulting HH segments 	<p>Qualitative interviews (n = 133)</p> <ul style="list-style-type: none"> Map the sanitation value chain through trace-backs² Understand business models, unit economics, and drivers and barriers Analyze the business environment and broader context 	<p>Qualitative interviews (n = 13)</p> <ul style="list-style-type: none"> Understand the sanitation landscape Analyze the business environment and broader context Explore key drivers and barriers 	
	<p>Quantitative Detailed Interviews¹ (n = 659)</p> <ul style="list-style-type: none"> Understand purchase process of HHs Segment HHs, and create detailed profiles 	<p>Quantitative interviews (n = 134)</p> <ul style="list-style-type: none"> Understand the actor profile, basic business model, and outlook towards sanitation, for key actors 	<p>Literature review (n = 24)</p> <ul style="list-style-type: none"> Study existing sector reviews/evaluations Identify government policies and strategy for sanitation Understand the design and impact of past interventions 	
	<p>Qualitative Interviews (n = 77)</p> <ul style="list-style-type: none"> Understand HH beliefs, attitudes, and rationale for purchase behavior 			



1. Conducted with a subset of households from Profile interviews. Overall, 3,685 unique HHs, 267 unique value chain actors, and 13 unique key informants were interviewed. [Refer to the appendix](#) for further details on the sampling plan and sampling frame.
2. A trace-back starts with a qualitative interview with a household that constructed an improved toilet in the past few years, followed by qualitative interviews with all the value chain actors who had provided materials or services towards the construction of that toilet, including upstream actors such as the supplier to the hardware store

Overview | Definition of Toilet Types

Our sample was guided by JMP definitions to classify toilet types; since the Liberia DHS program survey used a similar definition, it allowed us to better compare the two surveys, and understand the change in sanitation profile over time

JMP ladder for sanitation



Based on these definitions, in this document, we are **defining Basic Sanitation Service (BSS) as access to an improved toilet which is not shared with other households, where the pit is fully covered by a slab, and the area around the drop hole is made from durable and cleanable materials** such as cement.

These toilets may have onset or offset pits, and may have superstructures made of non-durable materials (e.g., mud, wattle) or durable materials (e.g., burnt bricks, cement).

Our definition of improved toilets differs marginally from the JMP definition as we are **not considering toilets with floors made of non-durable materials (e.g., mud, logs) as improved toilets**, since it was possible for such toilets to have gaps in the floor even in cases where respondents stated otherwise.

Source: WHO/UNICEF Joint Monitoring Program 2017

1. As per JMP definitions, improved sanitation facilities are those designed to hygienically separate excreta from human contact, and include: flush/pour flush to piped sewer system, septic tanks or pit latrines; VIPs, composting toilets or pit latrines with slabs. [Refer to the appendix](#) for detailed definitions.

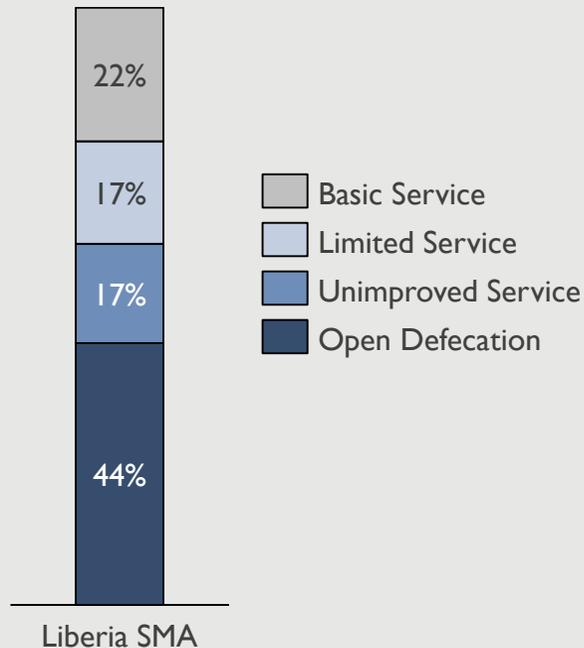
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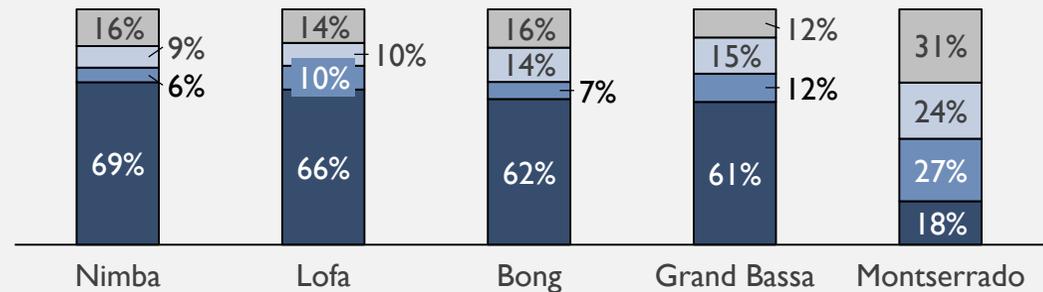
Market Context | Sanitation Profile

Our sample shows that 22% of households currently have access to basic sanitation service, while 44% practice OD; the highest proportion of households practicing OD is in Nimba and Lofa, as well as in the poorest quintile of the population

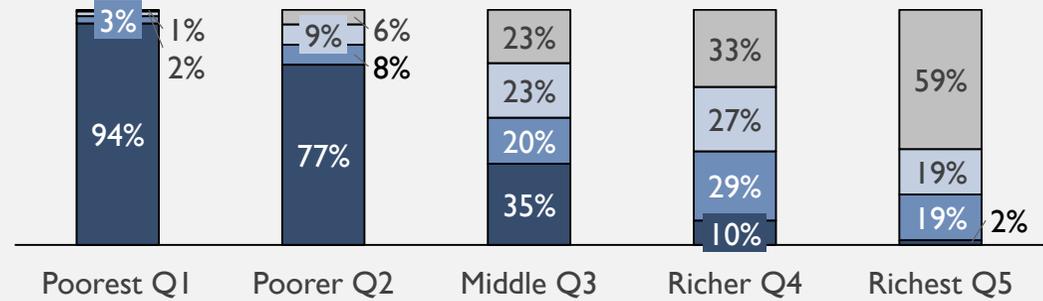
Sanitation Profile for Full Sample^{1,2}
(% of households)



Sanitation Profile by County^{1,2}



Sanitation Profile by Wealth Quintile^{1,2,3}

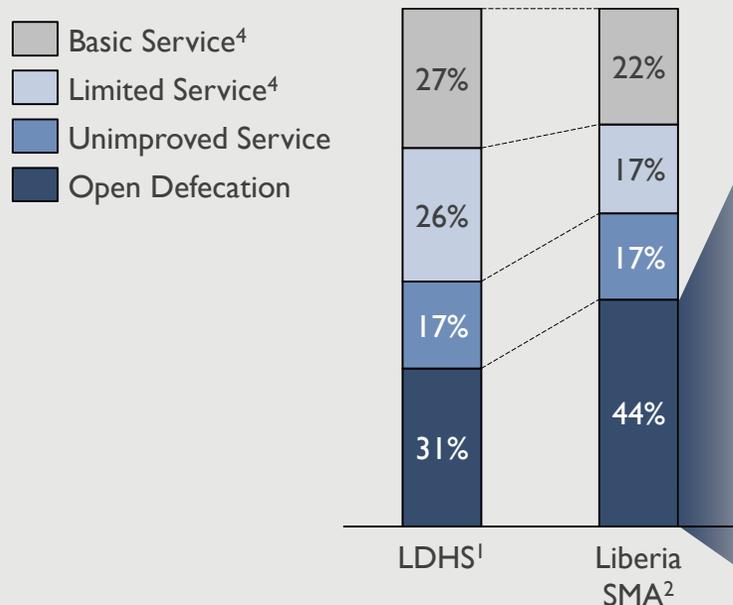


- Source:** Liberia SMA Household interviews (Profile n=3,608; Detailed n=659), FSG analysis
- Households were asked where most members regularly go for their defecation needs. Refer to [slide 6](#) for definitions of the various toilet types.
- Wealth index was created using 10 variables, which include asset ownership, source of water, cooking fuel etc. The Component Score Coefficients as per the LMIS 2016 were summed up for each HH to create a comparable set of quintiles.
- We have not presented rural and urban household profile data separately. This is because the most recent publicly available urban/rural classification in Liberia is from 2008, which may not accurately reflect the demographic changes. However, we have included key differences between urban and rural areas where the data shows a strong directional trend that is further supported by qualitative information. [Refer to the appendix](#) for further details on the sampling frame and the profile of respondents.

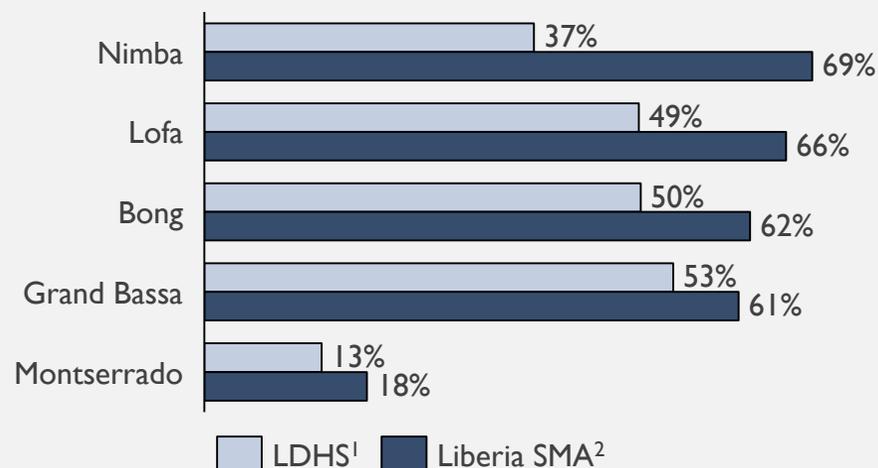
Market Context | Sanitation Profile | Increase in OD

Hard-earned progress towards ending OD is being lost; we found a 13 percentage point increase in OD rate when we compared LDHS data (2019)¹ with our sample (2021), which used the same sampling frame and similar methodology

Sanitation Profile³
(% of households)



Prevalence of OD by county
(% of households)



Reversion to OD was the highest in Nimba, followed by Lofa and Bong. Montserrado witnessed the lowest reversion to OD. Increase in OD was observed uniformly across rural and urban areas.

1. Liberia Demographic and Health Survey 2019-2020; data shown is only for Montserrado, Bong, Lofa, Nimba, Grand Bassa. Total ≠ 100% as numbers are rounded off.
2. Liberia SMA Household interviews (Profile n=3,608; Detailed n=659), FSG analysis. Liberia SMA used a similar methodology and the same sampling frame as the LDHS, however, the randomly selected enumeration areas for the Liberia SMA may differ from the ones selected for the LDHS
3. Proportion of improved toilets in our sample is 1.33% lower than LDHS as we are not considering toilets with floor made of non-durable materials as improved.
4. Refer to [slide 6](#) for definitions of the various toilet types.

Market Context | Sanitation Profile | Reasons for Increase in OD (1/5)

Breakdown of the toilets constructed under the CLTS initiative, and internal migration are key reasons for reversion to OD among others, such as reduction in donor funding towards shared toilet facilities, and economic slowdown



A Breakdown of toilets constructed under the CLTS initiative, as they were typically made using non-durable materials



B Internal migration from urban to rural, and between rural areas, has led to households losing access to toilet facilities they previously used



C Reduction in donor funding to rebuild or maintain community or public toilet facilities has led to reversion to OD in communities dependent on these facilities

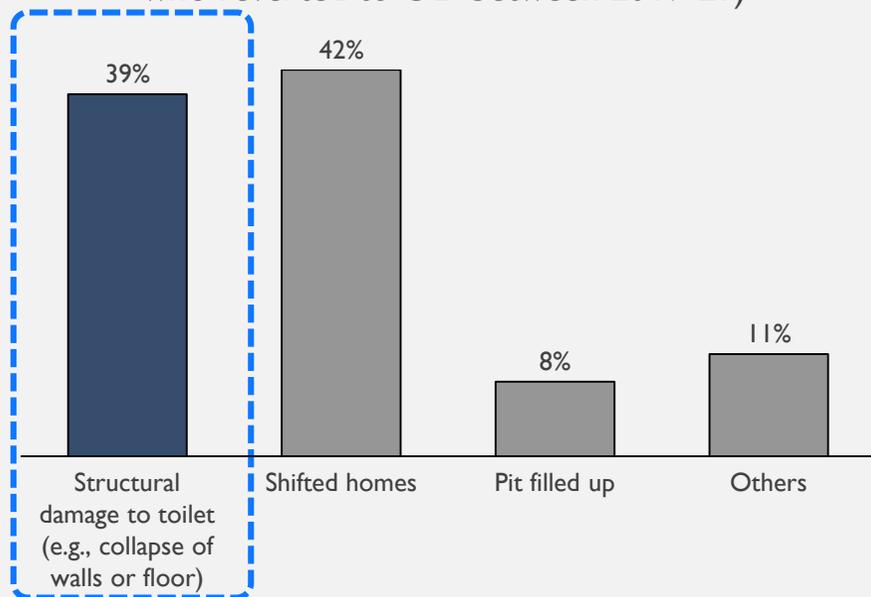


D Economic slowdown and high inflation have reduced households' ability to rebuild or replace filled or damaged toilets

Toilets constructed under the CLTS initiative have collapsed or gotten damaged over time, as they were built using poor quality non-durable materials

Why did you stop using the toilet?¹

(% of respondents in Montserrado and Grand Bassa who reverted to OD between 2019-21)



39% of households that have reverted to OD reported that they stopped using their toilet due to structural damage

Challenges with sustainability of toilets constructed under the CLTS initiative have been identified by the government, ...

Secondary research

According to the *Liberia Ending Open Defecation by 2025 Road Map*, there was a **slippage rate of over 43%** for communities that were **once certified as ODF**, primarily because of the **poor quality of non-durable materials used to construct toilets**.

...key WASH sector donors/implementers, ...

“CLTS helps trigger communities and encourages households to construct latrines, but sustainability remains a challenge. A comprehensive plan is needed to ensure behavior change. Toilets constructed using non-durable materials through CLTS are not sustainable; there is a risk of reversion to OD.”

- Senior Leader, WaterAid²

...and in other evaluations of the CLTS initiative

Secondary research

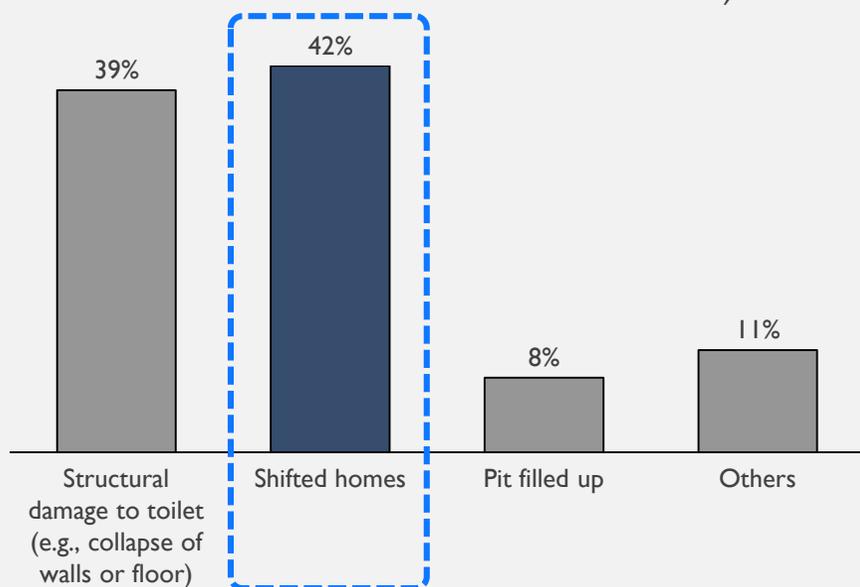
In An evaluation of the *Community Led-Total Sanitation Approach* by Frank Phillips from the Liberia CSO WASH Working Group, all the sampled communities **experienced challenges with the use of organic locally-sourced materials**, such as toilet collapse due to termites, or after heavy rains.

1. Liberia SMA Household interviews, FSG analysis. **Note:** Data presented is for households who reverted to OD in Montserrado and Grand Bassa (53% of OD households in the two counties) between 2019-21 (59% of households who reverted to OD). Question was not asked to full sample of respondents as we noticed a significant increase in OD rates after Phase 1 of data collection (Lofa, Bong, Nimba), and included the question for Phase 2 (Montserrado and Grand Bassa).
2. **Source:** Qualitative interviews with key informants

Internal migration, in search of jobs/income opportunities, has led to households losing access to toilet facilities they previously used, and resulted in reversion to OD

Why did you stop using the toilet?¹

(% of respondents in Montserrado and Grand Bassa who reverted to OD between 2019-21)



42% of households that have reverted to OD reported that they stopped using their toilet **because they shifted homes**

Internal migration has taken place between various rural areas...

Secondary research

According to *Strengthening Land Governance and Dispute Resolution Mechanisms*, a project document signed between the Government of Liberia and UN organizations in December 2019, in some provinces **35-40% of farmland has been allocated to corporations²**. As a result of this land allocation, **farmers have migrated to nearby counties to continue farming.³**

...and from urban to rural areas, leading to households losing access to toilet facilities they previously used

“Previously my family and I used a community toilet near our home in Monrovia, but now we have had to move back to our village as I lost my job last year, and there are no community toilets here.”

- Household practicing OD in Nimba

1. Liberia SMA Household interviews, FSG analysis. **Note:** Data presented is for households who reverted to OD in Montserrado and Grand Bassa (53% of OD households in the two counties) between 2019-21 (59% of households who reverted to OD). Question was not asked to full sample of respondents as we noticed a significant increase in OD rates after Phase 1 of data collection (Lofa, Bong, Nimba), and included the question for Phase 2 (Montserrado and Grand Bassa).
2. Govt. of Liberia, 2019, *Strengthening Land Governance and Dispute Resolution Mechanisms*, Pg 4;
3. Thembela Kepe, Nyanquoi Suah, 2021, *Land and Fragility of Peace in Postwar Liberia: Concessions and Conflicts in the Midst of Poverty*

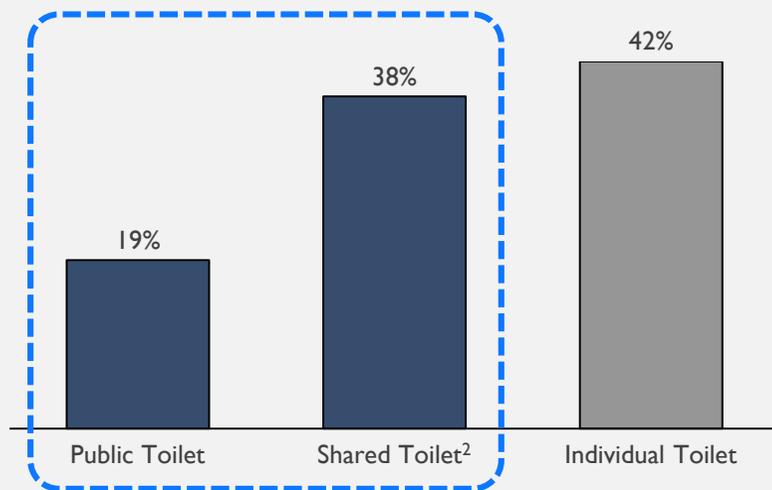
Market Context | Sanitation Profile | Reasons for Increase in OD (4/5)



Households had a high dependence on donor-funded shared or public toilets, however donor funding to rebuild/maintain these toilets has reduced, leading to reversion to OD in communities where these toilets have filled up or broken down

Type of toilet previously used?¹

(% of respondents in Montserrado and Grand Bassa who reverted to OD between 2019-21)



57% of households that reverted to OD previously used a Shared² or Public toilet. **45%** of these users reported that they stopped using the toilet due to structural damage or the pit filling up.

Shared or public toilets are commonly constructed by NGOs/donors...

Secondary research

According to the *PSI Liberia Sanitation Business Models* report (2014), **NGOs have commonly constructed public toilet blocks and shared community toilets.** This eliminates the stake communities have in the success of each facility, and often leads to management/oversight issues and abandonment.

...that invested a significant amount in the WASH sector until 2017...

Secondary research

According to the *Liberia Ending Open Defecation by 2025 Road Map*, **donor expenditure was 8 times more than what GoL spent on the WASH Sector** between 2014-17.

...but have scaled back their funding in the past couple of years

Secondary research

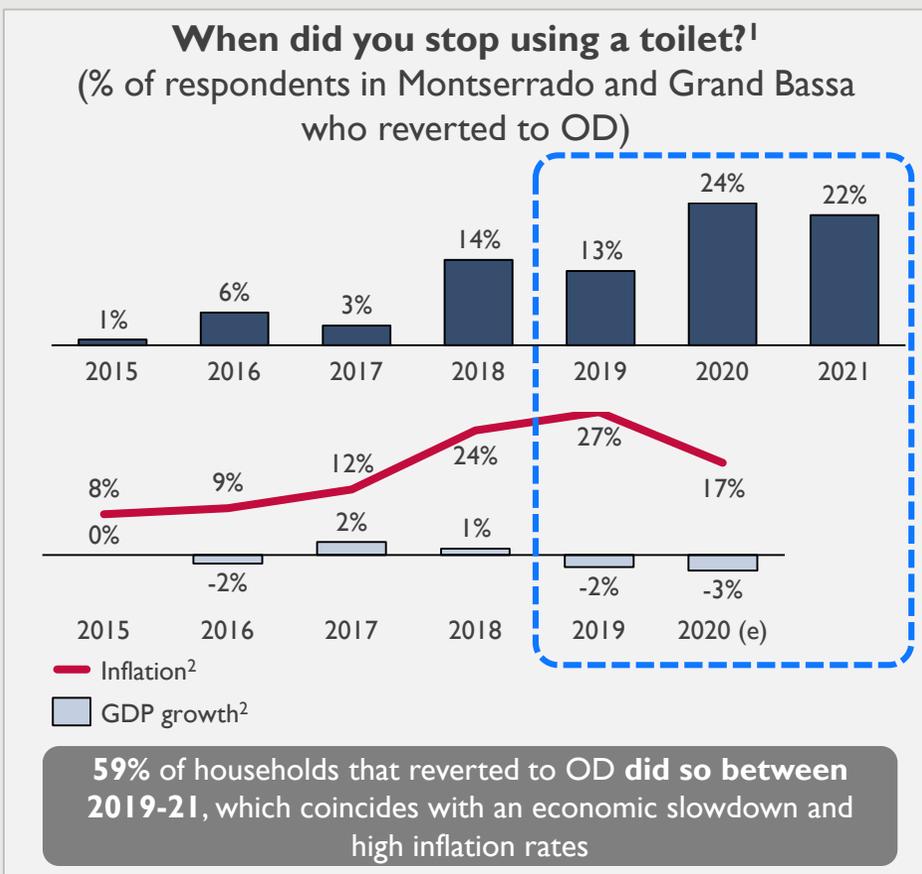
WASH funding from donors has reduced since 2019, e.g. Oxfam's funding has reduced since 2020³, USAID-funded PACS program concluded in 2019, **and no new projects have been announced for building toilet facilities since 2019⁴.**

1. Liberia SMA Household interviews, FSG analysis. **Note:** Data presented is for households who reverted to OD in Montserrado and Grand Bassa (53% of OD households in the two counties) between 2019-21 (59% of households who reverted to OD). Question was not asked to full sample of respondents as we noticed a significant increase in OD rates after Phase 1 of data collection (Lofa, Bong, Nimba), and included the question for Phase 2 (Montserrado and Grand Bassa). 2. For this question, households used the term 'Shared toilet' interchangeably to refer to public toilets, as well as privately-owned shared toilets. Due to limitations in data collection, we cannot estimate the proportion of public toilets and privately-owned shared toilets in this category; 3. *ABC news, 2020, Oxfam closes 18 offices worldwide*; 4. *Liberia Projects Dashboard*

Market Context | Sanitation Profile | Reasons for Increase in OD (5/5)

D

Economic slowdown and high inflation over the last two years have directly impacted households' ability to rebuild or replace filled or damaged toilets, resulting in reversion to OD



Economic slowdown and high inflation have eroded purchasing power...

Secondary research

A World Bank economic update in June 2020 stated that **Liberia's per capita GDP fell by 14% between 2013-19, and inflation reached 27%, eroding consumer purchasing power.**³

...especially for those that experience vulnerable employment...

Secondary research

77% of employed individuals in Liberia experience vulnerable employment⁴, i.e., they are either own account workers or contributing family members. These individuals are less able to generate adequate savings and suffered significant **reductions in purchasing power** after economic shocks.

...leaving households unable to construct an individual toilet

"I depend on a daily wage to meet my household expenses. Since I lost my job, there is no way I can afford to construct another toilet."

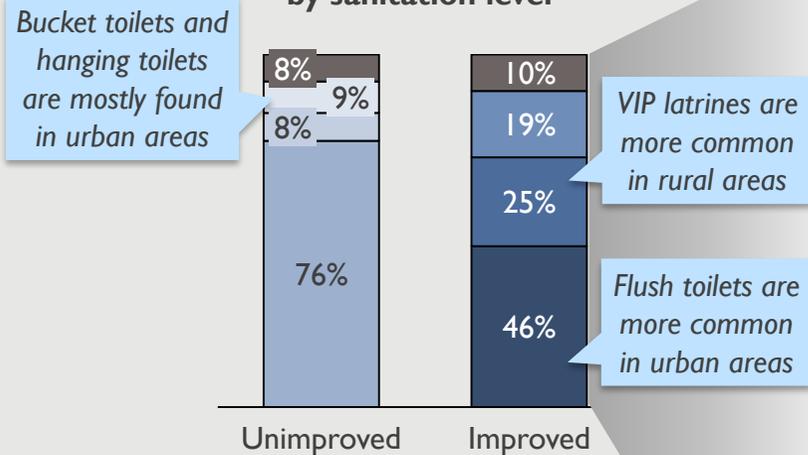
- Household practicing OD in Montserrado

1. Liberia SMA Household interviews, FSG analysis. **Note:** Data presented is for households who reverted to OD in Montserrado and Grand Bassa (53% of OD households in the two counties). Question was not asked to full sample of respondents as we noticed a significant increase in OD rates after Phase I of data collection (Lofa, Bong, Nimba), and included the question for Phase 2 (Montserrado and Grand Bassa). Total is <100% as 17% households stopped using a toilet prior to 2015; 2. **Data source:** World Bank; 3. **Data Source:** World Bank 2020, Liberia Economic Update: The COVID-19 Crisis in Liberia, pg 18; 4. **Data source:** World Bank

Market Context | Product

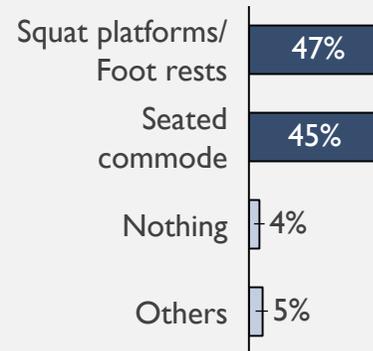
A significant proportion of households with improved toilets chose to build a pour flush/flush¹ to an offset pit, with a squat platform or a seated commode

% Types of toilets used by HHs, by sanitation level²

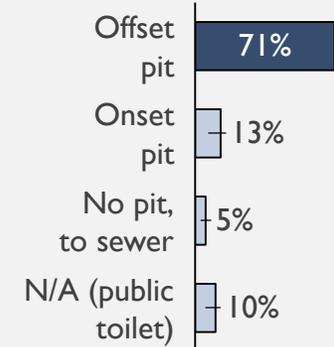


- Public toilet
- Bucket toilet or hanging toilet
- Pour flush/flush to environment or other
- Pit latrine without slab
- Pit latrine with slab
- Ventilated improved pit (VIP) latrine
- Pour flush/flush to piped sewer or septic tank or pit

Add-ons to the toilet floor²



Type of substructure²



1. Pour flush/flush toilets require a water trap, which is typically located underground for toilets that do not have a commode with an inbuilt water trap. As a result, we relied on verbal confirmation from interviewees, based on an image of a water trap that was shown to them, to identify the type of toilet used by the household; 2. **Source:** HH Profile interviews (n=3,608), FSG analysis. Totals \neq 100% as numbers are rounded off; 3. **Image Source:** Captured with permission during HH interviews; 4. A list of the key components and features of prevalent improved toilets is [provided in the appendix](#);

Market Context | The Case for Markets

By increasing access to affordable and desirable products for households, and addressing other market barriers, there is potential to unlock a market of LRD 20 Bn (US\$ 100Mn) in the five target counties



To unlock the market, we first need to understand the drivers and barriers that are impacting the market. We have presented the drivers and barriers to the adoption of improved toilets in the next section, followed by the key recommendations for addressing these barriers.

Note: Assuming a market of ~500,000 households (in the five target counties) that do not currently have basic sanitation service, but are able to pay for an improved toilet on their own accord, or with customer financing in the form of a soft loan or partial subsidy. In this document, an improved toilet, costing ~LRD 40,000 (US\$ 200) has an unlined offset pit, a pre-fabricated cement commode on a cemented floor, and walls made of mud bricks laid with mud. This toilet uses designs and components that are currently available in the market, and does not meet all customer preferences. Thus, there is a need to innovate on product design and construction processes to introduce products that are affordable, yet desirable for households. [Refer to the appendix](#) for further details.

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Summary of Key Findings



For Customers

- 1 Awareness-building programs (e.g., CLTS) have reaped sustained benefits as **most households are aware of the health and non-health benefits of toilets** (e.g., safety, privacy), however certain households have unfavorable beliefs related to toilets
- 2 **Lack of affordability is a key challenge** for households, as only 43% can afford to purchase even an improved toilet which partially meets their preferences, while the others may require soft loans or subsidies
- 3 While there is **high access to financiers** (e.g., savings/loan groups), and several households have taken a loan in the past, **very few have taken a loan for sanitation**



For Products

- 4 In fact, **more affordable product options** such as plastic pans and cement commodes do **exist in the market**, but are not commonly found in hardware stores (especially in rural areas); cement commodes are also not made by most cement pre-fabricators due to a **lack of demand**



For Services

- 5 Furthermore, there are no sanitation entrepreneurs in the market despite high unit margins, possibly because **sanitation is unviable as a stand-alone business** for many value chain actors; this results in a **cumbersome Do-It-Yourself (DIY) delivery model** for households, who have to interact with 6 to 9 value chain actors to construct an improved toilet



In the Business Environment

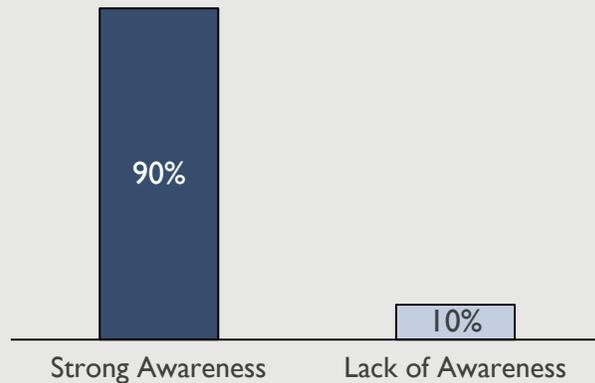
- 6 Rural households, and households located further away from Monrovia also face issues with limited local access, and increased transportation costs for materials such as cement, because of **poorly penetrated associated supply chains**

Key Findings | Customer | Awareness



Awareness-building programs (e.g., CLTS) have reaped sustained benefits as most HHs are aware of the health and non-health benefits of toilets (e.g., safety, privacy), however certain HHs have unfavorable beliefs related to toilets

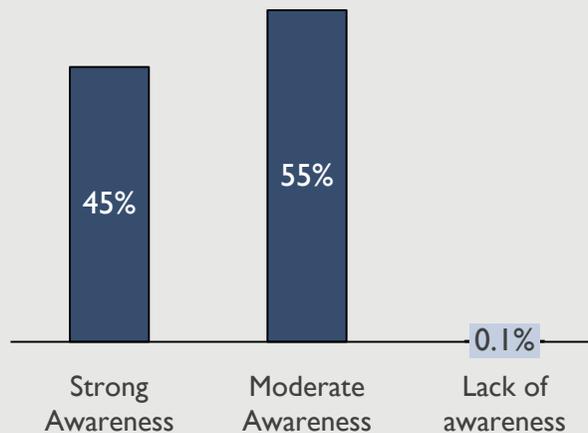
Awareness of health and hygiene benefits from toilets (%)¹



HH using an unimproved toilet in Grand Bassa²

“There are many benefits of having your own toilet. It stops you and your children from getting diarrhea, because the flies will not bring shit from the bush and make you sick.”

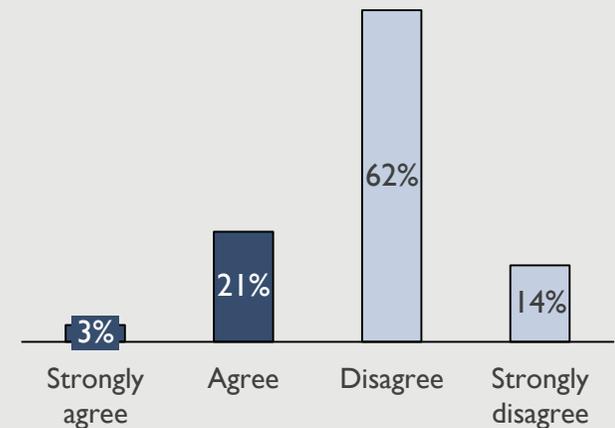
Awareness of privacy, convenience, safety benefits from toilets (%)^{1,3}



HH using an unimproved toilet in Nimba²

“Having your own toilet will give you respect, keep you safe from contracting illnesses, and give you privacy.”

Belief that it is taboo to live near a toilet (%)¹



HH with limited sanitation service in Montserrat²

“My feces and I cannot sleep in the same house.”

Key findings | Customer | Affordability

An improved toilet which only partially meets customer preferences¹ may cost up to ~LRD 40,000, and is affordable for only 43% of households

In fact, a toilet with features that most households consider ideal (e.g., ceramic commode, cement walls) costs LRD 120,000, and may only be affordable with a soft loan for 29% of households

Improved Toilet ~LRD 40,000 (US\$ 200)²



Toilet with concrete floor and a cement commode with an inbuilt water trap; walls of mud bricks laid with mud and not plastered; unlined offset pit

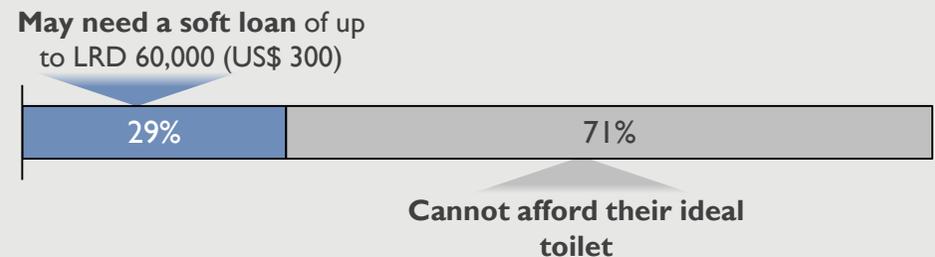
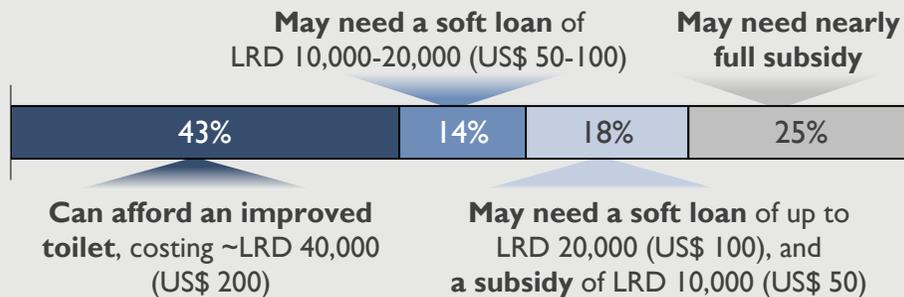
Ideal toilet ~LRD 120,000 (US\$ 600)²



Toilet with concrete **tiled** floor and a **ceramic commode** with an inbuilt water trap; walls of mud bricks **laid and plastered with cement**; **lined** offset **septic tank with ventilation pipe**

Distribution of HHs without basic sanitation service by ability to pay for an improved toilet (%)^{3,4}

Distribution of HHs without basic sanitation service by ability to pay for the “ideal toilet” (%)^{3,4}



1. Among the options available, this toilet only partially meets HH preferences by providing a seated interface, i.e., a pre-fabricated cement commode; 2. **Source:** Qualitative interviews, FSG analysis; 3. **Source:** HH interviews (Profile n=3,608; Detailed n=659), FSG analysis; 4. Assumption: Households cannot pay more than 50% of their total asset value towards toilet construction. The rest needs to be covered by a soft loan, and/or a subsidy. 5. **Image Source:** Captured with permission during HH interviews.

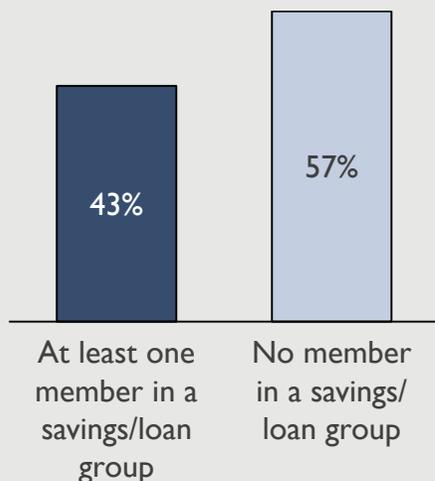
Key Findings | Customer | Liquidity (1/2)



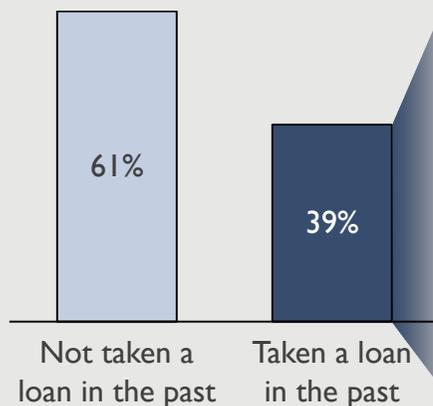
43% of HHs without BSS are members of a savings/loan group...

... and nearly 40% have taken a loan in the past, primarily from savings/loan groups

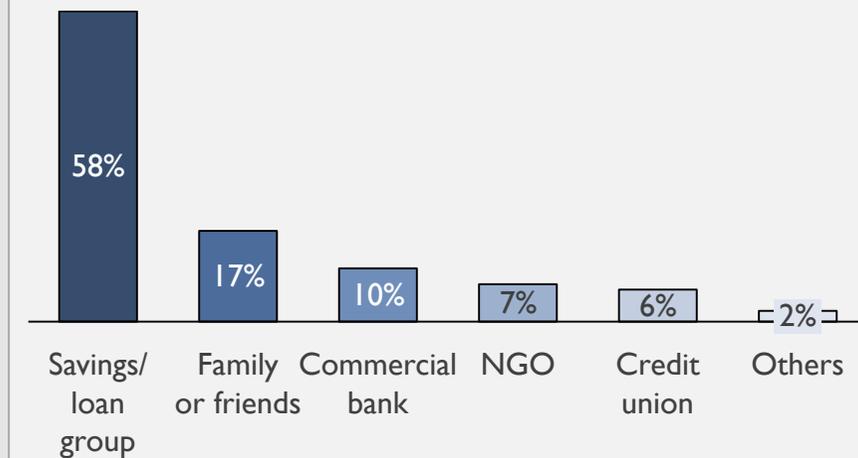
% of HHs that have membership to a savings/loan group¹



% of HHs without BSS that have taken a loan in the past²



% of HHs that have taken a loan in the past, by loan source¹



“My wife was already a member of a VSLA, so I took a loan of LRD 20,000 through her to build my toilet”

– HH in Lofa²

“There are many other SuSu clubs and loan clubs in Voinjama city. But only two of them are reputable, and can be considered as our competitors.”

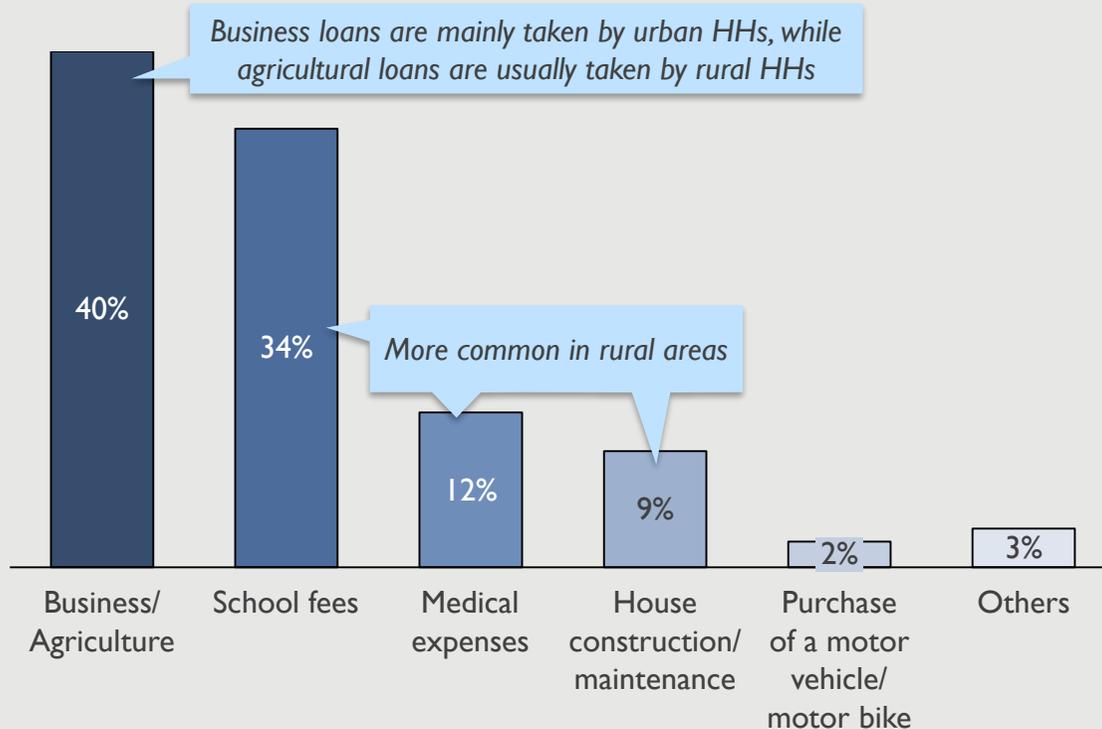
– Chairman of a SUSU club in Lofa²

1. Source: HH Profile interviews (n=3,608), FSG analysis; Source: Qualitative interviews, FSG analysis

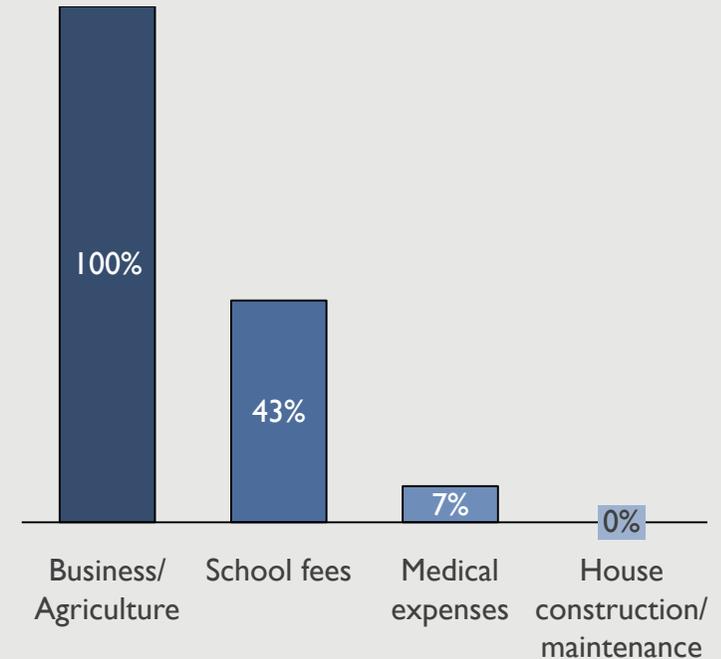
Key Findings | Customer | Liquidity (2/2)

However, most households that have taken a loan in the past took it for business or emergency consumption expenses (e.g., school fees, medical expenses); very few took a loan for house construction/maintenance (includes sanitation loans)

% of households that have taken a loan in the past, by the reason for taking the loan¹



% of savings and loan groups interviewed, by the reasons for which their customers take loans^{2,3}



1. **Source:** HH Profile interviews (n=3,608), FSG analysis

2. **Source:** Quantitative interviews with savings and loan groups (n=28), FSG analysis

3. Only including the 54% of savings and loan groups in our sample that ask their customers why they have applied for a loan

Key Findings | Products | Unavailability of Cheaper Products (1/2)

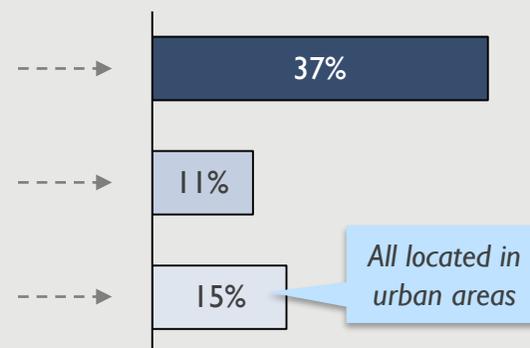
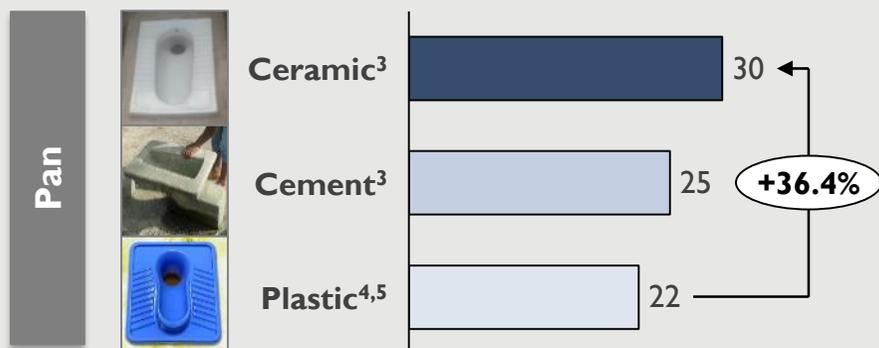
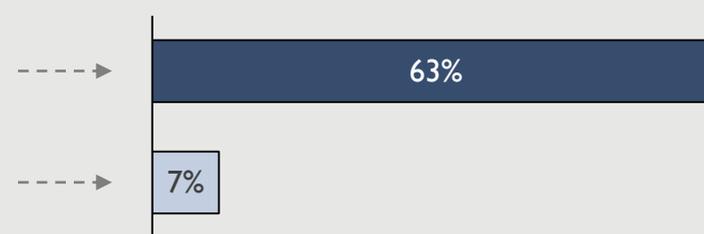
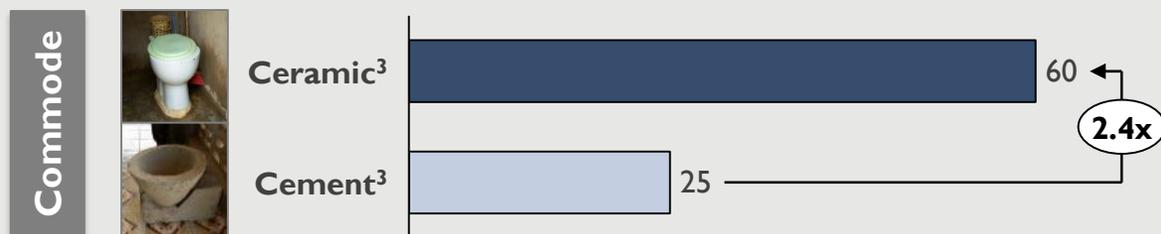


Ceramic commodes are ~2.4x as expensive as cement commodes, while ceramic pans are ~36% more expensive than plastic pans¹

However, most hardware stores do not sell plastic pans or cement commodes

Avg. price of commodes and toilet pans, by material used (US\$)^{1,2}

% of hardware stores that sell commodes or toilet pans, by material used⁶

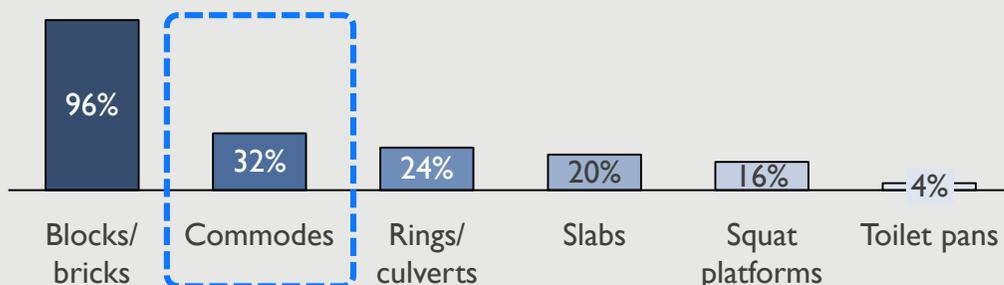


- Source:** Qualitative interviews, FSG analysis
- Average retail price of products in Liberia. It may be possible for the same, or similar products to retail at even lower prices after addressing some of the market barriers. For example, a plastic pan manufactured locally costs ~US\$ 4.40 in [Uganda](#)
- Image Source:** Captured with permission during HH interviews
- Price of a plastic pan imported from Conakry, Guinea
- Image Source:** [Silafrica](#)
- Source:** Quantitative interviews with hardware stores (n=27), FSG analysis

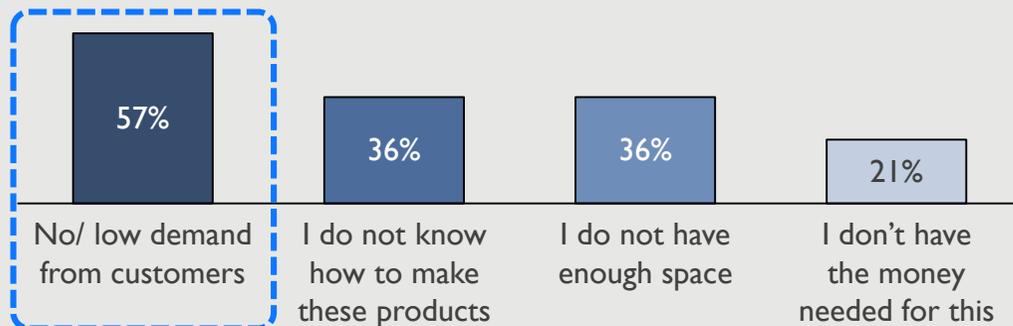


Cement commodes are also not made by most cement pre-fabricators due to a lack of demand, which could be addressed through promotional activities and awareness campaigns

% of cement pre-fabricators that make and sell cement products used in the building of toilets, by product¹



% of cement pre-fabricators, by the reasons why they do not sell cement products used in the building of toilets¹



Secondary research

The PACS project² proposed that promotional activity, such as handing out pamphlets in the market and social media campaigns, could help connect WASH Entrepreneurs with a larger consumer base that has more disposable income, and increase demand for the PACS cement commode in urban/peri-urban markets.

“Demand for pre-fabricated cement commodes has decreased because people are not used to the product, and think that the standing water inside the water trap is not good for health. The CLTS and NGO folks should carry out awareness campaigns to encourage people to use these products.”

– Cement pre-fabricator trained by an NGO, in Bong²

“I only sell about 3 cement commodes per month, because not many people in the community are aware of the product. I am currently taking up other jobs, because business is slow.”

– Cement pre-fabricator trained by an NGO, in Nimba²

Source: Qualitative interviews, FSG analysis

1. Source: Quantitative interviews with cement pre-fabricators (n=25), FSG analysis

2. The Partnership for Advancing Community-Based Services (PACS) was a community WASH activity partially implemented by Population Services International (PSI)

Key Findings | Services | Lack of Sanitation Entrepreneurs (1/2)

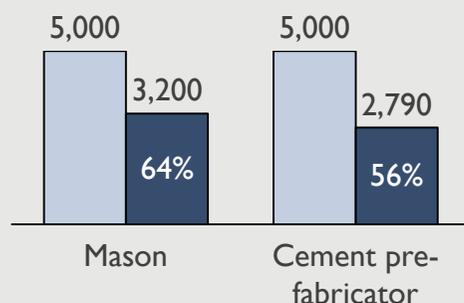


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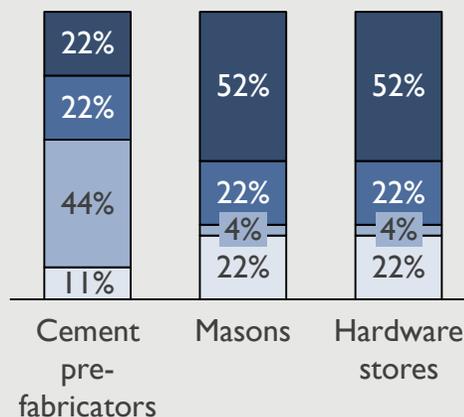
Furthermore, there are no sanitation entrepreneurs in the market despite high unit margins, possibly because sanitation is unviable as a stand-alone business for many VC actors due to monsoon-driven seasonality in income, among other factors

Unit gross margin earned by value chain actors (LRD)^{1,4}

■ Cost borne by HH customer
■ Unit margin earned by VC actor



% of VC actors, by actor type and income sources^{2,3}



■ Only my current VC role
■ Primarily my current VC role
■ Other construction related work
■ Non-construction related work

% of VC actors whose business does poorly from June to Sept, by actor type^{2,6}



“In the rainy season we do not sell mud bricks, since there is no way to sun dry them.”

– Mud bricks seller in Lofa¹

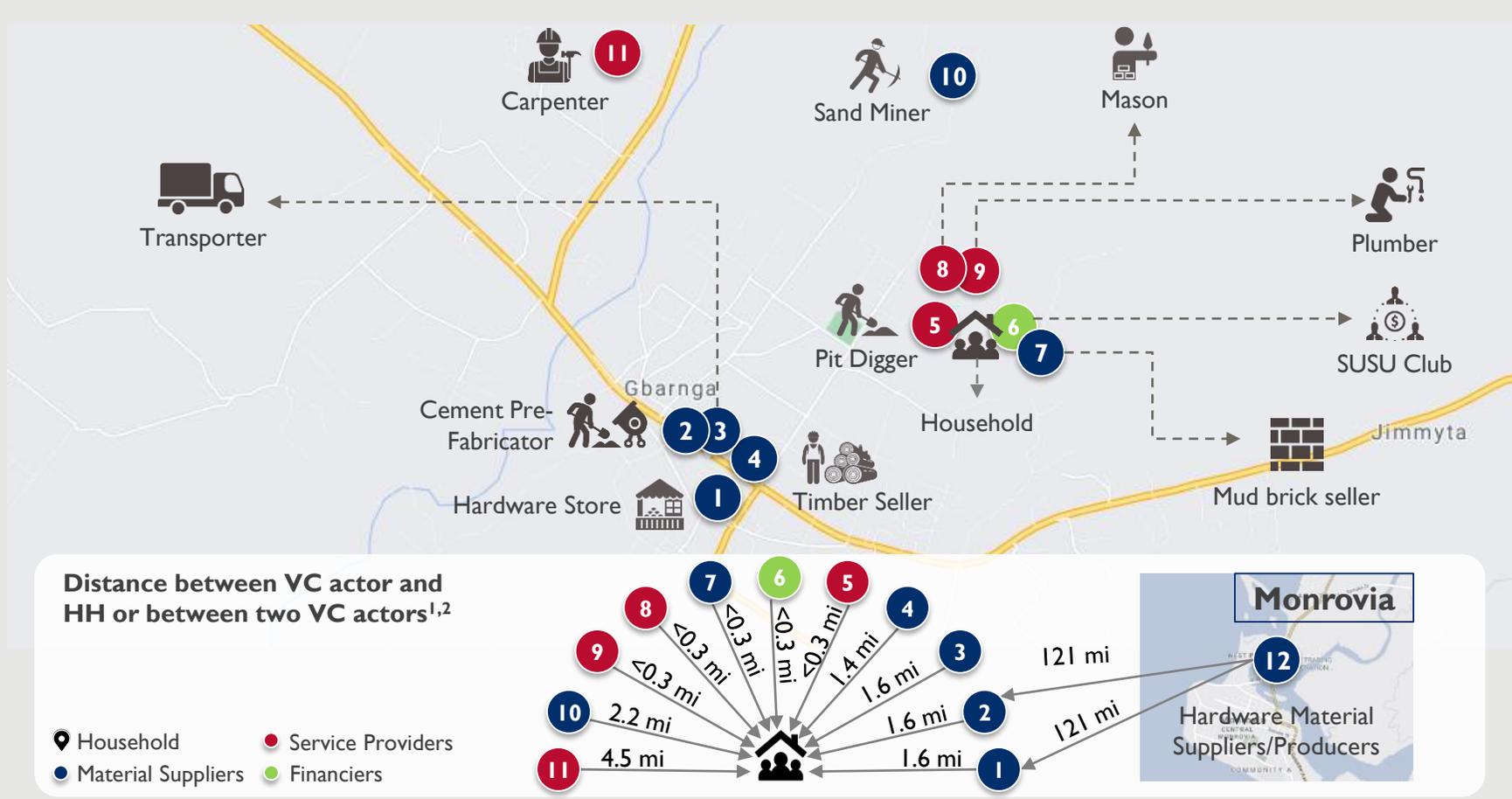
Product/service	
Building a mid-end improved toilet ⁵	Pre-fabricated cement commode

1. Source: Qualitative interviews, FSG analysis; 2. Source: Quantitative interviews with masons (n=27), hardware stores (n=27) and cement pre-fabricators (n=25), FSG analysis; 3. Combining data from two questions – ‘Apart from [your current VC role], do you earn money in any other way?’ and ‘How do you earn most of your money?’; 4. Other actors such as carpenters, plumbers and sand miners also have high unit margins. Refer to the appendix for further details; 5. A mid-end improved toilet refers to a single compartment improved pour flush latrine that has a ceramic commode with an inbuilt water trap, brick walls laid with cement, a wooden door, a zinc roof, and an unlined ventilated offset pit covered with a concrete slab. Refer to the appendix for further details; 6. June, July, August and September are the months with the heaviest rainfall in Liberia. Refer to the appendix for further details; 7. Detailed profiles of key actors in the sanitation value chain have been provided in the appendix

Key Findings | Services | Lack of Sanitation Entrepreneurs (2/2)



This results in a cumbersome Do-It-Yourself (DIY) delivery model for households, who have to interact with 6 to 9 VC actors to source the materials and services required to build a toilet; in some cases, they may interact with up to 11 actors



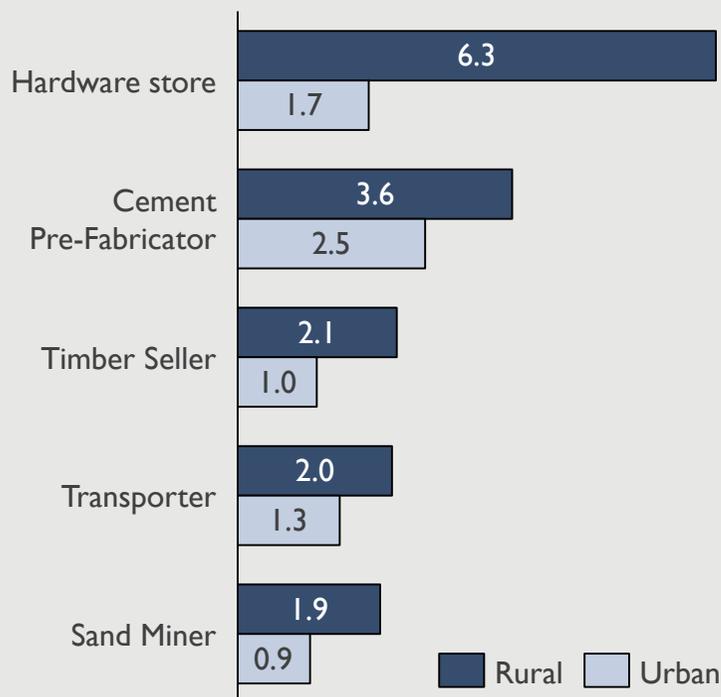
Source: Trace-back for an urban household in Bong county, FSG analysis

- Distances have been estimated based on the shortest distance suggested by Google Maps. Actual distance traveled may vary, if alternate routes are used
- The HH sourced aggregate on their own, and did not buy it from an aggregate seller; they also purchased cement from a hardware store and not a cement wholesaler
- A consolidated view of the distribution of value chain actors in urban and rural contexts for each of the five target counties has been provided in the appendix

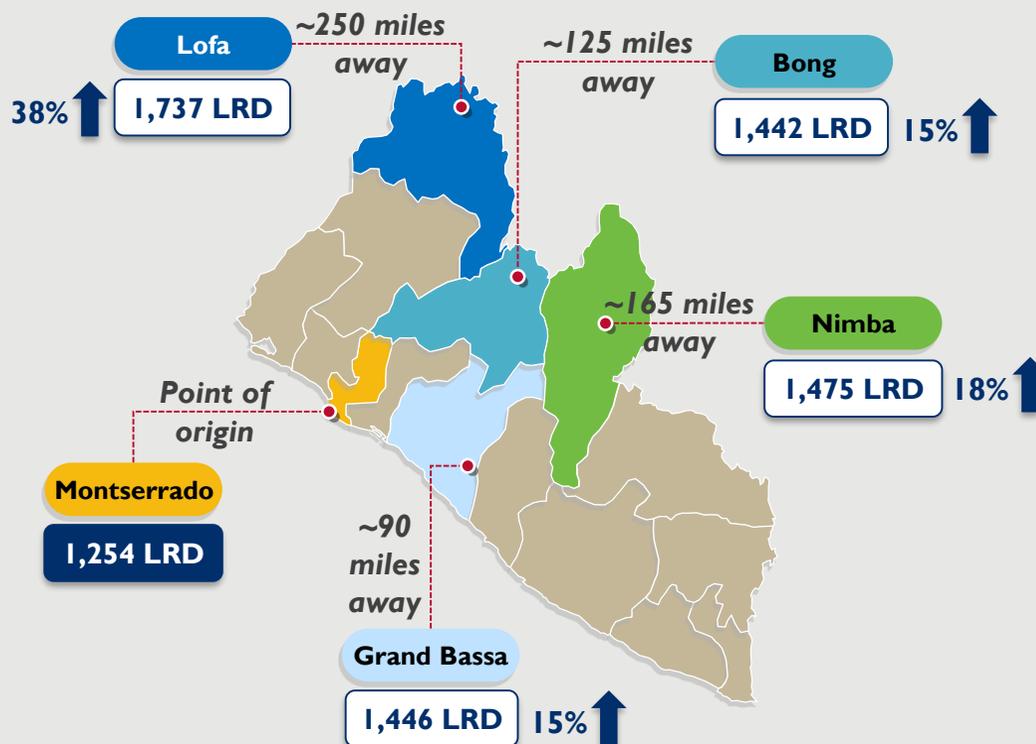


Poorly penetrated associated supply chains also lead to limited local access and increased transportation costs for materials such as cement, particularly for rural households and those that are further from Monrovia

Average distance travelled in miles by some HHs to buy materials from various VC actors^{1,2}



Average selling price in LRD of a 50 kg bag of Cemenco cement (42.5R) in hardware stores, by county³



- Source:** Qualitative interviews, FSG analysis based on 10 VC trace backs, with distances by road calculated using GPS locations on Google Maps
- Select actors (e.g., masons and carpenters) have not been included as their absolute distances from HHs were less than 1 mile and/or there were too few data points
- Source:** Quantitative interviews with hardware stores (n=27), FSG analysis – Question: What is the price (in LRD) today for a 50 kg bag of Cemenco cement (42.5R)?

Key Findings | Summary of the Drivers and Barriers to the Adoption of Improved Toilets



These drivers and barriers, however, do not affect all households equally, creating a need to segment the population without access to basic sanitation service. This customer segmentation, along with the detailed barriers and drivers, is provided in the appendix

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- Overview of the Liberia Sanitation Market Assessment (SMA)
- Market Context
- Key Findings
- **Recommendations**
- Appendix

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Summary of Key Recommendations

Based on the findings from the SMA, we have identified 5 key recommendations for unlocking the market and addressing the barriers to adoption of improved toilets

KEY FINDINGS

- 1 Awareness-building programs (e.g., CLTS) have reaped sustained benefits as **most households are aware of the health and non-health benefits of toilets** (e.g., safety, privacy), however certain households have unfavorable beliefs related to toilets
- 2 **Lack of affordability is a key challenge** for households, as only 43% can afford to purchase even an improved toilet which partially meets their preferences, while the others may require soft loans or subsidies
- 3 While there is **high access to financiers** (e.g., savings/loan groups), and several households have taken a loan in the past, **very few have taken a loan for sanitation**
- 4 **More affordable product options** such as plastic pans and cement commodes do **exist in the market**, but are not commonly found in hardware stores (especially in rural areas); cement commodes are also not made by most cement pre-fabricators due to a **lack of demand**
- 5 Furthermore, there are no sanitation entrepreneurs in the market despite high unit margins, possibly because **sanitation is unviable as a stand-alone business** for many value chain actors; this results in a **cumbersome Do-It-Yourself (DIY) delivery model** for households, who have to interact with 6 to 9 value chain actors to construct an improved toilet
- 6 Rural households and households located further away from Monrovia also face issues with limited local access, and increased transportation costs for materials such as cement, because of **poorly penetrated associated supply chains**

KEY RECOMMENDATIONS

- a **Address unfavorable beliefs, and maintain the high awareness of benefits of toilets**, through CLTS and social marketing campaigns
- b **Provide customer finance** in the form of soft loans for sanitation to overcome the liquidity barrier, and targeted, market compatible subsidies to enhance affordability for customers
- c **Innovate on and promote affordable, context-appropriate and desirable toilet products**, by focusing on product development, product reengineering, and demand activation
- d **Invest in enhancing the availability and viability of sanitation enterprises** through provision of enterprise finance (e.g., seed capital), training local entrepreneurs, and introducing new delivery models
- e **Shape market rules to create favorable regulations/policies** (e.g., tax rebates for entrepreneurs) that encourage private participation in sanitation markets, and in the associated service or product ecosystem

Illustrative Initiatives Implemented in Similar Contexts

We have collated examples of a few sanitation programs implemented in similar contexts, as thought starters to help design potential interventions

a

Address unfavorable beliefs, and maintain the high awareness of benefits of toilets

- Conduct CLTS to address unfavorable beliefs, by leveraging health-extension workers, teachers (e.g., Ethiopia), NGOs, and natural leaders (e.g., Ghana)
- Build awareness of the specific benefits of improved toilets through broader behavior change campaigns (e.g., UNICEF Community Approaches to Total Sanitation or CATS)

b

Provide customer finance, in the form of soft loans, and targeted, market-compatible subsidies

- Provide financiers with default guarantees and soft capital as an incentive to give out sanitation loans (e.g., 3Si, Bihar, India)
- Provide means-tested targeted subsidies to customers (e.g., CHOBA, Cambodia)

c

Fund innovation and dissemination of affordable, desirable, and context-appropriate toilet products

- Incentivize the manufacture and sale of affordable plastic sanitation products (e.g., Uganda Sanitation for Health Activity)
- Fund product reengineering to reduce input materials, or incorporate lower-cost alternatives while maintaining durability (e.g., development of *SanPlat* in Mozambique)
- Deploy sales agents to activate demand (e.g., SMSU and Hands-off SanMark, Cambodia)

d

Invest in enhancing the availability and viability of sanitation enterprises

- Identify and train suitable focal point enterprises (e.g., USHA, Uganda)
- Provide subsidized loans to financiers, to incentivize them to provide business loans to sanitation enterprises at low interest rates (e.g., 3Si, Bihar, India)
- Provide free or subsidized molds to entrepreneurs for manufacturing *SanPlats* (e.g., PHA, Benin and STS, Nigeria)

e

Shape market rules to create favorable policies for private actors in sanitation and associated services/products

- Reduce import tariffs on affordable plastic sanitation products (e.g., USAID Transform WASH, Ethiopia)
- Prohibit the lease of houses without toilets (e.g., Act 462, Ghana)
- Strengthen enforcement of the Public Health Law

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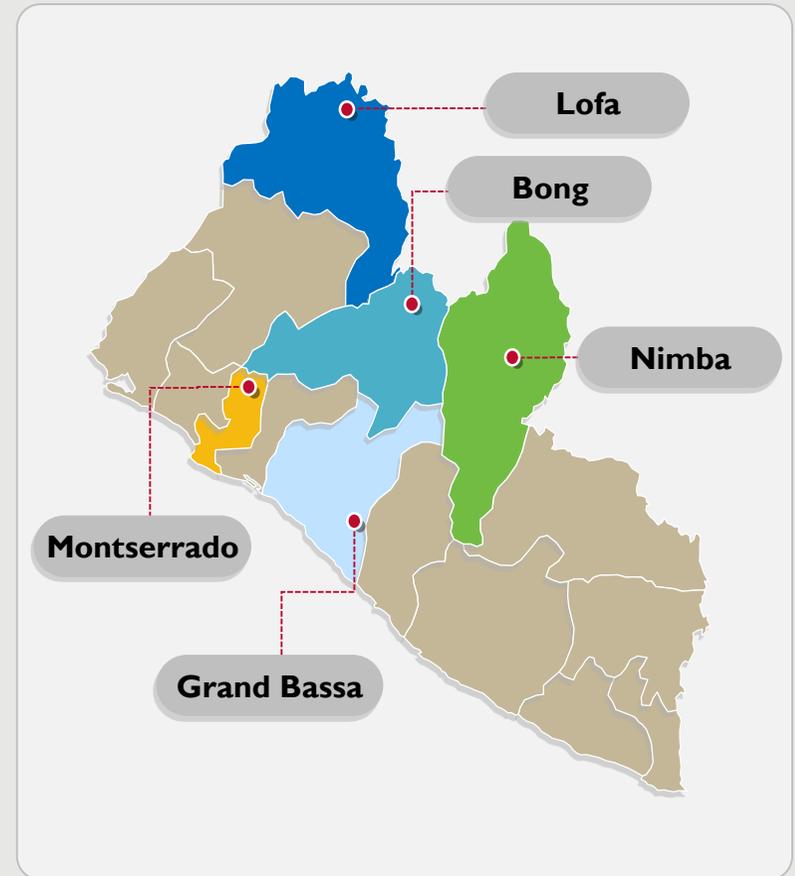
- **Overview of the Liberia SMA**
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- Actor Maps
- Toilet Costing
- Barriers and Drivers towards MBS
- Customer Segmentation
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Overview | Sampling Plan

Quantitative research was conducted in 120 Enumeration Areas across the five counties, and HHs were selected using a two-stage stratified sampling approach; VC trace-backs³ were initiated in EAs not selected for the quantitative research

- The **sampling frame** for selecting the HHs to interview is based on the **2008 National Population and Housing Census (NPHC)**,¹ conducted by the Liberia Institute of Statistics and Geo-Information Services (LISGIS)
 - This sampling frame is used by both the 2016 Liberia Malaria Indicator Survey (LMIS) and the Liberia Demographic and Health Survey (LDHS) 2019-20
- A **two-stage stratified sampling approach** for selecting HHs from this sampling frame was followed:
 - **Stage 1:** We selected **24 Enumeration Areas (EAs)** in each of the **5 counties**, in proportion to the county's rural/urban split
 - **Stage 2:** We selected **30 HHs** for profile interviews **from each EA** using systematic random sampling
- For the detailed interviews, we selected HHs from profile interviews in **proportion to the distribution of HHs by sanitation facility type in each county**² (LDHS 2019)
- Both the qualitative and quantitative VC interviews were split in a 1:2 ratio across urban and rural areas in all counties except Montserrado, where the ratio was 2:1
 - 82 qualitative interviews were conducted over 13 VC trace-backs³, in addition to 51 qualitative non trace-back interviews and 134 quantitative VC interviews
 - VC quantitative interviews were focused on **EAs not selected for the HH profile interviews**, where possible, to avoid overlapping interviews



1. The sampling frame for the 2008 census was used as the Liberia 2020 Population and Housing Census is not publicly available yet
2. Data on distribution of HHs by toilet facility type is not available at a lower administrative level than county
3. A value chain trace-back starts with a qualitative interview with a HH that constructed an improved toilet in the past few years, followed by qualitative interviews with all the VC actors that had provided materials or services towards the construction of that toilet, including upstream actors like the supplier for the hardware store

Overview | Sample Size for HH Interviews

We employed an external research agency to conduct quantitative Profile and Detailed interviews with 3,608 and 659 households respectively across 120 EAs in the five counties¹, along with qualitative interviews with 77 households

County	Number of EAs	Number of Profile Interviews	Number of Detailed Interviews	Number of Qualitative Interviews
Bong	24	725	132	3
Grand Bassa	24	734	125	25
Lofa	24	706	140	3
Montserrado	24	721	125	23
Nimba	24	722	137	23
Total	120	3,608	659	77

1. The number of Profile and Detailed interviews refer to the useable number of interviews – i.e., after cleaning the data to remove for errors made by enumerators and the survey software.

Overview | Sample Size for VC Interviews

We conducted 134 quantitative interviews and 133 qualitative interviews with VC actors in the 5 counties as part of the SMA, including 13 value chain trace-backs

County	# of Qualitative VC Interviews	# of VC Trace-backs
Bong	20	3
Grand Bassa	33	2
Lofa	18	3
Montserrado	27	2
Nimba	35	3
	133	13

Value Chain 'Key Actor'	# of Quantitative Interviews
Cement pre-fabricator	25
Hardware store	27
Mason	27
Savings and loan group	28
Transporter	27
	134

A value chain trace-back starts with a qualitative interview with a HH that constructed an improved toilet in the past few years, followed by qualitative interviews with all the VC actors that had provided materials or services towards the construction of that toilet, including upstream actors like the supplier for the hardware store

1. Key value chain actors are those actors that help mitigate, to an extent, key barriers that prevent customers from buying an improved toilet (e.g., lack of finances/liquidity, heavily disaggregated information, material and service flows). They are either customer facing and/or usually involved in value chain of building an improved toilet

Overview | Literature Review and KIIs



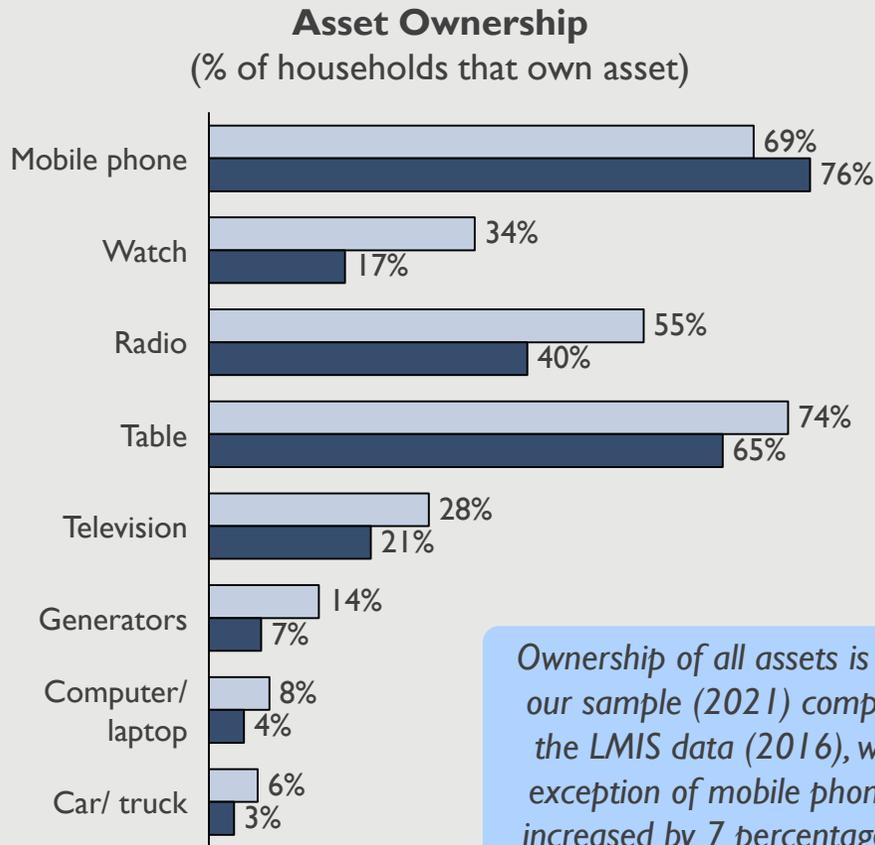
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We also conducted a literature review of 24 documents and interviewed 13 key informants, to develop a better understanding of the sanitation landscape and business environment in Liberia

Sources	#	Examples
Desk study of existing literature 	24	<ul style="list-style-type: none">• Government policy and strategy documents (e.g., Liberia Ending Open Defecation by 2025 Road Map, WASH Sector Strategic Plan)• Program reports (e.g., PACS end line report, IWASH case study)• Sector review/evaluation documents (e.g., 2018 sector performance report, WASH in schools assessment report)
Key informant interviews 	13	<ul style="list-style-type: none">• Funders (e.g., African Development Bank)• International NGOs (e.g., PSI, Global Communities, WaterAid, BRAC)• Government officials (e.g., National WASH Commission, National Public Health Institute of Liberia, Liberia Water and Sewer Corporation)• Upstream value chain actors (e.g., Fouta Corporation)

Overview | Profile of HH Respondents (1/3)

Our sample shows reduced asset ownership and access to bank accounts, but an increase in ownership of agricultural land and livestock, compared to the LMIS data¹



Ownership of all assets is lower in our sample (2021) compared to the LMIS data (2016), with the exception of mobile phones that increased by 7 percentage points



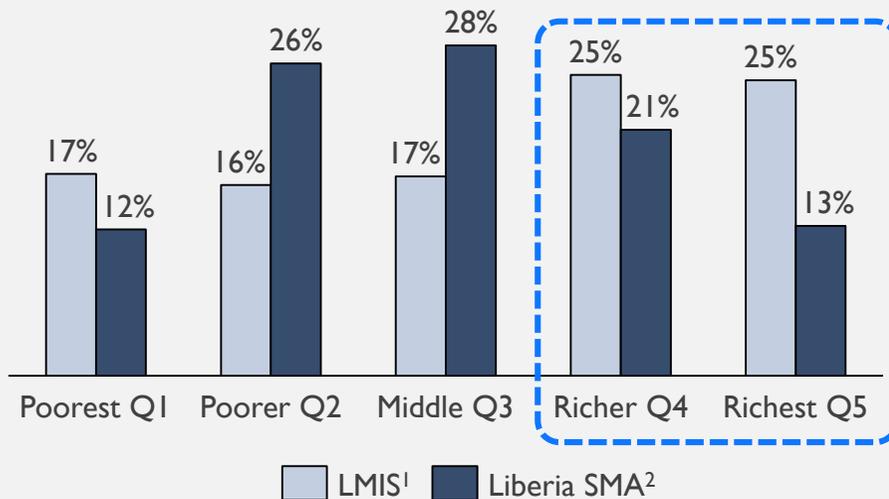
LMIS¹ Liberia SMA²

1. Liberia Malaria Indicator Survey 2016 data for the five counties. Liberia SMA and LMIS used a similar research methodology, and the same sampling frame, although the selected Enumeration Areas may differ; 2. Liberia SMA Household interviews (Profile n=3,608; Detailed n=659), FSG analysis

Overview | Profile of HH Respondents (2/3)

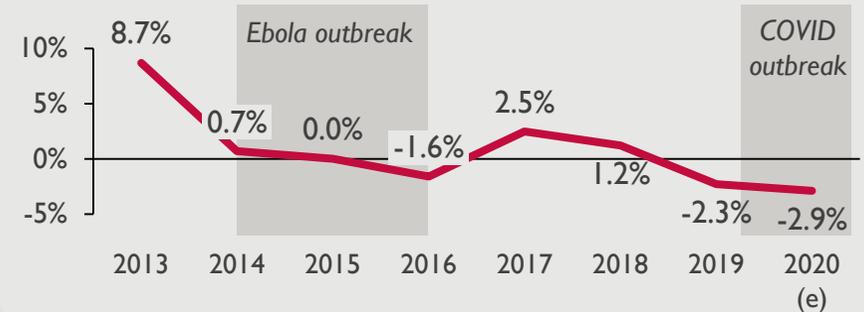
Consequently, our sample shows a shift in wealth quintiles, with a reduction in the Richer(Q4) and Richest(Q5) quintiles, which can be attributed to a variety of macro-economic factors between 2016-2021

Wealth Quintiles
(% of households across the five counties)



There has been a sharp fall in the Richest (Q5) quintile, and a relatively smaller decrease in the Richer (Q4) quintile between the LMIS in 2016 and our survey

Liberia GDP Growth Rate³



The reduction in the Q5 and Q4 quintiles likely resulted from reduced asset ownership, caused by the effects of Ebola and COVID, combined with job losses, rising inflation, and lower GDP growth between 2016-2021⁴

Secondary research

A 2015 World Bank survey of 550+ households found that **~30% of households had sold assets** (e.g. tools, furniture etc.) as an economic coping strategy during the Ebola crisis. **Small business owners and microenterprises were impacted the most.**⁵

1. Liberia Malaria Indicator Survey 2016 data for the five counties; 2. Wealth index was created using 10 variables, which include asset ownership, source of water, cooking fuel etc. The Component Score Coefficients as per the LMIS 2016 were summed up for each HH to create a comparable set of quintiles. 3. **Source:** World Bank; 4. World Bank, 2020, *Liberia Economic Update: The COVID-19 Crisis in Liberia*, pg 18; 5. World Bank Group, Gallup, LISGIS, 2015, *The Socio-Economic Impacts of Ebola in Liberia*, pg 9

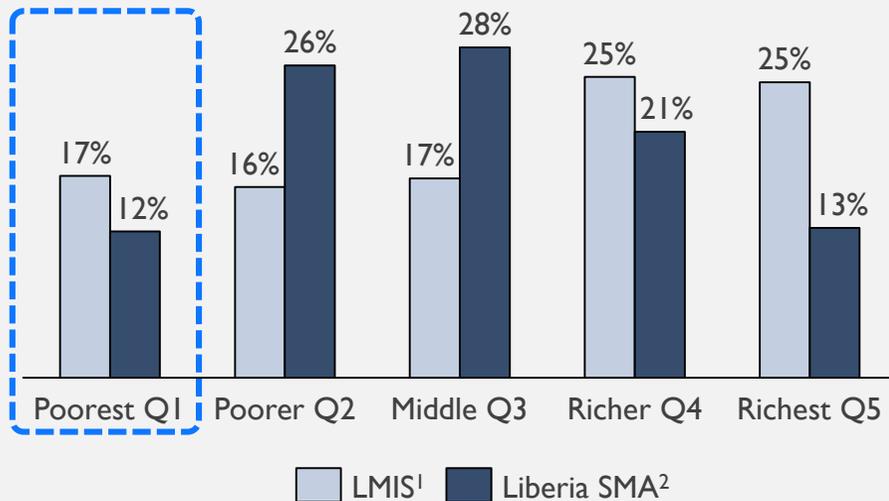
Overview | Profile of HH Respondents (3/3)



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Our sample shows a reduction in the Poorest (Q1) quintile, suggesting upward mobility of this group, owing to the resilience offered by the agricultural sector which employs most low-income families

Wealth Quintiles
(% of households across the five counties)



There has been a reduction in the Poorest (Q1) quintile, suggesting upward mobility of the Poorest quintile between the LMIS in 2016 and our survey

Secondary research

A 2014 World Bank survey noted that after an initial downturn, the **agricultural sector showed the most resilience during the Ebola crisis**. Outside agriculture, **only 36% of previously self-employed workers**, and **50% of wage laborers were employed** in Nov 2014, following the outbreak.²

Secondary research

Rural areas are increasingly witnessing agriculture focused projects such as:

- An IDA credit of \$25 million for the STAR-Project approved by the World Bank in Jan 2019, aimed at 38,000 smallholder farmers.³
- The World Bank's Youth Opportunities Project, aimed at increasing rural youth participation by provided training, agro-inputs, tools, and labor subsidies to 10,000+ farmers as of Dec 2019.⁴

1. Liberia Malaria Indicator Survey 2016 data for the five counties

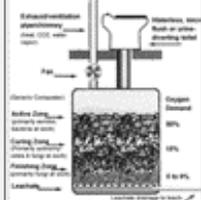
2. **Source:** World Bank Press Release, 2014, *Nearly Half of Liberia's Workforce No Longer Working since Start of Ebola Crisis*

3. **Source:** World Bank Press Release, 2019, *Liberia: New Agriculture Project to Increase Productivity and Promote Commercialization by Private Sector Investment*

4. **Source:** World Bank Project Results Brief, 2020, *Youth Opportunities Project in Liberia Helps Young People Increase Their Earning Potential*

Overview | Key Definitions | Improved Toilet Types

JMP definitions¹, with minor modifications, were used to classify toilet types as they are consistent with the DHS program surveys, which were used for understanding the change in sanitation profiles over time

Toilet type	Definition
 <p>Flush/Pour Flush Toilet</p> <ul style="list-style-type: none"> – To septic tank – To piped sewer system – To pit latrine 	<ul style="list-style-type: none"> • A pour flush toilet contains a water seal below the seat/squatting hole that prevents the passage of smell/flies; it allows for excreta to be flushed by manually pouring water by hand • A flush toilet uses a cistern/holding tank for flushing water and has a water seal • Both variants flush the excreta into pit latrines, septic tanks, or piped sewer systems
 <p>Pit latrine with slab</p>	<ul style="list-style-type: none"> • A dry pit latrine where the pit is fully covered by a durable slab or platform (made of durable material, such as concrete, or cement)². The slab or platform should adequately cover the pit so that fecal matter is not exposed
 <p>Ventilated Improved Pit Latrine</p>	<ul style="list-style-type: none"> • A dry pit latrine with slab, ventilated with a pipe extending above the latrines roof. The vent pipe is covered with gauze mesh or fly-proof netting
 <p>Composting toilet</p>	<ul style="list-style-type: none"> • A dry toilet in which excreta and carbon-rich material are combined (vegetable wastes, straw, grass, sawdust, ash) in special conditions to produce compost

1. Demographic and Health Survey Interviewer's Manual (Feb 2019)

2. Slabs made of non-durable material (e.g., logs with earth or mud) were not included as they may not be durable

Overview | Key Definitions | Unimproved Toilet Types



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JMP definitions¹, with minor modifications, were used to classify toilet types as they are consistent with the DHS program surveys, which were used for understanding the change in sanitation profiles over time

Toilet type	Definition
 <p>Pit latrine without slab</p>	<ul style="list-style-type: none">• A latrine without a slab/platform for squatting or a seated commode. This includes an open pit, where there is a rudimentary hole in the ground where excreta is collected, or a latrine where the slab/platform is made of non-durable material (e.g., logs with earth or mud), or where the slab/platform has gaps and does not adequately cover the pit, leaving fecal matter exposed
 <p>Hanging latrine</p>	<ul style="list-style-type: none">• A toilet built over a body of water (e.g., a sea, or river), allowing excreta to drop directly into the water
 <p>Bucket latrine</p>	<ul style="list-style-type: none">• A bucket or similar container that is used to capture and retain excreta
<p>Flush/Pour Flush Toilet – <i>To somewhere else</i></p>	<ul style="list-style-type: none">• A flush/pour flush toilet where excreta is deposited in or around the dwelling unit<ul style="list-style-type: none">– This must be a location other than a sewer, septic tank, or pit. For example, excreta may be flushed to the street, yard/plot, drainage ditch or other location

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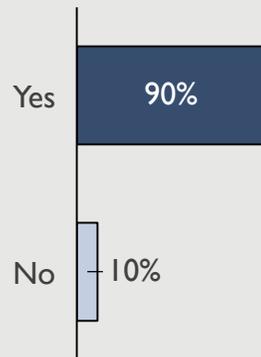
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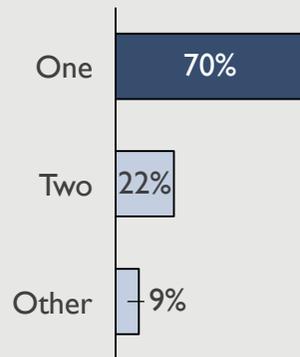
Market Context | Product

Most households with improved toilets chose to build a pour flush toilet with a single compartment, and an offset lined pit with a ventilation pipe

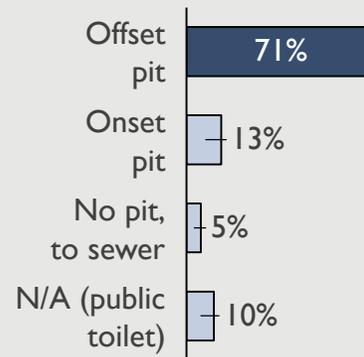
Is water needed to flush the feces away?



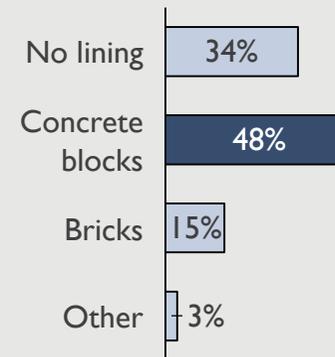
Number of compartments



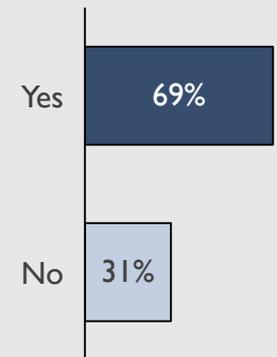
Type of substructure



Is the pit lined? With what material?



Is a ventilation pipe present?



Source: HH Profile interviews (n=3,608), FSG analysis – only improved toilets considered. Totals ≠ 100% as numbers are rounded off.

Image Source: Captured with permission during HH interviews.

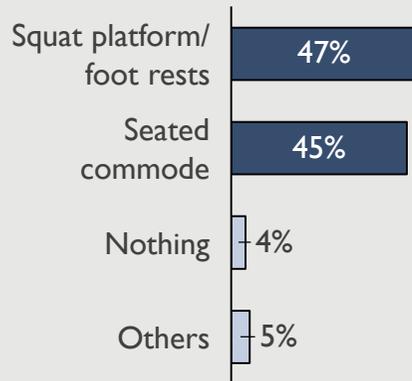
Market Context | Product



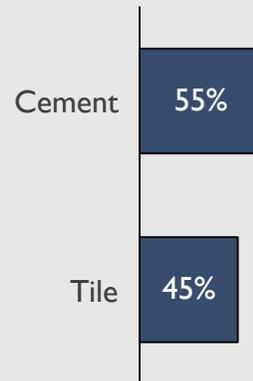
[Click to go back](#)

Households with improved toilets also chose ceramic commodes or cement squat platforms, and a superstructure made of durable materials such as cement, tiles, and bricks, with wooden doors, and roofed with metal sheets

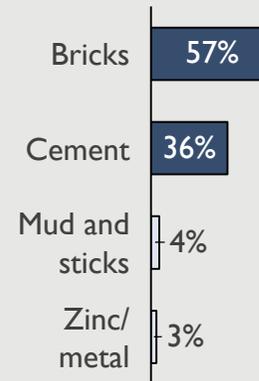
Add-ons to the toilet floor



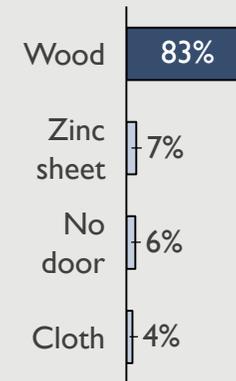
Main material of floor surface



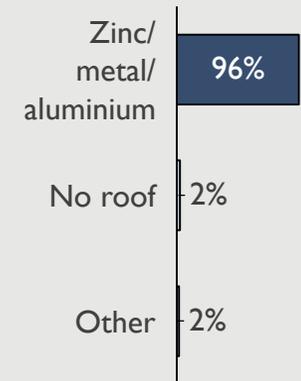
Main material of walls



Main material of door



Main material of roof



Source: HH Profile interviews (n=3,608), FSG analysis – only improved toilets considered. Total ≠ 100% as numbers are rounded off.
Image Source: Captured with permission during HH interviews.

Market Context | Cost of Prevalent Improved Toilets

There is no standard design for a single compartment pour flush toilet with an offset pit; the cost varies significantly based on materials used, quality of construction, and additional features of the toilet

Lower-end Option

~LRD 33,000 (US\$ 165)^{2,3}

Interface



Super-structure



Concrete floor; a raised cement squat platform;
walls of mud bricks laid with mud and not plastered; unlined offset pit¹

Mid-end Option

~ LRD 76,000 (US\$ 380)^{2,3}



Concrete floor; a ceramic commode and a water trap; walls of mud bricks laid with cement and not plastered; unlined offset pit with a ventilation pipe¹

Higher-end Option

~LRD 120,000 (US\$ 600)^{2,3}



Concrete tiled floor; a ceramic commode and a water trap; walls of mud bricks laid and plastered with cement; lined offset septic tank with a ventilation pipe¹

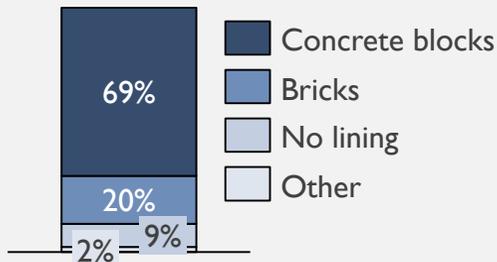
Source: Qualitative interviews, FSG analysis; Image Source: Captured with permission during HH interviews

1. A more detailed description of the toilets shown here is provided in the [Toilet Costing section of the appendix](#)
2. Assumes that the customer pays for all the materials and services required, and does not source materials for free or provide own labor for any construction activities
3. Assumes US\$ 1 = LRD 200, as these toilet were built a few years ago

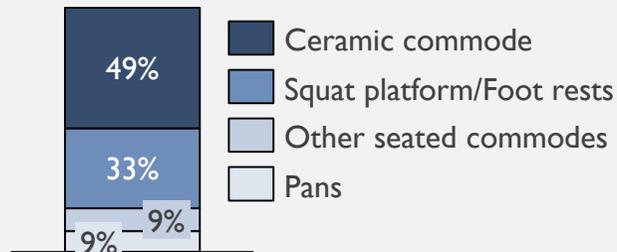
Market Context | Customer Preferences

Only the higher-end option of the improved toilet, which costs ~LRD 120,000, has all the features that are desired by customers, such as a lined septic tank, a ceramic commode, tiled floors, and brick walls laid and plastered with cement

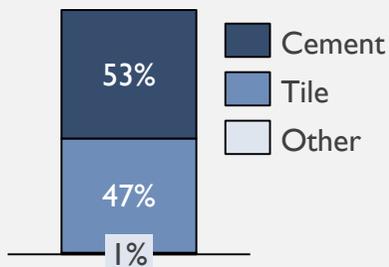
Main materials for the pit lining considered by HHs without BSS (%)²



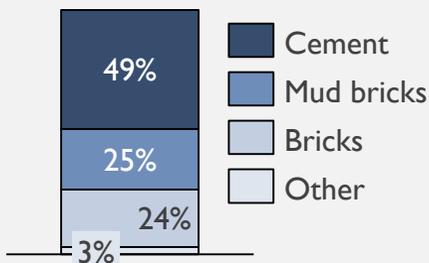
Add-ons to the toilet floor considered by HHs without BSS (%)²



Main materials for the toilet floor considered by HHs without BSS (%)²



Main materials for the toilet walls considered by HHs without BSS (%)²



Higher-end Option

~LRD 120,000 (US\$ 600)^{1,3,4}



Concrete **tiled** floor; a **ceramic commode** and a **water trap**; walls of **mud bricks laid and plastered with cement**; **lined offset septic tank with a ventilation pipe**¹

1. **Source:** Qualitative interviews, FSG analysis; **Image Source:** Captured with permission during HH interviews
2. **Source:** HH interviews (Profile n=3,608; Detailed n=659), FSG analysis. Total ≠ 100% as numbers are rounded off.
3. Assumes that the customer pays for all the materials and services required, and does not source materials for free or provide own labor for any construction activities
4. Assumes US\$ 1 = LRD 200, as these toilet were built a few years ago

Market Context | Cost of an Improved Toilet



[Click to go back](#)

However, a low-end toilet with a pre-fabricated cement commode added on to the toilet's floor meets the strong customer preference for a seated option without a significant increase in cost

Improved Toilet

~LRD 40,000 (US\$ 200)^{1,3,4}

Interface

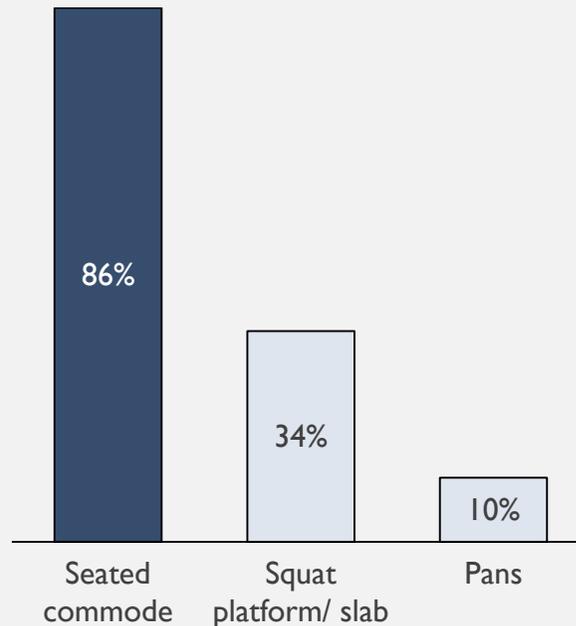


Super-structure



Concrete floor; a **pre-fabricated cement commode**; walls of mud bricks laid with mud and not plastered; unlined offset pit

Toilet floor add-ons (or upgrades) that HHs with unimproved toilets or limited sanitation service might be interested in (%)²



“The commode type of toilet is very good, it is modern and more comfortable. The one who uses it will sit and not to have the pains of squatting, like the older people and pregnant women.”

- HH practicing OD in Grand Bassa¹

“I really want a toilet with an imported commode, tiles on the walls and floor. I'm not satisfied with my existing toilet, but do not have the money to upgrade”

- HH with limited sanitation service in Nimba¹

1. **Source:** Qualitative interviews, FSG analysis; **Image Source:** Captured with permission during HH interviews
2. **Source:** HH interviews (Profile n=3,608; Detailed n=659), FSG analysis
3. Assumes that the customer pays for all the materials and services required, and does not source materials for free or provide own labor for any construction activities
4. Assumes US\$ 1 = LRD 200, as these toilet were built a few years ago

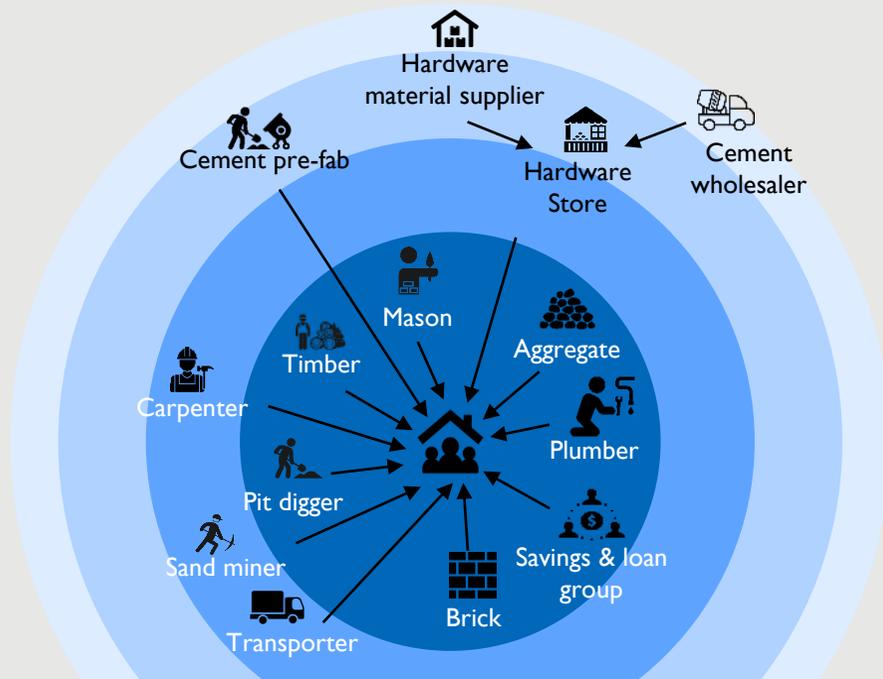
Market Context | Sanitation Value Chain



[Click to go back](#)

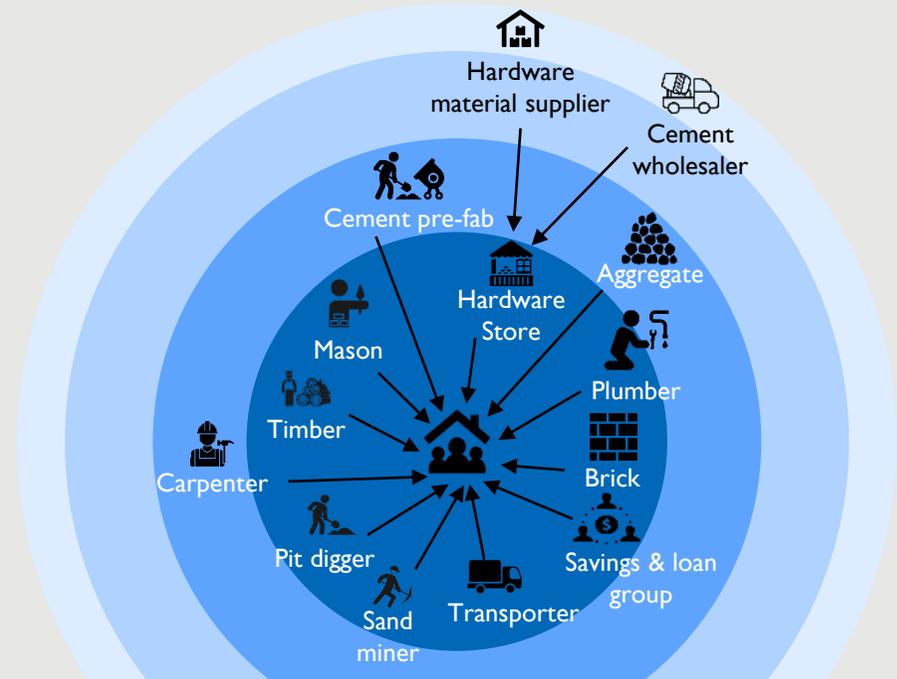
In the absence of sanitation entrepreneurs, most households build improved toilets using a “DIY” model, involving 6-9 actors that vary in distance from the household

Typical rural customer



KeyVC actors are located at varying distances, up to 15 miles away from the household

Typical urban customer



KeyVC actors can generally be found within a 5 mile radius of the household

- Found closest to the customer
- Found moderately close to the customer
- Found farther away from the customer
- Found farthest from customer – national capital

Source: Qualitative interviews, FSG analysis

Note: Detailed actor maps from all trace backs conducted in urban/rural contexts of the five target counties have been provided in the Actor Maps section of the appendix

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- Overview of the Liberia SMA
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Masons

Typical actor profile

Age & gender 43 years (average); All are male

Years in business 15 years (average)

Partners/ employees 4 employees/partners work on a household toilet job

Training 82% received some technical/vocational training, of which 23% received training from family/ friends

Education level 70% received some secondary or higher education

Sources of income 74% stated masonry as the primary source; 48% had another source of income, including farming, trading, salaried work, among others

Role in the sanitation value chain

Overview

- Masons are typically found at a community level in both urban and rural areas
- 56% of masons construct all aspects of the toilet, including the substructure, interface and superstructure
- Unit margin on a standalone toilet construction job (including pit digging) is 44% in rural areas, and 29% in urban areas

Key inputs

- 41% of masons purchase construction materials on behalf of households
- Masons typically own the tools required to construct the toilet (e.g., shovel, trowel, hammer)

Operations

- On average, masons work on 6 standalone¹ household toilet jobs per year
- Most masons cited that the rainy season months (June, July, August and September) were bad for their toilet construction business

Customers

- Masons most commonly constructed new houses with toilets for customers (96%), and built new toilets at existing houses for old houses (92%)
- 70% of masons stated that customers come from within the same district; 56% stated that customers come from the same community, clan/city or town
- Masons stated that customers most commonly heard about them by seeing them work nearby, and from friends/ neighbors
- 59% of masons do not offer customers credit during toilet construction jobs
- 48% of masons stated that they have experienced issues with delays in payments from customers

Key linkages within value chain

- 52% of masons refer their customers to pit diggers; 56% of masons refer their customers to hardware stores and/or building material suppliers

1. Standalone toilet jobs refer to constructing new toilets for old houses

Source: Quantitative value chain interviews with 27 masons

Cement Pre-Fabricators

Typical actor profile

Age & gender	40 years (average); Mostly all are male
Years in business	9 years (average)
Partners/ employees	3 partners/employees that are paid a fixed monthly salary
Training	56% received some technical/vocational training;
Education level	67% received secondary education; 22% received some college/ university education
Sources of income	44% stated cement pre-fabrication as the primary source; 78% had another source of income, including masonry

Role in the sanitation value chain

Overview

- 96% of cement pre-fabricators make and sell cement bricks; 32% cement commodes; 20% cement slabs; 16% concrete squat platforms; 4% cement pans
 - 60% only make and sell cement bricks
- In rural areas, the nearest cement pre-fabricators are found at county capitals; in urban areas, the nearest cement pre-fabricators are located at the clan level
- Unit margin on a cement commode is 51% in rural areas, and 57% in urban areas

Key inputs

- Cement pre-fabricators typically purchase cement from hardware stores or cement wholesalers close to their area of operation, and source other key input materials (e.g., sand) from local material suppliers
- Cement pre-fabricators typically use various tools to fabricate cement products, including moulds, shovels, wheelbarrows, and trowels

Operations

- Cement pre-fabricators (who sell cement bricks and/or commodes) sell an average of 6,000 cement bricks and 5 cement commodes, in a month
- 50% of cement pre-fabricators offer delivery services to customers who purchase cement bricks and cement commodes, using a pick-up truck
- All cement pre-fabricators offer installation services to customers who purchase cement commodes

Customers

- Household customers are the main customer type for both cement bricks and cement commodes
- 50% of cement pre-fabricators offer credit to customers for the purchase of cement commodes, and 75% offer credit for the purchase of cement bricks

Key linkages within value chain

- 78% refer their household customers to one or more sanitation-related businesses/ providers (e.g., mason, transporter, sand seller)

Hardware Stores

Typical actor profile

Age & gender	41 years (average); Mostly all are male
Years in business	8 years (average)
Partners/ employees	3 partners/employees that are paid a fixed monthly salary
Training	30% received some vocational/technical training
Education level	74% received some secondary education; 22% received some college education
Sources of income	74% stated hardware store as the primary source; 48% had another source of income, including agriculture

Role in the sanitation value chain

Overview

- In urban areas, the nearest hardware stores are typically found at a community level; in rural areas, the nearest hardware stores are often found at county capitals
- Cement and PVC pipes are the items most frequently purchased by customers
- Although 63% of hardware stores sell ceramic commodes, only 15% sell plastic pans, and only 11% sell plastic squat platforms (all these are located in urban areas)
- Unit margin on a bag of cement is 19-20% in both urban and rural areas

Key inputs

- Hardware stores typically source products by placing orders with distributors/input suppliers (65%), purchasing them directly from a distributor/input supplier's location (61%), and/or by placing orders with transporters (35%)
- 61% of hardware stores source products from suppliers located in other counties
- 52% of hardware stores purchased materials on credit from their suppliers

Operations

- 33% of respondents run more than one hardware store
- Most hardware stores cited that some of the rainy season months (July, August, September) were bad for their business
- 67% of hardware stores do not offer any delivery services to their customers

Customers

- Hardware stores stated households (89%), contractors (44%), and masons (33%), as their main customer types
- 56% of hardware stores stated that their customers come from the same community, clan/city or town
- Hardware stores stated that customers most commonly heard about them from neighbors/friends (77%) or because they are known in the area (50%)

Key linkages within value chain

- 46% refer their household customers to one or more sanitation-related businesses/ providers (e.g., masons, carpenters, sand sellers)

Transporters

Typical actor profile

Age & gender	42 years (average); All are male
Years in business	14 years (average)
Partners/ employees	2 partners/employees that are paid a fixed monthly salary
Group members	52% are members of transporters' group/club
Education level	52% received either no education or some primary education
Sources of income	89% stated transportation business as their primary source; 37% had another source of income, including agriculture

Role in the sanitation value chain

Overview

- Transporters are typically found in all urban areas, and at a clan level in rural areas
- 81% of transporters normally use a pick up truck, while 15% use a lorry, and 4% use a tipper truck; 75% use a truck with capacity between 1 and 3 tons
- Transporters stated that cement (81%), bricks (63%), and sand (52%), were the materials transported most often
- Unit margin on a standard pick-up truck trip varies from 41% in rural areas, to 35% in urban areas

Key inputs

- 44% of transporters own more than one transportation vehicle
- 81% of transporters park their vehicles at a fixed place/transport station

Operations

- 29% of transporters choose which supplier/stores to get the materials from
- 56% of transporters purchase materials from the supplier for the customer
- 39% of transporters deliver materials to more than one customer in a trip
- 69% of transporters offer loading/unloading services when transporting materials

Customers

- Transporters stated households (89%), building material sellers (37%), and masons (26%) as their main customer types
- 48% stated that most of their customers come from the same district; 44% stated that most of their customers come from a different district in the same county
- Transporters stated that household customers most commonly heard about them because they are known in the area (92%) or from neighbors/ friends (68%)
- 92% of transporters receive cash payment for their services, 8% receive payment through mobile money

Key linkages within value chain

- 32% of transporters refer their household customers to one or more sanitation-related businesses/providers (e.g., cement sellers, sand sellers, hardware stores)



Typical actor profile

Age of group Groups were started an average of 5 years ago

Number of members 73 (average); 18 – 200 (range)

Location of members 52% were from the same community as the Savings and loan group; 30% are from the same clan/ city or town

Partners/ employees 3 partners/employees that are paid a fixed monthly salary

Loans for sanitation 43% of savings and loan groups provide loans to people to build toilets or houses; 39% have previously encouraged members/customers to take a loan to build/repair toilets; 22% of these groups do so by offering different terms and conditions for such loans

Role in the sanitation value chain

Overview

- Savings and loan groups are typically found at the community level in both urban and rural areas
- Savings and loan groups typically collect and manage savings for their customers/members, and provide loans to their customers/members

Membership and evaluation

- The most common prerequisites to becoming a group member is paying a one-time membership fee (100%)
- 87% require members to save/contribute a minimum amount regularly to be a part of the organization and/or take a loan
 - The average savings requirement for remaining a member is LRD ~1900; 59% stated that these savings need to be made on a weekly basis
 - The average savings requirement for taking a loan is LRD ~2900; 50% stated that these savings need to be made on a weekly basis

Loan usage and terms

- Members tend to take more loans in Jan – April, June, and December
- Top 2 reasons for taking loans are:
 - For business purposes, excluding agriculture (83%): Average loan amount given is LRD 55,000; maximum loan amount given is LRD 78,000; average annual interest rate of 22%
 - To pay school fees (50%): Average loan amount given is LRD 12,000; maximum loan amount given is LRD 13,600; average annual interest rate is 33%
- 76% stated that customers/members did not need to provide security/ collateral to take loans

Key linkages within value chain

- 30% of savings and loan groups refer customers who take loans to build/ repair houses/ toilets to sanitation-related business/service providers (e.g., cement sellers, sand sellers)

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Please click on the section name to go to that particular section

Trace-back of an Improved Toilet in urban Montserrado (1/2)



Toilet substructure



Toilet superstructure



Toilet interface

Household descriptors

Owned, female-headed house in Greater Monrovia district of Montserrado

Main materials used for construction Cement walls with zinc roof

Number of rooms: (excluding toilet, kitchen) 4

Number of members that share the house 1

<i>Access to grid electricity</i>	Yes
<i>Access to solar panels</i>	No
<i>Access to mobile phone</i>	Yes
<i>Access to mobile money</i>	Yes
<i>Non-drinking water source</i>	Open unprotected well
<i>Distance to nearest main road</i>	2.4 miles
<i>Distance to school</i>	0.3 miles
<i>Distance to nearest health clinic</i>	0.3 miles
<i>Distance to nearest market</i>	0.3 miles ¹

Toilet descriptors

<i>Overview</i>	Pour-flush toilet constructed in 2019, with 2 compartments – 1 each for Toilet and Bath
<i>Substructure</i>	8 ft deep, Pit lined with concrete rings
<i>Interface</i>	Raised concrete squat platform
<i>Superstructure</i>	Walls made of cement plastered with cement, Door made of wooden planks, and Roof made of zinc sheets

Cost of toilet (as stated by HH)

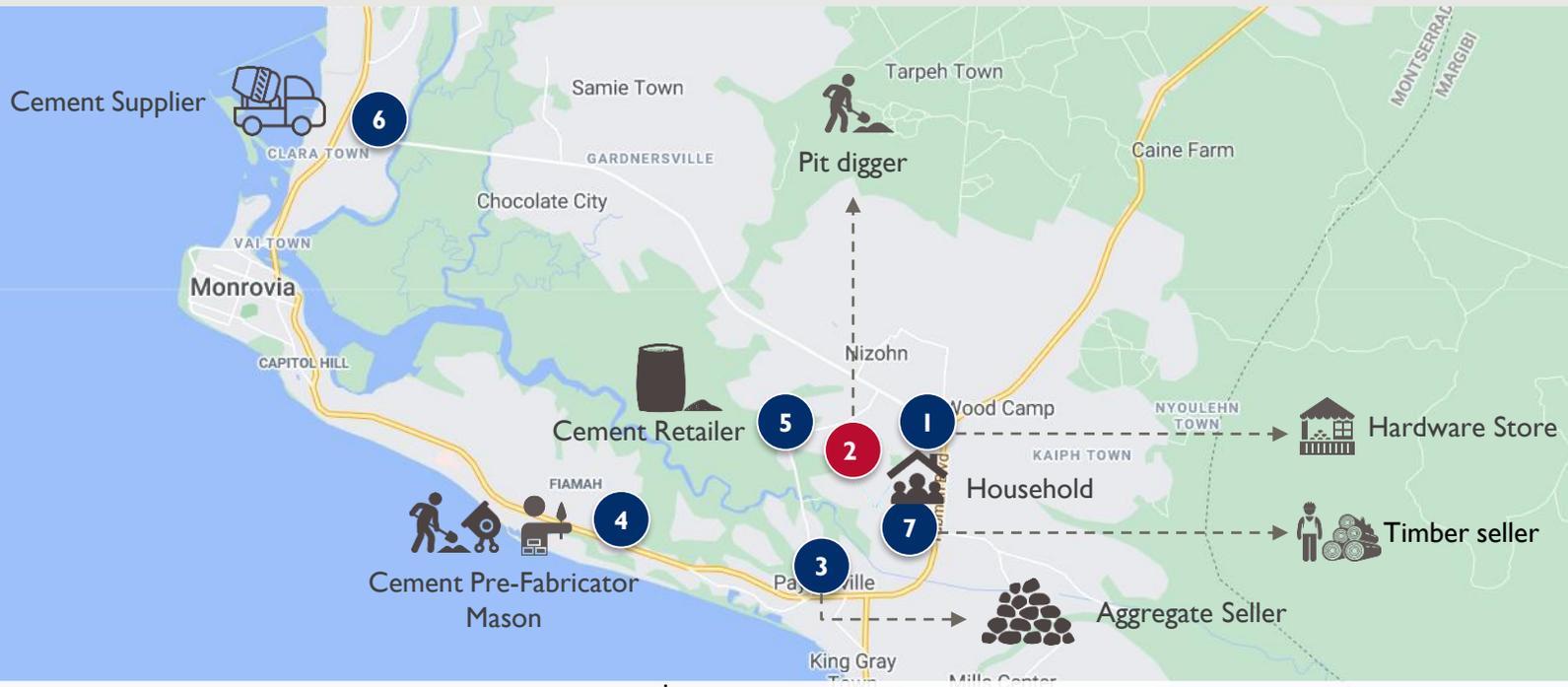
More than LRD ~131,000

Loan taken for toilet construction, if any

LRD 25.5k from 3 Sisters SUSU club

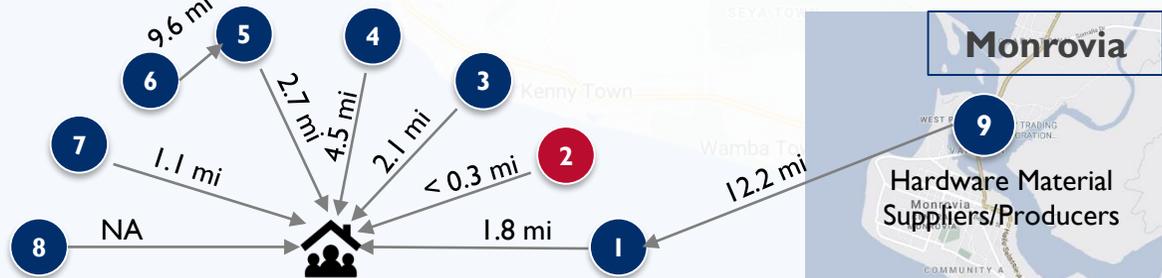
1. Assuming walking speed as 4 miles per hour

Trace-back of an Improved Toilet in urban Montserrado (2/2)



Distance between VC actor and HH or between two VC actors

- 📍 Household
- Material Suppliers
- Service Providers
- Financiers



Source: Qualitative interviews conducted by FSG in Greater Monrovia district in Montserrado county;

Note: 1. Distances have been estimated based on the shortest distance suggested by Google Maps. Actual distance traveled may vary, if alternate routes are used; 2. Households sourced mud bricks and sand on their own, did not hire transporters, carpenters or plumbers, and did not take a loan from a savings/loan groups; 3. A consolidated view of the distribution of VC actors in urban/rural contexts for the 5 target counties has been provided in the Market Context section of the appendix

Trace-back of an Improved Toilet in rural Montserrat (1/2)



House



Toilet superstructure



Toilet interface

Household descriptors

Owned, male-headed house in Todee district of Montserrat

Main materials used for construction Mud bricks covered with cement, zinc roof

Number of rooms: (excluding toilet, kitchen) 5

Number of members that share the house 1

<i>Access to grid electricity</i>	No
<i>Access to solar panels</i>	No
<i>Access to mobile phone</i>	Yes
<i>Access to mobile money</i>	Yes
<i>Non-drinking water source</i>	Hand pump
<i>Distance to nearest main road</i>	< 0.3 miles
<i>Distance to school</i>	< 0.3 miles
<i>Distance to nearest health clinic</i>	< 0.3 miles
<i>Distance to nearest market</i>	< 0.3 miles ¹

Toilet descriptors

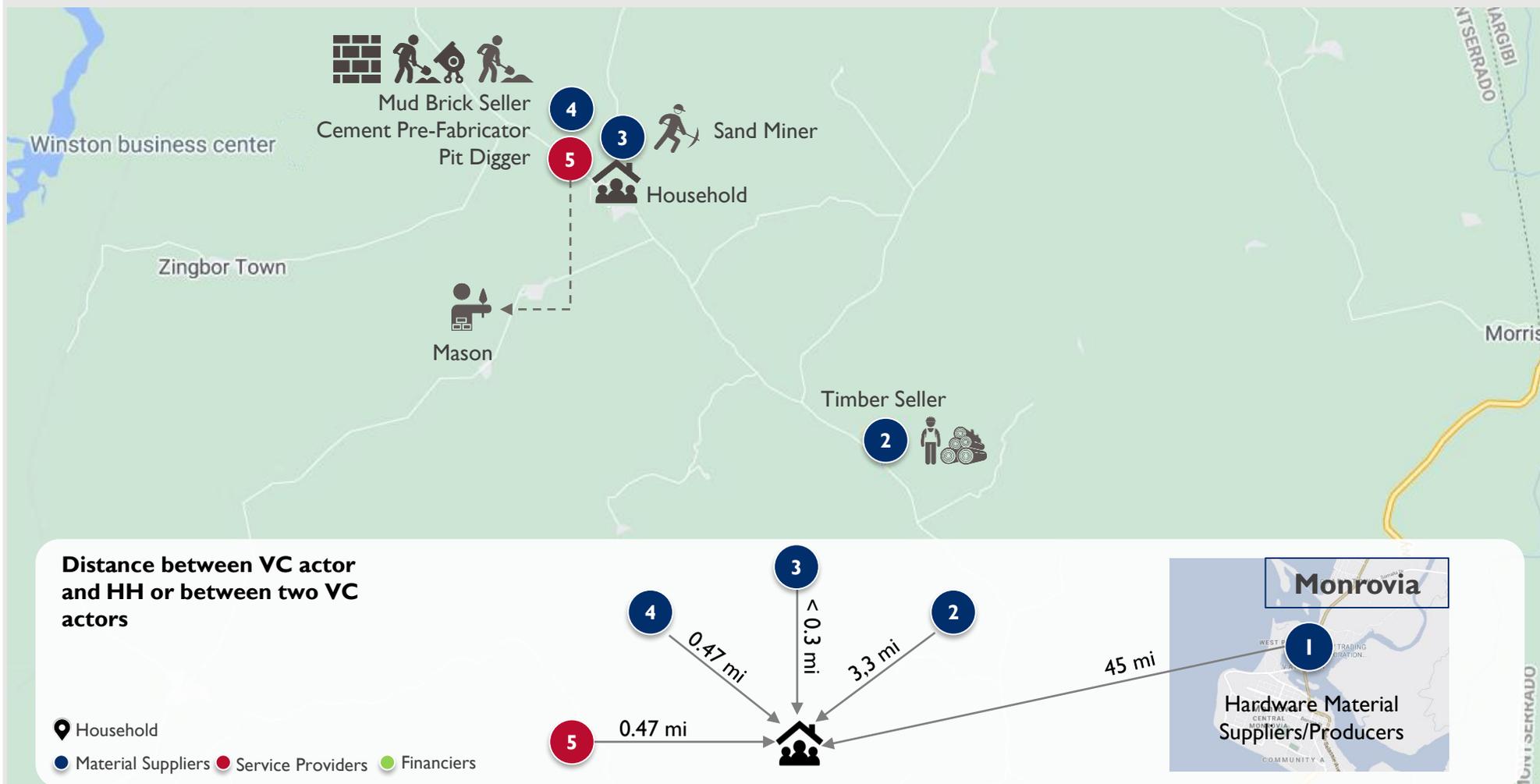
<i>Overview</i>	Pour-flush toilet constructed in 2019, with 2 compartments – 1 each for toilet and bath
<i>Substructure</i>	13 ft deep, single offset pit
<i>Interface</i>	Raised concrete squat platform
<i>Superstructure</i>	Walls made of mud bricks and cement, Door made of wooden planks, and Roof made of zinc sheets

Cost of toilet (as stated by HH) LRD ~53,000

Loan taken for toilet construction, if any No Loan

1. Assuming walking speed as 4 miles per hour

Trace-back of an Improved Toilet in rural Montserrado (2/2)



Source: Qualitative interviews conducted by FSG in Todee district in Montserrado county in Liberia;

Note: 1. Distances have been estimated based on the shortest distance suggested by Google Maps. Actual distance traveled may vary, if alternate routes are used; 2. Households sourced hardware materials and aggregate on their own, did not hire carpenters or plumbers, and did not take a loan from a savings/loan groups; 3. A consolidated view of the distribution of VC actors in urban/rural contexts for the 5 target counties has been provided in the Market Context section of the appendix

Trace-back of an Improved Toilet in urban Grand Bassa (1/2)



House



Toilet superstructure



Toilet interface

Household descriptors

Owned, female-headed house in Neekreen district of Grand Bassa

Main materials used for construction: Concrete house with zinc roof

Number of rooms: (excluding toilet, kitchen) 3

Number of members that share the house 10

Access to grid electricity	No
Access to solar panels	No
Access to mobile phone	Yes
Access to mobile money	Yes
Non-drinking water source	Hand pump
Distance to nearest main road	1.1 miles
Distance to school	2.2 miles
Distance to nearest health clinic	6.5 miles
Distance to nearest market	2.2 miles ¹

Toilet descriptors

Overview	Pour-flush toilet constructed in 2020, with 1 compartments for toilet and one for bathing
Substructure	12 ft deep, single offset pit
Interface	Raised squat platform
Superstructure	Walls made of mud and cement, Door made of wooden planks, and Roof made of zinc sheets

Cost of toilet (as stated by HH)

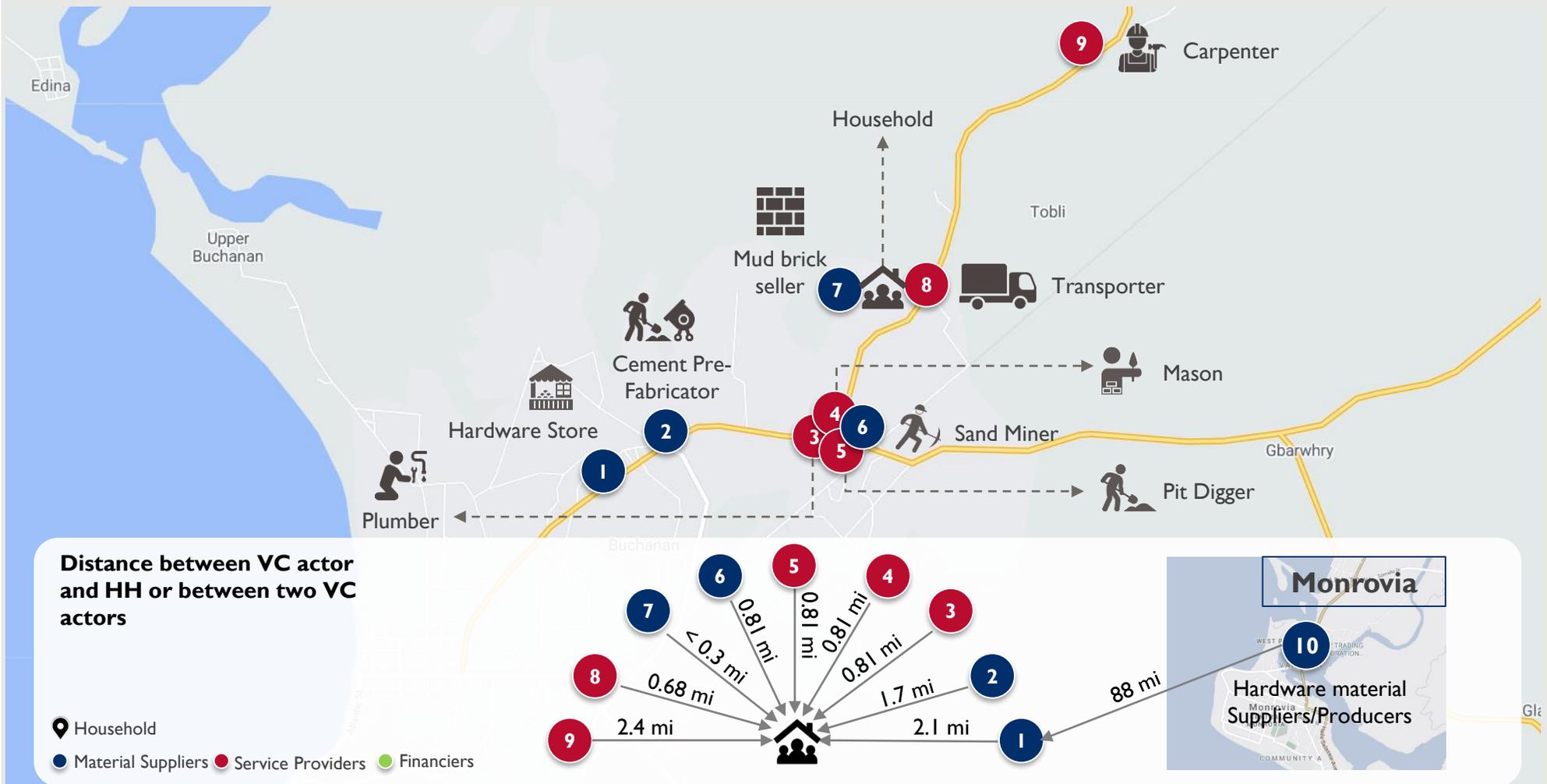
LRD ~77,000

Loan taken for toilet construction, if any

No Loan

1. Assuming walking speed as 4 miles per hour

Trace-back of an Improved Toilet in urban Grand Bassa (2/2)



Source: Qualitative interviews conducted by FSG in Neekreen district in Grand Bassa county in Liberia;

Note: 1. Distances have been estimated based on the shortest distance suggested by Google Maps. Actual distance traveled may vary, if alternate routes are used; 2. Households sourced timber and aggregate on their own, and did not take a loan from a savings/loans group; 3. A consolidated view of the distribution of VC actors in urban/rural contexts for the 5 target counties has been provided in the Market Context section of the appendix

Trace-back of an Improved Toilet in rural Grand Bassa (1/2)



House



Toilet superstructure



Toilet interface

Household descriptors

Owned, male-headed house in District #3 district of Grand Bassa

Main materials used for construction Mud house wall with zinc roof

Number of rooms: (excluding toilet, kitchen) 4

Number of members that share the house 17

<i>Access to grid electricity</i>	No
<i>Access to solar panels</i>	No
<i>Access to mobile phone</i>	Yes
<i>Access to mobile money</i>	Yes
<i>Non-drinking water source</i>	Creek
<i>Distance to nearest main road</i>	1.7 miles
<i>Distance to school</i>	2.7 miles
<i>Distance to nearest health clinic</i>	8.1 miles
<i>Distance to nearest market</i>	8.1 miles ¹

Toilet descriptors

<i>Overview</i>	Pour-flush toilet constructed in 2020, with 1 compartments
<i>Substructure</i>	12 ft deep, single offset circular pit covered with concrete
<i>Interface</i>	Raised cement squat platform
<i>Superstructure</i>	Walls made with stick and mud bricks, Door made of wooden planks, and Roof made of zinc sheets

Cost of toilet (as stated by HH)

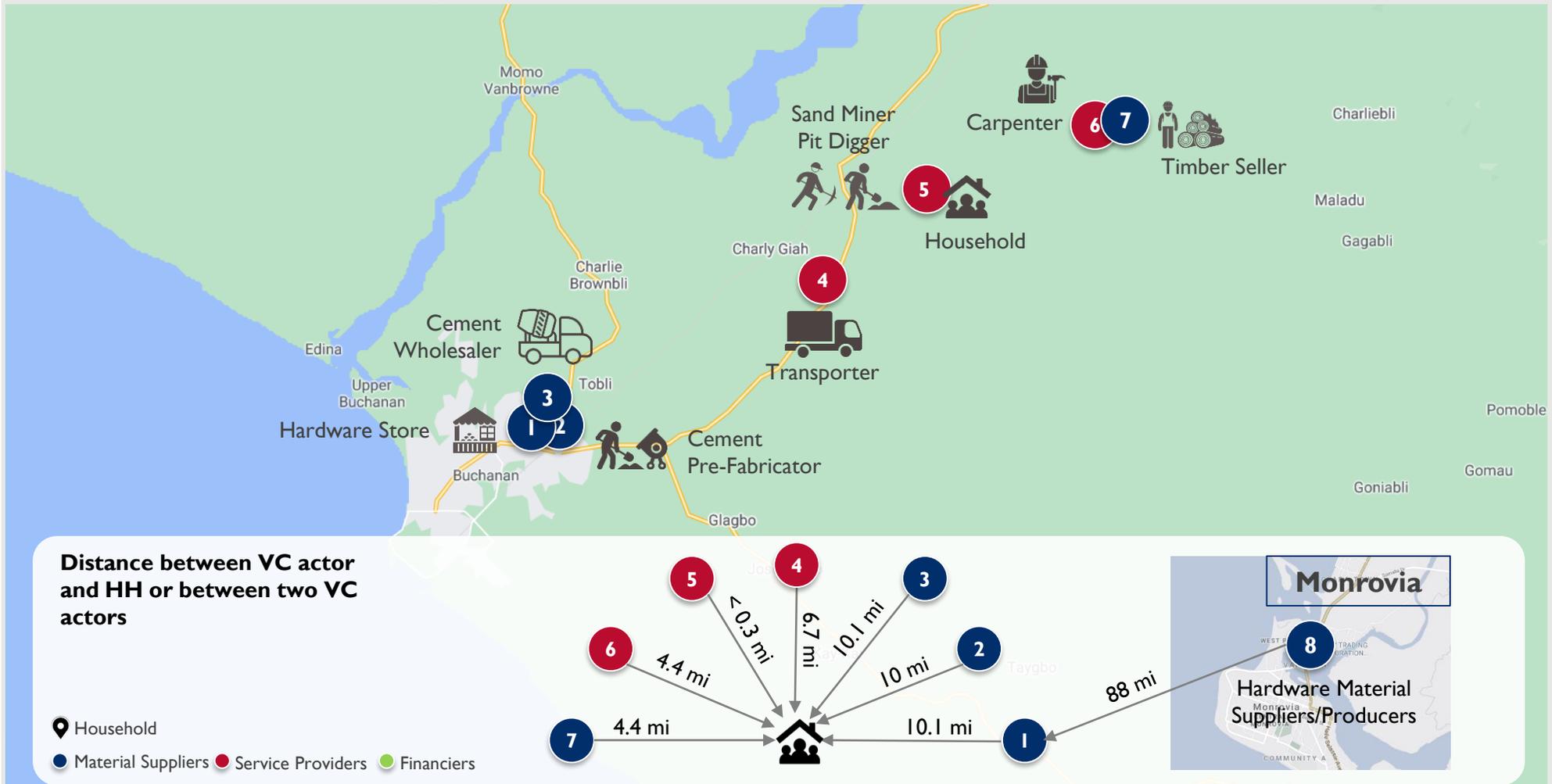
LRD ~68,000

Loan taken for toilet construction, if any

No Loan

1. Assuming walking speed as 4 miles per hour

Trace-back of an Improved Toilet in rural Grand Bassa (2/2)



Source: Qualitative interviews conducted by FSG District #3 district in Grand Bassa county in Liberia

Note: 1. Distances have been estimated based on the shortest distance suggested by Google Maps. Actual distance traveled may vary, if alternate routes are used; 2. Households sourced mud bricks and aggregate on their own, did not hire masons or plumbers, and did not take a loan from a savings/ loans group; 3. A consolidated view of the distribution of VC actors in urban/rural contexts for the 5 target counties has been provided in the Market Context section of the appendix

Trace-back of an Improved Toilet in urban Bong (1/2)



House



Toilet superstructure



Toilet interface

Household descriptors

Owned, female-headed house in Jorquelleh (Zone 3) district of Bong

Main materials used for construction Cement and mud bricks, wooden planks, zinc sheets

Number of rooms: (excluding toilet, kitchen) 4

<i>Access to grid electricity</i>	No
<i>Access to solar panels</i>	No
<i>Access to mobile phone</i>	Yes
<i>Access to mobile money</i>	Yes
<i>Non-drinking water source</i>	Community yard and well
<i>Distance to nearest main road</i>	3 miles
<i>Distance to school</i>	0.3 miles
<i>Distance to nearest health clinic</i>	6 miles
<i>Distance to nearest market</i>	6 miles ¹

Toilet descriptors

<i>Overview</i>	Improved pit toilet constructed in 2019, with 3 compartments – 2 for the toilet and 1 for the bath
<i>Substructure</i>	10 ft deep, 2 offset pits with septic tank;
<i>Interface</i>	Floor made of concrete with a footrest made using mud bricks
<i>Superstructure</i>	Walls made of mud bricks, Door made of wooden planks, and Roof made of zinc sheets

Cost of toilet (as stated by HH)

LRD ~65,000

Loan taken for toilet construction, if any

Local SUSU club

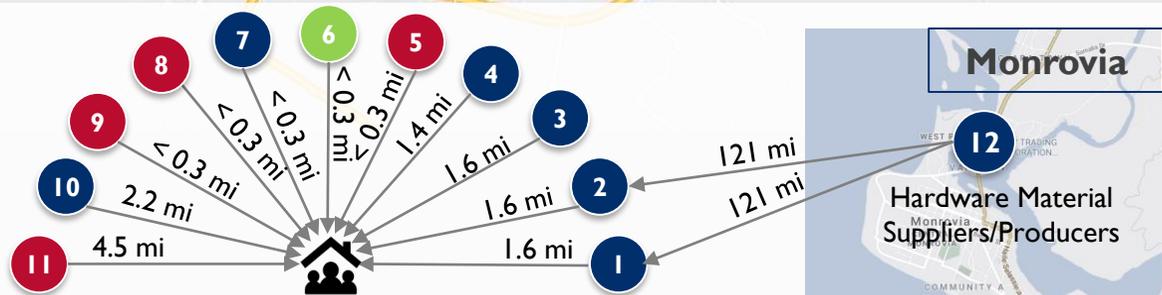
1. Assuming walking speed as 4 miles per hour

Trace-back of an Improved Toilet in urban Bong (2/2)



Distance between VC actor and HH or between two VC actors

- Household
- Material Suppliers
- Service Providers
- Financers



Source: Qualitative interviews conducted by FSG in Jorquelleh (Zone 3) district in Bong county, Liberia

Note: 1. Distances have been estimated based on the shortest distance suggested by Google Maps. Actual distance traveled may vary, if alternate routes are used; 2. Households sourced aggregate on their own; 3. A consolidated view of the distribution of VC actors in urban/rural contexts for the 5 target counties has been provided in the [Market Context section of the appendix](#)

Trace-back of an Improved Toilet in rural Bong (1/2)



House



Toilet superstructure



Toilet interface

Household descriptors

Owned, female-headed house in Kpaai district of Bong

Main materials used for construction Mud, Cement and Corrugated Metal Sheets

Number of rooms: (excluding toilet, kitchen) 5

Number of members that share the house 12

<i>Access to grid electricity</i>	No
<i>Access to solar panels</i>	No
<i>Access to mobile phone</i>	Yes
<i>Access to mobile money</i>	Yes
<i>Non-drinking water source</i>	Water pump
<i>Distance to nearest main road</i>	< 0.3 miles
<i>Distance to school</i>	< 0.3 miles
<i>Distance to nearest health clinic</i>	< 0.3 miles
<i>Distance to nearest market</i>	< 0.3 miles ¹

Toilet descriptors

<i>Overview</i>	Pour-flush toilet constructed in 2020, with 1 combined compartment for toilet and bath
<i>Location of the toilet</i>	Outside the house
<i>Substructure</i>	11 ft deep; single lined offset pit
<i>Interface</i>	Slab built with cement bricks and tiles
<i>Superstructure</i>	Walls made of cement bricks, Door made of planks and Roof made of stakes and zinc

Cost of toilet (as stated by HH)

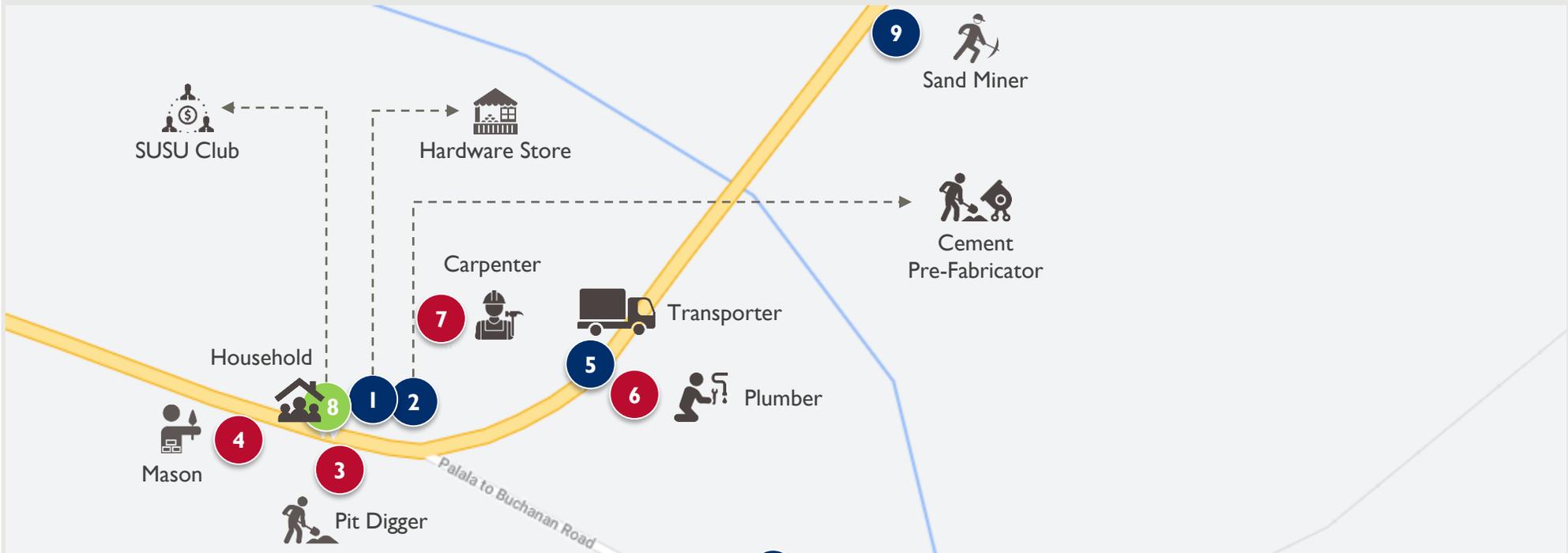
LRD ~75,000

Loan taken for toilet construction, if any

LRD 25k from local SUSU club

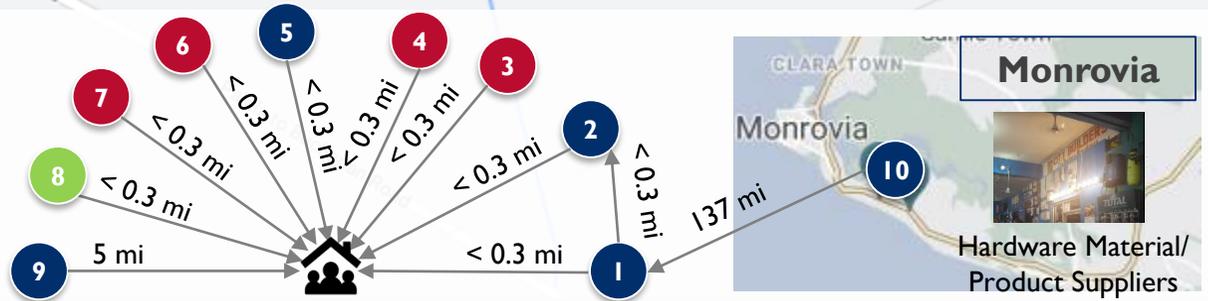
1. Assuming walking speed as 4 miles per hour

Trace-back of an Improved Toilet in rural Bong (2/2)



Distance between VC actor and HH or between two VC actors

- Household
- Material Suppliers
- Service Providers
- Financers



Source: Qualitative interviews conducted by FSG in Kpaai district in Bong county in Liberia;

Note: 1. Distances have been estimated based on the shortest distance suggested by Google Maps. Actual distance traveled may vary, if alternate routes are used; 2. Households sourced timber, mud bricks, and aggregate on their own; 3. A consolidated view of the distribution of VC actors in urban/rural contexts for the 5 target counties has been provided in the Market Context section of the appendix

Trace-back of an Improved Toilet in urban Nimba (1/2)



House



Toilet superstructure



Toilet interface

Household descriptors

Owned, Male-headed house in Sanniquellie-Mahn district of Nimba

Main materials used for construction Mud, Cement, Corrugated Metal Sheets, Steel Bars and Wood

Number of rooms: (excluding toilet, kitchen) 4

Number of members that share the house 15

<i>Access to grid electricity</i>	Yes
<i>Access to solar panels</i>	No
<i>Access to mobile phone</i>	Yes
<i>Access to mobile money</i>	Yes
<i>Non-drinking water source</i>	Hand dug well
<i>Distance to nearest main road</i>	2 miles
<i>Distance to school</i>	1 miles
<i>Distance to nearest health clinic</i>	2.4 miles
<i>Distance to nearest market</i>	2 miles ¹

Toilet descriptors

<i>Overview</i>	Pour-flush toilet constructed in 2019, with 2 compartments – 1 each for toilet and bath
<i>Substructure</i>	11 ft deep, single offset pit with septic tank
<i>Interface</i>	Raised concrete squat platform built with mud bricks and cement
<i>Superstructure</i>	Walls made of mud bricks and cement, Door made of wood and zinc, and Roof made of corrugated metal sheets

Cost of toilet (as stated by HH)

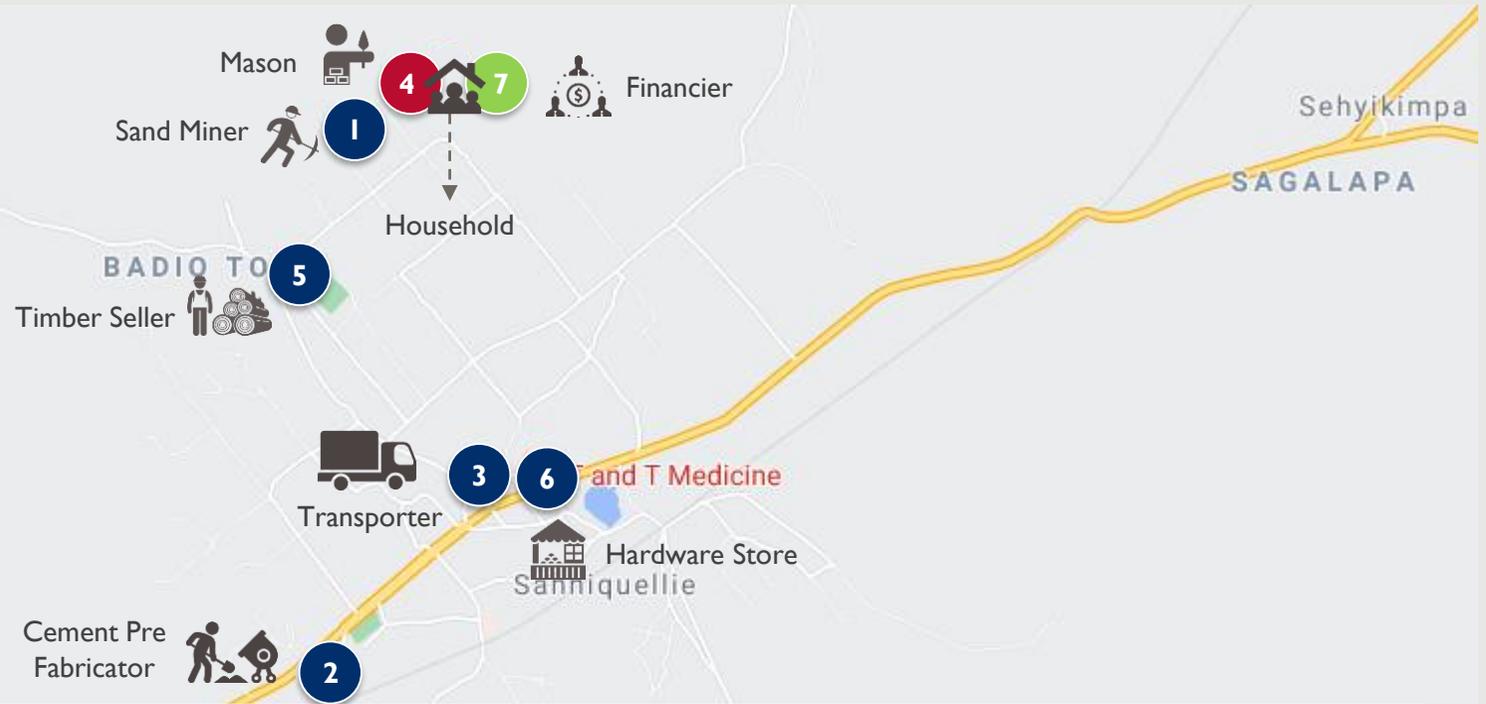
LRD ~28,000

Loan taken for toilet construction, if any

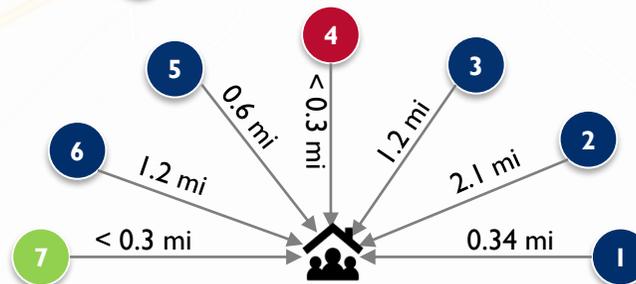
Local SUSU club

1. Assuming walking speed as 4 miles per hour

Trace-back of an Improved Toilet in urban Nimba (2/2)



Distance between VC actor and HH or between two VC actors



- Household
- Material Suppliers
- Service Providers
- Financiers

Source: Qualitative interviews conducted by FSG in Sanniquellie-Mahn district in Nimba county, Liberia;

Note: 1. Distances have been estimated based on the shortest distance suggested by Google Maps. Actual distance traveled may vary, if alternate routes are used; 2. Households did not hire pit diggers, carpenters, or plumbers, and sourced mud bricks and aggregate on their own. Hardware material/ product suppliers were identified during the trace back process, but their location was not captured; 3. A consolidated view of the distribution of VC actors in urban/rural contexts for the 5 target counties has been [provided in the Market Context section of the appendix](#)

Trace-back of an Improved Toilet in rural Nimba (1/2)



House



Toilet superstructure



Toilet interface

Household descriptors

Owned, male-headed house in Garr-Bain district of Nimba

Main materials used for construction Mud Bricks and Corrugated Metal Sheets

Number of rooms: (excluding toilet, kitchen) 9

Number of members that share the house 19

<i>Access to grid electricity</i>	No
<i>Access to solar panels</i>	No
<i>Access to mobile phone</i>	Yes
<i>Access to mobile money</i>	Yes
<i>Non-drinking water source</i>	River
<i>Distance to nearest main road</i>	1 miles
<i>Distance to school</i>	1 miles
<i>Distance to nearest health clinic</i>	11.2 miles
<i>Distance to nearest market</i>	2.5 miles ¹

Toilet descriptors

<i>Overview</i>	Improved pit latrine toilet constructed in 2019, with 2 compartments – 1 each for toilet and bath
<i>Substructure</i>	13 ft deep, single offset pit with septic tank
<i>Interface</i>	Raised concrete squat platform built with mud bricks
<i>Superstructure</i>	Walls made of mud bricks, Door made of wooden planks, and Roof made of zinc sheets

Cost of toilet (as stated by HH)

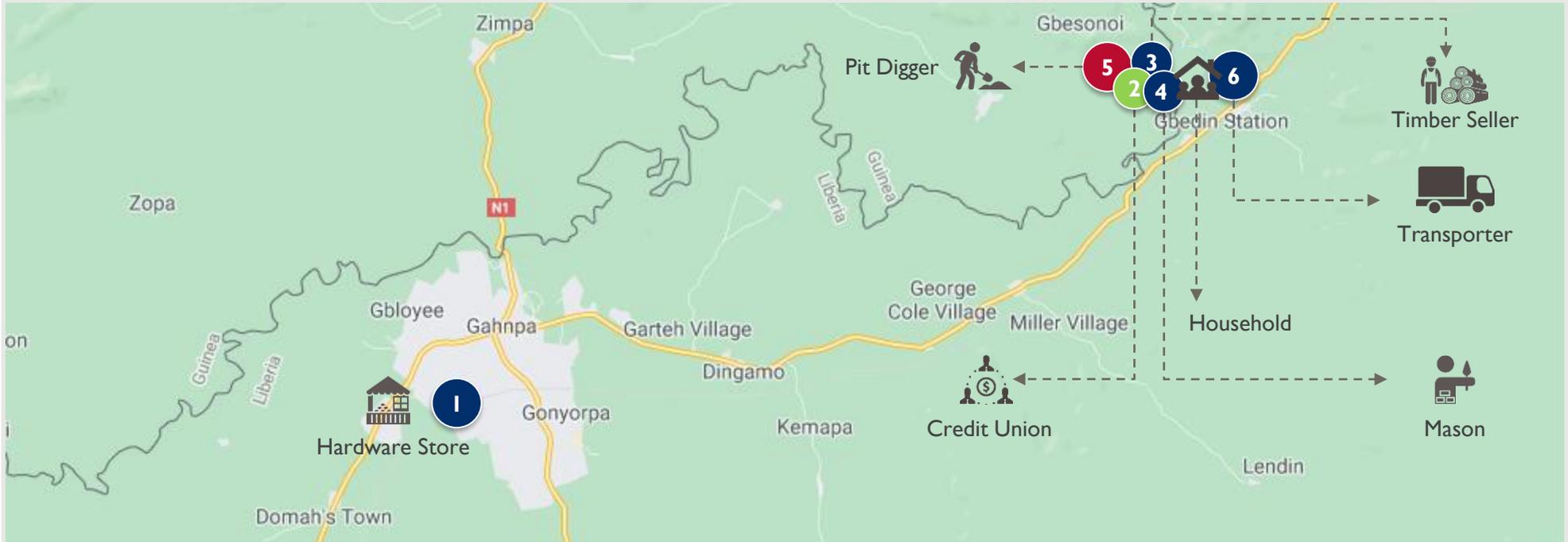
LRD ~20,000

Loan taken for toilet construction, if any

LRD 10k from local SUSU club

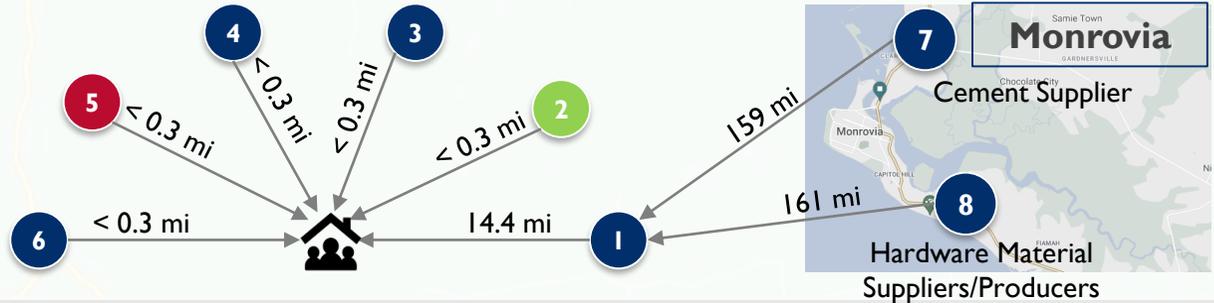
1. Assuming walking speed as 4 miles per hour

Trace-back of an Improved Toilet in rural Nimba (2/2)



Distance between VC actor and HH or between two VC actors

- Household
- Material Suppliers
- Service Providers
- Financers



Source: Qualitative interviews conducted by FSG in Garr-Bain district in Nimba county in Liberia ;

Note: 1. Distances have been estimated based on the shortest distance suggested by Google Maps. Actual distance traveled may vary, if alternate routes are used; 2. Households did not hire carpenters or plumbers, sourced sand, aggregate and mud bricks on their own, and did not source cement pre-fabricated materials; 3. A consolidated view of the distribution of VC actors in urban/rural contexts for the 5 target counties has been provided in the Market Context section of the appendix

Trace-back of an Improved Toilet in urban Lofa (1/2)



House



Toilet superstructure



Toilet interface

Household descriptors

Owned, female-headed house in Foya district of Lofa

Main materials used for construction Mud bricks laid with mud but not plastered with cement

Number of rooms: (excluding toilet, kitchen) 4

Number of members that share the house 10

<i>Access to grid electricity</i>	No
<i>Access to solar panels</i>	No
<i>Access to mobile phone</i>	Yes
<i>Access to mobile money</i>	No
<i>Non-drinking water source</i>	Open well
<i>Distance to nearest main road</i>	2.1 miles
<i>Distance to school</i>	0.68 miles
<i>Distance to nearest health clinic</i>	2.1 miles
<i>Distance to nearest market</i>	2.1 miles ¹

Toilet descriptors

<i>Overview</i>	Pour-flush toilet constructed in 2019, with 2 compartments – 1 each for toilet and bath
<i>Substructure</i>	10-13 ft deep, offset pit with concrete slab
<i>Interface</i>	Raised cement squat platform, PVC pipe connected to the pit with no water seal
<i>Superstructure</i>	Walls made of mud bricks, laid with mud and plastered with cement, Door made of wooden planks, and Roof made of zinc sheets

Cost of toilet (as stated by HH)

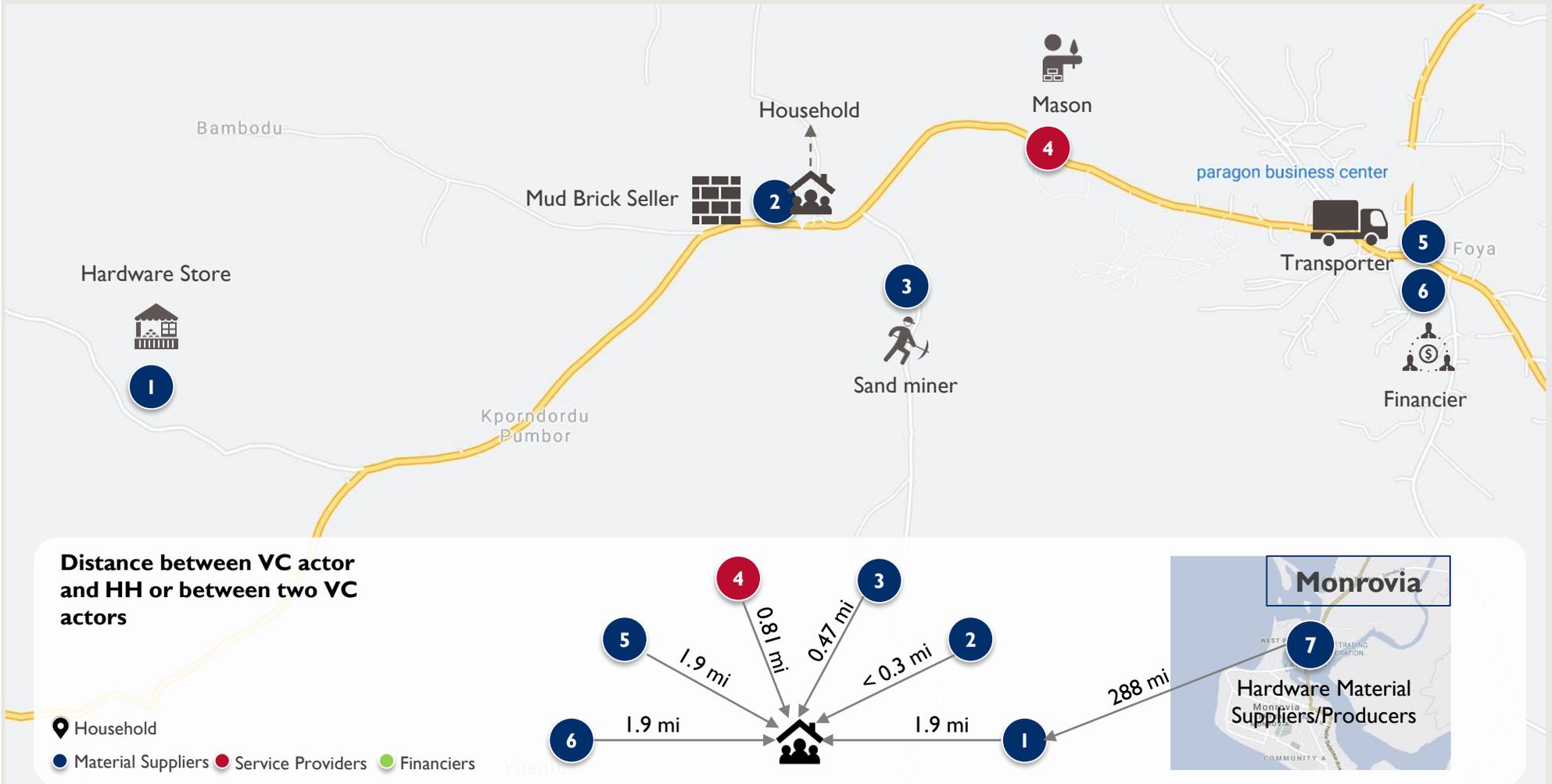
LRD ~38,000

Loan taken for toilet construction, if any

LRD 30k from an MFI

1. Assuming walking speed as 4 miles per hour

Trace-back of an Improved Toilet in urban Lofa (2/2)



Source: Qualitative interviews conducted by FSG in Foya district in Lofa county in Liberia;

Note: 1. Distances have been estimated based on the shortest distance suggested by Google Maps. Actual distance traveled may vary, if alternate routes are used; 2. Households did not hire pit diggers, plumbers or carpenters, and sourced timber and aggregate on their own. Cement pre-fabricators were identified during the trace back process, but their location was not captured; 3. A consolidated view of the distribution of VC actors in urban/rural contexts for the 5 target counties has been provided in the [Market Context](#) section of the appendix

Trace-back of an Improved Toilet in rural Lofa (1/2)



House



Toilet superstructure



Toilet interface

Household descriptors

Owned, male-headed house in Salayea district of Lofa

Main materials used for construction Mud and wattle; ground plastered with cement

Number of rooms: (excluding toilet, kitchen) 4

Number of members that share the house 1

<i>Access to grid electricity</i>	No
<i>Access to solar panels</i>	No
<i>Access to mobile phone</i>	Yes
<i>Access to mobile money</i>	Yes
<i>Non-drinking water source</i>	Creek
<i>Distance to nearest main road</i>	< 0.3 miles
<i>Distance to school</i>	< 0.3 miles
<i>Distance to nearest health clinic</i>	0.7 miles
<i>Distance to nearest market</i>	0.3 miles ¹

Toilet descriptors

<i>Overview</i>	Pour-flush toilet constructed in 2011 (renovated in 2019), with 2 compartments
<i>Substructure</i>	8 ft deep, lined offset pit with septic tank
<i>Interface</i>	Ceramic commode; raised concrete squat platform
<i>Superstructure</i>	Walls made of mud bricks, laid with mud and plastered with cement, wooden door, and Roof made of zinc and planks

Cost of toilet (as stated by HH)

LRD ~33,000

Loan taken for toilet construction, if any

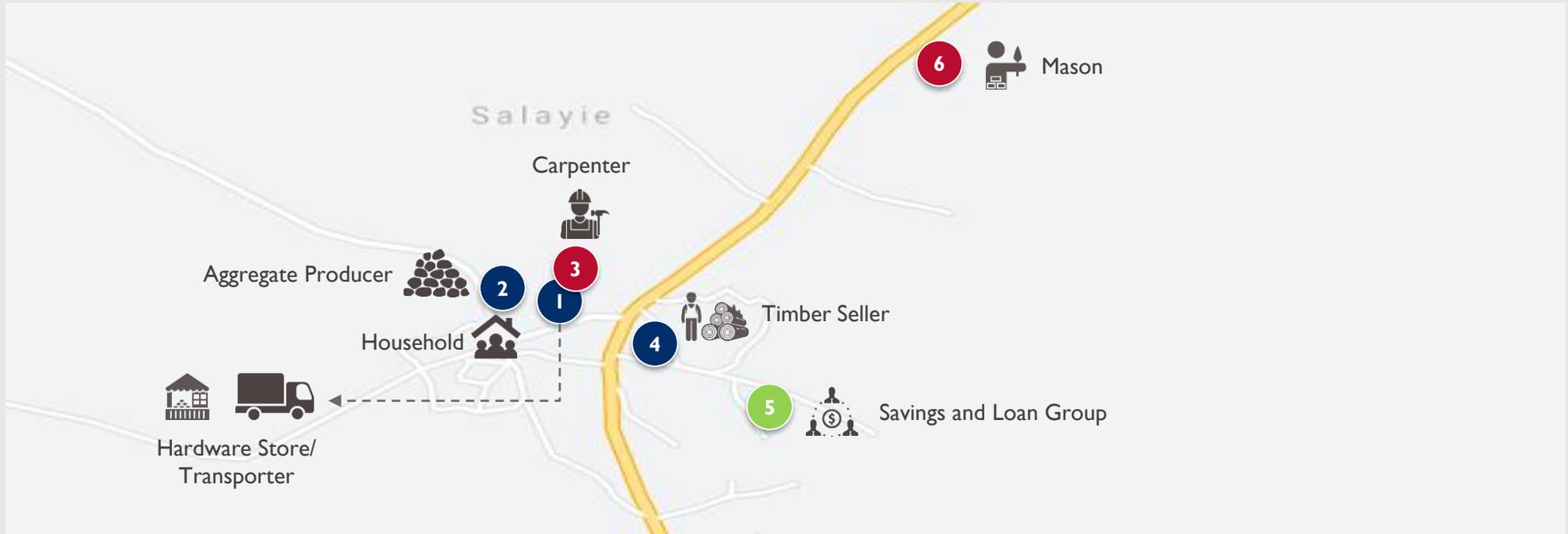
LRD 20k loan from a VSLA

1. Assuming walking speed as 4 miles per hour

Trace-back of an Improved Toilet in rural Lofa (2/2)

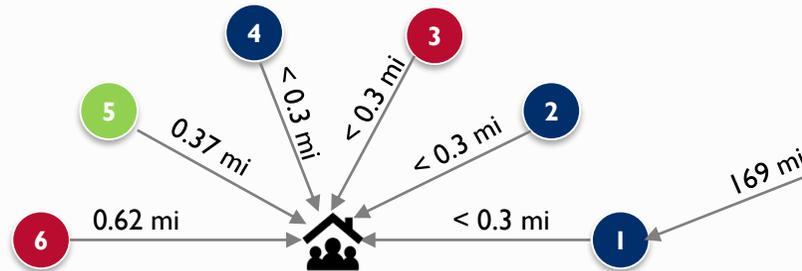


[Click to go back](#)



Distance between VC actor and HH or between two VC actors

- Household
- Material Suppliers
- Service Providers
- Financiers



Source: Qualitative interviews conducted by FSG in Salayea district in Lofa county in Liberia;

Note: 1. Distances have been estimated based on the shortest distance suggested by Google Maps. Actual distance traveled may vary, if alternate routes are used; 2. Households did not hire pit diggers or plumbers, sourced mud bricks and sand on their own, and did not source cement pre-fabricated materials; 3. A consolidated view of the distribution of VC actors in urban/rural contexts for the 5 target counties has been provided in the Market Context section of the appendix

Appendix - Table of Contents

- Overview of the Liberia SMA
- Market Context
- Actor Profiles
- Actor Maps
- **Toilet Costing**
- Barriers and Drivers towards MBS
- Customer Segmentation
- Segment Profiles

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Toilet Costing | Cost of an Improved Toilet

As the quality of construction, materials used, and additional features of the toilet are improved/upgraded, the labor cost as a proportion of the total cost of the toilet increases significantly

Lower-end option

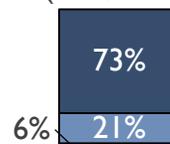
LRD 33,000^{1,2}
(US\$ 165)



Concrete floor; a raised cement squat platform; walls of mud brick laid with mud and not plastered; unlined offset pit

Mid-end option

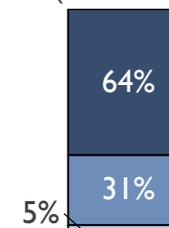
LRD 76,000^{1,2}
(US\$ 380)



Concrete floor; a ceramic commode with an inbuilt water trap; walls of mud brick laid with cement and not plastered; unlined offset pit with a ventilation pipe

Higher-end option

LRD 120,000^{1,2}
(US\$ 600)



Concrete tiled floor; a ceramic commode with an inbuilt water trap; walls of mud brick laid and plastered with cement; lined offset septic tank with a ventilation pipe

Material Labor Transportation

Source: Qualitative interviews, FSG analysis; Image Source: Captured with permission during HH interviews

- Assuming that the customer pays for all the materials and services required, and does not self-source any of the materials or provide labor for any construction activities
- Toilet costs differ based on county, urban vs. rural, and other factors. However, for simplicity, we have taken the average cost across all factors for this cost analysis

Toilet Costing | Features of a Lower-end Improved Toilet

The total cost to build an improved, pour flush latrine with a raised cement squat platform and an offset pit comes to ~LRD 33,000; ~40% of this is retained as gross profit margin by the VC actors involved

Sub-structure



- Rectangular offset pit, covered with a concrete slab
- No ventilation pipe
- Unlined
- 6 feet deep

Interface



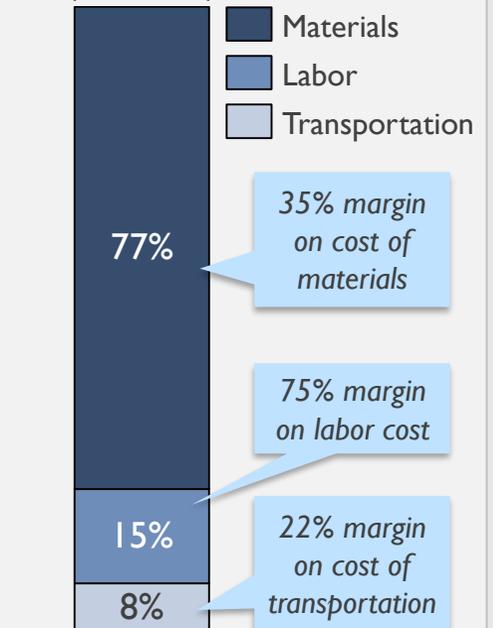
- One compartment
- Concrete floor
- Raised cement squat platform with no water trap

Super-structure



- Walls made of mud bricks laid with mud and not plastered
- Wooden door
- Roof made of zinc and wooden planks

LRD 33,000^{1,2}
(US\$ 165)



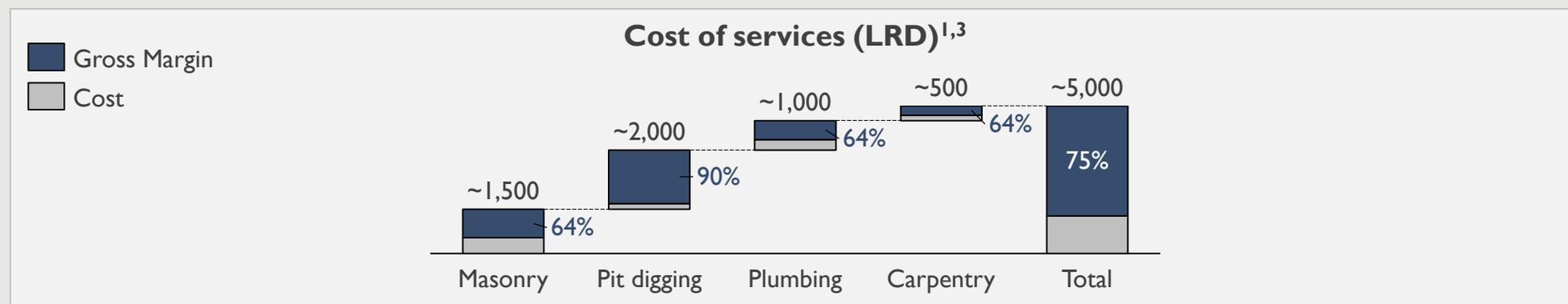
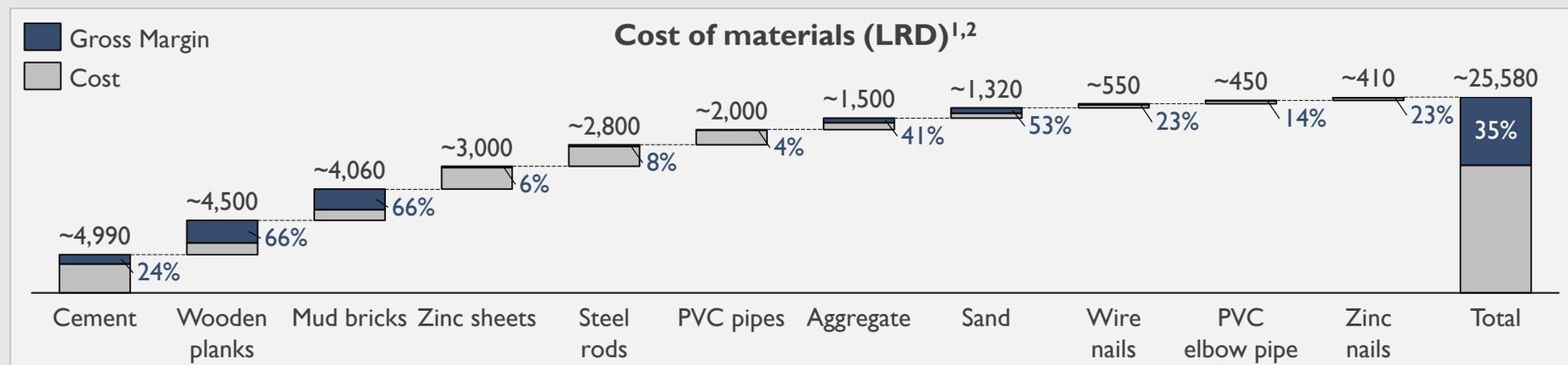
Cost to build a lower-end improved toilet

Source: Qualitative interviews, FSG analysis; **Image Source:** Captured with permission during HH interviews

1. Assuming that the customer pays for all the materials and services required, and does not self-source any of the materials or provide labor for any construction activities
2. Toilet costs differ based on county, urban vs. rural, and other factors. However, for simplicity, we have taken the average cost across all factors for this cost analysis

Toilet Costing | Cost Build-up of a Lower-end Improved Toilet (1/2)

The cost of masonry and pit digging make up 70% of the total labor cost, while the cost of cement, wooden planks and mud bricks comprises 53% of the total cost of materials needed to build a lower-end improved toilet

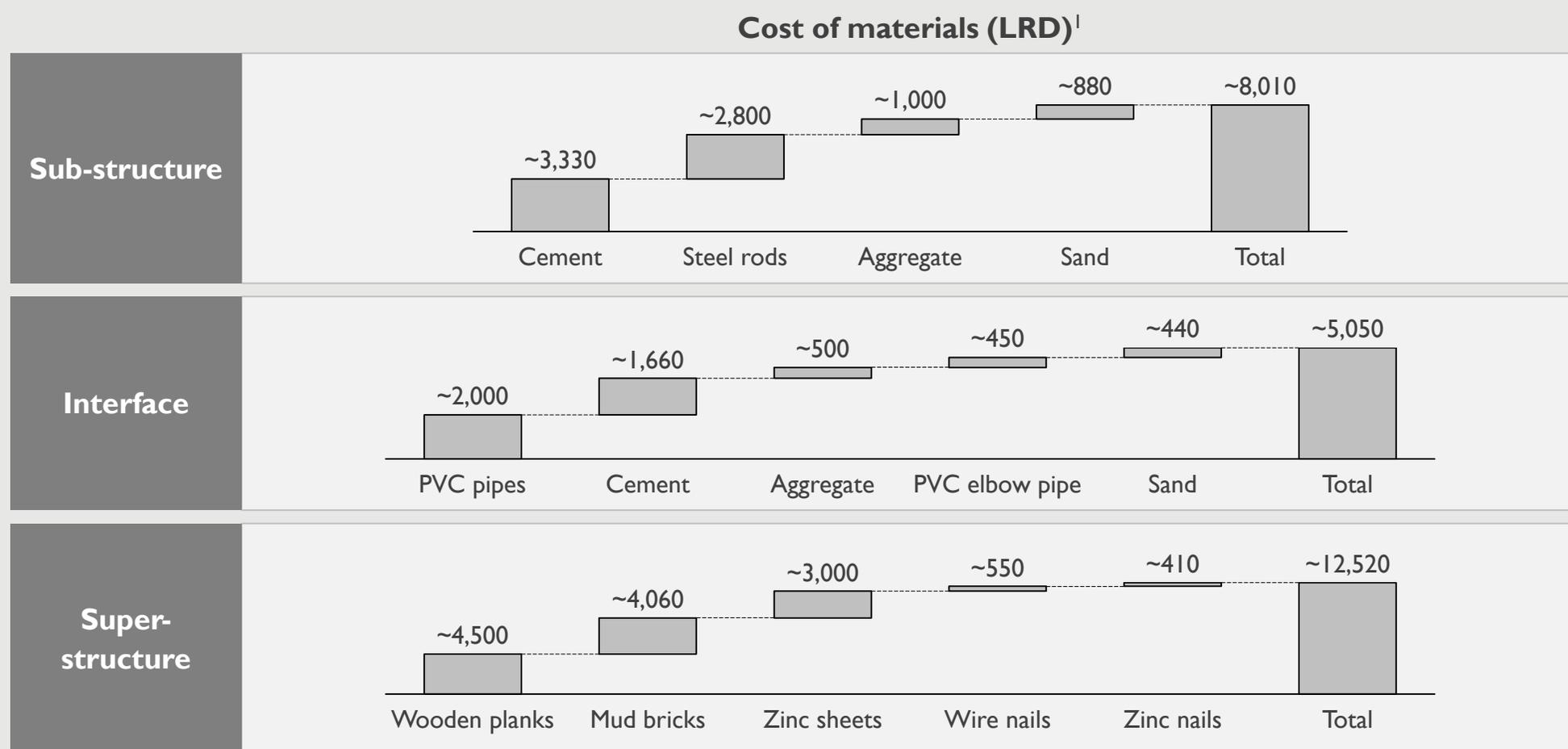


Source: Qualitative interviews, FSG analysis

1. Toilet costs differ based on county, urban vs. rural, and other factors. However, for simplicity, we have taken the average cost across all factors for this cost analysis
2. This cost analysis accounts for materials that make up a significant portion of the total cost, but may not include materials like floor drains that are not used consistently across contexts and do not affect the overall cost significantly
3. For lower-end toilets, the masonry, carpentry, and plumbing services are typically provided by one actor (usually a mason), which helps reduce the labor cost

Toilet Costing | Cost Build-up of a Lower-end Improved Toilet (2/2)

The materials needed for the superstructure of a lower-end improved toilet make up 49% of the total cost of materials, 68% of which is just the cost of wooden planks and mud bricks



Source: Qualitative interviews, FSG analysis

1. This cost analysis accounts for materials that make up a significant portion of the total cost, but may not include materials like floor drains that are not used consistently across contexts and do not affect the overall cost significantly

Toilet Costing | Features of a Mid-end Improved Toilet

The total cost of a pour flush latrine with a ceramic commode, walls of mud brick laid with cement, and an offset pit with a ventilation pipe, comes to ~LRD 76,000; ~38% of this is retained as gross profit margin by the VC actors involved

Sub-structure



- Rectangular offset pit, covered with a concrete slab
- **With a ventilation pipe**
- Unlined
- 6 feet deep

Interface



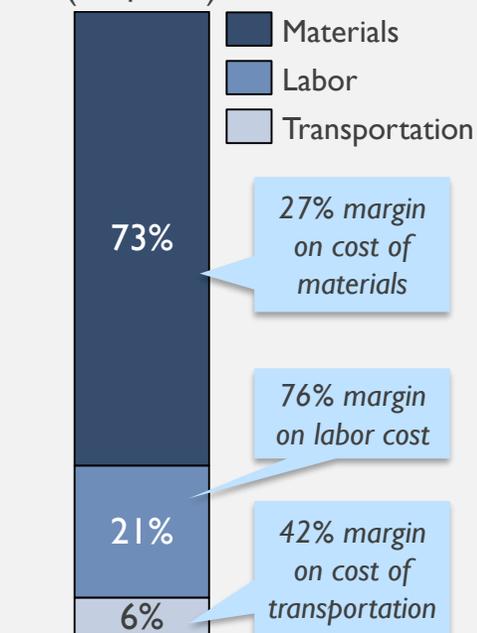
- One compartment
- Concrete floor
- **Ceramic commode with an inbuilt water trap**

Super-structure



- Walls made of mud bricks **laid with cement** and not plastered
- Wooden door
- Roof made of zinc and wooden planks

LRD 76,000^{1,2}
(US\$ 380)



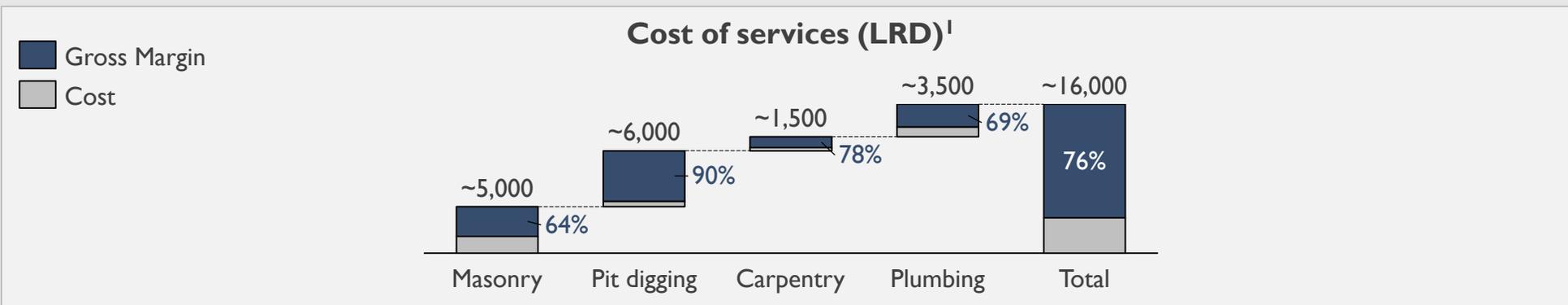
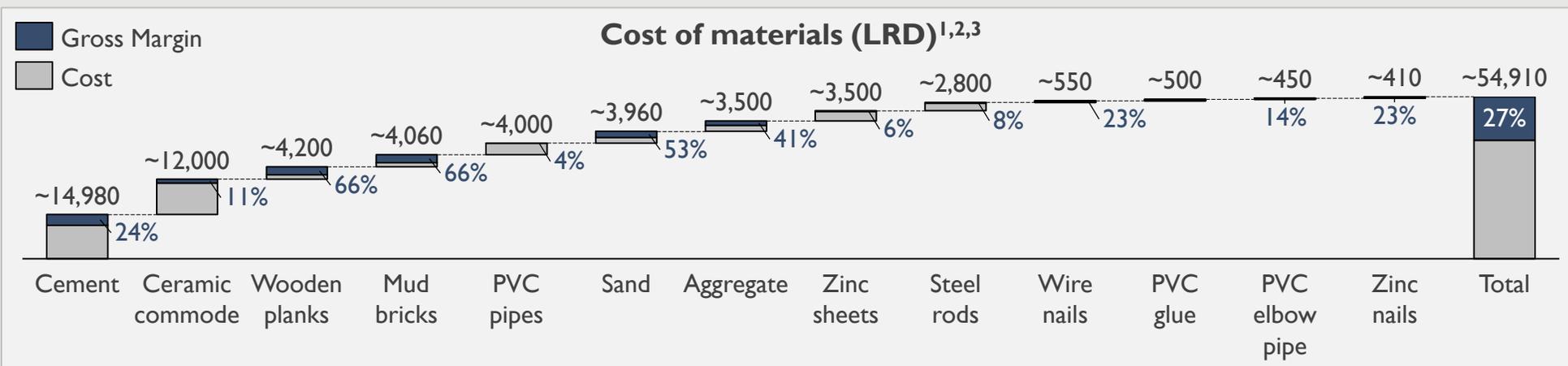
Cost to build a
mid-end
improved toilet

Source: Qualitative interviews, FSG analysis; **Image Source:** Captured with permission during HH interviews

1. Assuming that the customer pays for all the materials and services required, and does not self-source any of the materials or provide labor for any construction activities
2. Toilet costs differ based on county, urban vs. rural, and other factors. However, for simplicity, we have taken the average cost across all factors for this cost analysis

Toilet Costing | Cost Build-up of a Mid-end Improved Toilet (1/2)

The cost of masonry and pit digging make up 69% of the total labor cost, while the cost of cement and a ceramic commode comprises 49% of the total cost of materials needed to build a mid-end improved toilet

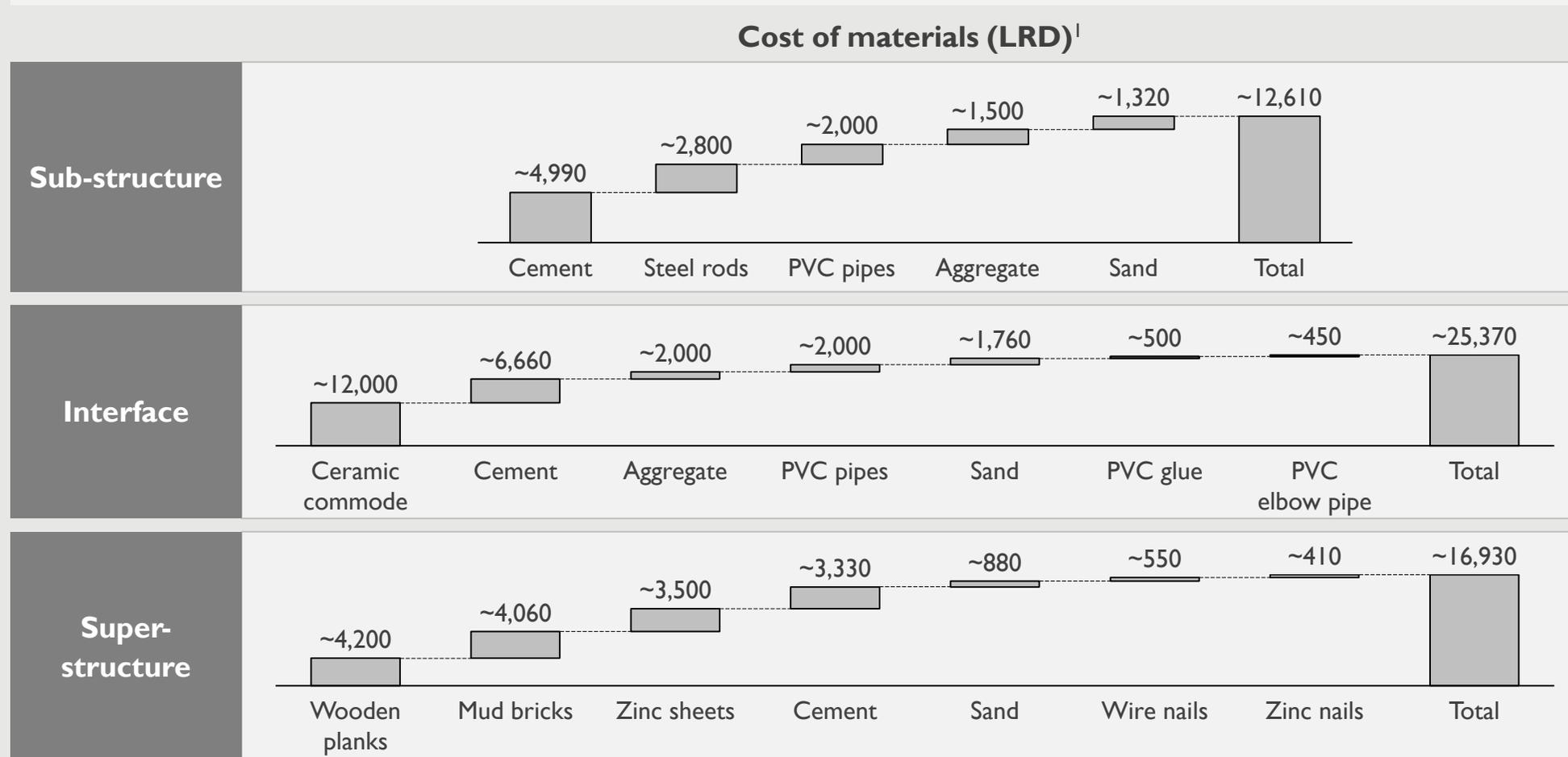


Source: Qualitative interviews, FSG analysis

1. Toilet costs differ based on county, urban vs. rural, and other factors. However, for simplicity, we have taken the average cost across all factors for this cost analysis; 2. This cost analysis accounts for materials that make up a significant portion of the total cost, but may not include materials like floor drains that are not used consistently across contexts and do not affect the overall cost significantly; 3. This analysis also does not include the gross margin for PVC glue, due to the unavailability of data

Toilet Costing | Cost Build-up of a Mid-end Improved Toilet (2/2)

The materials needed for the interface of a mid-end improved toilet make up 46% of the total cost of materials, 74% of which is just the cost of the ceramic commode and cement



Source: Qualitative interviews, FSG analysis

1. This cost analysis accounts for materials that make up a significant portion of the total cost, but may not include materials like floor drains that are not used consistently across contexts and do not affect the overall cost significantly

Toilet Costing | Features of a Higher-end Improved Toilet

The total cost of a pour flush latrine with a ceramic commode, tiled floor, and a lined offset septic tank with a ventilation pipe, comes to ~LRD 120,000; ~41% of this is retained as gross profit margin by the VC actors involved

Sub-structure



- Rectangular, offset **septic tank**, covered with a concrete slab
- **With a ventilation pipe**
- **Lined with cement bricks laid with cement**
- **10 feet deep**

Interface



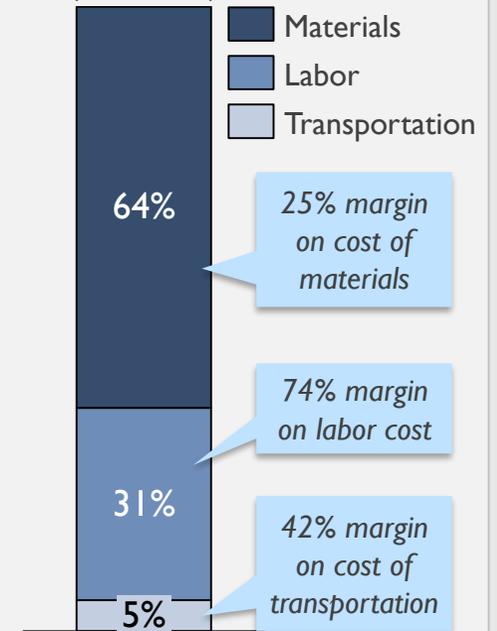
- One compartment
- Concrete floor, **covered with tiles**
- **Ceramic commode with an inbuilt water trap**

Super-structure



- Walls made of mud bricks **laid and plastered with cement**
- Wooden door
- Roof made of zinc and wooden planks

LRD 120,000^{1,2}
(US\$ 600)



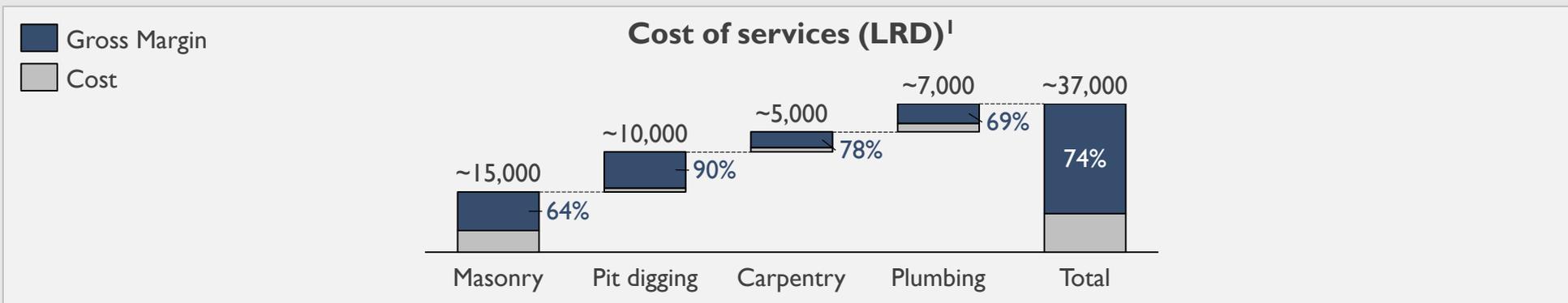
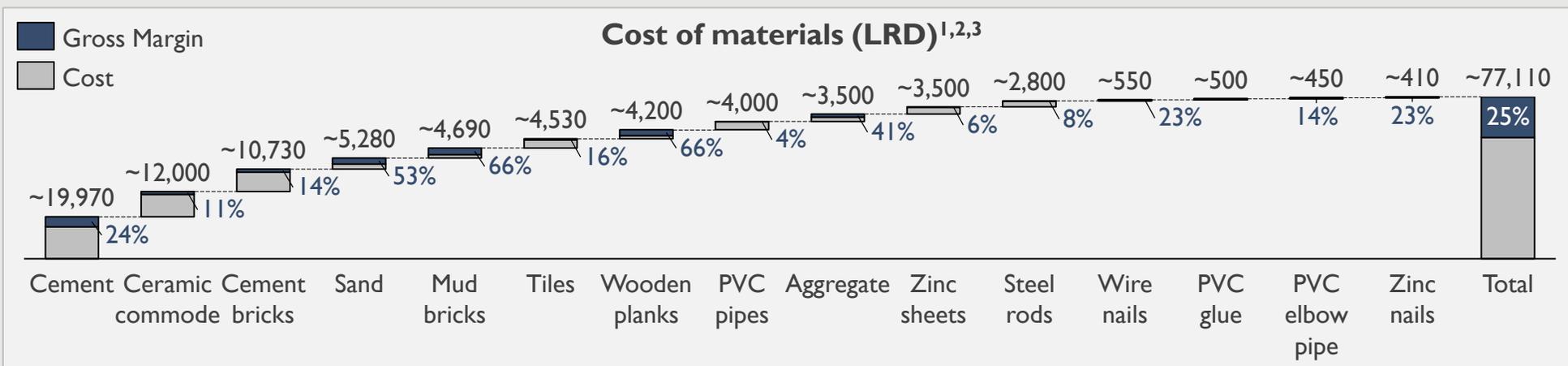
Cost to build a higher-end improved toilet

Source: Qualitative interviews, FSG analysis; **Image Source:** Captured with permission during HH interviews

1. Assuming that the customer pays for all the materials and services required, and does not self-source any of the materials or provide labor for any construction activities
2. Toilet costs differ based on county, urban vs. rural, and other factors. However, for simplicity, we have taken the average cost across all factors for this cost analysis

Toilet Costing | Cost build-up of a Higher-end Improved Toilet (1/2)

The cost of masonry and pit digging make up 68% of the total labor cost, while the cost of cement, cement bricks and a ceramic commode comprises 55% of the total cost of materials needed to build a higher-end improved toilet

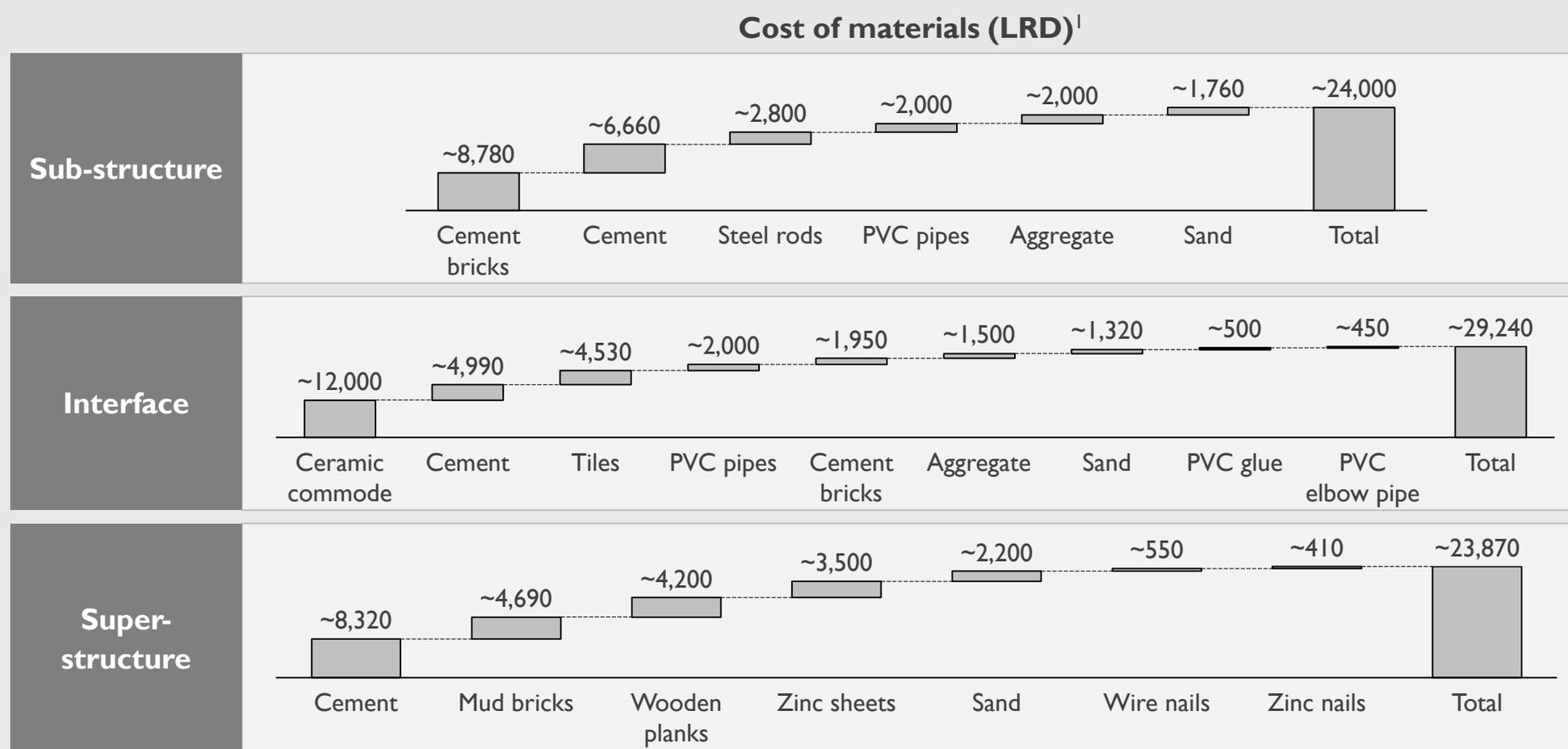


Source: Qualitative interviews, FSG analysis

1. Toilet costs differ based on county, urban vs. rural, and other factors. However, for simplicity, we have taken the average cost across all factors for this cost analysis; 2. This cost analysis accounts for materials that make up a significant portion of the total cost, but may not include materials like floor drains that are not used consistently across contexts and do not affect the overall cost significantly; 3. This analysis also does not include the gross margin for PVC glue, due to the unavailability of data

Toilet Costing | Cost Build-up of a Higher-end Improved Toilet (2/2)

The materials needed for the interface of a higher-end improved toilet make up 38% of the total cost of materials, 74% of which is just the cost of the ceramic commode, cement and tiles



Source: Qualitative interviews, FSG analysis

1. This cost analysis accounts for materials that make up a significant portion of the total cost, but may not include materials like floor drains that are not used consistently across contexts and do not affect the overall cost significantly

Toilet Costing | Approach to Calculate Unit Margins for VC Actors (1/2)

Sanitation is adequately profitable at a unit level, especially for key value chain actors such as masons, carpenters, plumbers and cement pre fabricators

Actor	Unit definition	Rationale for choice of unit	Unit margin (%) ¹	Costs excluded in unit margin analysis ²
Aggregate producer	1 pickup truck load of small-sized aggregate	Aggregate is only available in two sizes, and is usually purchased in pickup truck loads.	~38%	<ul style="list-style-type: none"> • Cost of food/transport for labor
	1 pickup truck load of large-sized aggregate		~44%	
Carpenter	Making a wooden door (including the door frame) and a roof made of zinc sheets and wood for a 5 ft. by 7 ft. toilet	The carpentry work for a toilet typically involves making the door and roof only.	~78%	<ul style="list-style-type: none"> • Cost of transport for labor
Cement pre-fabricator	1 6-inch cement brick	Most cement pre-fabricators only sell 6-inch cement bricks. The cement commode is the sanitation product that they sell most often.	~14%	<ul style="list-style-type: none"> • Cost of food/transport for labor • Cost of land and utilities • Cost of transporting materials
	1 pre-fabricated cement commode		~56%	
Hardware store	1 50kg bag of cement	Typical unit of purchase	~24%	<ul style="list-style-type: none"> • All costs other than material purchase and transportation
	1 carton of 11 tiles	Typical unit of purchase	~23%	
	1 packet of zinc nails	Typical unit of purchase	~16%	
	1 PVC elbow pipe	Typical unit of purchase	~15%	
	1 ceramic commode	Typical unit of purchase	~11%	
	1 unit of other hardware material (e.g., 1 14-gauge zinc sheet, 1 steel rod, etc.)	Typical unit of purchase	3% – 8%	

Source: Qualitative interviews, FSG analysis

1. Unit margins differ based on county, urban/rural, and other factors. However, for simplicity, we have taken the average cost across all factors for this analysis; 2. Taxes are not accounted for in unit margin calculations for value chain actors; 3. Detailed profiles of key value chain actors are [included in the Actor Profiles section of the appendix](#)

Toilet Costing | Approach to Calculate Unit Margins for VC Actors (2/2)



[Click to go back](#)

Sanitation is adequately profitable at a unit level, especially for key value chain actors such as masons, carpenters, plumbers and cement pre fabricators

Actor	Unit definition	Rationale for choice of unit	Unit margin (%) ¹	Costs excluded in unit margin analysis ²
Mason	Building a 5 ft. by 7 ft. mid-end improved toilet with a raised cement squat platform ³	Most common type of improved toilet constructed by masons	~64%	<ul style="list-style-type: none"> • Cost of transport for labor
Mud brick seller	1 6-inch mud brick	Typical unit of purchase	~66%	<ul style="list-style-type: none"> • Cost of transport for labor • Cost of land and utilities
Pit digger	Digging a 6-12 ft. deep offset pit for a 5 ft. by 7 ft. mid-end improved toilet	Most common type of pit dug for toilets	~90%	<ul style="list-style-type: none"> • Cost of transport for labor
Plumber	Plumbing for a mid-end improved toilet with a raised cement squat platform, including installing the water trap ³	The plumbing for a toilet involves connecting interface to pit, and installing a water trap/commode	~69%	<ul style="list-style-type: none"> • Cost of transport for labor
Sand miner	1 pickup truck load of sand	Typical unit of purchase	~53%	<ul style="list-style-type: none"> • Cost of food/transport for labor
Timber seller	1 14 ft. long plank of wood	Standard length for wooden planks, with customizable width/thickness	~66%	<ul style="list-style-type: none"> • Cost of food/transport for labor • Cost of land and utilities
Transporter	1 trip on a motorcycle transporting 4 50 kg bags of cement	Maximum load for the vehicle, which determines the rate per unit distance and, therefore, the unit margin	~22%	<ul style="list-style-type: none"> • Cost of vehicle purchase/rental • Interest cost on loan taken to purchase vehicle (if any) • License/registration costs
	1 trip in a pickup truck transporting 30 50kg bags of cement		~42%	

Source: Qualitative interviews, FSG analysis

1. Unit margins differ based on county, urban vs. rural, and other factors. However, for simplicity, we have taken the average cost across all factors for this analysis; 2. Taxes are not accounted for in unit margin calculations for value chain actors; 3. Refers to the construction of a single compartment improved pour flush latrine that has a raised cement squat platform with a water trap, brick walls laid with cement, a wooden door, a zinc roof, and an unlined offset pit covered with a concrete slab; 4. Detailed profiles of key actors in the sanitation value chain have been [provided in the Actor Profiles section of the appendix](#).

Appendix - Table of Contents

- Overview of the Liberia SMA
- Market Context
- Actor Profiles
- Actor Maps
- Toilet Costing
- **Barriers and Drivers towards MBS**
- Customer Segmentation
- Segment Profiles

Please click on the section name to go to that particular section

Barriers and Drivers | Definitions

For Customers



A barrier is any factor that **inhibits a customer from paying for and constructing a toilet**

For Value Chain Actors

A barrier is any factor that **restricts a value chain (VC) actor's participation** in the sanitation market, thereby making it more difficult for customers to purchase toilets



A driver is any factor that **enables a customer** to pay for and construct a toilet

A driver is any factor that **enhances a VC actor's participation** in the sanitation market, thereby making it easier for customers to purchase toilets

Barriers and Drivers | Framework for Market Based Sanitation

What is the framework for MBS?

- The framework for market-based sanitation (MBS) helps funders and implementers to design, analyze, and improve MBS interventions by specifying the types of barriers that may need to be addressed to bring about systems change at scale
- The framework identifies three distinct domains: (1) the core **sanitation market**, comprising customers, enterprises, and entrepreneurs, that large-scale interventions can address (2) the **business environment**, shaped by government policy or the availability of raw materials and financial services, which governments, donors and funders, and large interventions can potentially influence, depending on the complexity and resources available; (3) **context**, such as social norms, economic environment, and geographic conditions, which interveners should understand but typically cannot influence in the short-term

The Sanitation Market System – Framework for MBS¹



1. **Source:** USAID, 2018. Scaling Market Based Sanitation: Desk review on market-based rural sanitation development programs. Washington, DC., USAID Water, Sanitation, and Hygiene Partnerships and Learning for Sustainability (WASHPaLS) Project

Barriers and Drivers | Overall Summary

Click on any bullet for additional details

- Barriers
- Drivers



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Customer

- High awareness of the benefits of BSS
- Unaffordability of preferred improved toilets
- Irregular and unpredictable incomes for agrarian households
- Access to financiers and prior loan-taking behavior
- Convenience of defecating in the open at or near water sources
- Lack of space and incentive for renters to build toilets

Entrepreneur

- Sanitation, as a business, may not be viable for many VC actors
- Sanitation is adequately profitable at a unit level for some VC actors
- Many VC actors do not have money for business expansion
- VC actors that could act as sanitation entrepreneurs may not have the requisite business acumen



Enterprise

- More affordable product options are not found in most hardware stores
- Strong preference for flush/pour flush toilets, but insufficient access to water
- Low demand for ready-made cement products; may be addressable through promotional activities and awareness campaigns
- A DIY model of toilet building that is cumbersome for households
- Potential for increased business due to customer referrals among VC actors

Business environment and context

- Poorly penetrated associated supply chains
- Centralized planning and coordination of sanitation activities
- Inconsistent enforcement of existing laws and high tariffs on imported goods
- Significant internal economic migration, leading to a reversion to OD
- High dependence on donor-funded public toilet facilities
- Reduced ability to pay due to economic slowdown and rising inflation

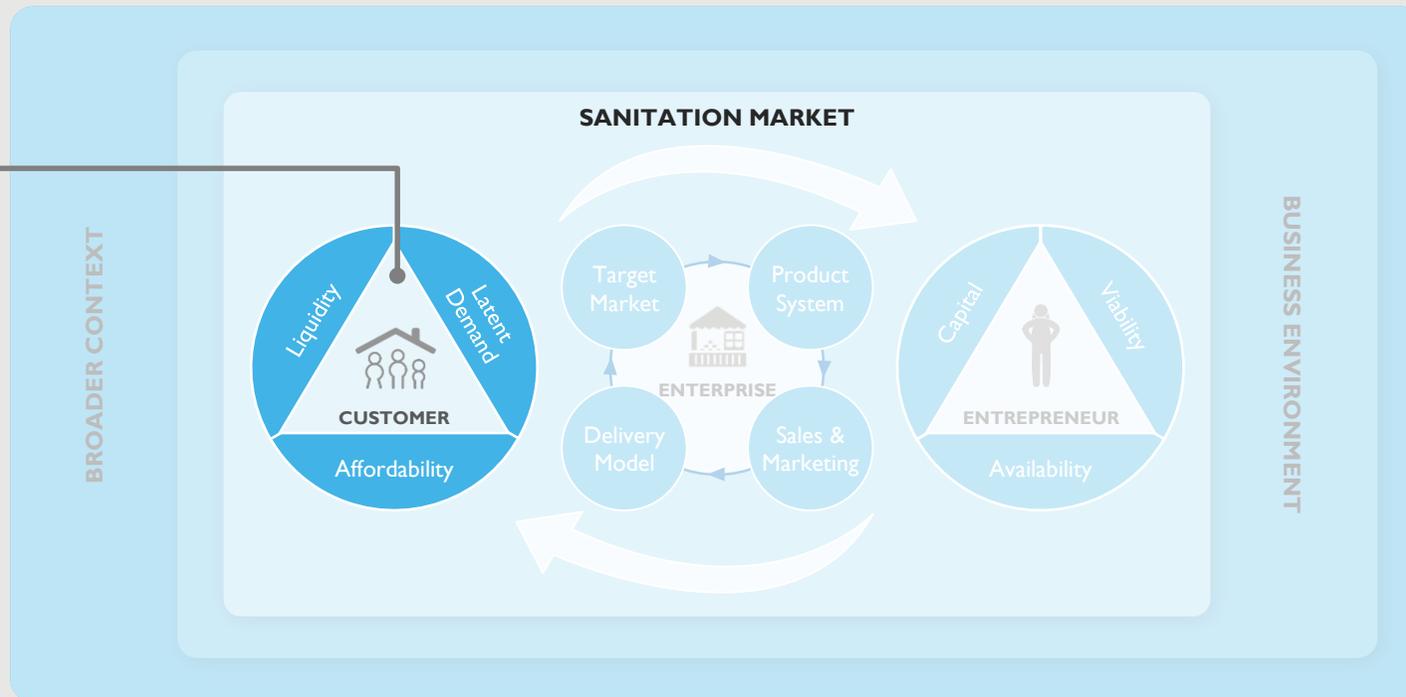
Barriers and Drivers | Customer



• Barriers • Drivers

Customer

- High awareness of the benefits of basic sanitation service
- Unaffordability of preferred improved toilets
- Irregular and unpredictable incomes for agrarian HHs
- Access to financiers and prior loan-taking behaviour
- Convenience of defecating in the open at or near water sources
- Lack of space and incentive for renters to build toilets

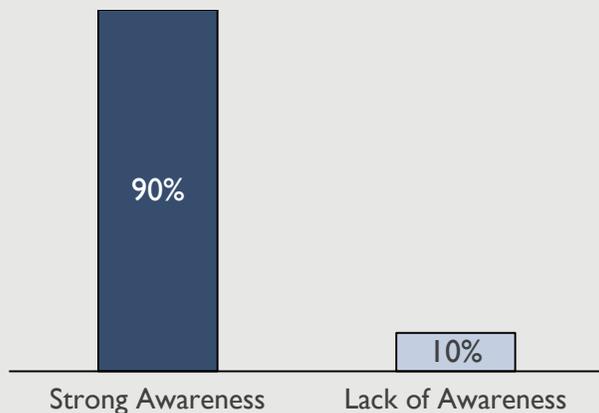




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Households are highly aware of the benefits of a toilet, particularly of the benefits most commonly associated with basic sanitation service, however some households have unfavorable beliefs related to toilets

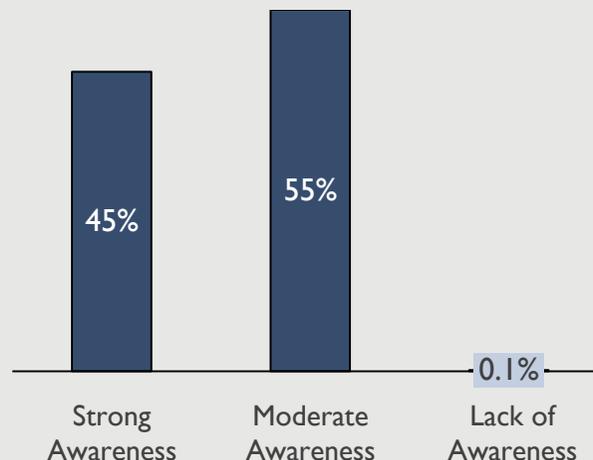
Awareness of health and hygiene benefits from toilets (%)¹



“There are many benefits of having your own toilet. It stops you and your children from getting diarrhea, because the flies will not bring shit from the bush and make you sick.”

– HH using an unimproved toilet in Grand Bassa²

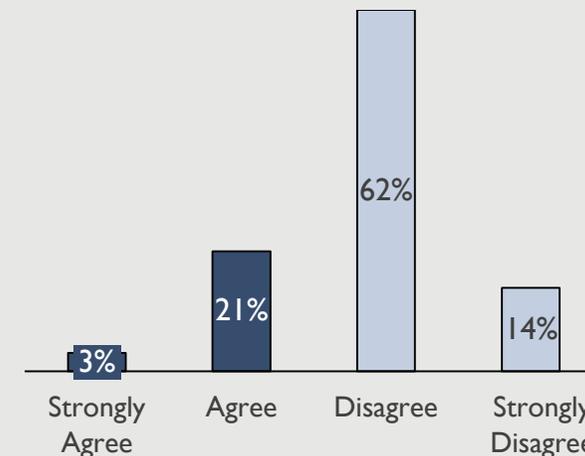
Awareness of prestige, convenience, safety benefits from toilets (%)^{1,3}



“Having your own toilet will give you respect, keep you safe from contracting illnesses from the public/community toilet, and give you privacy.”

– HH using an unimproved toilet in Nimba²

Belief that it is taboo to live near a toilet (%)¹



“My feces and I cannot sleep in the same house.”

– HH with limited sanitation service in Montserrat²

1. **Source:** HH interviews (Profile n=3,608; Detailed n=659), FSG analysis

2. **Source:** Qualitative interviews, FSG analysis

3. Total ≠ 100% as numbers are rounded off.



The unaffordability of preferred improved toilet options is a key reason why many households have not built an improved toilet

a

Most households that do not have access to basic sanitation service do not build an improved toilet because they cannot afford it

b

Households prefer building a toilet with a ceramic commode and cement/brick walls, further exacerbating the affordability challenge and sometimes delaying construction in want of the “ideal toilet”

Even an improved toilet which only partially meets customer preferences¹ may cost up to ~LRD 40,000...

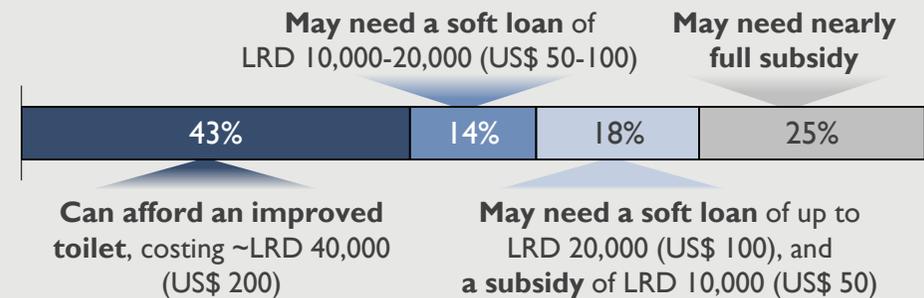
... and is affordable for only 43% of households

Improved Toilet ~LRD 40,000 (US\$ 200)²



Toilet with concrete floor and a cement commode with an inbuilt water trap; walls of mud bricks laid with mud and not plastered; unlined offset pit

Distribution of HHs without basic sanitation service by ability to pay for an improved toilet (%)^{3,4}

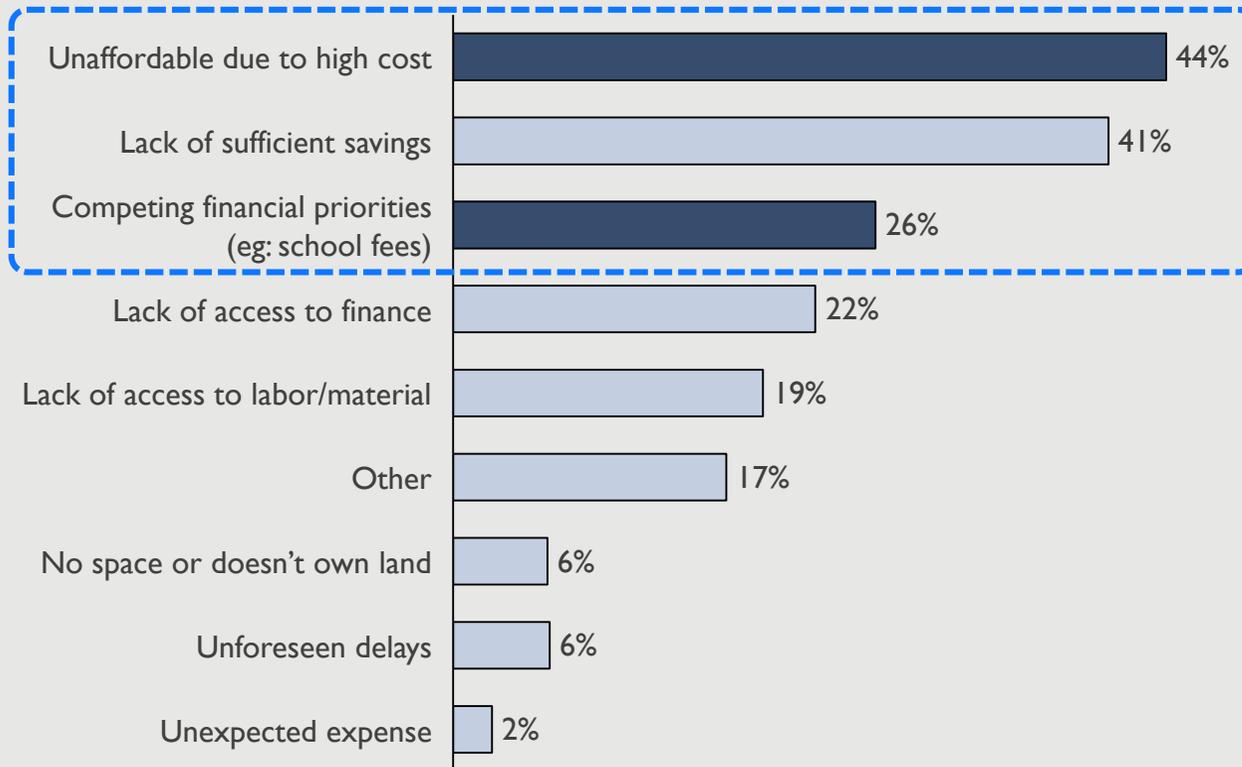


1. Among the options available in the market, this toilet only partially meets customer preferences by providing a seated interface in the form of a pre-fabricated cement commode, however it may not be desirable for all households
2. **Source:** Qualitative interviews, FSG analysis; **Image Source:** Captured with permission during HH interviews
3. **Source:** HH interviews (Profile n=3,608; Detailed n=659), FSG analysis
4. Assumption: Households can pay no more than 50% of their total asset value towards toilet construction. The rest needs to be covered by a soft loan, and/or a subsidy.

Customer | Barrier | Affordability (2/2)

In fact, a significant proportion of households without basic sanitation service considered an improved toilet, but did not purchase/build it due to affordability challenges (e.g., high cost, competing financial priorities)

Reasons why HHs without basic sanitation service considered but did not purchase/build an improved toilet (%)¹



"I have not built a toilet since buying this land because the toilet is too expensive. I live far from town, and transporting toilet construction items will cost me a lot"

– HH practicing OD in Grand Bassa²

"My dream toilet is the flush toilet that my neighbor has. It has a concrete structure with a commode. I do not currently have the money to upgrade to this toilet"

– HH with an unimproved toilet in Montserrado²

1. **Source:** HH interviews (Profile n=3,608; Detailed n=659), FSG analysis

2. **Source:** Qualitative interviews, FSG analysis



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In fact, a toilet with features that most households consider ideal (e.g., ceramic commode, cemented walls) costs LRD 120,000, and may only be affordable with a soft loan for 29% of households...

Ideal toilet
~LRD 120,000 (US\$ 600)¹



Toilet with concrete **tiled** floor and a **ceramic commode** with an inbuilt water trap; walls of mud bricks **laid and plastered with cement**; **lined** offset **septic tank with ventilation pipe**

Distribution of HHs without basic sanitation service by ability to pay for the “ideal toilet” (%)^{2,3}

May need a soft loan of up to LRD 60,000 (US\$ 300)



... leading some households to wait and only construct their “ideal toilet”

“I want to build a toilet with a concrete floor, and a local pour flush of cement connected by a PVC pipe with a seat. I will not consider building a cheaper toilet, as it will not last long and can be dangerous”

– HH practicing OD in Nimba¹

“I would only like to build a flush toilet with a commode - the same type that my sister has in Monrovia. All the toilet construction materials are expensive, so there is no such thing as a cheaper toilet.”

– HH practicing OD in Grand Bassa¹

1. **Source:** Qualitative interviews, FSG analysis; **Image Source:** Captured with permission during HH interviews

2. **Source:** HH interviews (Profile n=3,608; Detailed n=659), FSG analysis

3. Assumption: Households can pay no more than 50% of their total asset value towards toilet construction. The rest needs to be covered by a soft loan, and/or a subsidy.



Several agrarian households, which account for a third of households without basic sanitation service, tend to have irregular and unpredictable annual incomes, leading to a liquidity constraint even if they can afford an improved toilet

a

Several agrarian households, which account for a third of households without basic sanitation service, tend to have irregular and unpredictable annual incomes, which has a knock-on impact on their savings and investments

b

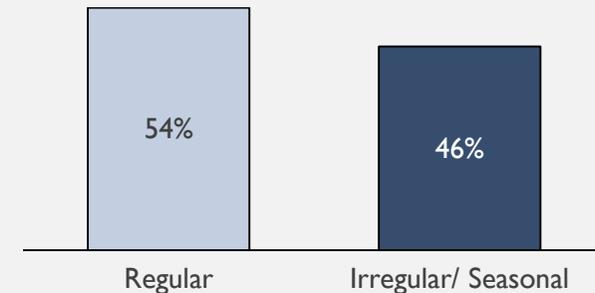
A significant proportion of households face liquidity issues while constructing an improved toilet

Several agrarian households¹, which account for a third of households without basic sanitation service, tend to have irregular and unpredictable annual incomes, which has a knock-on impact on their savings and investments

Primary source of income for HHs without basic sanitation service (%)²



Distribution of agrarian households¹ by frequency of receiving income (%)²



“My main source of income is crop production. I grow corn, cassava and sugarcane. I don’t earn much money from the sugarcane plantation, but I could make anywhere between LRD 10,000 – 15,000 when I harvest my corn twice a year. There is no certainty and my income varies every year.”

– HH practicing OD in Grand Bassa³

Secondary research

According to the Agricultural Risk Assessment Study by the Platform for Agricultural Risk Management (PARM), **unpredictability of natural events**, particularly floods, storms or harmattans, are a major source of risk in agricultural activity, significantly impacting the earnings, savings, and investments of households engaged in agriculture.

1. Households that reported agriculture was their primary source of income
2. **Source:** HH interviews (Profile n=3,608; Detailed n=659), FSG analysis. Note: Total ≠ 100% as numbers are rounded off.
3. **Source:** Qualitative interviews, FSG analysis

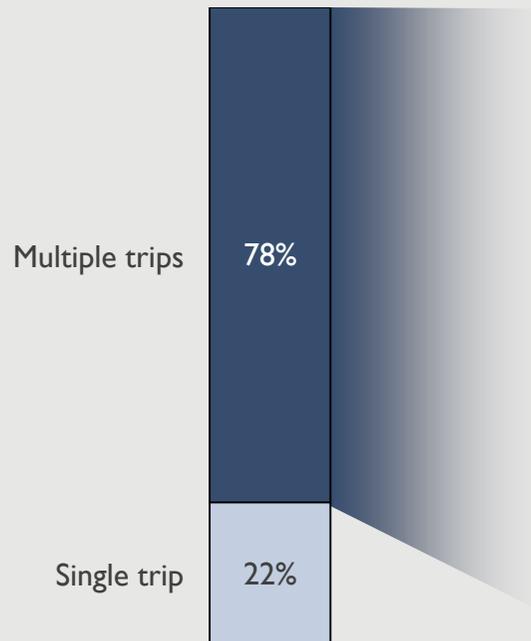


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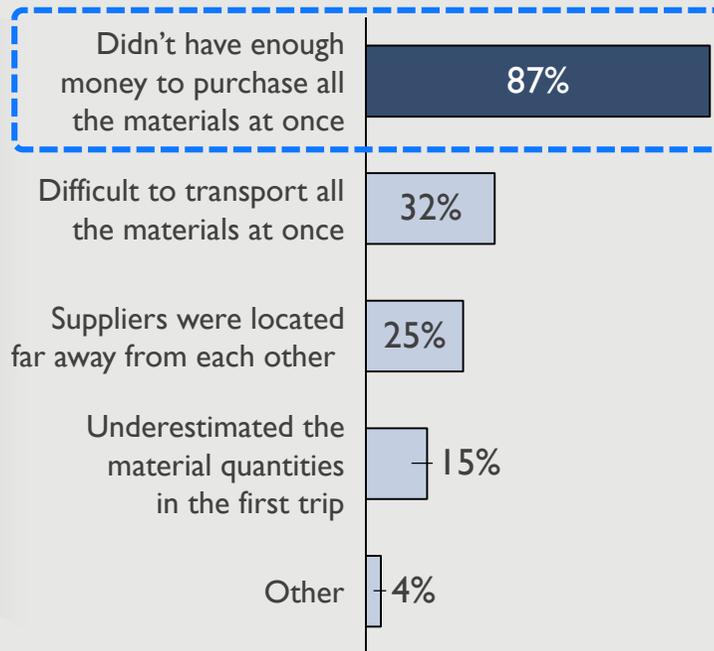


A significant proportion of households face liquidity issues while constructing an improved toilet

% of HHs with basic sanitation service that made multiple trips to purchase the materials needed for toilet construction¹



Reasons why HHs with basic sanitation service made multiple trips to purchase the materials needed for toilet construction¹



"I saved a portion of my income for about two years to build the toilet."

– HH with basic sanitation service in Montserrado²

"I saved a portion of my agricultural income for more than 3 years to come up with the amount I needed to construct the toilet."

– HH with an unimproved toilet in Lofa²

1. **Source:** HH interviews (Profile n=3,608; Detailed n=659), FSG analysis

2. **Source:** Qualitative interviews, FSG analysis



A significant proportion of households have access to financiers and have taken loans in the past, but not to build toilets

a

Savings and loan groups are prevalent in Liberia, and most give out non-business/consumption loans, some of which are sufficient to cover the entire cost of building an improved toilet

b

A significant proportion of households are members of savings and loan groups, and have taken a loan in the past, usually from a savings and loan group

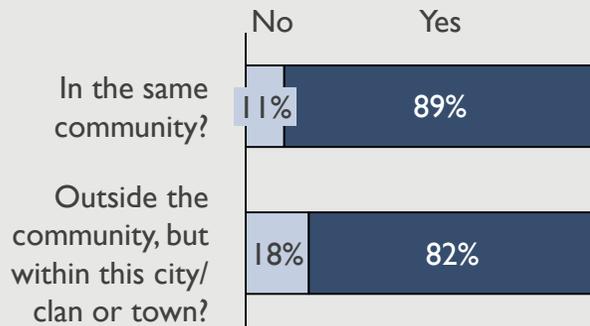
c

While households take loans for both business and non-business purposes, they usually do not consider taking a loan to build a toilet, often because they fear not being able to repay the loan, and do not think toilet construction is something you should take a loan for

Savings and loan groups are prevalent in Liberia...

... and more than 2/3rd of them provide non-business loans², a significant proportion of which can cover the entire cost of building a low-end improved toilet

% of savings and loan groups that know of similar organizations in different areas¹



“There are 5 SUSU clubs in the nearby town of Voipa, and they have a credit union there as well”

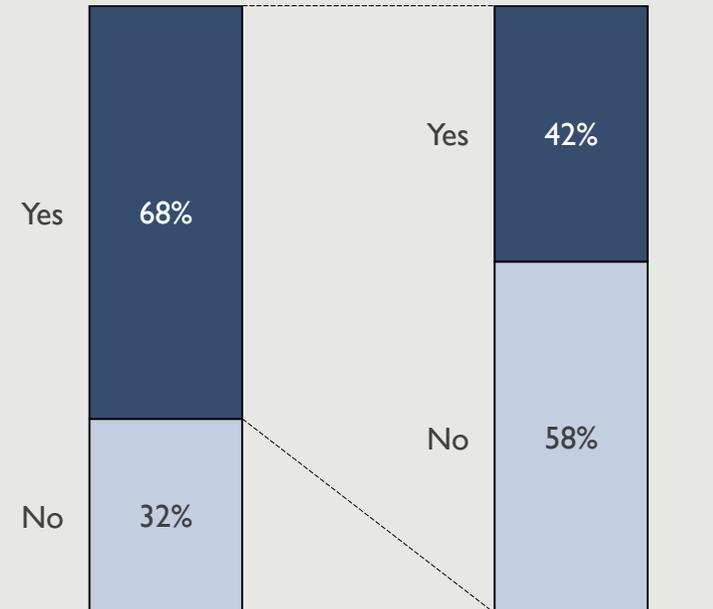
- Chairman of a SUSU club in Nimba³

Secondary research

The report “*The Impact of Ebola Virus Disease on Village Savings and Loans Associations in Montserrado, Margibi, Bong and Lofa Counties*”, released by the Food and Agriculture Organization (FAO) in December 2014, states that there are **13,000 groups working in savings and loans initiatives** such as SUSU, Rural Women and VSLAs spread over **15 counties** in Liberia, with an average of 30 members per group.

Does the savings and loan group provide non-business loans?¹

Does the savings and loan group provide non-business loans for amounts \geq LRD 33,000?^{1,4}

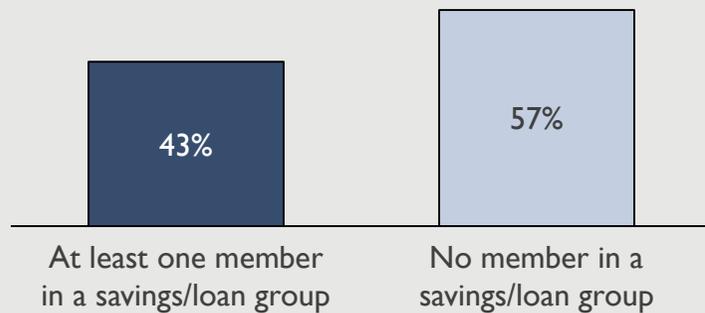


1. **Source:** Quantitative interviews with savings and loan groups (n=28), FSG analysis
2. Non-business loans or consumption loans are those loans which people do not use to earn more money (e.g., loan taken to build a new house)
3. **Source:** Qualitative interviews, FSG analysis
4. Cost of building a low-end improved toilet is ~LRD 33,000, as detailed in the Sanitation Market Context section of this document

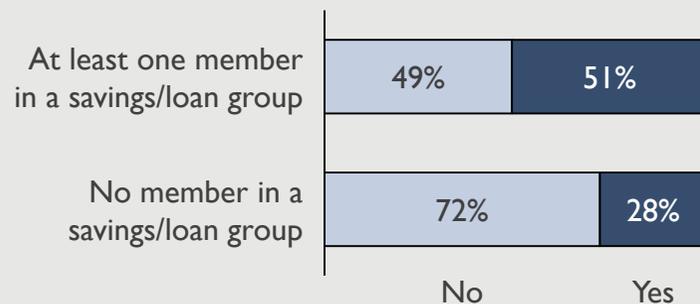
Customer | Driver | Liquidity

A significant proportion of households are members of savings and loan groups, and have taken a loan in the past

% of HHs that have membership to a savings/loan group¹

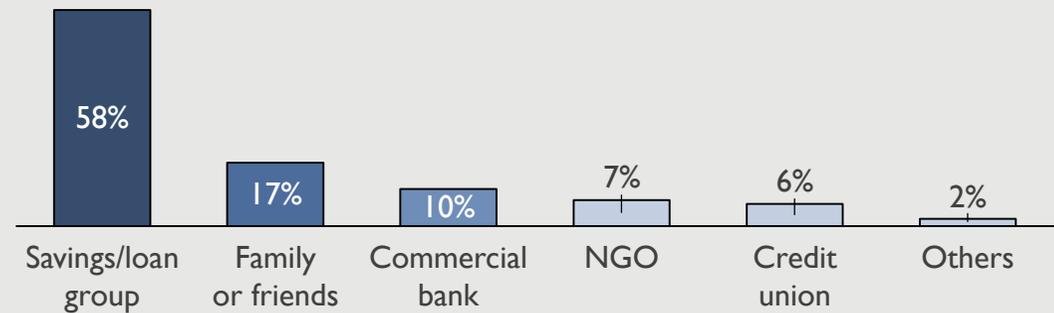


% of HHs that have taken a loan in the past¹, by membership to a savings and loan group¹

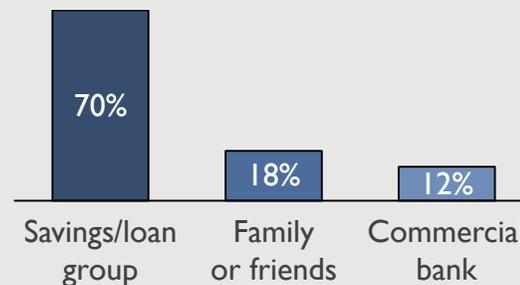


Households are also more likely to take a loan from savings and loan groups as compared to other sources

% of HHs that have taken a loan in the past, by loan source¹



% of HHs that have taken a loan to build an improved toilet, by loan source¹



“My wife was already a member of a VSLA, so I took a loan of LRD 20,000 through her to build my toilet”

– HH in Lofa²

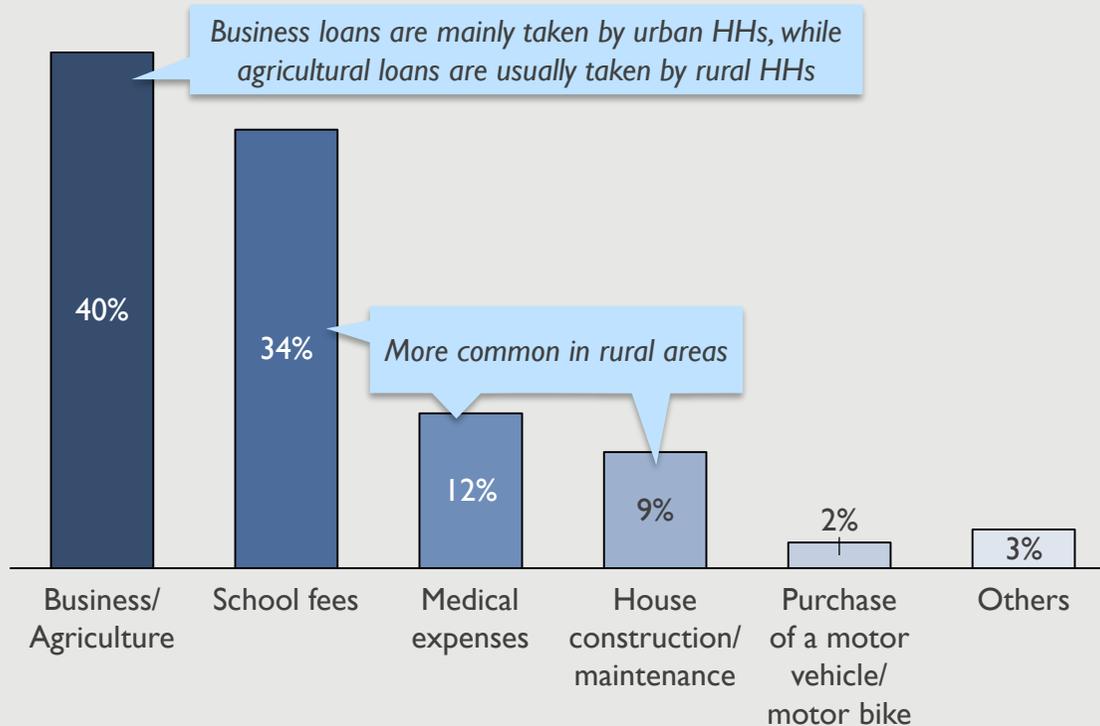
1. **Source:** HH interviews (Profile n=3,608; Detailed n=659), FSG analysis
 2. **Source:** Qualitative interviews, FSG analysis

Customer | Driver | Liquidity (1/2)

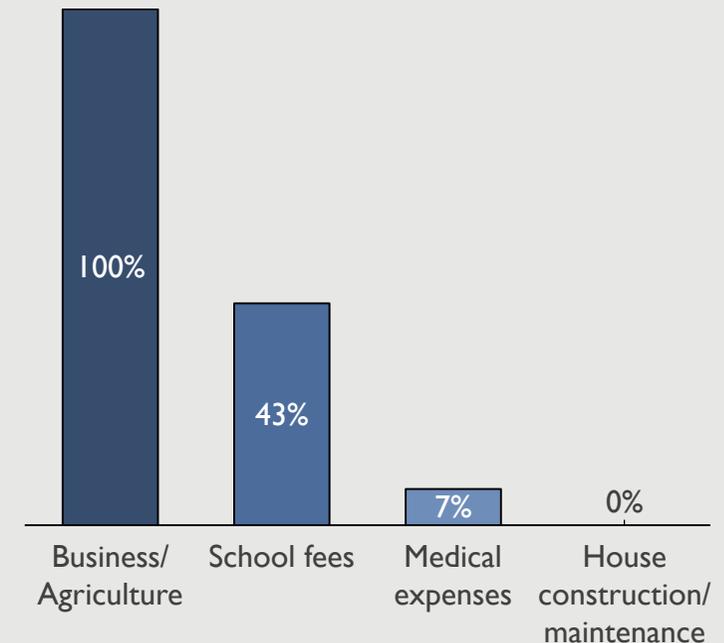


Most households that have taken a loan in the past took it for business or emergency consumption expenses (e.g., school fees, medical expenses); very few took a loan for house construction/maintenance

% of households that have taken a loan in the past, by the reason for taking the loan¹



% of savings and loan groups interviewed, by the reasons for which their customers take loans^{2,3}



1. Source: HH Profile interviews (n=3,608), FSG analysis

2. Source: Quantitative interviews with savings and loan groups (n=28), FSG analysis

3. Only including the 54% of savings and loan groups in our sample that ask their customers why they have applied for a loan



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A majority of households did not take/consider taking a loan to construct an improved toilet, often because they feared not being able to repay the loan, and did not think toilet construction was something you should take a loan for

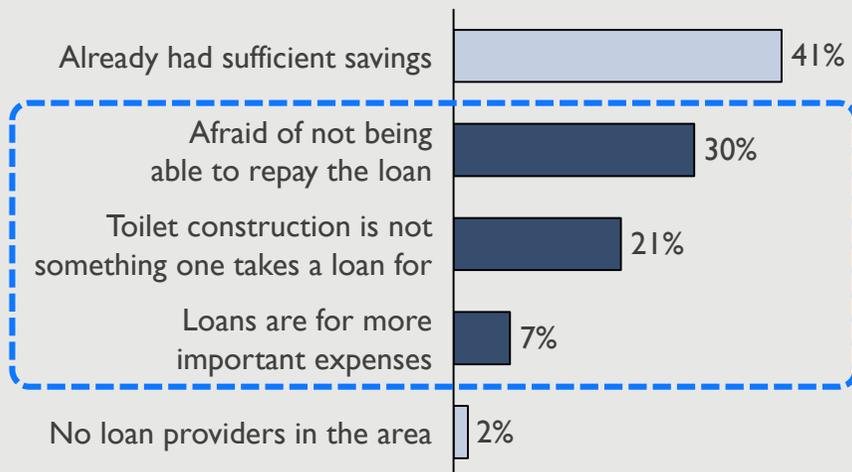
Did the HH take a loan to construct the improved toilet?¹



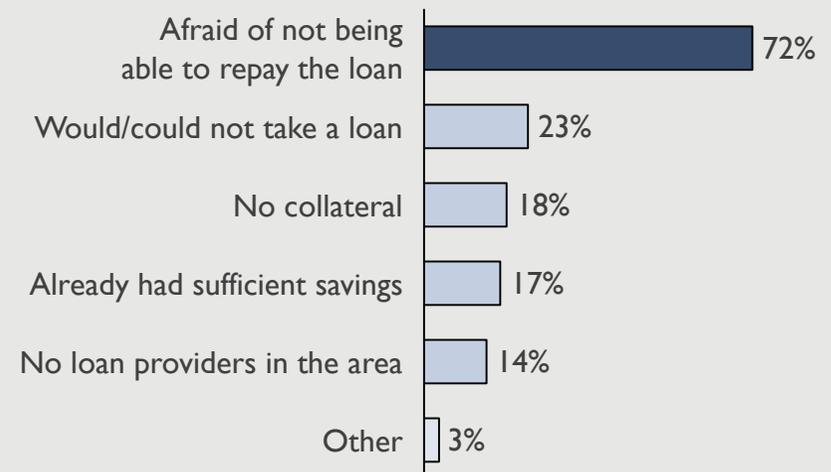
Would the HH consider taking a loan to build an improved toilet?¹



% of HHs with basic sanitation service that did not take a loan to build the improved toilet, by the reason for the same¹



% of HHs without basic sanitation service that would not consider taking a loan to build an improved toilet, by the reasons for the same¹



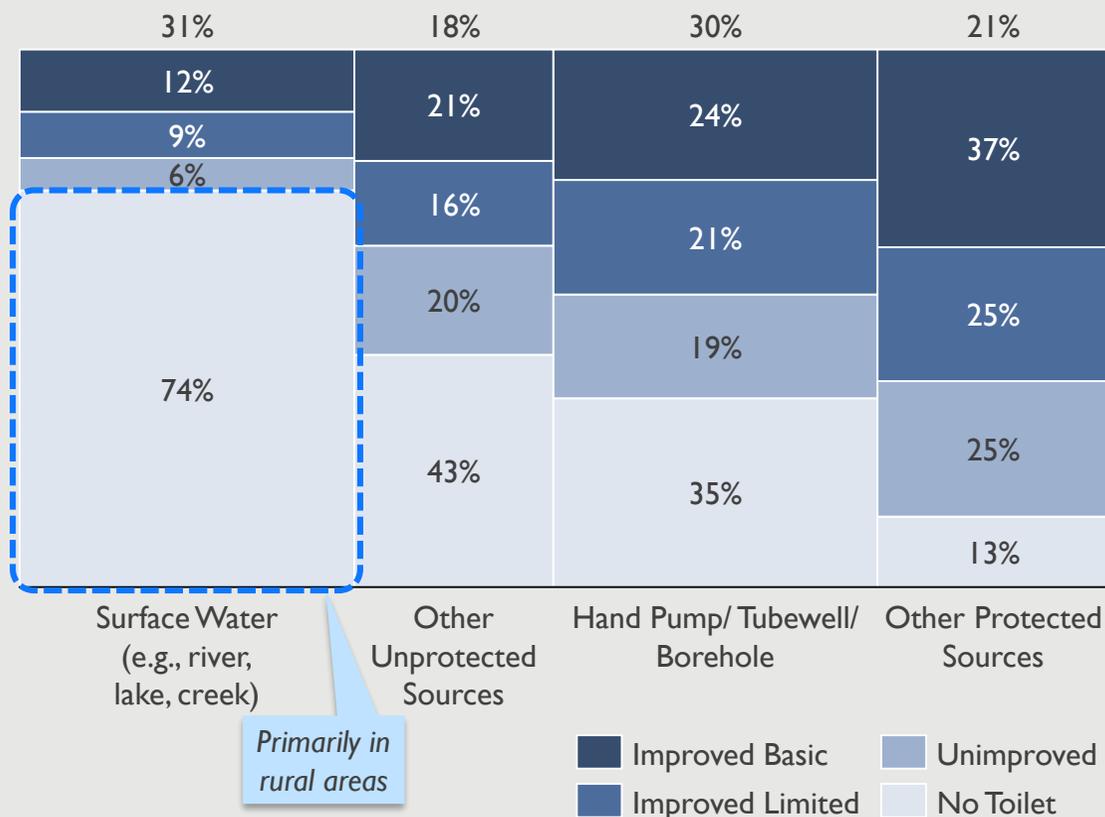
1. **Source:** HH interviews (Profile n=3,608; Detailed n=659), FSG analysis. **Note:** Totals ≠ 100% as numbers are rounded off.



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Several households rely on running water bodies for their non-drinking water needs, and may find it more convenient to defecate in the open at or near the water body

Non-drinking water source by sanitation facility type¹



“Some households that rely on a water source like a river or stream which is 10-15 minutes away from their house prefer defecating near the water source to avoid carrying water back to a toilet near their house. Households typically travel slightly down-stream to defecate, as they believe this would not contaminate the water they are using for their other daily activities.”

– Representative from National WASH Commission

“We often head to a creek to defecate as it allows us to easily clean ourselves with water afterwards. Many people in the community also use the creek for drinking water and bathing”

– HH practicing OD in Lofa²

“Everyone in my community defecates at the nearby creek. This is the cleanest option available to us, as the feces get easily washed away in the water, as compared to defecating in a bush, which is unhygienic.”

– HH practicing OD in Bong³

1. **Source:** HH interviews (Profile n=3,608; Detailed n=659), FSG analysis. **Note:** Total ≠ 100% as numbers are rounded off.

2. **Source:** Focus group discussions, FSG analysis

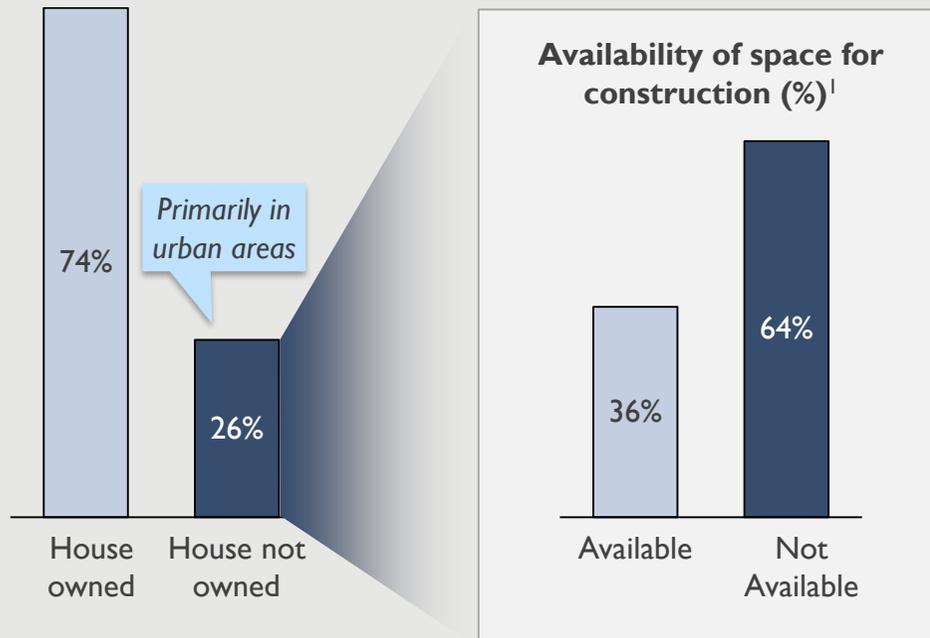
3. **Source:** Qualitative interviews, FSG analysis



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Around a quarter of households without basic sanitation service in Montserrado, Grand Bassa, and Bong live in rented housing, due to which they do not have the incentive to build a toilet, or access to the space required to construct a toilet

House ownership for HHs without basic sanitation service in Montserrado, Grand Bassa, and Bong (%)¹



Secondary research

According to the *PSI Liberia Sanitation Business Models* document prepared by Hope Consulting, **limited land ownership** has been cited as a barrier to the construction of toilets in low income neighborhoods in Monrovia. Landlord approval is required to construct these toilets, and **landlords have limited incentive to provide this approval.**

“We may not live in this house long enough to justify the construction of an individual toilet.”

– HH practicing OD in Montserrado²

1. **Source:** HH interviews (Profile n=3,608; Detailed n=659), FSG analysis
2. **Source:** Qualitative interviews, FSG analysis



Enterprise

- More affordable product options are not found in most hardware stores
- Strong preference for flush/pour flush toilets, but insufficient access to water
- Low demand for ready-made cement products; may be addressable through marketing
- A DIY model of toilet building that is cumbersome for households
- Potential for increased business due to customer referrals among VC actors



More affordable product options for the toilet interface (e.g., plastic pans and cement commodes) exist in the market, but are not commonly found in most hardware stores, especially in rural areas; however, a significant proportion of hardware stores are aware of plastic sanitation products

a

Plastic pans and cement commodes may be significantly cheaper than ceramic options

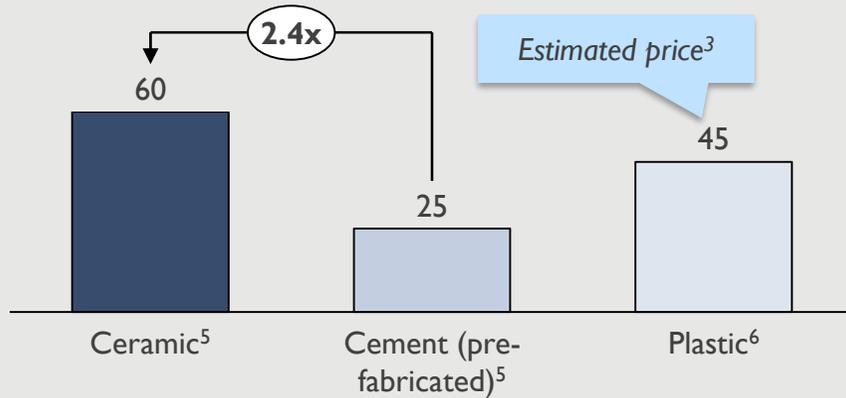
b

These more affordable product options for the toilet interface are not sold in most hardware stores; however, a significant proportion of hardware store owners are aware of plastic sanitation products



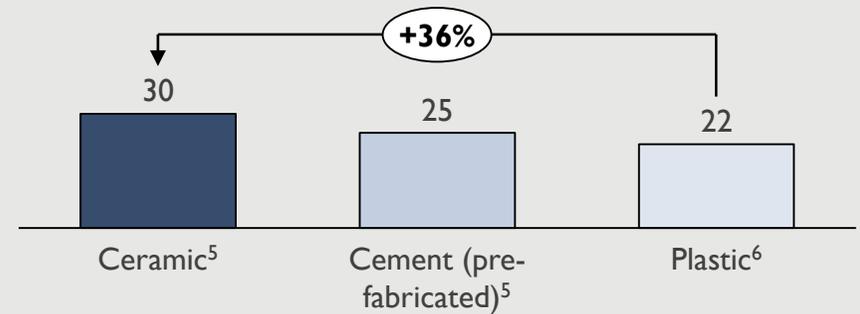
Ceramic commodes are ~2.4x more expensive than cement commodes¹

Avg. price of commodes/stools, by material used (US\$)^{1,2,3}



Ceramic pans are ~36% more expensive than plastic pans¹

Avg. price of toilet pans, by material used (US\$)^{1,2,4}



1. **Source:** Qualitative interviews, FSG analysis; 2. Average retail price of products in Liberia. It may be possible for the same, or similar products to retail at even lower prices after addressing some of the market barriers. For example, a plastic pan manufactured locally costs ~US\$ 4.40 in Uganda; 3. There is limited information available about the retail price of plastic commodes/stools in Liberia. Hence, we have estimated the same based on the price of a plastic pan in Liberia, by applying the ratio between the prices of plastic commodes/stools and pans in Uganda, as obtained from the [Learning Brief from USAID Uganda](#); 4. Price of a plastic pan imported from Conakry, Guinea; 5. **Image Source:** Captured with permission during HH interviews; 6. **Image Source:** [Sustainable Sanitation Alliance, Silafrica](#)



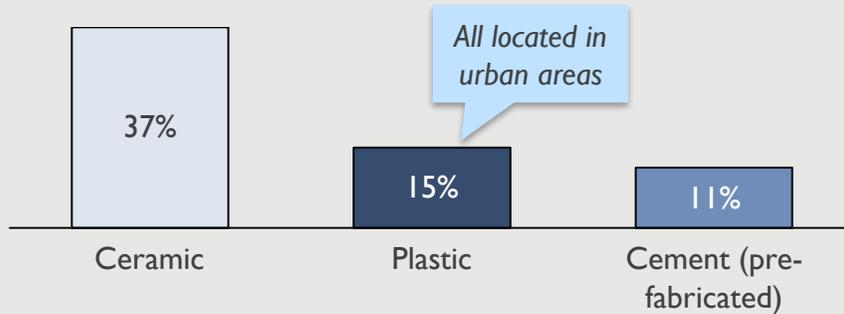
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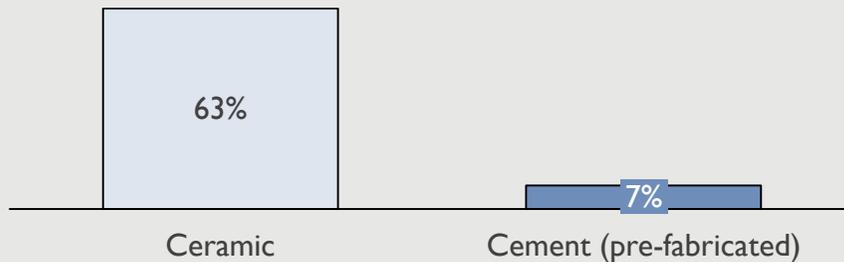
Most hardware stores do not sell sanitation products like plastic pans and cement commodes

However, a significant proportion of hardware store owners are aware of plastic sanitation products

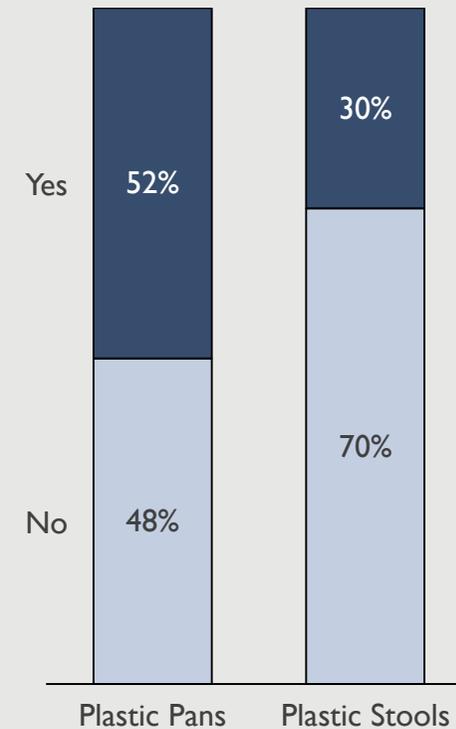
% of Hardware Stores that sell toilet pans, by material used¹



% of Hardware Stores that sell commodes, by material used¹



% of Hardware Store owners that know about sanitation products like plastic pans and plastic stools¹



1. Source: Quantitative interviews with hardware stores (n=27); FSG analysis



Customers choose flush/pour flush toilets; however, many households may not be able to fulfill the water requirements of these toilets

a

Most customers choose flush/pour flush toilets

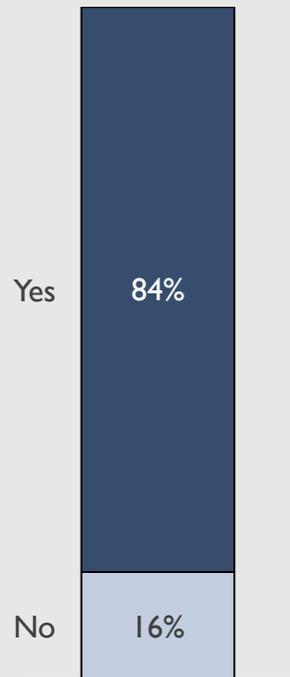
b

Pour flush toilets require a significant amount of non-drinking water every day; certain households may not be able to fulfill these requirements if their water sources are not conveniently located, and may instead revert to open defecation

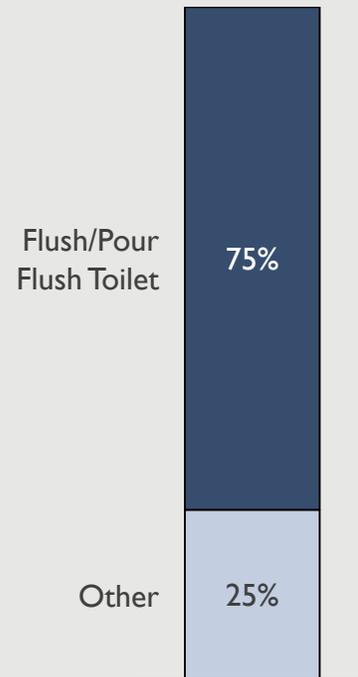
Most households currently use water to flush the waste away after using the toilet

A majority of HHs without basic sanitation service also desire a flush/pour flush toilet, some citing the lack of smell and insects as key reasons

Does the HH use water to flush away waste when using the toilet?¹



% of HHs without basic sanitation service that desire a flush/pour flush toilet¹



“We considered 2 types of latrines. The pit latrine with the direct drop hole and the pour flush. The advantage of the pour flush is that it does not smell and does not breed flies.”

– Household with an unimproved toilet in Nimba²

“My older son suggested we build a local pour flush, as the direct drop pit latrines stink, and also breed roaches and flies.”

– Household in urban Nimba²

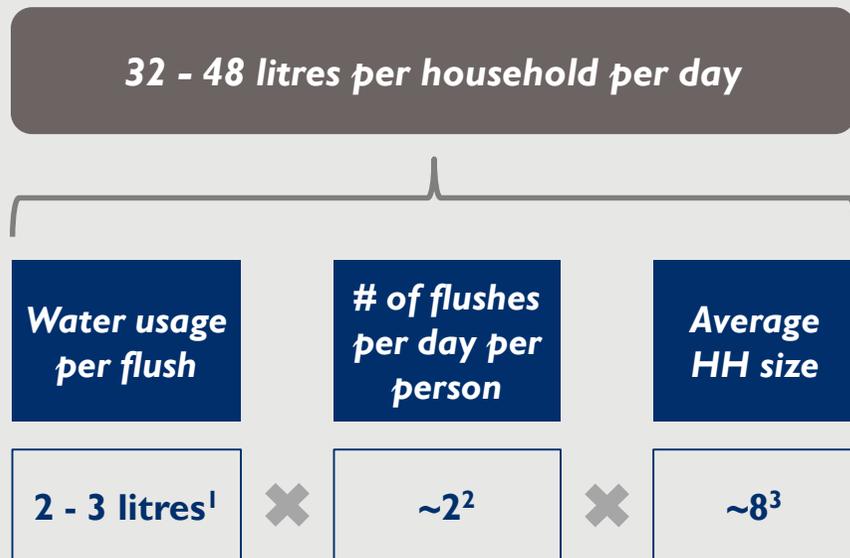
1. Source: HH interviews (Profile n=3,608; Detailed n=659), FSG analysis
2. Source: Qualitative interviews, FSG analysis



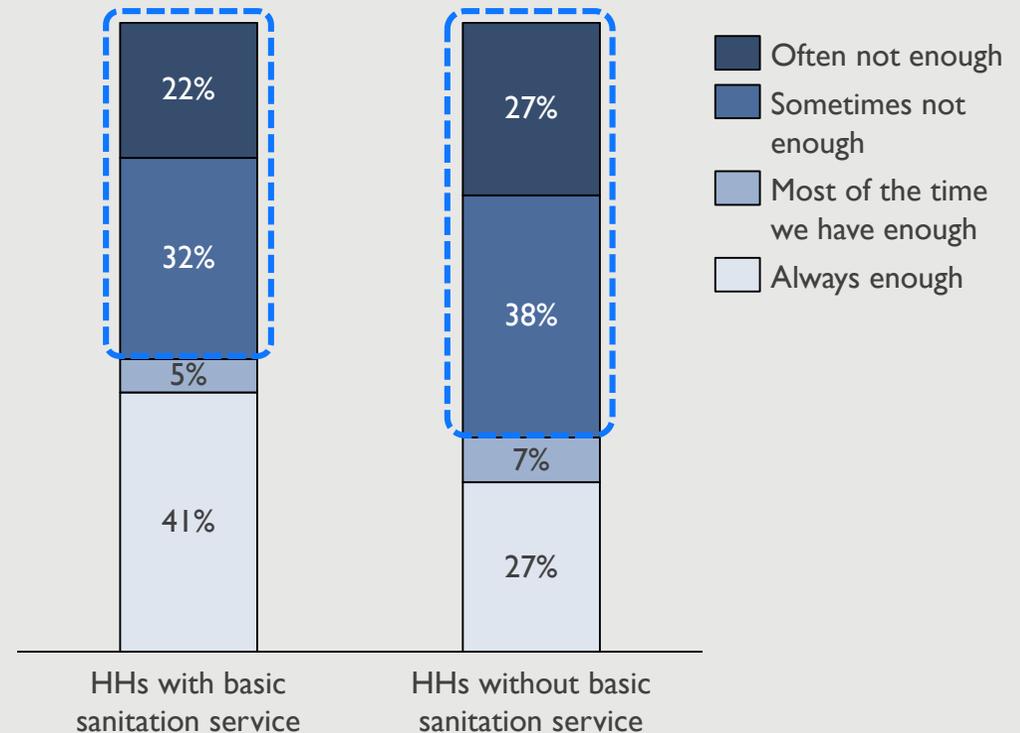
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HHs may require up to 48 liters of non-drinking water per day to use pour flush toilets, but may find it difficult to source the additional water needed



% of HHs by sanitation facility, and how satisfied they are with the amount of water they have to use at home³



1. **Source:** Sustainable Sanitation and Water Management Toolbox

2. **Source:** Cleveland Clinic, assuming that only feces is flushed using water, and taking the average of 3 bowel movements per day and 3 bowel movements per week as 2 bowel movements per day

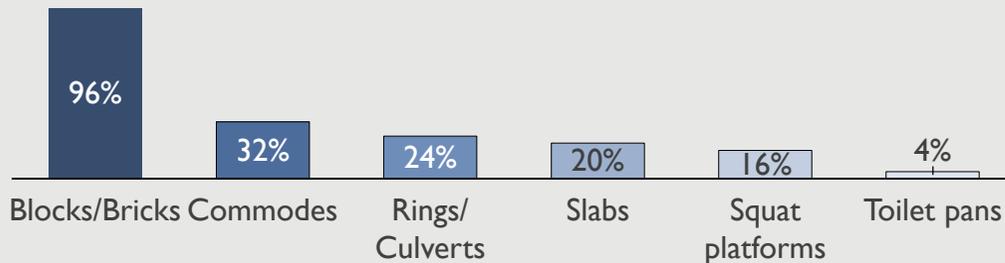
3. **Source:** HH Profile interviews (n=3,608), FSG analysis. **Note:** Total ≠ 100% as numbers are rounded off.



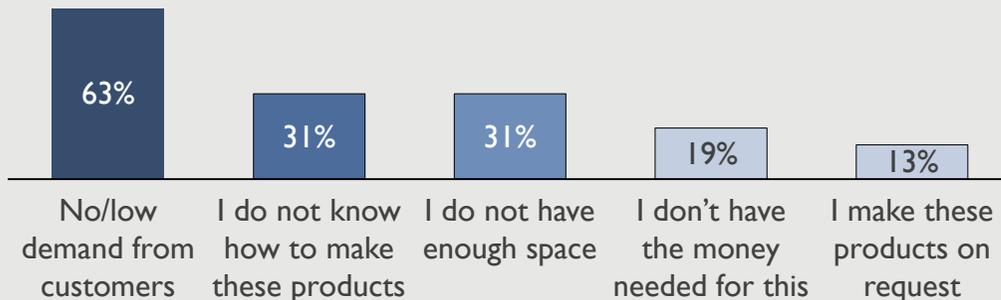
[Click to go back](#)

Most cement pre-fabricators do not make ready-made sanitation products (except cement blocks) even though they know how to, mainly due to low demand that could be addressed through promotional activities and awareness campaigns

% of cement pre-fabricators that make and sell cement products used in the building of toilets, by product¹



% of cement pre-fabricators, by the reasons why they do not sell cement products used in the building of toilets¹



Source: Qualitative interviews, FSG analysis

1. **Source:** Quantitative interviews with cement pre-fabricators (n=25), FSG analysis

2. The Partnership for Advancing Community-Based Services (PACS) was a community WASH activity partially implemented by Population Services International (PSI)

Secondary research

The PACS project² proposed that promotional activity, such as handing out pamphlets in the market and social media campaigns, could help connect WASH Entrepreneurs with a larger consumer base that has more disposable income, and increase demand for the PACS cement commode in urban/peri-urban markets.

“Demand for pre-fabricated cement commodes has decreased because people are not used to the product, and think that the standing water inside the water trap is not good for health. The CLTS and NGO folks should carry out awareness campaigns to encourage people to use these products.”

– Cement pre-fabricator trained by an NGO, in Bong²

“I only sell about 3 cement commodes per month, because not many people in the community are aware of the product. I am currently taking up other jobs, because business is slow.”

– Cement pre-fabricator trained by an NGO, in Nimba²



A largely DIY model of toilet building that requires customers to individually source most materials and services from various locations, some of which may be far away

a

VC actors that build toilets for customers (e.g., masons, plumbers) usually do not purchase materials on their behalf

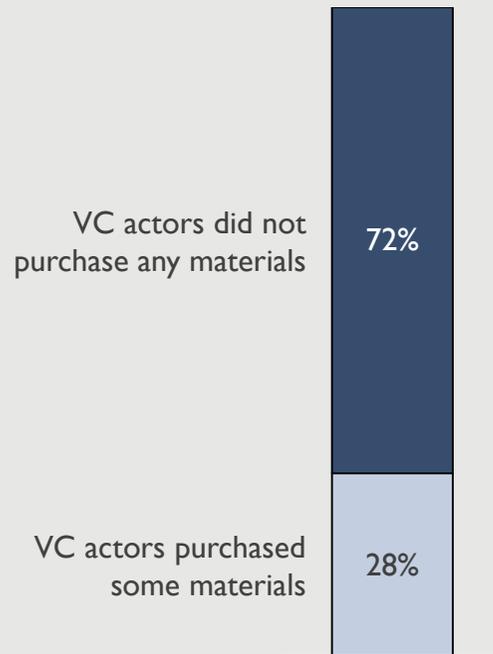
b

On average, households interact with 6 to 9 value chain actors to source the services required to build a toilet; however, in some cases, they may interact with up to 11 actors

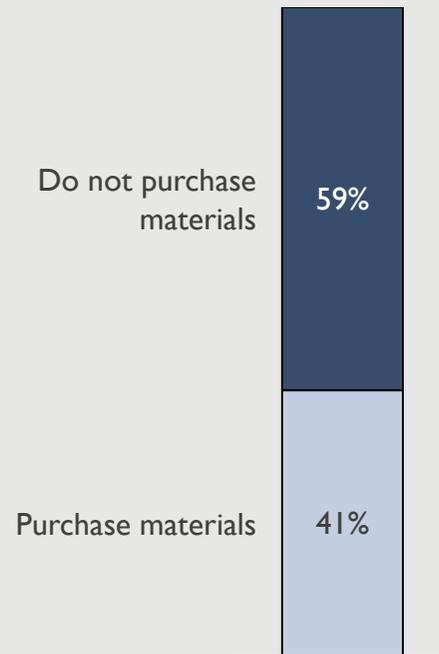


The VC actors that build toilets for customers (e.g., masons, plumbers) usually do not purchase materials on their behalf

% of HHs with basic sanitation service for whom VC actors did not purchase any materials while building the improved toilet¹



% of masons that purchase some building materials on behalf of their household customers²



“No, I do not purchase construction material on behalf of my customers. The materials are usually bought from shops or vendors that are located out of town, and very far away.”

– Mason in Nimba³

“I do not purchase construction material on behalf of my customers because households usually hire me to build their toilet only after they have purchased all the materials.”

– Plumber in Grand Bassa³

“Sometimes, if we run out of materials and the customer is busy with something else, they give me money to buy the materials for them.”

– Mason in Nimba³

1. **Source:** HH interviews (Profile n=3,608; Detailed n=659), FSG analysis
2. **Source:** Quantitative interviews with masons (n=27); FSG analysis
3. **Source:** Qualitative interviews, FSG analysis

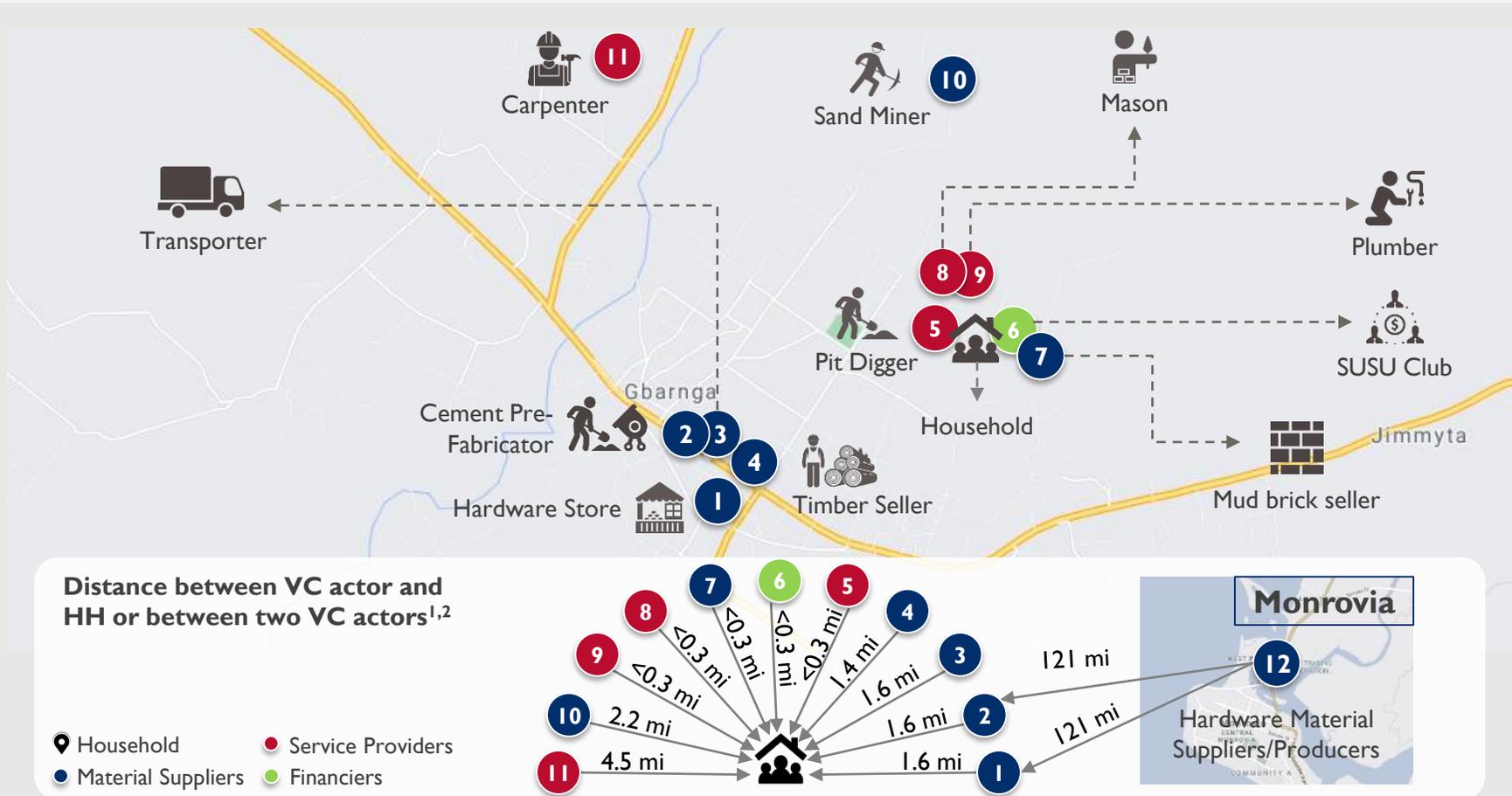
Enterprise | Barrier | Delivery Model



10 b

Click to go back

Households typically interact with 6 to 9 value chain actors to source the services required to build a toilet; however, in some cases, they may interact with up to 11 actors



Source: Trace-back for an urban household in Bong county, FSG analysis;

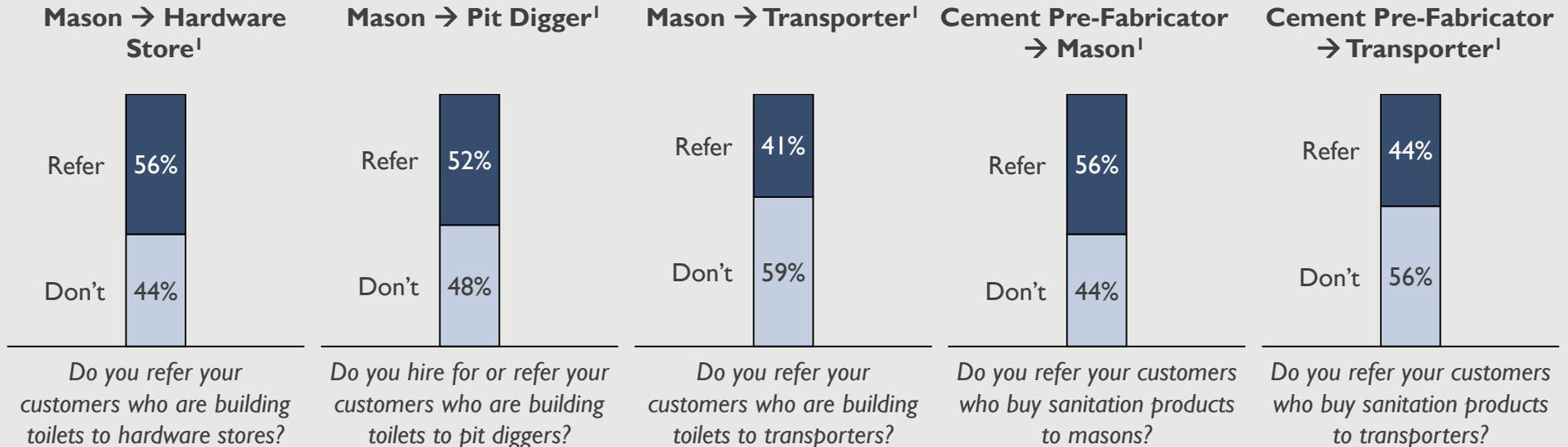
- Distances have been estimated based on the shortest distance suggested by Google Maps. Actual distance traveled may vary, if alternate routes are used
- The HH sourced aggregate on their own, and did not buy it from an aggregate seller; they also purchased cement from a hardware store and not a cement wholesaler
- A consolidated view of the distribution of VC actors in urban/rural contexts for the 5 target counties has been provided in the Market Context section of the appendix



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Within the existing DIY delivery model, a large proportion of value chain actors refer their customers to other VC actors, which provides the actors with additional business; this may provide the potential for an existing actor to serve as a focal point to households



“I recommend this particular hardware store to my customers. This helps me get more business, since those customers also hire me to transport the goods that they buy from this store.”

– Transporter in Bong²

“A group of us work on construction projects together. Whenever any of us gets a big contract - like building a house - he calls the rest of us to also work on that contract.”

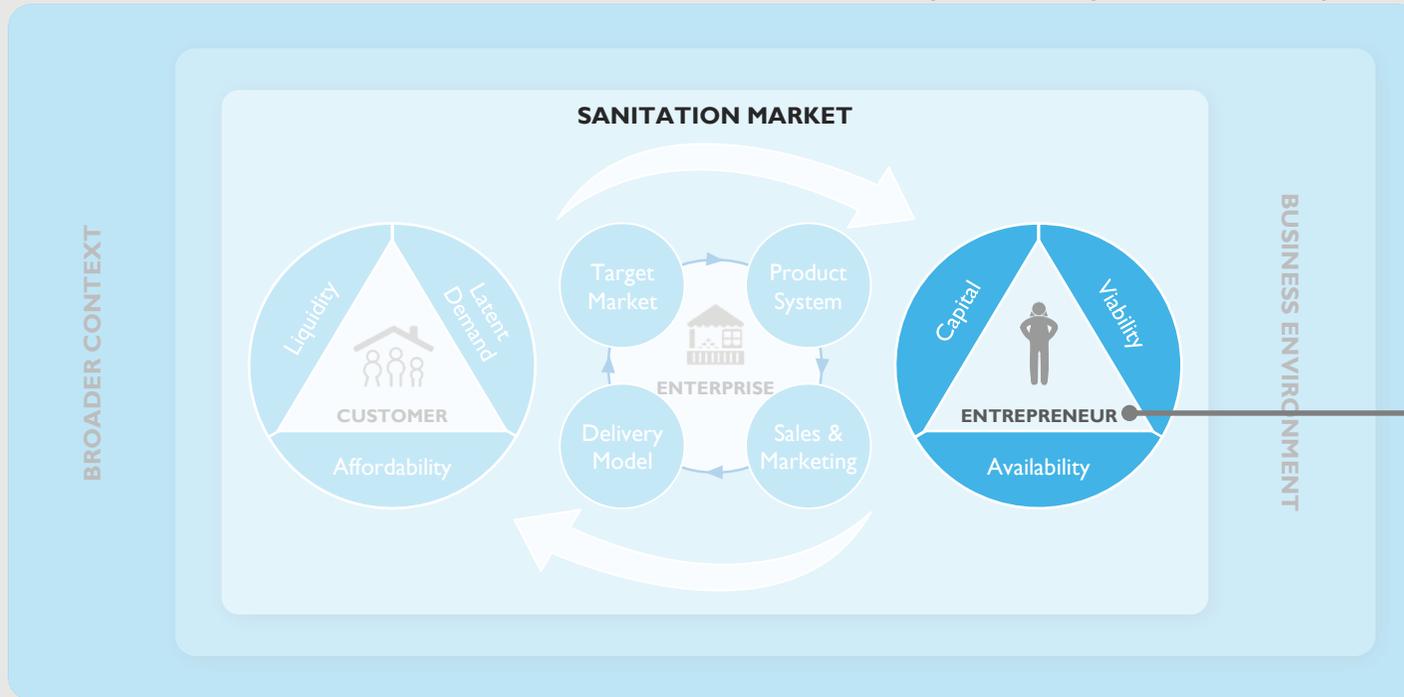
– Mason in Lofa²

1. **Source:** Quantitative interviews with masons (n=27), and cement pre-fabricators (n=25); FSG analysis
2. **Source:** Qualitative interviews, FSG analysis



Entrepreneur

- Sanitation, as a stand-alone business, may not be viable for many VC actors
- Sanitation is adequately profitable at a unit level for some VC actors
- Many VC actors do not have money for business expansion; however, most financing options accept movable assets as collateral
- VC actors that could act as sanitation entrepreneurs may not have the requisite business acumen



Sanitation, as a stand-alone business, may not be viable for many value chain actors due to monsoon-driven seasonality in income, high competition, and customer-related delays; this reduces their interest in actively pursuing sanitation-specific business opportunities

a

A significant proportion of VC actors also have more than one source of income, which indicates that sanitation may not be viable as a stand-alone business for many actors

b

The monsoon-driven seasonality of the construction business affects most VC actors

c

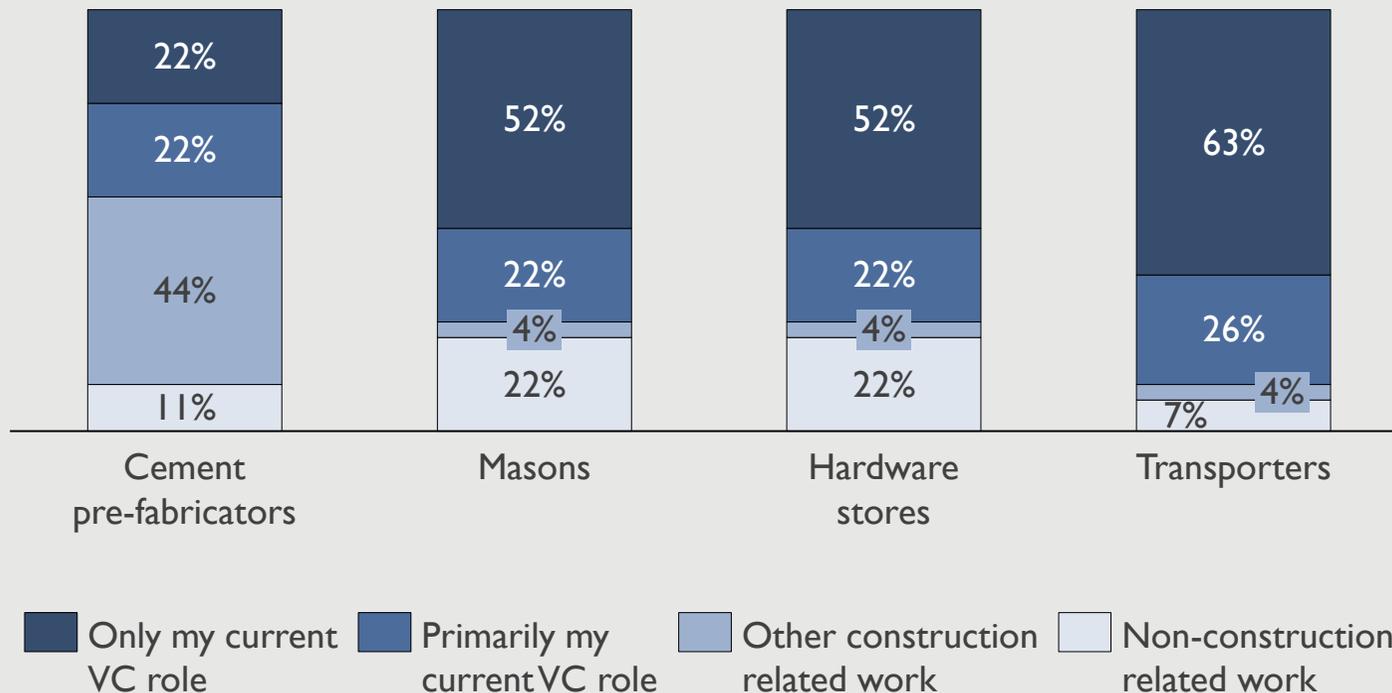
High competition impacts the business of some VC actors

d

Customer payment delays and defaults impact the viability of some value chain actors; provision of customer credit further exacerbates the challenge

A significant proportion of VC actors also have more than one source of income, which indicates that sanitation may not be viable as a stand-alone business for many actors

% of VC Actors, by actor type and income sources^{1,2}



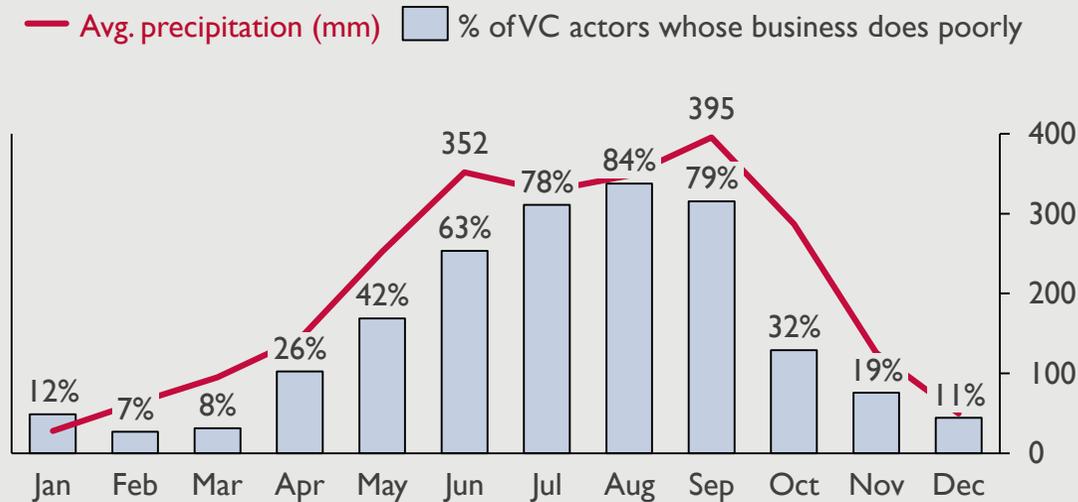
1. **Source:** Quantitative interviews with masons (n=27), hardware stores (n=27), cement pre-fabricators (n=25), and transporters (n=27); FSG analysis.

Note: Total ≠ 100% as numbers are rounded off.

2. Combining data from 2 questions – ‘Apart from [your current VC role], do you earn money in any other way?’ and ‘How do you earn most of your money?’

The incomes of most VC actors is negatively impacted in the monsoon months with the heaviest rainfall, i.e., June, July, August and September

% of sanitation value chain actors that stated a specific month as being bad for business vs. average monthly precipitation (in mm)^{1,3,4}



Secondary research

According to the “Job Demand & Employment Market Analysis Liberia” report by FHI 360 and BRAC, owners of micro enterprises suffer significant income loss during the rainy season, due to challenges in accessing markets and transporting goods and services.

“We sell sand only in the dry season, till May. We cannot mine sand during the rains, when the creek is filled.”

– Sand miner in Montserrado²

“In the rainy season we do not sell mud bricks, since there is no ways to sun dry them.”

– Mud bricks seller in Lofa²

“My income from carpentry is very low in the rainy season.”

– Carpenter in Bong²

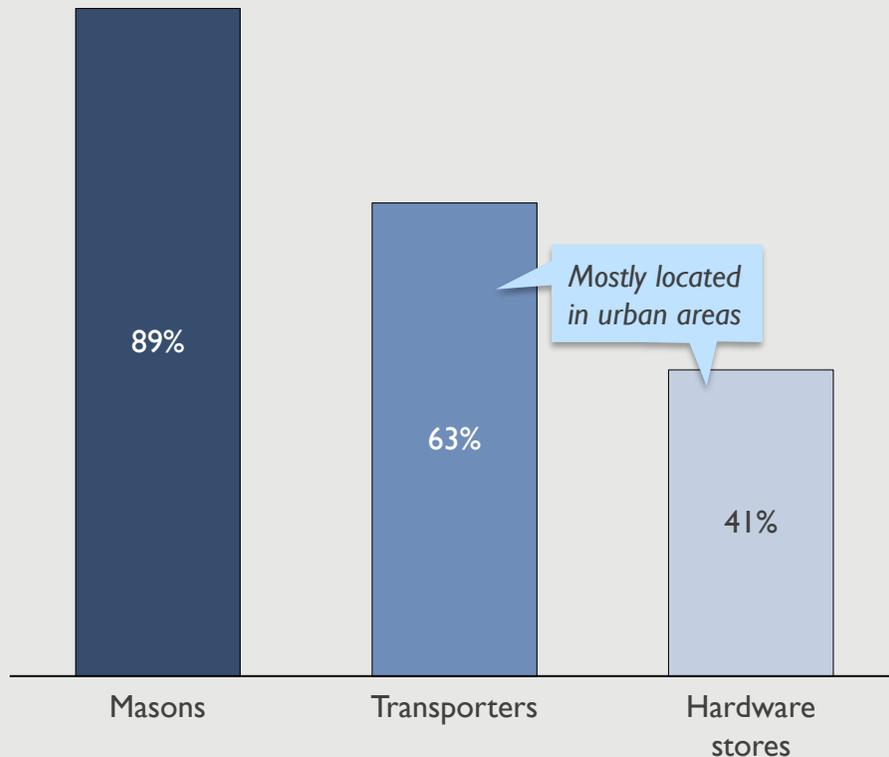
“I get more orders during the dry season than the rainy season.”

– Timber seller in Nimba²

- Sanitation value chain actors refers to masons, hardware stores, cement pre-fabricators and transporters that participate in the process of constructing household toilets
- Source:** Qualitative interviews, FSG analysis
- Source:** Quantitative interviews with masons (n=27), hardware stores (n=27), cement pre-fabricators (n=25), and transporters (n=27); FSG analysis
- Source:** The Climate Change Knowledge Portal (CCKP), created by the World Bank

The presence of many similar actors in the same area is a challenge for some VC actors

% of VC actors that cited competition as one of their key business challenges, by actor type¹



“Too many community dwellers are involved in digging and selling sand in this community - I can’t even count all of them now. This forces us to sell at reduced prices when the rains are setting in, because when the river swells in the rains, it sweeps away all the sand that was not bought.”

– Sand miner in Lofa²

“There are 20 other brick molders in our community, which is a big challenge for my business.”

– Mud brick seller in Lofa²

“There are 5 other timber sellers just in this town, which affects my business”

– Timber seller in Nimba²

“The competition is tough. There are a lot of big businesses here that sell below the prices at which we sell and, as a result, a lot of the customers rush to their stores for goods.”

– Hardware store in Nimba²

1. Source: Quantitative interviews with masons (n=27), hardware stores (n=27), and transporters (n=27); FSG analysis
2. Source: Qualitative interviews, FSG analysis

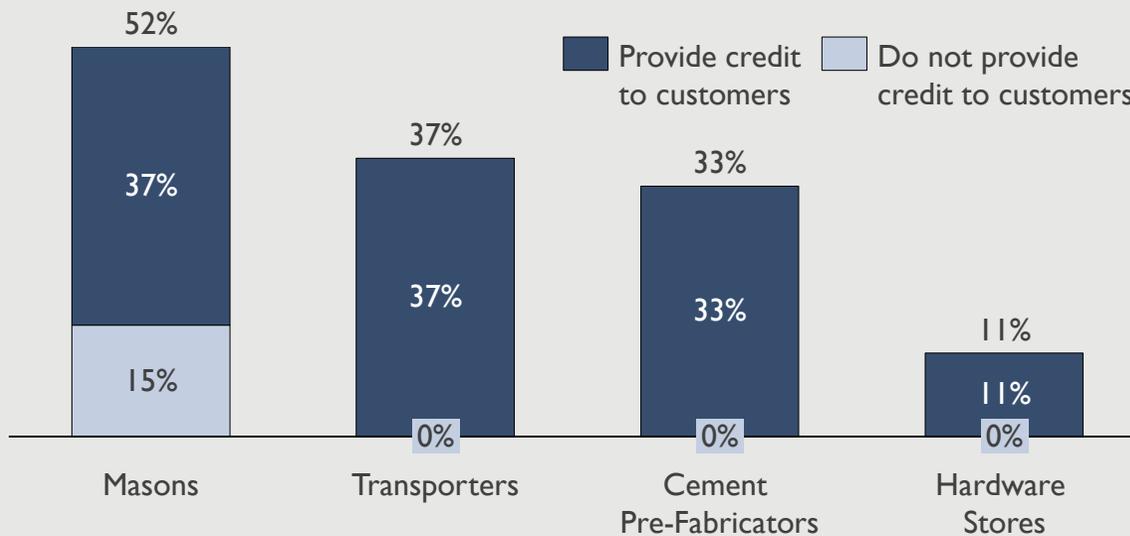


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Some VC actors face issues of delayed payments or non-payment from customers who have been offered products/services on credits, which affects their viability

% of VC actors who face issues with customers delaying or not making payments, by actor type¹



“Yes, we do provide credit to our customers, because doing this helps us get more customers. But delay in payment by customers is one of the key challenges we face.”

– Hardware store in Nimba²

“Customers make a part of the payment at the start of the job, but then it is difficult to get the rest of the money – they delay, or make excuses. This impacts my ability to change or repair my tools.”

– Carpenter in Bong²

“Customers sometimes become very reluctant to pay up once their work is completed.”

– Mud bricks seller in Lofa²

1. **Source:** Quantitative interviews with masons (n=27), hardware stores (n=27), cement pre-fabricators (n=25), and transporters (n=27); FSG analysis
2. **Source:** Qualitative interviews, FSG analysis



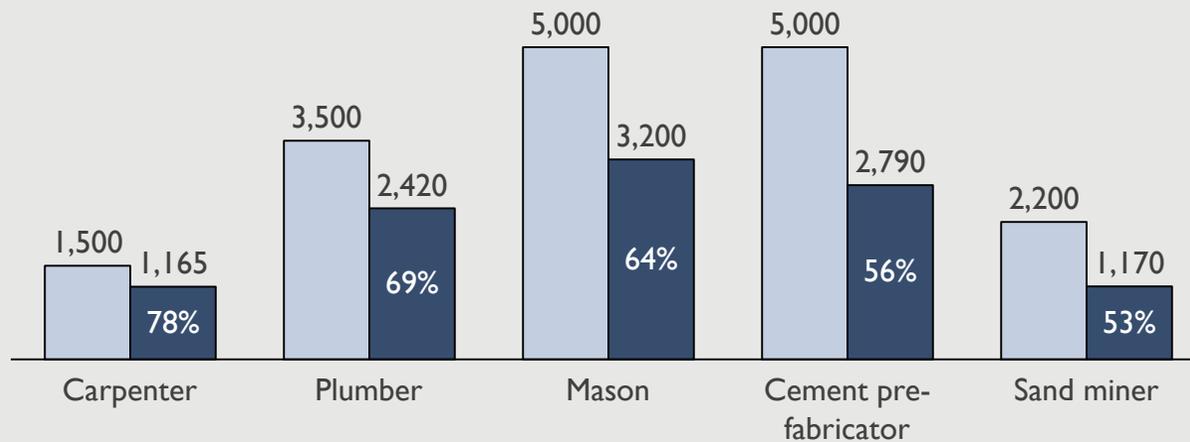
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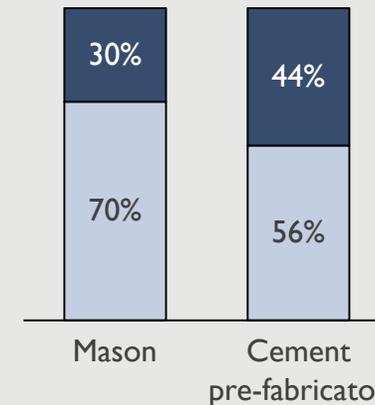
Sanitation is adequately profitable at a unit level, especially for key value chain actors such as masons and cement pre fabricators; this may increase their interest in sanitation

Unit margin earned by value chain actors (LRD)^{1,4}

■ Cost borne by HH customer
 ■ Unit margin earned by VC actor



% of VC actors that cited toilet building as an important area for their business as it has significant revenue potential²



Product/service				
Building a mid-end improved toilet ³	Building a mid-end improved toilet ³	Building a mid-end improved toilet ³	Pre-fabricated cement commode	Pickup truck load of sand

■ See sanitation as an important area for their business
■ Do not see sanitation as an important area for their business

- Source:** Qualitative interviews, FSG analysis
- Source:** Quantitative interviews with masons (n=27) and cement pre-fabricators (n=25); FSG analysis
- Refers to the construction of a single compartment improved pour flush latrine that has a ceramic commode with an inbuilt water trap, brick walls laid with cement, a wooden door, a zinc roof, and an unlined ventilated offset pit covered with a concrete slab. Refer to the Toilet Costing section of the appendix for details.
- Other actors such as carpenters, plumbers and sand miners also have high unit margins. Refer to the Toilet Costing section of the appendix for further details.
- Detailed profiles of key actors in the sanitation value chain have been provided in the Actor Profiles section of the appendix.

Many VC actors do not have the money needed to expand their business; however, most of the financing options available to VC actors do not require collateral to disburse business loans

a

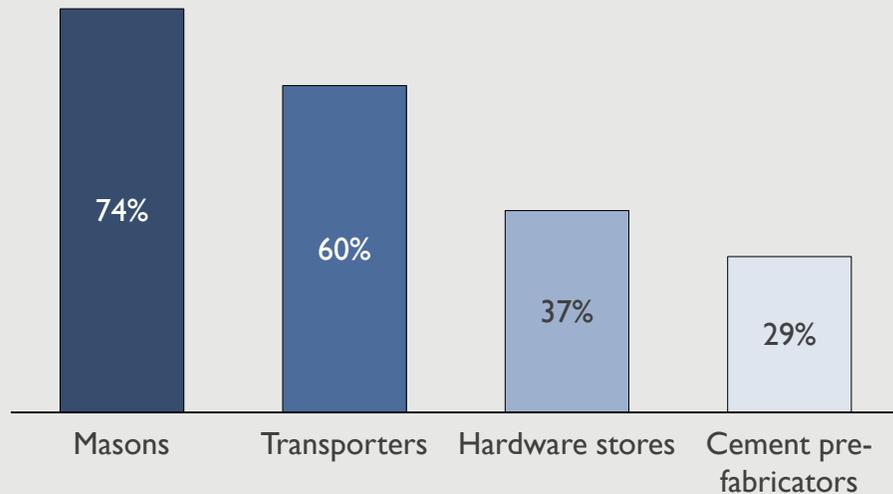
Many VC actors do not have the money needed to expand their business

b

However, most of the financing options available to VC actors do not require collateral to disburse business loans

Many value chain actors do not take up activities that will help expand their sanitation business because they do not have the money needed for the same

% of VC actors who cited a lack of money as the reason for not taking up activities to expand their business, by actor type¹



"I want to buy a block molding iron compressor to help us make blocks in large quantities, but I do not have the money needed for it."

– Mud bricks seller in Lofa²

"I want to build a processing site where I will purchase more tools - especially a power saw - and employ more people to increase production. But the major challenge I'm faced with is a lack of finances. The income generated from the sale of timbers in the current style can't raise the money needed to implement this plan."

– Timber seller in Nimba²

"I have many plans to expand my business – creating more shelter to dry our bricks in the monsoon, buying a vehicle to transport cement, and buying more land to make/store bricks. But I do not have the money needed for this."

– Cement pre-fabricator in Bong²

1. **Source:** Quantitative interviews with masons (n=27), hardware stores (n=27), cement pre-fabricators (n=25), and transporters (n=27); FSG analysis
2. **Source:** Qualitative interviews, FSG analysis



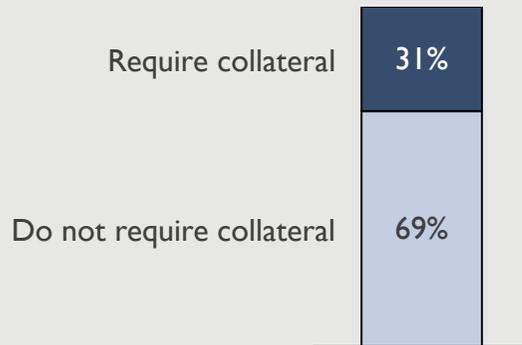
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The financing options available to VC actors usually do not require collateral to disburse business loans

VC actors may also be allowed to use moveable assets as collateral towards a loan

% of savings and loan groups that require collateral to provide a business loan to customers¹



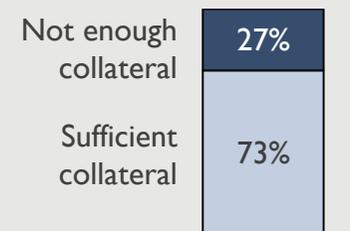
Our micro loan program is only for low income women who either intend to start or are already engaged in small businesses, and is collateral free. On the other hand, our Social Enterprise Program (SEP) targets larger business people, with a much larger loan size and requiring collateral from customers.”

— Representative from BRAC^{2,3}

Secondary research

An online platform established in 2015 by the Central Bank of Liberia in collaboration with IFC⁴ and the World Bank Group’s Finance and Markets Global Practice, the **Liberia Collateral Registry** allows individuals and MSMEs that do not have access to traditional collateral – such as land or real estate property – to **register moveable assets as collateral in order to access loans from commercial banks**. These moveable assets can be a car, a motorcycle, crops, agricultural equipment, accounts receivable, to name a few.⁴

% of savings and loan groups that cite insufficient collateral provided by customers to take loans against as a key challenge¹



1. **Source:** Quantitative interviews with savings and loan groups (n=28), FSG analysis
2. **Source:** Qualitative interviews, FSG analysis
3. **BRAC** is the largest development organization in the world, founded by Sir Fazle Abed in 1972 in a small village in Bangladesh
4. **Source:** International Finance Corporation (IFC), World Bank Group

Sanitation entrepreneurs are not present in the market; actors that could play this role may not have the requisite business acumen, while others (e.g., cement pre-fabricators) are often unavailable to rural HHs

a

VC actors like transporters and cement pre-fabricators do not aggregate any materials used in construction; hardware stores also do not stock all the materials typically used to build an improved toilet

b

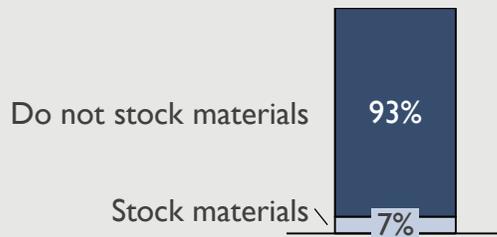
Most value chain actors do not engage in marketing efforts

c

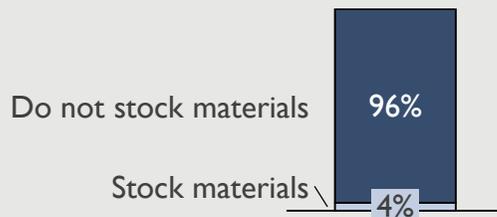
Cement pre-fabricators are not available to household customers in all rural areas

Most transporters and cement pre-fabricators do not aggregate the materials used in construction

% of transporters who do not stock some of of the materials they transport to sell directly to customers¹

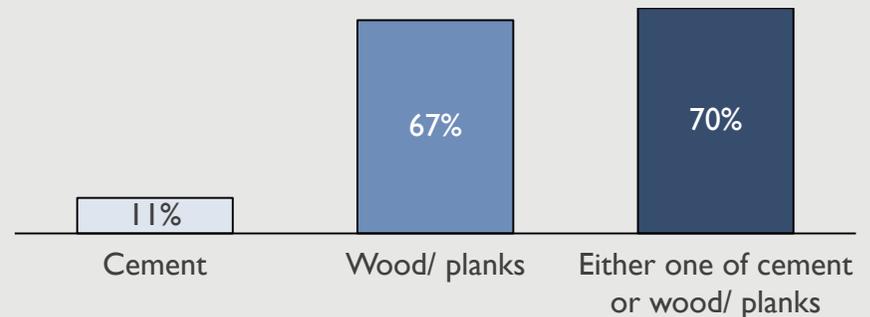


% of cement pre-fabricators who do not stock the materials used to make ready-made cement products to sell directly to customers¹



A majority of hardware stores do not stock and sell either cement or wood/planks, both of which are critical materials typically used to build an improved toilet in Liberia

% of hardware stores that do not stock and sell critical materials typically used to build an improved toilet in Liberia¹



% of HHs with improved toilets, by the main material of the floor surface²



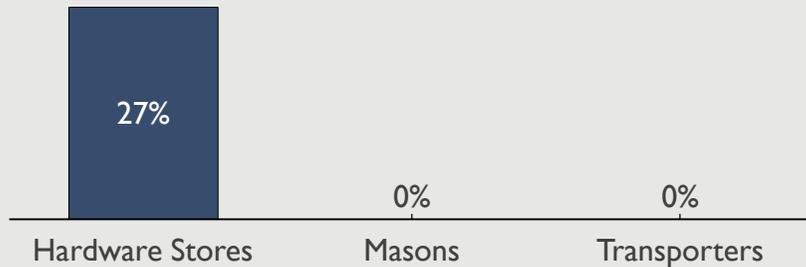
% of HHs with improved toilets, by the main material of the door²



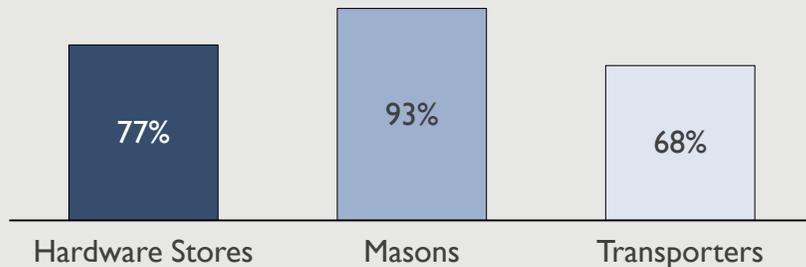
1. **Source:** Quantitative interviews with hardware stores (n=27), cement pre-fabricators (n=25), and transporters (n=27); FSG analysis
 2. **Source:** HH Profile interviews (n=3,608), FSG analysis

Most value chain actors rely on referrals and word-of-mouth, and do not market their business or actively reach out to customers

% of VC actors whose customers get to know about them from an advertisement (e.g., on the radio), by actor type¹



% of VC actors whose customers get to know about them from friends/neighbors, by actor type¹



“The people in the community know about me because I live here. Customers who are not from here either hear about me from friends or from past customers, or see the products I have displayed here and walk in. I also have my phone number on the door of the shop, though currently my phone is damaged. I have not made use of the radio for advertisement.”

– Cement pre-fabricator in Grand Bassa²

“I get new projects either from people who have seen my work and liked it, or from people who have heard about me from my past customers. I do not know how to advertise my business.”

– Mason in Lofa²

“I do not advertise my business. My store is centrally located and my prices are affordable.”

– Hardware store in Nimba²

1. Quantitative interviews with masons (n=27), hardware stores (n=27), and transporters (n=27); FSG analysis
2. **Source:** Qualitative interviews, FSG analysis



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Most cement pre-fabricators are clustered around urban areas, and are not available to household customers in all rural areas

“After my training in cement pre-fabrication, I came here and made two commodes. However, I was not able to get the other materials needed to install the commodes, like PVC pipes, elbow pipes, etc. As a result, I was not able to sell the commodes, which discouraged me and I abandoned the business to return to farming. Now there are no cement pre-fabricators in this area.”

– Former cement pre-fabricator trained by an NGO, in rural Nimba¹

“In rural clans, some VC actors like cement pre-fabricators were not readily available. Most affected were the Lofa and Nimba counties.”

– Research agency hired by FSG to conduct the VC quantitative interviews²

“Very few sanitation entrepreneurs are present – they are only present in urban and peri-urban areas. Cement pre-fabricators are only present in urban areas”

– Senior Leader, WaterAid²

“There are several cement pre-fabricators in urban areas, but there are few or none in rural areas”

– Consultant, Save the Children²

“There are more than 30 cement pre-fabricators around here.”

– Cement pre-fabricator in urban Bong²

1. **Source:** Qualitative interviews, FSG analysis
2. **Source:** Qualitative interviews with key informants, FSG analysis



Business environment and context

- Poorly penetrated associated supply chains
- Centralized planning and coordination of sanitation activities
- Inconsistent enforcement of existing laws and tax rates, and high tariffs on imported goods
- Significant internal economic migration, leading to a reversion to OD¹
- High dependence on donor-funded public toilet facilities¹
- Reduced ability to pay due to economic slowdown and rising inflation¹

1. Supporting data for this barrier is in the Market Context section. Please refer to 'Reasons for increase in OD' in the Market Context section

Poorly penetrated associated supply chains lead to limited local access and increased transportation costs, particularly for rural households and those that are further away from Monrovia

a

The average distance between rural households and key material providers is significantly greater than it is between key material providers and urban households

b

Upstream transport costs increase for some materials in proportion to their distance from Monrovia; households further away from Monrovia have to pay a higher price for the same material as a result

On average, some rural households travelled almost 4 times as far as urban households to buy materials from a hardware store

Average distance travelled in miles by some HHs to buy materials from various VC actors^{1,2}



“We bought materials from the building material store in Compound #3, which is located 45 minutes away on foot (3 miles). It was costly to transport the material from the store to the house. We had to make 5 trips on motorcycle.”

– Household in Grand Bassa¹

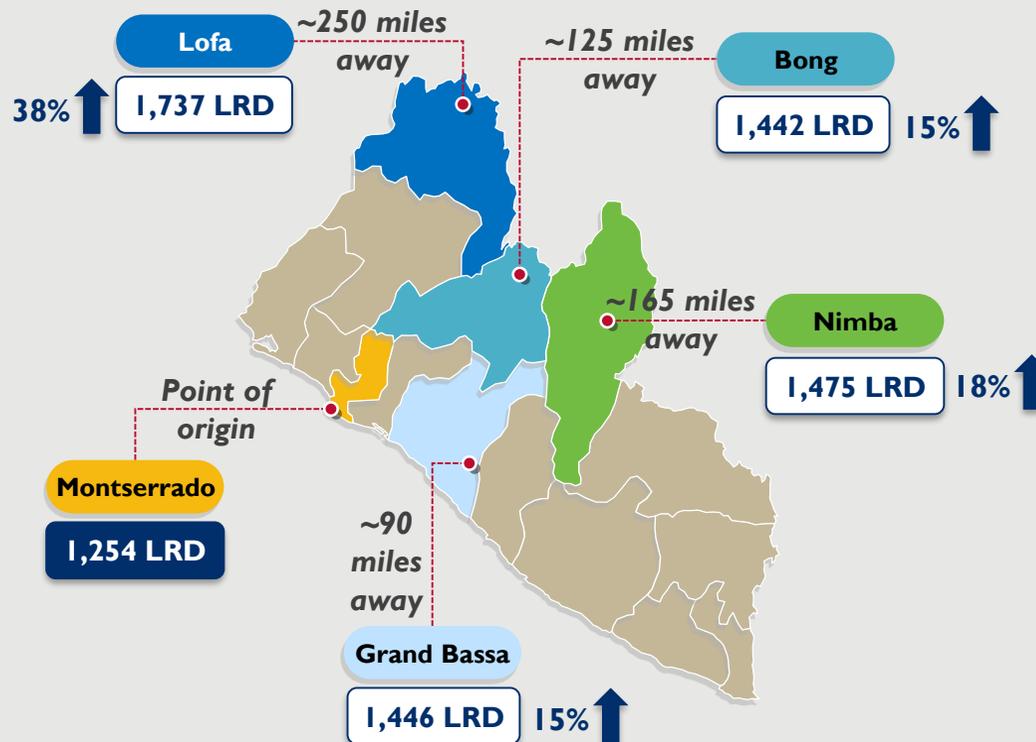
1. **Source:** Qualitative interviews, FSG analysis based on 10 VC trace backs, with distances by road calculated using GPS locations on Google Maps
2. Select actors (e.g., masons and carpenters) have not been included as their absolute distances from HHs were less than 1 mile and/or there were too few data points



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The average retail price for a 50 kg bag of Cemenco cement (42.5R) at hardware stores increases with the distance of the store from Monrovia

Average selling price in LRD of a 50 kg bag of Cemenco cement (42.5R) in hardware stores, by county¹



Data from expert interviews

Hardware stores add a **significant markup to the cost of cement**, to cover the transportation costs they incur in traveling to/from Monrovia to purchase cement and other materials from wholesalers in the national capital.

For example, hardware stores in Voinjama (capital of Lofa) will charge **US\$ 11** for a bag of cement, even though the wholesale price is **US\$ 6** and the retail price in Monrovia is **US\$ 8**.⁴

"I buy cement directly from Cemenco, and they deliver the cement to me. I buy one bag of cement for US\$ 6.25, and pay them a dollar above that for transport. I then sell the cement for US\$ 7.90 per bag."

– Hardware store owner and Cemenco distributor in Bong²

1. **Source:** Quantitative interviews with hardware stores (n=27), FSG analysis – Question: What is the price (in LRD) today for a 50 kg bag of Cemenco cement (42.5R)?
2. **Source:** Qualitative interviews, FSG analysis
3. **Source:** Expert interview with Ex-Consultant, Save the Children

The presence of a National WASH Commission supports central planning and coordination of sanitation activities; however, budgetary constraints at the county and district level impedes the enforcement of the national Public Health Law

a

The establishment of the National WASH Commission in 2017 has helped centralize planning and coordination of sanitation activities

b

However, budgetary constraints and insufficient support from the local government are affecting the enforcement of the National Public Health Law

The establishment of the National WASH Commission in 2017 has helped centralize planning and coordination of sanitation activities

Secondary research

According to the World Bank *Liberia Gov Constraints to Service Delivery* document, WASH activities are **currently spread out across multiple ministries/agencies**, including: Ministry of Public Works (Rural WASH), Liberia Water and Sewage Corporation (Urban WASH), Ministry of Education (WASH in schools), and Ministry of Health (WASH in Health).

The WASH Commission was set up to play a **regulatory role**, and is increasingly **helping organize service delivery** across the sector.

“The WASH commission is a regulator and has been useful to some extent. The commission is mainly there to regulate the difference agencies that are carrying out their mandate”

- Consultant, Save the Children¹

“The WASH commission was established as stakeholders across the civil society, ministries, and NGOs agreed that the WASH sector was highly fragmented and often involved a duplication of activities across stakeholders”

- Government official, WASH Commission¹



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However, budgetary constraints and insufficient support from the local government are affecting the enforcement of the national Public Health Law

Secondary research

According to the Government of Liberia *Guidelines for Community-Led Total Sanitation Implementation in Liberia*, the **Liberia Public Health Law (1976)** states that all dwelling places and public buildings should have **adequate toilet facilities**² and all surroundings of dwelling places **should be kept sanitary at all times**.

Households that fail to meet these standards, upon conviction, are liable to a **fine** not exceeding two hundred Liberian dollars or to an **imprisonment** not exceeding thirty days, or to both a fine and imprisonment.

“Logistics support for supervision is mostly lacking. Enforcement of the Public Health law is not effective; Advocacy meetings that train local government leaders to take responsibility of sanitation need to be improved.”

– County Environmental and Occupational Health Supervisor¹

“The enforcement of the Public Health law is not effective generally. We are trying to push it in the district but we are getting lots of resistance from the local political leaders. They try to politicize the system and side with defaulters.”

– District Health Officer¹

“We have plans to improve the sanitation conditions by monitoring and evaluating communities to ensure that they meet sanitation standards, but there is no funding. The public health law is also not being properly enforced due to a lack of logistical support.”

– County Environmental Health Coordinator¹

1. **Source:** Qualitative interviews with local government officials

2. The Public Health Law states that usable latrines (i.e., latrines that are not 'in such a state as to be prejudicial to health or a nuisance, and cannot without reconstruction be put into a satisfactory condition') should be provided in all buildings, and that these latrines should be 'water closets' in areas with 'sufficient water supply and sewers'



[Click to go back](#)

Inconsistent enforcement of existing laws and tax rates, along with high tariffs on imported goods, impacts the ability of some actors to expand their business

Secondary research

According to the USAID *Liberia Cross Border Trade Assessment Learning Evaluation and Analysis Project*, small businesses in Liberia **face significant costs importing** through formal channels. This is due to administrative and procedural hurdles, transport costs, and **taxes or other payments**

“Currently, government tariffs on imported materials used in the sector and a lack of price regulation/control in some areas of the country, is preventing the sanitation market from growing. It is important to ensure both the wide availability and affordability of quality products.”

– Representative from BRAC¹

Secondary research

According to the International Trade Administration’s *Liberia – Country Commercial Guide*, **high tariffs and an inconsistent tax administration** are significant business challenges in Liberia. Tariffs, customs duties, tax rates, and other statutory fees are **not fully harmonized**. As a result, the government is attempting to broaden Liberia’s tax base, in addition to centralizing and standardizing revenue collection systems

“There is inequity in how the government works with investments. There are differential withholding tax rates for similar or comparable products in the Liberian commerce; this creates an uneven playing field. The tax code in Liberia is also not business friendly and tariffs on imported goods are so high that they should be revised downwards.”

– Representative from Fouta¹

1. Source: Qualitative interviews with key informants

Barriers and Drivers | Overall Summary

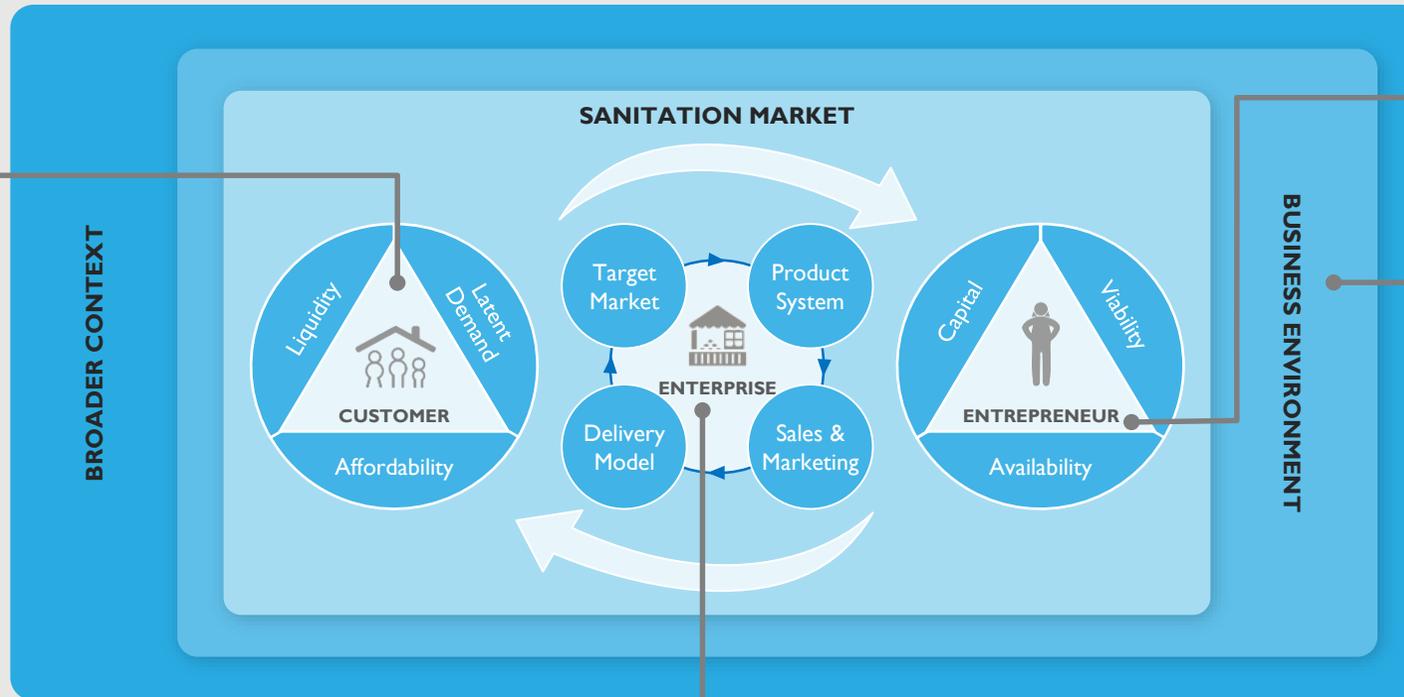
• Barriers • Drivers

Customer

- High awareness of the benefits of BSS
- Unaffordability of preferred improved toilets
- Irregular and unpredictable incomes for agrarian households
- Access to financiers and prior loan-taking behavior
- Convenience of defecating in the open at or near water sources
- Lack of space and incentive for renters to build toilets

Entrepreneur

- Sanitation, as a business, may not be viable for many VC actors
- Sanitation is adequately profitable at a unit level for some VC actors
- Many VC actors do not have money for business expansion
- VC actors that could act as sanitation entrepreneurs may not have the requisite business acumen



Enterprise

- More affordable product options are not found in most hardware stores
- Strong preference for flush/pour flush toilets, but insufficient access to water
- Low demand for ready-made cement products; may be addressable through promotional activities and awareness campaigns
- A DIY model of toilet building that is cumbersome for households
- Potential for increased business due to customer referrals among VC actors

Business environment and context

- Poorly penetrated associated supply chains
- Centralized planning and coordination of sanitation activities
- Inconsistent enforcement of existing laws and high tariffs on imported goods
- Significant internal economic migration, leading to a reversion to OD
- High dependence on donor-funded public toilet facilities
- Reduced ability to pay due to economic slowdown and rising inflation

Appendix - Table of Contents

- Overview of the Liberia SMA
- Market Context
- Actor Profiles
- Actor Maps
- Toilet Costing
- Barriers and Drivers towards MBS
- **Customer Segmentation**
- Segment Profiles

Please click on the section name to go to that particular section

Customer Segmentation | Rationale

Household customers differ in their preferences and beliefs around sanitation, creating a need to segment the population of households without basic sanitation service

	Annie Montserrado	Saye Nimba	Linda Montserrado	Ben Bong
Sanitation service level	Limited Sanitation Service	Open Defecation	Unimproved Toilet	Open Defecation
Believe that community cleanliness is important	■ ■ ■ ■ ■	■ ■ ■ ■ □	■ ■ ■ ■ ■	■ ■ □ □ □
Believe that it is embarrassing to be seen practicing OD	■ ■ ■ ■ ■	■ □ □ □ □	■ ■ ■ ■ □	■ ■ □ □ □
Understand the health, safety and privacy benefits of using a toilet	■ ■ ■ ■ ■	■ □ □ □ □	■ ■ ■ ■ □	■ ■ □ □ □
Willingness to pay for an improved toilet	■ ■ ■ ■ □	■ ■ □ □ □	■ ■ □ □ □	■ □ □ □ □
Ability to afford an improved toilet	■ ■ ■ ■ ■	■ ■ □ □ □	■ ■ ■ ■ □	■ □ □ □ □

Legend

■ ■ ■ ■ ■	■ ■ ■ ■ □	■ ■ □ □ □	■ □ □ □ □	□ □ □ □ □
Very high/strong		Somewhat		Not at all

Source: HH interviews (Profile n=3,608; Detailed n=659), FSG analysis

Note: Names used are fictitious. No identification with actual persons is intended or should be inferred.

Customer Segmentation | Approach

In order to segment the population, we ran five appropriateness tests across all our hypothesized segmentation variables to see which variables predicted differences in the key drivers of propensity to purchase an improved toilet

Construction of improved toilets not meant to be shared with other households

General sanitation awareness

Perception of **increased health and hygiene** benefits from toilet

- *High*: Strong agreement with these benefits
- *Low*: Lack of awareness of these benefits

Awareness of benefits linked with improved toilets

Perception of **increased non-health** benefits from **improved** toilet features (prestige, convenience, safety)

- *High*: Strong agreement with these benefits
- *Low*: Lack of awareness of these benefits

Involvement in category

Respondent's **involvement in improved toilet Buying Process**

- *High*: Considered purchasing an improved toilet; definite product preference
- *Medium*: Considered purchasing an improved toilet; but indefinite/partial product preference
- *Low*: Did not consider purchasing an improved toilet

Willingness to pay

Respondent's **willingness to pay** for/propensity to purchase a toilet

- *High/Medium/Low* based on stated willingness to pay for an improved toilet

Ability to pay

Respondent's **ability to pay** for a toilet

- *High/Medium/Low* based on existing ownership of household assets (e.g., mobile phone, TV, furniture), and livestock

Customer Segmentation | Segmentation Variables

We selected five segmentation variables that predict the differences in key drivers of purchasing an improved toilet not meant to be shared with other households¹ (appropriate), and that are easily identifiable (executable)

Identifying appropriate and executable variables

Appropriateness	Higher than average	<ul style="list-style-type: none"> • HH education level • HH head education level • HH head age • Extra space available in house • Type of toilet being used • Access to electricity • Source of electricity • Distance from nearest taxi/bus stand • Level of education facility in EA • Level of health facility in EA 	<ul style="list-style-type: none"> • Occupation • Ownership of means of transport • Region • Drinking water source • Distance from water source • Seasonality of income • Urban or Rural • Non-drinking water source • Distance from nearest market with shops • Distance from main road 	<ul style="list-style-type: none"> • Time taken to walk to nearest marketplace • County • House material • Loan taken • House ownership
	Lower than average	<ul style="list-style-type: none"> • Mobile ownership • Mobile money usage • Loan group membership • Source of loan • Purpose of loan taken • Total expenses • Discretionary expenditure • Proportion of income from remittance • Distance to public toilet 	<ul style="list-style-type: none"> • HH gender ratio • Age of house • Size of family • # children in HH • # females in HH • # elderly in HH • Major modifications to house • Prevalence of basic sanitation service in area • Wealth quintile 	
		Low	Medium	High
		Executability		

Out of a shortlist of **appropriate variables** (i.e., variables that predict significant differences across drivers), we selected **variables that are executable** in that they divide the population into easily identifiable segments, allowing for targeted interventions

High priority
 Medium priority
 Low priority

1. Pairwise t-tests were run to determine statistically significant variation across the variables when tested against the 5 Appropriateness Tests, and Chi-squared tests comparing column proportions were run at 95% confidence interval.

Customer Segmentation | Segmentation Frame | Overview

			≤ 30 minutes					> 30 minutes				
			Montserrado	Grand Bassa	Bong	Nimba	Lofa	Montserrado	Grand Bassa	Bong	Nimba	Lofa
Time taken to walk to nearest marketplace ¹												
County												
House Material	Loan taken	House ownership										
		Owned										
Durable Material ²	Yes	Not owned										
		Owned										
Non-Durable Material ³	No	Not owned										
		Owned										
			<p>Counties are economically, culturally, and demographically different, and these differences impact awareness of improved toilet benefits, involvement in category, and ability and willingness to pay</p>					<p>Distance from the nearest marketplace is an indicator of access to information, construction materials, value chain actors, and other facilities; it impacts awareness of general sanitation benefits, and ability and willingness to pay</p>				
			<p>Access to loans is an indicator of greater financial inclusion which particularly impacts involvement in category, and willingness to pay</p>									
			<p>House ownership indicates the household's potential inclination to modify/upgrade their home, and their level of affluence, ultimately impacting their ability and willingness to pay</p>									
			<p>House material used reflects the household's preferences and level of affluence, which impacts general sanitation awareness, awareness of other benefits linked with improved toilets, involvement in category, along with ability and willingness to pay.</p>									

1. Marketplaces are open-air stalls that operate periodically (e.g., once a week); they differ from permanent stores/businesses, colloquially known as 'big market', that operate from the same location on all working days
2. At least two components among the roof, floor, and walls of the house are primarily made of durable materials (e.g., cement, tiles, zinc sheets)
3. One or fewer components between the roof, floor, and walls of the house are primarily made of durable material

Customer Segmentation | Segmentation Frame | Population Distribution

Time taken to walk to nearest marketplace			≤ 30 minutes					> 30 minutes					Total HH (%)
			County	Montserratado	Grand Bassa	Bong	Nimba	Lofa	Montserratado	Grand Bassa	Bong	Nimba	
House Material	Loan taken	House ownership											
Durable Material	Yes	Owned											17.0%
		Not owned											4.5%
	No	Not owned											11.2%
		Owned											25.1%
Non-Durable Material	Yes												17.3%
	No												24.8%
Total HH (%)			31.2%	4.3%	8.0%	17.2%	5.1%	9.7%	4.4%	6.2%	6.2%	7.6%	100%

Note: Total ≠ 100% as numbers are rounded off.

Customer Segmentation | Final Segmentation Frame

			≤ 30 minutes					> 30 minutes						
			Montserrado	Grand Bassa	Bong	Nimba	Lofa	Montserrado	Grand Bassa	Bong	Nimba	Lofa		
House Material	Loan taken	House ownership												
			Durable Material ²	Yes	Owned	A (5.84%)	E (8.10%)					J (11.08%)		
Not owned	B (11.18%)													
No	Not owned	C (12.00%)		F (3.31%)	G (5.27%)									
	Owned													
Non-Durable Material ³	Yes	D (2.14%)	H (7.68%)		I (10.27%)	K (15.49%)								
	No													

Note: Percentages in parentheses indicate the proportion of HHs that are in each segment out of the total population of HHs without basic sanitation service in the five counties

1. Marketplaces are open-air stalls that operate periodically (e.g., once a week); they differ from permanent stores/businesses, colloquially known as ‘big market’, that operate from the same location on all working days; 2. At least two components among the roof, floor, and walls of the house are primarily made of durable materials (e.g., cement, tiles, zinc sheets); 3. One or fewer components between the roof, floor, and walls of the house are primarily made of durable material; 4. Refer to the section on ‘Segment Profiles’ for [detailed profiles](#) of each of the 12 segments mentioned here

Customer Segmentation | Mapping respondents

The individuals previously discussed can be classified into distinct segments on this segmentation frame, with similar attitudes, beliefs, preferences, and buying behavior, in order to design tailored interventions for them

Time taken to walk to nearest marketplace			≤ 30 minutes					> 30 minutes				
			Montserrado	Grand Bassa	Bong	Nimba	Lofa	Montserrado	Grand Bassa	Bong	Nimba	Lofa
House Material	Loan taken	House ownership										
Durable Material	Yes	Owned	A	E					J			L
		Not owned	B	E								
	No	Not owned	B	F		G						
		Owned	C	F		G						
Non-Durable Material	Yes		D	H			K					
	No		D	I		I						

Annie Montserrado	Ben Bong	Linda Montserrado	Saye Nimba
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Note: Names used are fictitious. No identification with actual persons is intended or should be inferred.

Customer Segmentation | Segmentation Statistics (1/2)

Though most segments have considered buying a toilet with improved features, there is significant variation between them on other variables that predict propensity to purchase an improved toilet that is not meant to be shared with other households, signifying that they are externally heterogeneous

	Awareness of health risks of not having a toilet	Awareness of benefits of improved toilets	Involvement in category	Willingness to pay for a toilet	Ability to pay for a toilet
A	H	H	H	H	H
B	M	H	H	H	H
C	M	H	H	M	H
D	M	H	H	L	L
E	M	M	H	H	H
F	H	M	M	L	H
G	H	M	H	L	M
H	M	M	H	M	L
I	M	M	M	M	L
J	H	M	H	L	H
K	M	M	H	L	L
L	H	H	H	M	L

 High

 Medium

 Low

Source: HH interviews (Profile n=3,608; Detailed n=659), FSG analysis

Note: Responses to multiple questions were combined in order to develop a definition of each of these categories; these figures do not correspond to any single question

Customer Segmentation | Segmentation Statistics (2/2)

The 12 customer segments also show significant differences in household demographic characteristics, behavior, and asset ownership, signifying that they are externally heterogeneous

	% household heads with education till Senior High or above	% of households that use protected sources for non-drinking water	% of households with access to electricity	% of households engaged in agriculture	% of households that are < 30mins walking distance from a permanent market	% of households with televisions	% of households with mobile phones
A	51%	72%	58%	3%	66%	51%	96%
B	67%	80%	57%	0%	77%	46%	93%
C	51%	71%	47%	11%	60%	29%	93%
D	0%	20%	3%	73%	12%	0%	53%
E	39%	47%	17%	59%	31%	4%	77%
F	37%	51%	29%	38%	53%	6%	85%
G	44%	38%	20%	65%	35%	1%	64%
H	34%	34%	17%	66%	20%	0%	55%
I	24%	35%	10%	72%	30%	1%	58%
J	50%	55%	30%	41%	8%	21%	79%
K	16%	24%	7%	75%	2%	0.2%	54%
L	16%	10%	10%	78%	6%	0.5%	58%

 Top 3 segments indicating higher percentage of households that exhibit the characteristic

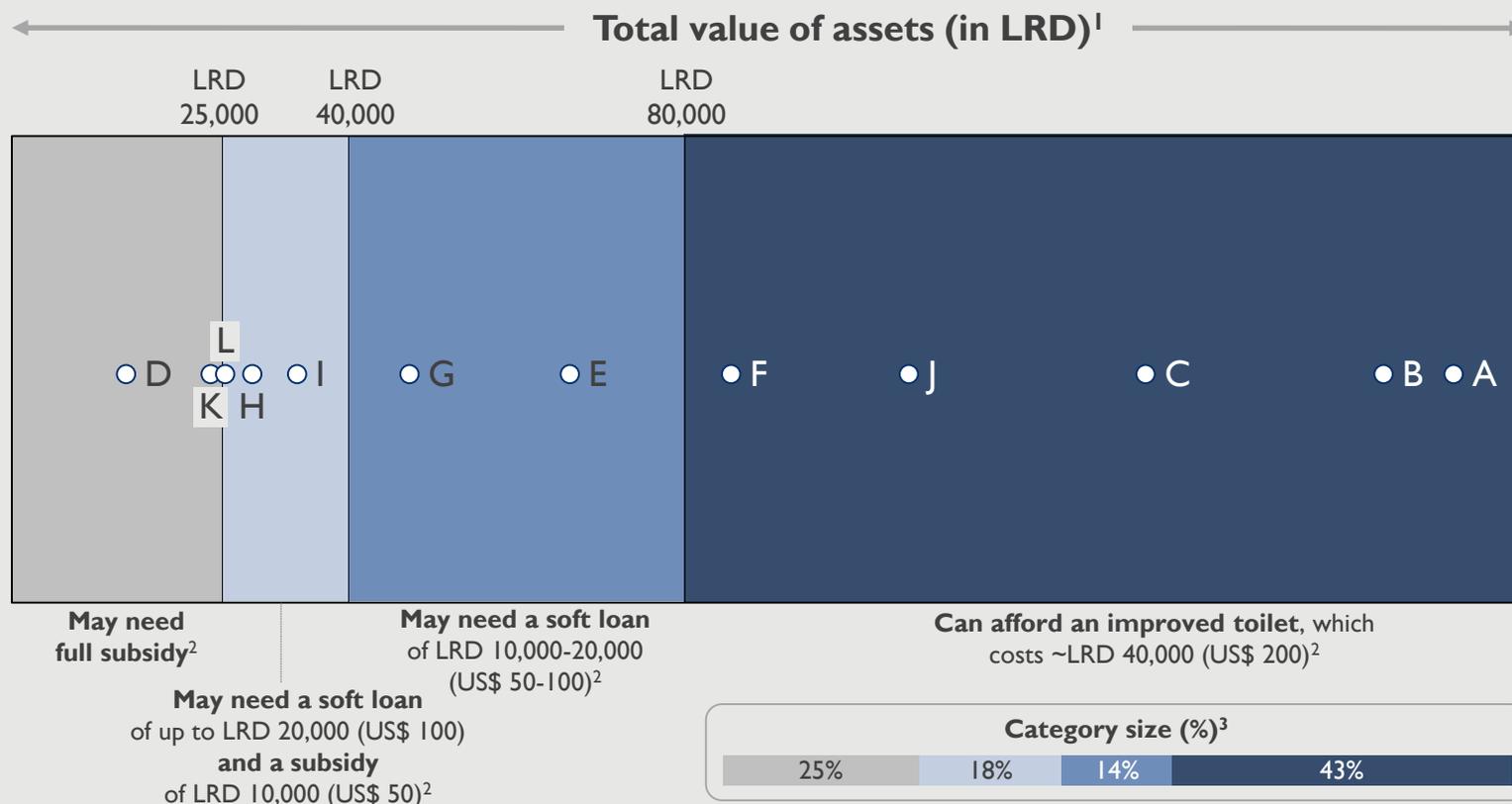
 Bottom 3 segments indicating lower percentage of households that exhibit the characteristic

Source: HH interviews (Profile n=3,608; Detailed n=659), FSG analysis

Note: The above is a sample of characteristics on which the identified segments vary, and is not meant to be exhaustive.

Customer Segmentation | Categorization of Customer Segments (1/2)

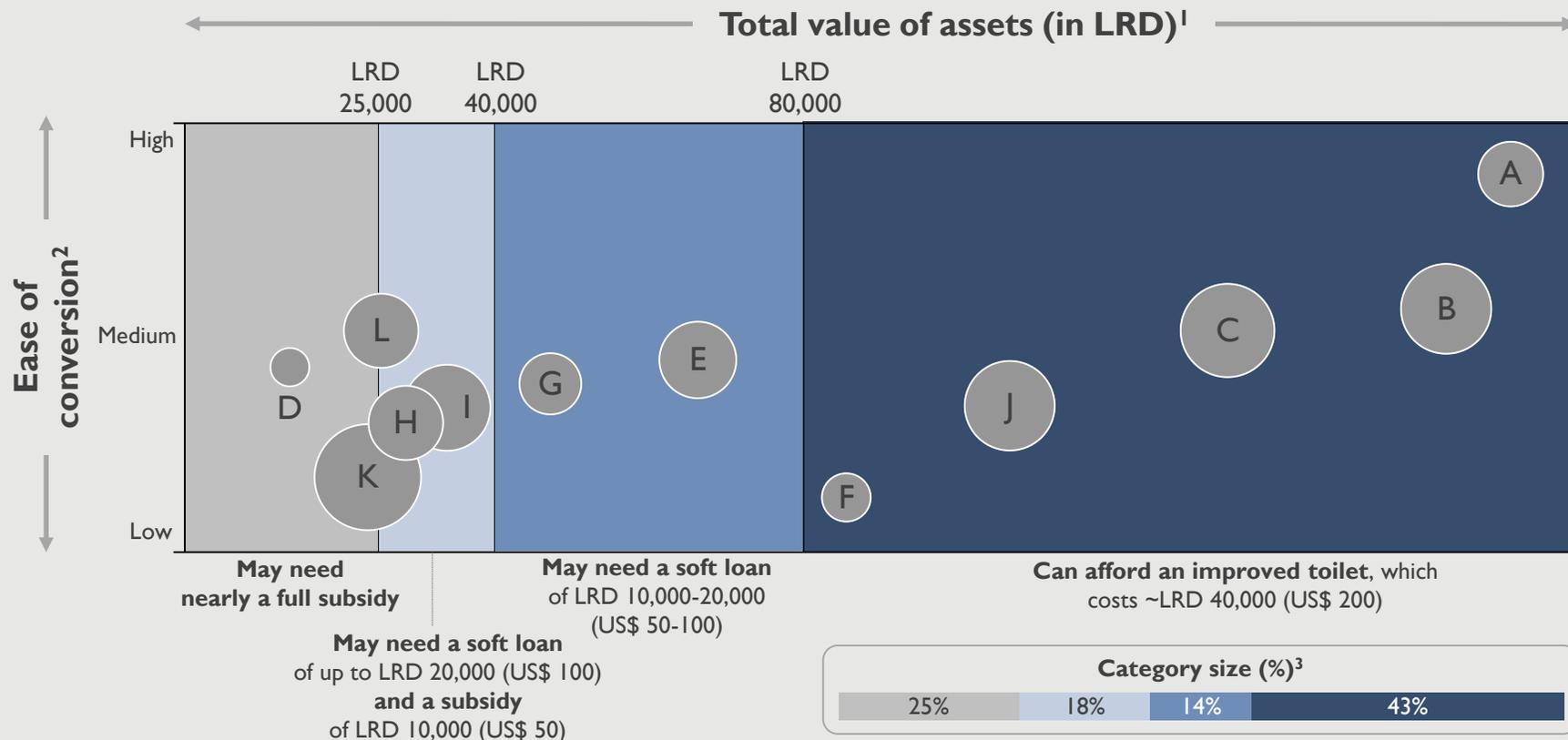
We have grouped the 12 customer segments into 4 categories based on their ability to pay for an improved toilet, which was estimated using the total value of assets owned by households in the segment



1. Average total asset value for households within the segment (in LRD); assets considered included appliances (e.g., furniture, mobile phone, TV), vehicles, livestock
2. Categorization is based on household's ability to pay for an improved toilet costing ~LRD 40,000 (US\$ 200). Assumption: Households can pay no more than 50% of their total asset value towards toilet construction. The remaining needs to be covered by a soft loan and/or a subsidy. Households with total assets >LRD 80,000 (i.e., twice the toilet cost) can afford to purchase the toilet without any financing, households with assets between LRD 40,000-80,000 (i.e., between 100-200% of toilet cost) may need a soft loan, households with assets between LRD 25,000-40,000 (i.e., nearly equal to toilet cost) may need partial subsidy in addition to a soft loan, and households with assets ≤LRD 25,000 (i.e., significantly lesser than toilet cost) may need nearly a full subsidy (includes segment L)
3. Proportion of households that are in each category, out of the total population of households without basic sanitation service in the five counties

Customer Segmentation | Categorization of Customer Segments (2/2)

... and assessed them on their potential to be impacted by market-based interventions (i.e., ease of conversion), which is a composite metric created by combining the other four appropriateness tests



Note: Size of bubble denotes segment size in terms of proportion of households (%) out of the population that do not own an individual improved toilet

1. Average total asset value for households within the segment (in LRD); assets considered included appliances (e.g., furniture, mobile phone, TV), vehicles, livestock
2. Composite metric created by combining four appropriateness tests: general sanitation awareness, awareness of benefits of basic sanitation service, involvement in category, willingness to pay
3. Proportion of households that are in each category, out of the total population of households without basic sanitation service in the five counties

Customer Segmentation | Variation across Drivers and Barriers



[Click to go back](#)

Within each of the four categories, the segments differ significantly on the impact of the customer drivers and barriers to adoption of improved toilets

	Can afford an improved toilet					May need a soft loan		May need a soft loan, and partial subsidy		May need nearly a full subsidy		
	A	B	C	F	J	E	G	H	I	D	K	L
Drivers												
High awareness of benefits of basic sanitation service	●	●	●	◐	●	◐	●	◐	◐	●	◐	●
Access to financiers and prior loan-taking behavior	●	◐	◐	◐	◐	●	◐	●	◐	◐	◐	◐
Barriers												
Unaffordability of preferred improved toilet options	◐	◐	◐	◐	◐	◐	◐	●	●	●	●	●
Irregular and unpredictable incomes for agrarian HHs	◐	◐	◐	◐	◐	◐	◐	◐	◐	●	◐	●
Convenience of defecating near water sources	◐	◐	◐	◐	◐	◐	◐	◐	◐	●	◐	●
Lack of space and incentive for renters to build toilets	◐	●	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐

● High impact of driver ● High impact of barrier

Note: For each driver and barrier, a four point relative scale was defined (based on segment-level averages of relevant data points), to determine the impact of the driver/barrier on each segment; i.e., 'Very low impact', 'Low impact', 'Moderate impact', 'High impact'. Data points considered include awareness of benefits of basic sanitation service, ability to pay for a toilet, seasonality of income, openness to financing, reliance on surface water as non drinking water source, and lack of extra space for construction. Refer to the next section for [detailed profiles](#) of the 12 segments within these four categories

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- **Segment Profiles**

Please click on the section name to go to that particular section

Segment Profiles | Final Segmentation Frame

Please click on any customer segment on the frame to go to the detailed slides for that particular segment

Time taken to walk to nearest marketplace ¹			≤ 30 minutes					> 30 minutes				
			County	Montserrado	Grand Bassa	Bong	Nimba	Lofa	Montserrado	Grand Bassa	Bong	Nimba
House Material	Loan taken	House ownership										
Durable Material ²	Yes	Owned	A (5.84%)	E (8.10%)			J (11.08%)			L (7.64%)		
		Not owned	B (11.18%)									
	No	Not owned	F (3.31%)	G (5.27%)								
		Owned				C (12.00%)						
Non-Durable Material ³	Yes	D (2.14%)	H (7.68%)		I (10.27%)		K (15.49%)					
	No											

Note: Percentages in parentheses indicate the proportion of HHs that are in each segment out of the total population of HHs without basic sanitation service in the five counties

1. Marketplaces are open-air stalls that operate periodically (e.g., once a week); they differ from permanent stores/businesses, colloquially known as 'big market', that operate from the same location on all working days
2. At least two components among the roof, floor, and walls of the house are primarily made of durable materials (e.g., cement, tiles, zinc sheets)
3. One or fewer components between the roof, floor, and walls of the house are primarily made of durable material

Segment Profiles | Segments that can Afford an Improved Toilet

Segments A, B, C, F, and J can afford an improved toilet, but have not invested in one...



Distribution of HHs without basic sanitation service by ability to pay for an improved toilet (%)

Let's understand their behavior better.

Segment Profiles | Segment A

Limited sanitation service:

41%

Unimproved toilet:

46%

No toilet:

13%

Households in **Segment A** are the most educated and affluent amongst the HHs without basic sanitation service...

			Time taken to walk to nearest marketplace	≤ 30 min					> 30 minutes				
			County	Montserrado	Grand Bassa	Bong	Nimba	Lofa	Montserrado	Grand Bassa	Bong	Nimba	Lofa
House Material	Loan taken	House ownership											
Permanent Material	Yes	Owned	A	E					J				
		Not owned	B	F					G				
	No	Not owned	C	H					K				
		Owned	D	I					L				
Non-Permanent Material	Yes												
	No												

...but either use unimproved toilets or have limited sanitation service, as their preferred toilet option is too expensive.

Note: 100% of the segment resides in Montserrado.

Segment Profiles | Segment A | Customer Story

Eliza lives and works in Tweh Farm, Montserrado with her two sisters, two cousins and four children. She has completed her education up till senior high, and works as a dry-goods-seller (selling groceries and other household items) to support her family.

Eliza and her family own a house built with durable materials, and also own several assets such as a mobile phone, television, and a scooter. They also have access to electricity and obtain water for bathing and cleaning from a tube well. Their average monthly household expenditure is LRD 57,000, and is spent primarily on food, healthcare, and the children's school fees. Eliza's regular income ensures that her family lives comfortably, and their level of affluence keeps them financially stable.

Eliza strongly believes that community cleanliness is very important, and that using a toilet is a matter of pride and prestige for her and her family. She and her family share a toilet facility with two neighboring households. The toilet includes an offset pit, foot rests, cement floor, walls plastered with cement, a lockable wooden door, and zinc sheets for the roof. However, because they share it with other families, Eliza and her children cannot use the toilet when it is occupied. This is especially challenging in the morning when the children are preparing to go to school.

Eliza feels it is unhygienic to share a toilet; she would like to build her own toilet to enjoy exclusive access for herself and her children, and is willing to pay a significant amount of LRD 80,000-100,000 for one. However, she believes that building a modern toilet like the one they currently use, but with a seated ceramic commode instead of foot rests, will cost over LRD 100,000, which is beyond her budget. She is less willing to build a toilet without the ceramic commode because she finds squatting uncomfortable. She also wants to ensure that the toilet is water-based so that feces do not collect and are properly washed away, and that it has an offset pit so that she is protected from heat emanating from the pit and flies.

Segment Profiles | Segment A | Key Demographic Statistics

Segment size		Demographics		Income & occupation	
% of potential market	6%	Family size (Avg.)	9	Nature of income	
# of households	31K	Gender of HH Head		• Regular	83%
		• Male	41%	• Seasonal	17%
		• Female	59%	Primary occupation²	
		HH Head education¹		• Petty Trading	54%
		• No education	25%	• Unskilled Labor	13%
		• Up to Junior High	24%	• Skilled Labor	11%
		• Senior High or above	51%	• Shop owner	7%
Sanitation profile					
Limited sanitation service	41%				
Unimproved toilet	46%				
No toilet	13%				

Affluence indicators		Access indicators		Attitudes & beliefs ³	
Total monthly expenditure		Assets and other indicators		Distance to nearest market^{4,5}	
High (>LRD 40K)	61%	Mobile phone	96%	<30 minutes	66%
Medium (LRD 20K-40K)	35%	Computer	4%	30 minutes to 1 hour	18%
Low (≤LRD 20K)	4%	Television	51%	Not walking distance	15%
Total asset value (avg.)	171k	Chair	80%	Access to electricity	58%
Total asset value (spread)		Agricultural land	20%	Non-drinking water source⁴	
High (> LRD 120K)	71%	Any mode of transport	14%	Surface water	3%
Medium (LRD 75K-120K)	7%	Home improvement	66%	Other unprotected sources	25%
Low (LRD 35K-75K)	0%	Loan group member	65%	Hand pump, tube well or borehole	39%
Very low (< LRD 35K)	22%	Mobile money user	61%	Other protected sources	32%
				Believe that community cleanliness is important	
				93%	
				Believe it is embarrassing to be seen practicing OD	
				93%	
				Willing to pay for products that bring prestige	
				58%	
				Believe it is taboo to live near a toilet	
				38%	

1. Indicates highest level of education attended; 2. Top four occupations for each segment are shown; 3. Respondents were asked if they 'strongly disagreed', 'disagreed', 'agreed', or 'strongly agreed' to statements related to their attitudes and beliefs. Here the combined percentage of those who 'strongly agreed' or 'agreed' with a statement is reported, barring willingness to pay for prestige products, for which only 'strongly agreed' is shown; 4. Total % ≠100 as it is rounded off; 5. Refers to a permanent market with stores; **Source:** HH interviews (Profile n=122; Detailed n=21), FSG analysis

Segment Profiles | Segment A | Customer Persona

Setting

- **Location:** Urban Montserrado, typically within or near Monrovia
- **Typical family size:** 9 people, with 3 children and no elderly¹
- **Type of house:** Live in their own house, made predominantly of permanent materials
- **Income and occupation:** Typically have regular income, however nearly a fifth of this segment have seasonal income; petty trading is the most dominant occupation
- **Mobile phone and mobile money:** Almost all HHs in this segment have a mobile phone, and mobile money is used by more than half the HHs in this segment
- **Total value of assets:** HHs are affluent; the average total asset value per HH is LRD ~171,000
- **Loan groups:** Two thirds of HHs are loan group members
- **Loans:** All HHs in this segment have taken loans in the past, primarily for business or school fees; loans are typically taken from savings/loan groups

Mental Model

- **Strongly desire respect** from people in their community
- **Value products that make their life more convenient**, and that are **prestigious**
- **Conformity is not particularly important** to this group, as nearly two thirds disagree or strongly disagree that one shouldn't do things 'differently' from their neighbors
- **Place high value on ownership of a toilet.** The majority strongly believe owning a toilet is a sign of prestige, and that it is irresponsible to not have a toilet
 - Majority are **well aware of the health, safety, and privacy benefits** of a toilet, and equate owning a toilet to being modern
 - **Community cleanliness is a priority**, and to witness OD or be seen practicing OD is highly embarrassing
 - **Slightly over a third of the segment may have concerns about using or living near a toilet**



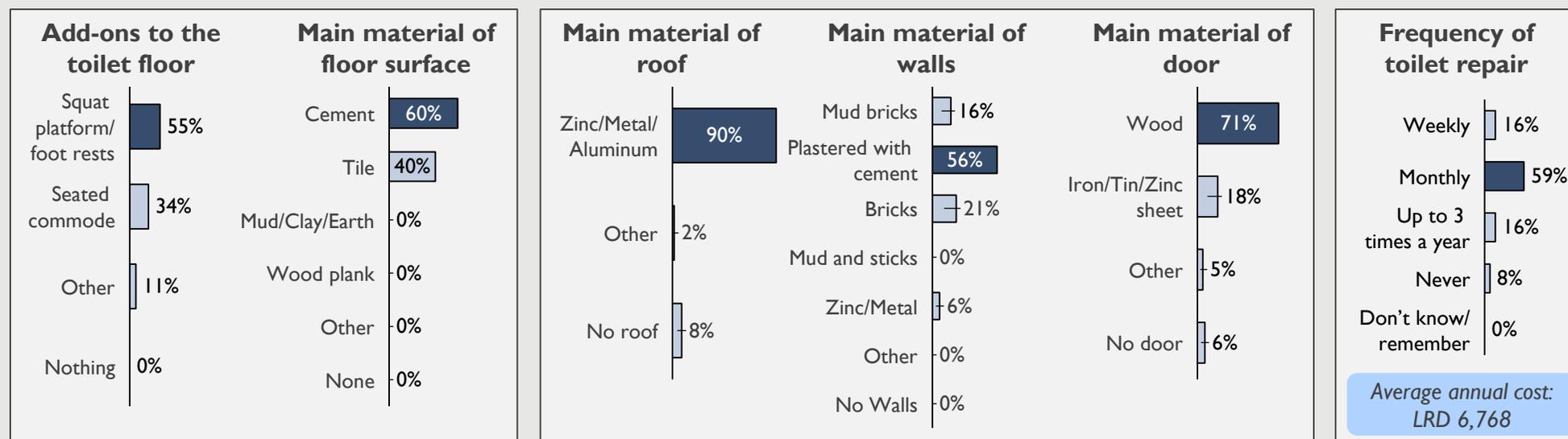
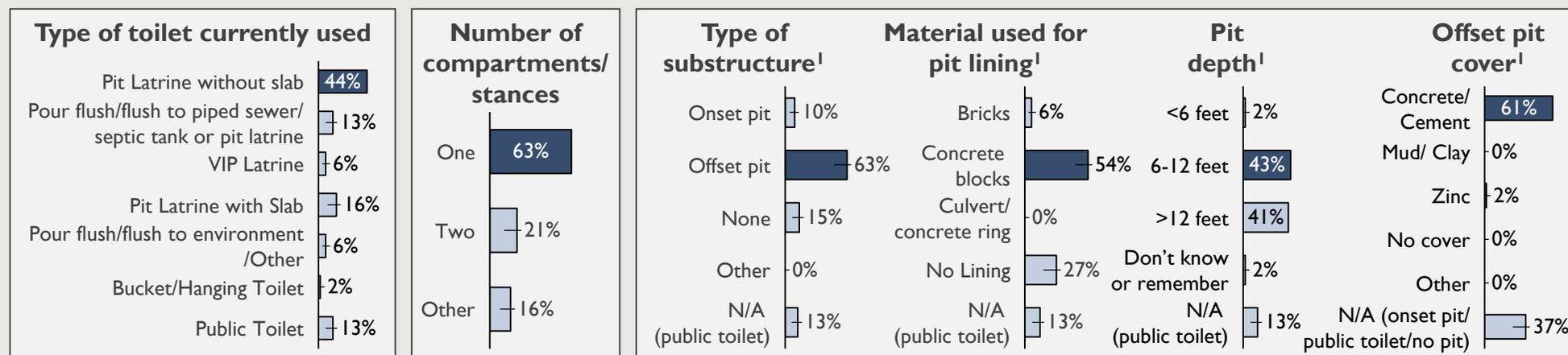
- **Current product and usage:** Improved shared toilet facilities and unimproved toilets
- **Desired product:** A toilet that is easy to clean with water, provides privacy, is comfortable, and has the following functionalities:
 - **Toilet type:** Flush/pour flush toilet to ensure feces are flushed away and do not attract unwanted organisms
 - **Substructure:** Offset pit to limit exposure to pit heat and flies, greater than 6ft deep, lined with concrete blocks

- **Interface:** Tiled floor, ceramic commode to provide seated comfort
- **Superstructure:** Zinc sheet roof, cement walls, wooden door
- **Estimated cost and ability to pay:** Estimated cost of desired toilet - LRD 96,000; average ability to pay (out-of-pocket) - LRD 86,000
- **Financing:** Only one fifth of the segment would consider taking a loan, with most opting for banks or credit unions; the biggest reason for not taking a loan is a fear of the inability to pay back the loan

The Ask

Segment Profiles | Segment A | Current Sanitation Profile for Toilet Users

Toilet users in this segment use a pit latrine with a cement floor which has developed gaps/holes, a squat platform/ foot rests add-on, an offset pit, and a superstructure built with permanent materials

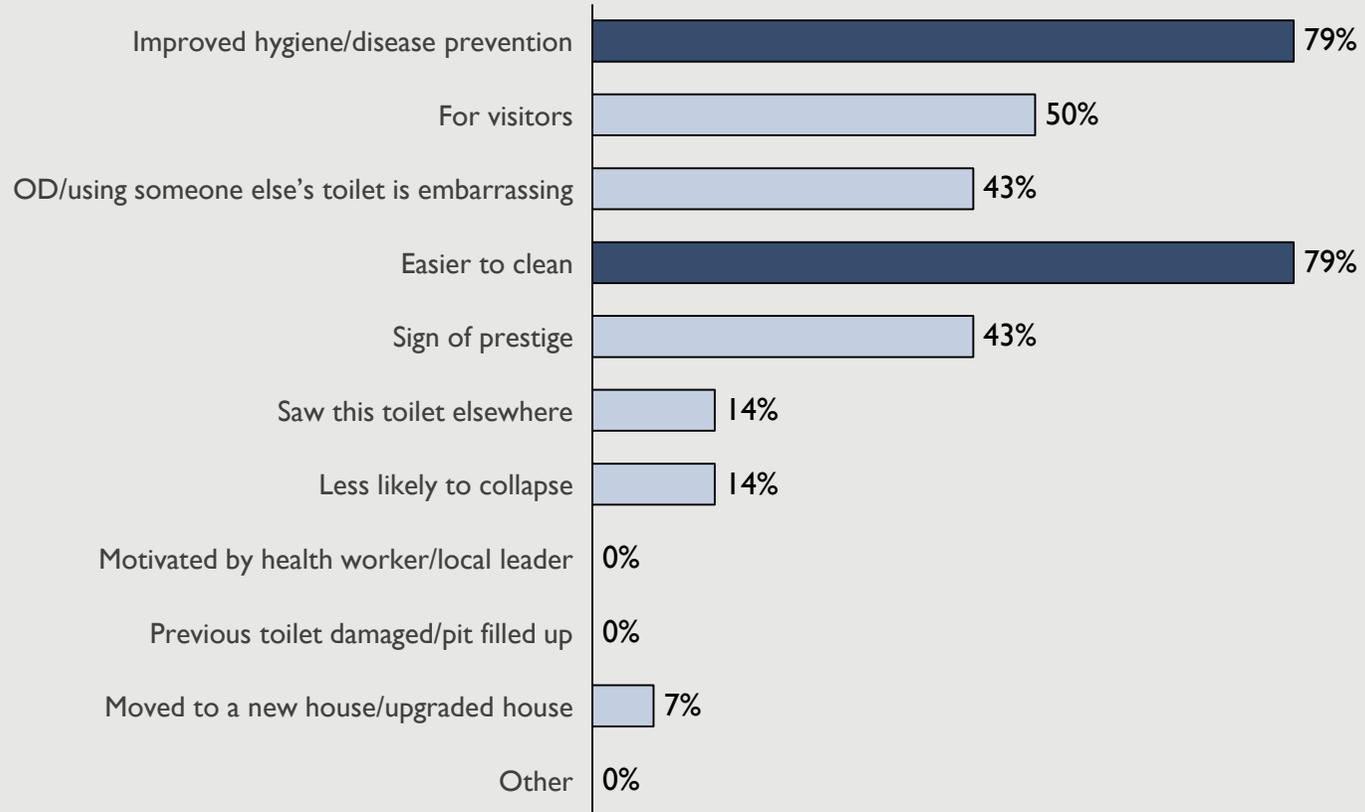


Segment Profiles | Segment A | Buying Process (1/6)

Most households wanted to construct a toilet because it improves hygiene, prevents diseases and is easier to clean



Origination of need for toilet



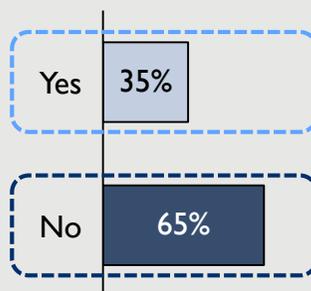
Callout boxes capture key differences exhibited by those with basic sanitation from this segment

Segment Profiles | Segment A | Buying Process (2/6)

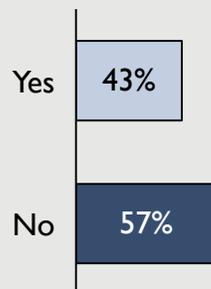
Most HHs did not seek information on how to build a toilet and have not attended a CLTS event; they did not seek information because they believe toilets are too expensive, and had prior knowledge or no reliable source of information



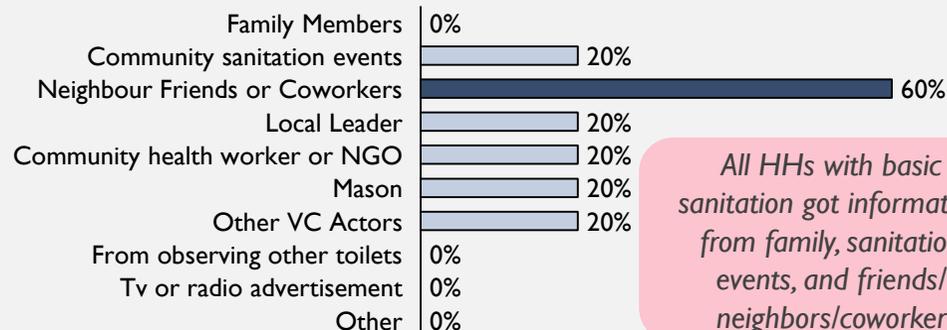
Sought information while considering building a toilet



Attended a CLTS event

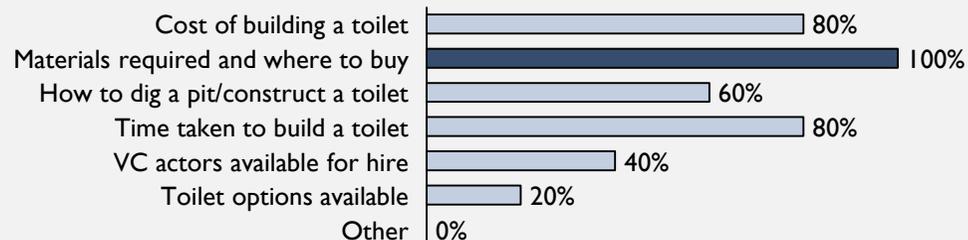


Sources of information about toilets

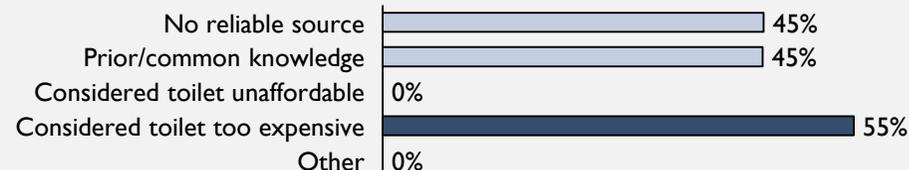


All HHs with basic sanitation got information from family, sanitation events, and friends/neighbors/coworker

Nature of information captured



Reasons for not seeking information

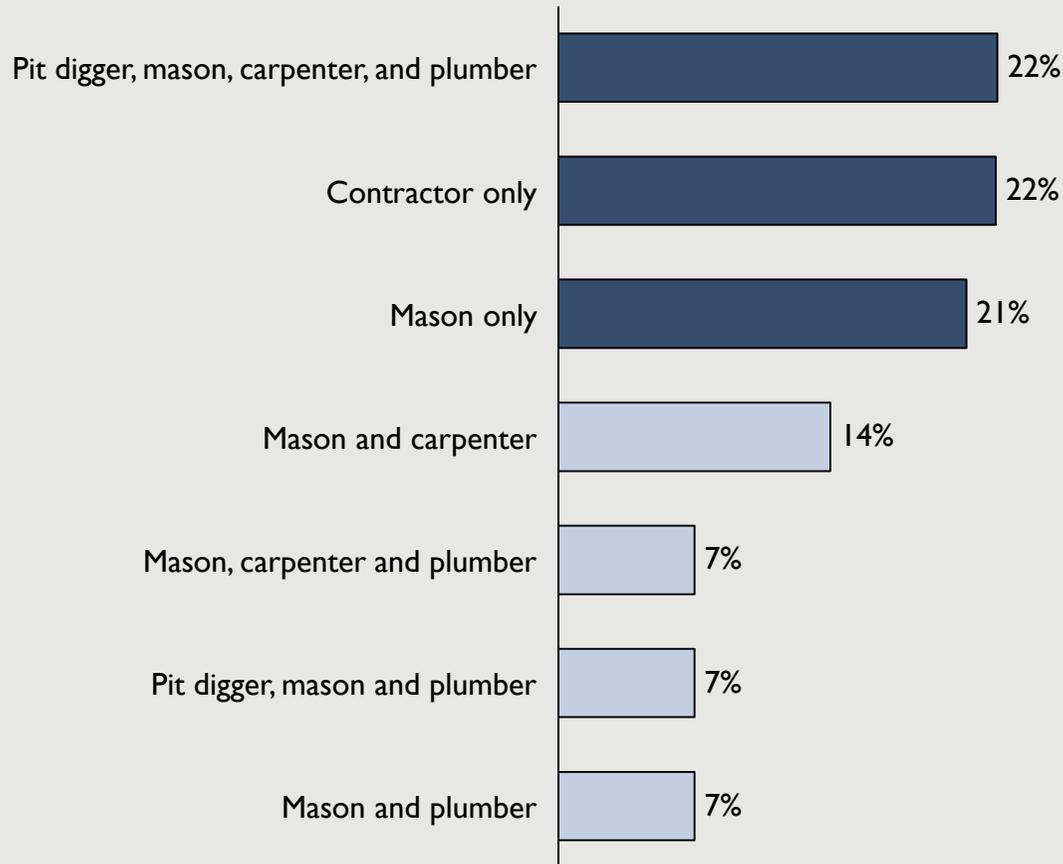


Segment Profiles | Segment A | Buying Process (3/6)

HHs most commonly considered hiring a combination of actors (i.e., pit digger, mason, carpenter and plumber), or considered hiring a contractor only, or a mason only, to construct their toilets



Channels considered for toilet construction



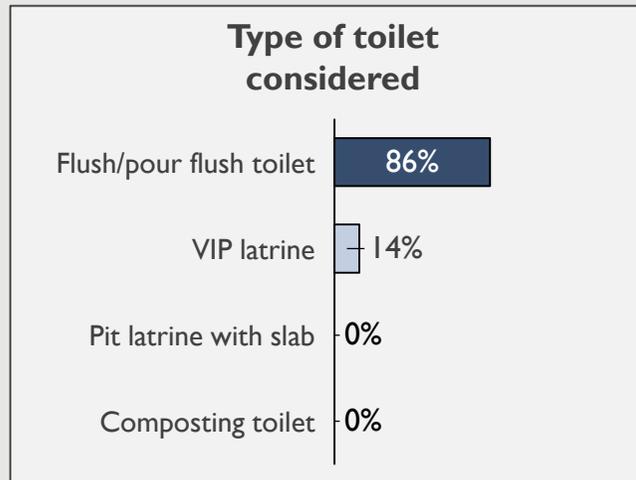
43% of HHs considered hiring 1 actor during toilet construction; 57% considered hiring 2-4 actors

Typically HHs considered hiring actors from within their local community

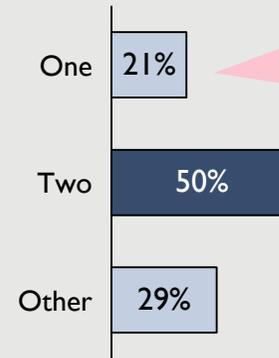
HHs with basic sanitation most commonly hired a mason only to construct their toilets

Segment Profiles | Segment A | Buying Process (4/6)

Most households prefer to construct a flush/pour flush toilet, with two compartments, a offset pit greater than 12 feet deep, lined with concrete blocks, with either a concrete or a cement cover...

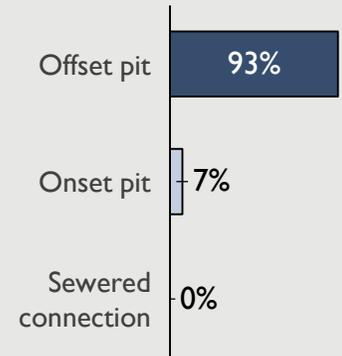


Number of compartments/stances considered

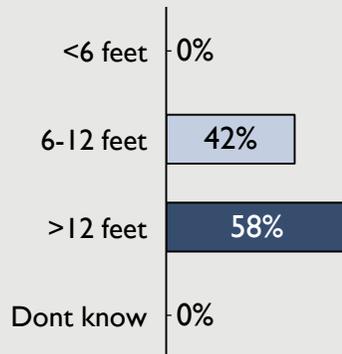


80% of HHs with basic sanitation have one compartment

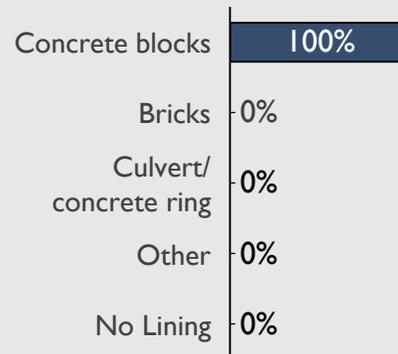
Type of substructure considered



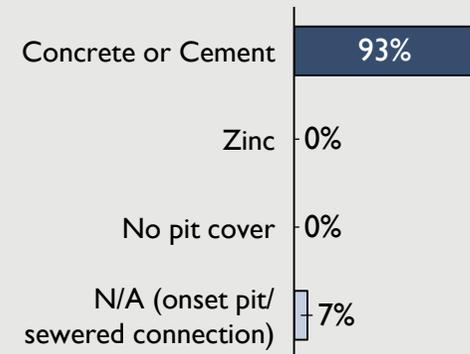
Pit depth considered



Types of pit lining considered



Offset pit cover considered

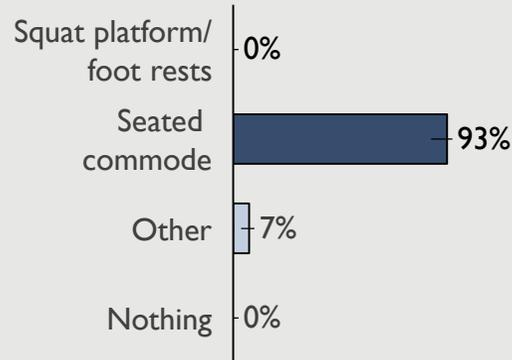


Segment Profiles | Segment A | Buying Process (5/6)

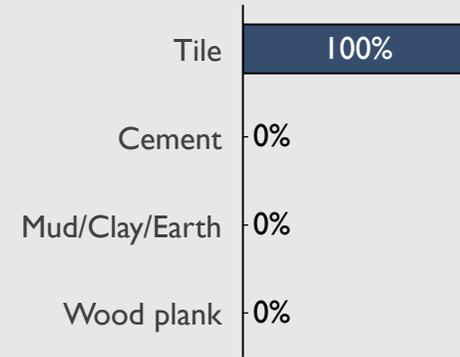
...a tiled floor, with a seated commode, walls plastered with cement, a zinc sheet roof and a wooden door



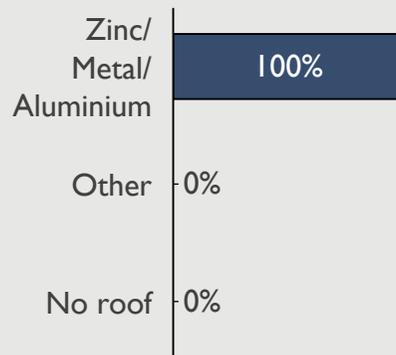
Add-ons considered for the toilet floor



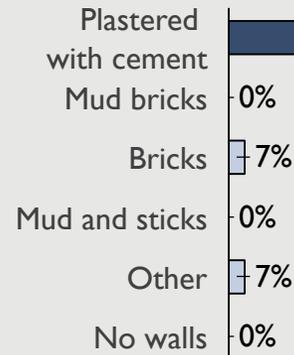
Main material considered for floor surface



Main material considered for roof

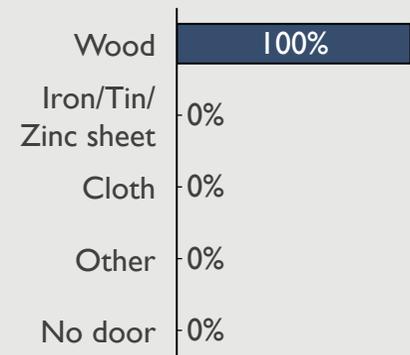


Main material considered for walls



47% of HHs with basic sanitation have cement walls, and 41% have brick walls

Main material considered for door

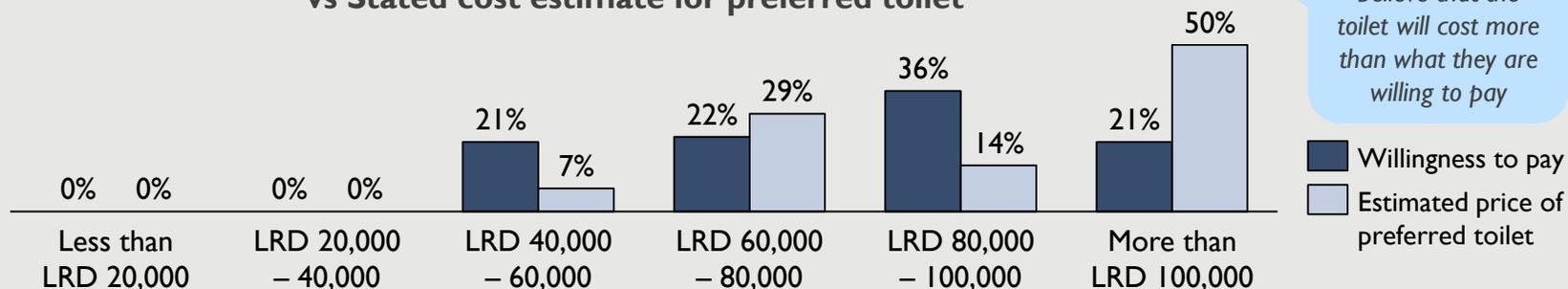


Segment Profiles | Segment A | Buying Process (6/6)

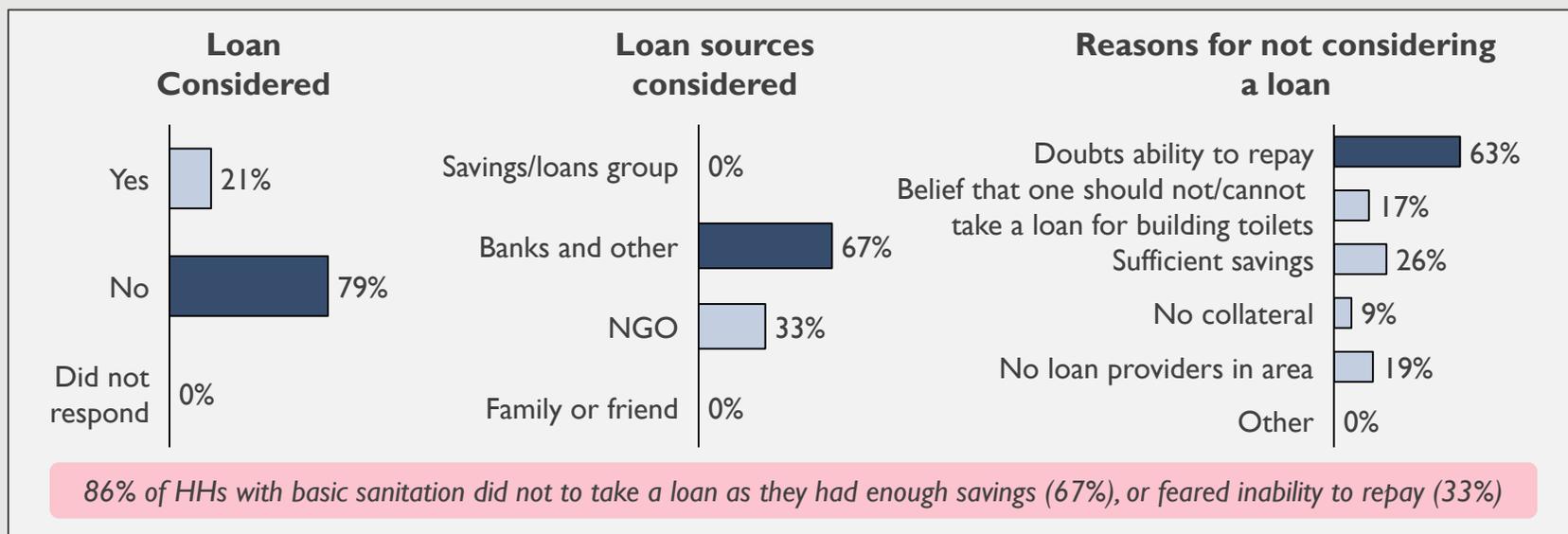
A third of the segment are willing to pay less than the estimated cost for the preferred toilet; only a fifth of the segment are willing to consider taking a toilet construction loan, primarily from a bank



Stated willingness to pay for an improved toilet that is not meant to be shared vs Stated cost estimate for preferred toilet¹



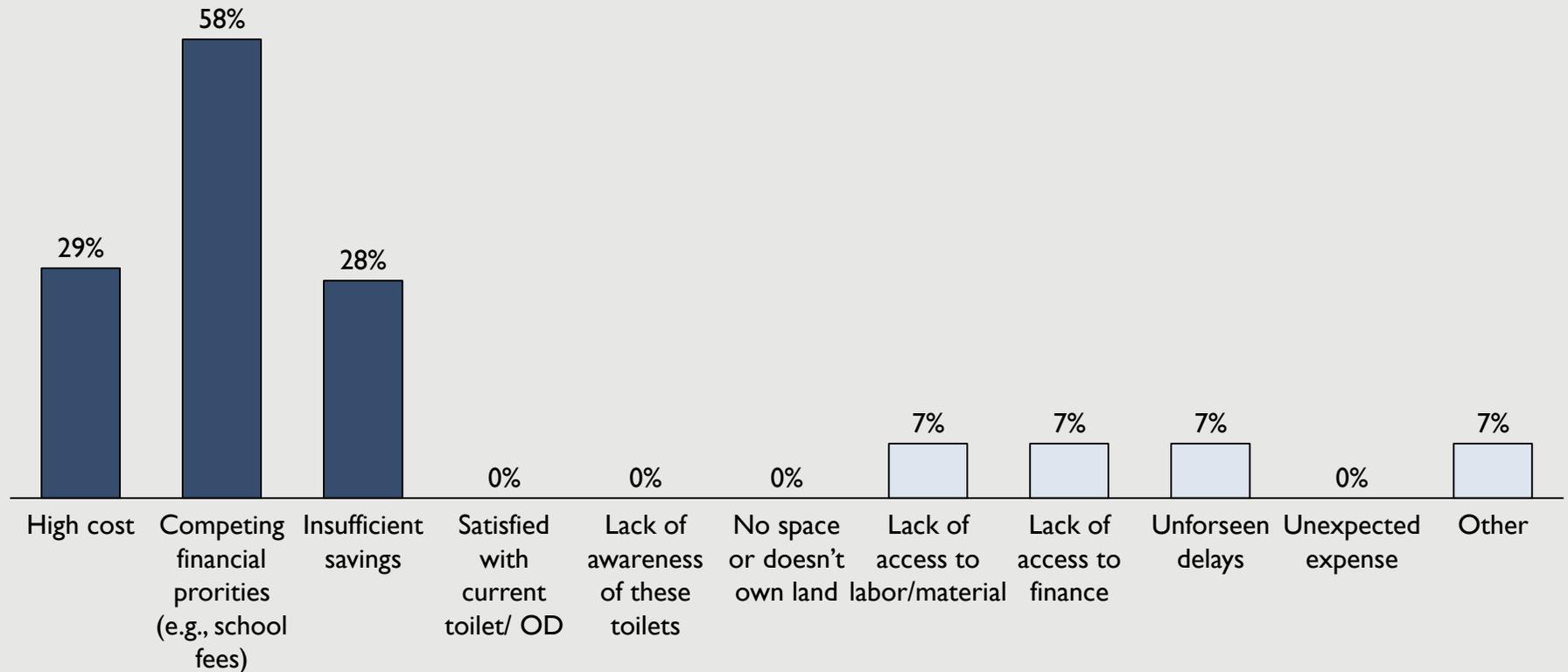
36% of households believe that the toilet will cost more than what they are willing to pay



Segment Profiles | Segment A | Drop-offs from Buying Process

All HHs in this segment considered investing in BSS but did not proceed with doing so; competing financial priorities in addition to high costs and insufficient savings were the primary reasons for not investing in BSS

Reasons for not investing in basic sanitation service



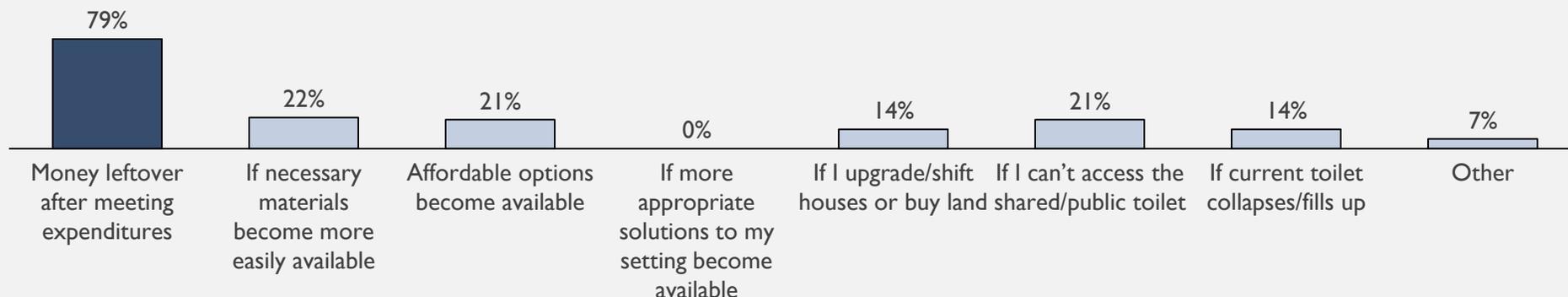
Segment Profiles | Segment A | Future Considerations



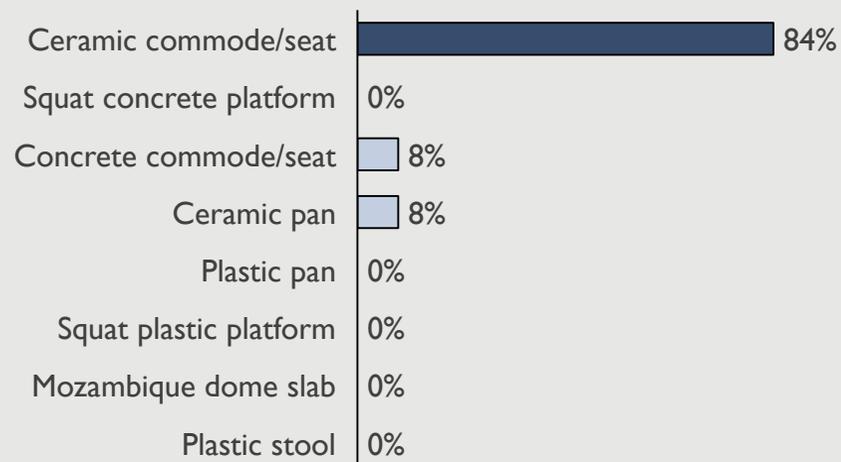
[Click to go back](#)

Most HHs might reconsider investing in BSS if they can set aside enough savings; ceramic commode is the most preferred floor upgrade; most current toilet users haven't thought about what to do when their toilet pit fills up

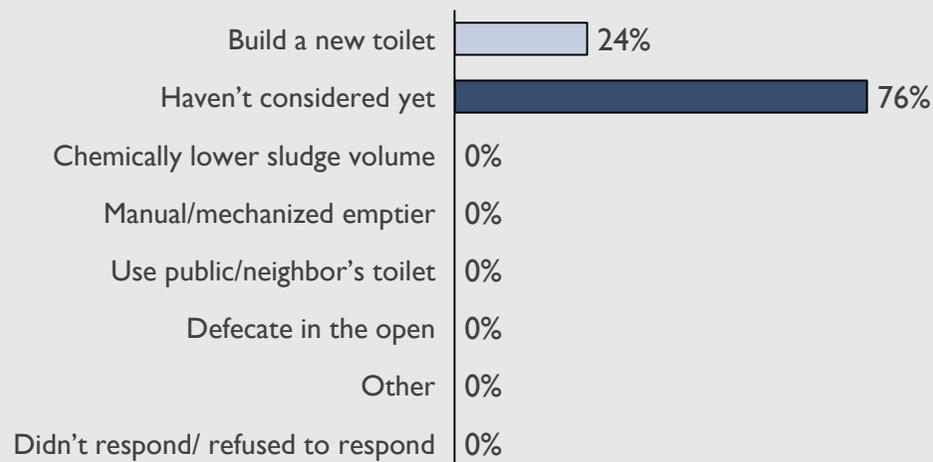
Factors that might increase consideration of a toilet in the future



Toilet floor add-ons considered by HHs without basic sanitation



Plan for when existing toilet pit fills up



Segment Profiles | Segment B

Limited sanitation service:

43%

Unimproved toilet:

42%

No toilet:

15%

Segment B households live in rented housing and either have limited sanitation service or use unimproved toilets...

			Time taken to walk to nearest marketplace									
			≤ 30 min					> 30 minutes				
County			Montserrado	Grand Bassa	Bong	Nimba	Lofa	Montserrado	Grand Bassa	Bong	Nimba	Lofa
House Material	Loan taken	House ownership										
Permanent Material	Yes	Owned	A	E			J				L	
		Not owned	B	E			J					
	No	Not owned		F		G		J				
		Owned	C	F		G		J				
Non-Permanent Material	Yes		D	H			K					
	No		D	I			K					

... as they either do not have the incentive to construct a toilet, or access to the space required to construct a toilet

Segment Profiles | Segment B | Customer Story

Annie lives and works in Plumkor community, Montserrado with her three children and husband. She has completed her education till senior high; she works as a petty trader (selling radio batteries) in Duala market, and as a plumber, to support her family.

Annie and her family have been living in the same rented house, made with durable materials, for many years. Even though they do not own their house, they spent money in improving its structure. They also have access to electricity, and obtain water for bathing from a protected dug well. They own assets such as a television and a mobile phone, and their average monthly household expenditure is LRD 42,000.

Annie and her family use a public toilet facility, which is located near their house. The public toilet is modern – it has a offset pit, a seated ceramic commode, concrete floor, walls plastered with cement, zinc roof, and a lockable wooden door. Annie believes that community cleanliness is important, and that owning and using a toilet is a matter of pride and prestige for a family. In fact, for Annie building a toilet is as important as investing in items such as televisions.

Annie would like a private toilet for her family, so that they do not have to use the unhygienic public toilet. However, since she does not own the house in which she lives, her first preference is for her landlord to pay to construct the toilet. Alternatively, Annie is willing to spend between LRD 80,000-100,000 on a new toilet, exactly like the one they currently use, except with tiles on the floor instead of cement. She is willing to do this if her landlord agrees to monthly rent adjustments to compensate Annie for building the toilet. In taking this decision, a key consideration for Annie is whether her family will continue to stay in this house for at least another five to seven years. This seems uncertain in the current climate, where her earnings have been modest since the COVID-19 outbreak, and she has been contemplating returning to her village. Annie has not considered taking a loan for toilet construction, as she believes that her savings will prove sufficient, if she chooses to build the toilet.

Segment Profiles | Segment B | Key Demographic Statistics

Segment size		Demographics		Income & occupation	
% of potential market	11%	Family size (Avg.)	6	Nature of income	
# of households	59K	Gender of HH Head		• Regular	85%
		• Male	35%	• Seasonal	15%
		• Female	65%	Primary occupation²	
		HH Head education¹		• Petty Trading	39%
		• No education	17%	• Skilled Labor	35%
		• Up to Junior High	16%	• Unskilled Labor	12%
		• Senior High or above	67%	• Shop owner	5%
Sanitation profile					
Limited sanitation service	43%				
Unimproved toilet	42%				
No toilet	15%				

Affluence indicators		Access indicators		Attitudes & beliefs ³	
Total monthly expenditure		Assets and other indicators		Distance to nearest market⁴	
High (>LRD 40K)	51%	Mobile phone	93%	<30 minutes	77%
Medium (LRD 20K-40K)	43%	Computer	8%	30 minutes to 1 hour	12%
Low (≤LRD 20K)	6%	Television	46%	Not walking distance	11%
Total asset value (avg.)	163k	Chair	75%	Access to electricity	57%
Total asset value (spread)		Agricultural land	12%	Non-drinking water source	
High (> LRD 120K)	41%	Any mode of transport	12%	Surface water	0%
Medium (LRD 75K-120K)	19%	Home improvement	61%	Other unprotected sources	21%
Low (LRD 35K-75K)	16%	Loan group member	36%	Hand pump, tube well or borehole	39%
Very low (< LRD 35K)	24%	Mobile money user	57%	Other protected sources	40%
				Believe that community cleanliness is important	
				89%	
				Believe it is embarrassing to be seen practicing OD	
				81%	
				Willing to pay for products that bring prestige	
				63%	
				Believe it is taboo to live near a toilet	
				32%	

1. Indicates highest level of education attended; 2. Top four occupations for each segment are shown; 3. Respondents were asked if they 'strongly disagreed', 'disagreed', 'agreed', or 'strongly agreed' to statements related to their attitudes and beliefs. Here the combined percentage of those who 'strongly agreed' or 'agreed' with a statement is reported, barring willingness to pay for prestige products, for which only 'strongly agreed' is shown; 4. Refers to a permanent market with stores;

Source: HH interviews (Profile n=174; Detailed n=29), FSG analysis

Segment Profiles | Segment B | Customer Persona

Setting

- **Location:** Urban Montserrado, typically within or near Monrovia
- **Typical family size:** 6 people, with 2 children and no elderly¹
- **Type of house:** Live in rented houses, made predominantly of permanent materials, as monthly renters or multi-year lease tenants
- **Income and occupation:** Typically have regular income; petty trading and skilled labor are the most common occupations
- **Mobile phone and mobile money:** Mobile phone usage is widespread, and mobile money is used by more than half the customers in this segment
- **Total value of assets:** HHs are affluent; the average total asset value per HH is LRD ~163,000
- **Loan groups:** A third of the segment are loan group members
- **Loans:** Less than a third of the segment have taken loans in the past; loans are primarily taken for business followed by school fees, and are taken from NGOs or savings/loan groups

Mental Model

- **Strongly desire respect** from people in their community
- **Value products that make their life more convenient**, and that are **prestigious**
- **Conforming to the norm is not particularly important** to this group, with nearly two thirds suggesting that one should do things 'differently' from their neighbors
- **Place high value on ownership of a toilet** - strongly believe owning a toilet is a matter of pride and as important as investing in things such as a television or home improvement
- Majority are **well aware of the health, safety, and privacy benefits of owning a toilet**
 - **Community cleanliness is a priority**, however they are not as embarrassed to witness OD or be seen practicing OD
 - A third of the segment may express concerns about using or living near a toilet, and **most HHs find using someone else's toilet embarrassing**



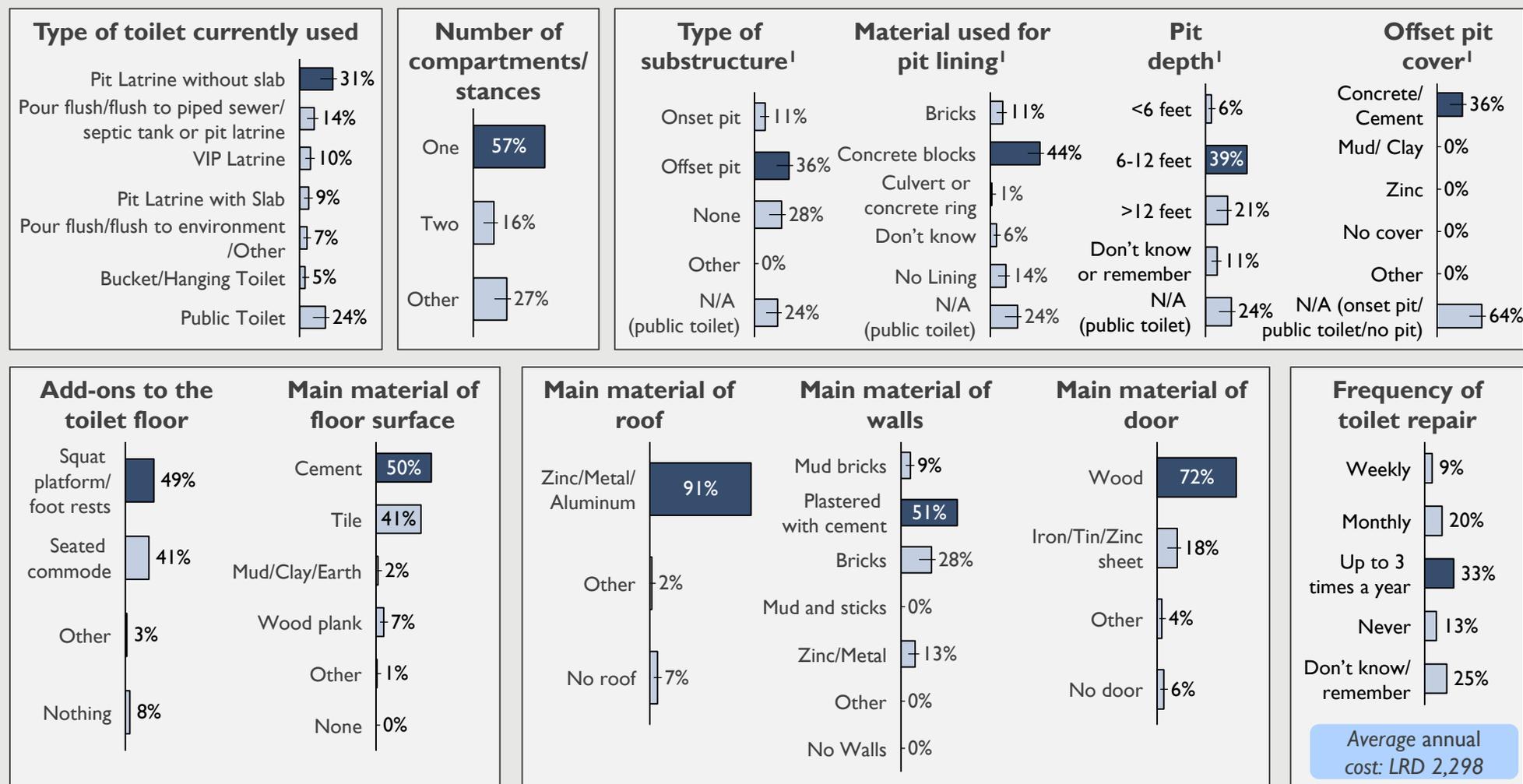
- **Current product and usage:** Improved shared toilet facilities and unimproved toilets
- **Desired product:** A toilet that is easy to clean with water, is comfortable, is well ventilated, and has the following functionalities:
 - **Toilet type:** Flush/pour flush toilet to ensure feces are flushed away
 - **Substructure:** Offset pit for better hygiene and safety, depth of >6 ft, lined with concrete blocks

- **Interface:** Tiled floor, with a ceramic commode to provide seated comfort
- **Superstructure:** Zinc sheet roof, cement walls, wooden door
- **Estimated cost and ability to pay:** Estimated cost of desired toilet - LRD 78,000; average ability to pay (out-of-pocket) - LRD 81,000
- **Financing:** Less than a fifth of the segment would consider taking a loan, with most opting for banks or NGOs; biggest reason for not taking a loan is the fear of inability to pay back the loan

The Ask

Segment Profiles | Segment B | Current Sanitation Profile for Toilet Users

Toilet users in this segment typically use a pit latrine with a cement floor which has developed gaps/ holes, a squat platform/foot rests add-on, an offset pit, and a superstructure built with permanent materials

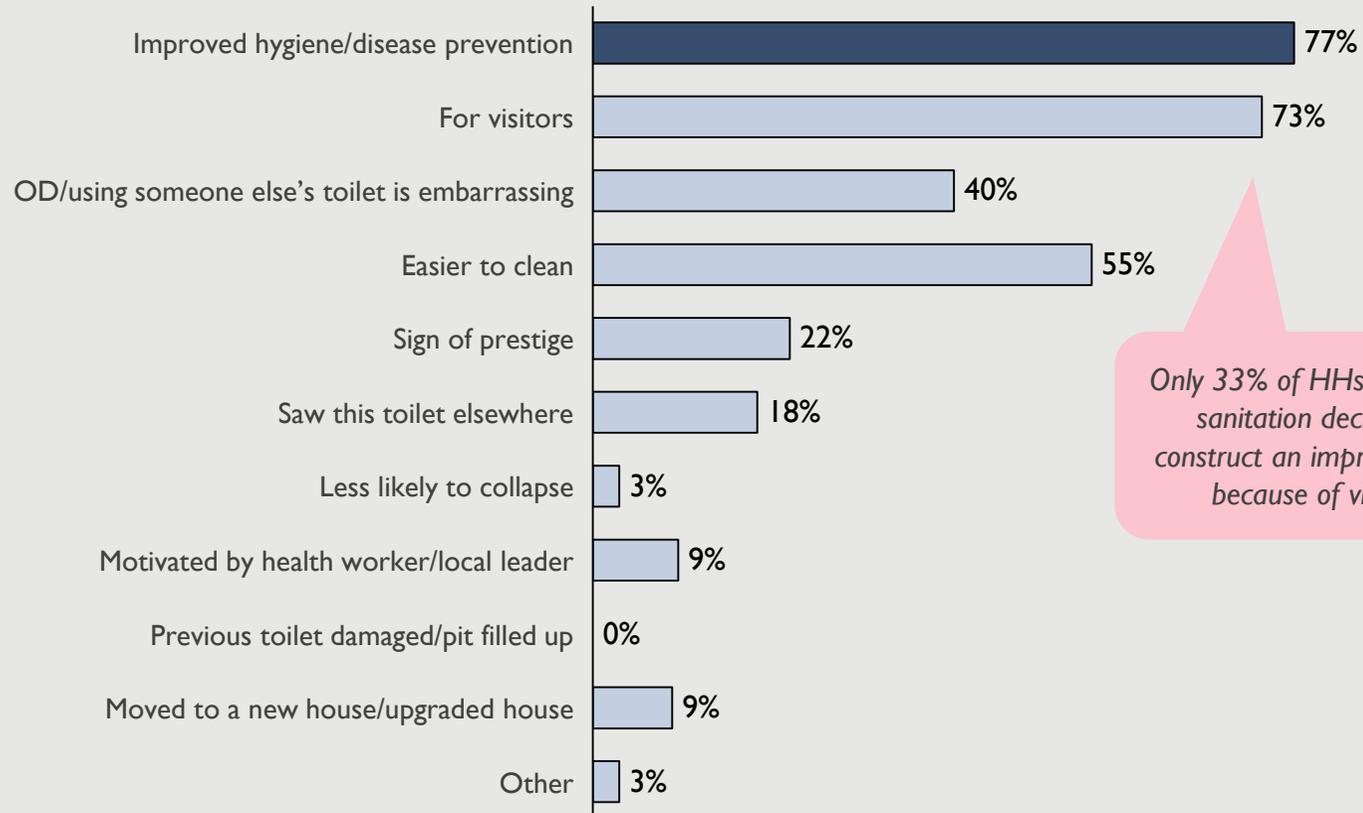


Segment Profiles | Segment B | Buying Process (1/6)

Most households wanted a more hygienic toilet which helps prevent diseases and can be used by visitors; however, only 33% of HHs with basic sanitation in this segment chose to construct a toilet because of visitors



Origination of need for toilet



Only 33% of HHs with basic sanitation decided to construct an improved toilet because of visitors

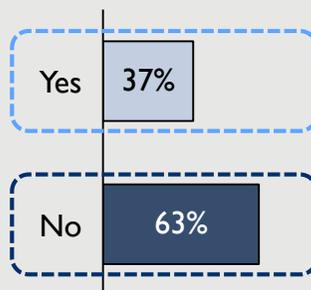
Callout boxes capture key differences exhibited by those with basic sanitation from this segment

Segment Profiles | Segment B | Buying Process (2/6)

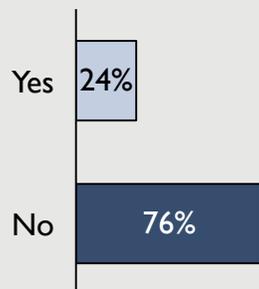
Most HH did not seek information on how to build a toilet; the biggest reasons for not seeking information include not having a reliable source for information, and considering toilets too expensive



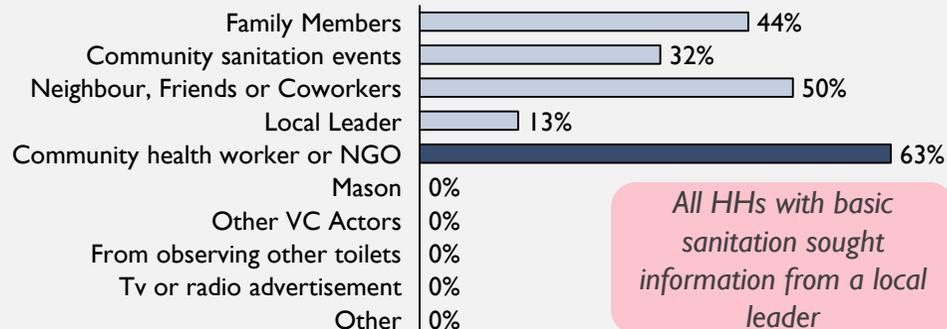
Sought information while considering building a toilet



Attended a CLTS event

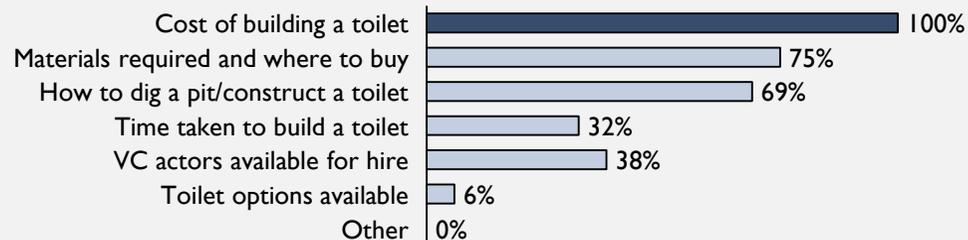


Sources of information about toilets

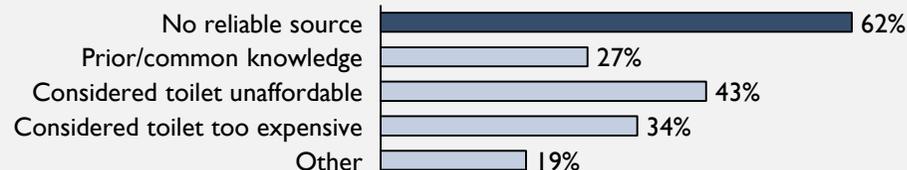


All HHs with basic sanitation sought information from a local leader

Nature of information captured



Reasons for not seeking information

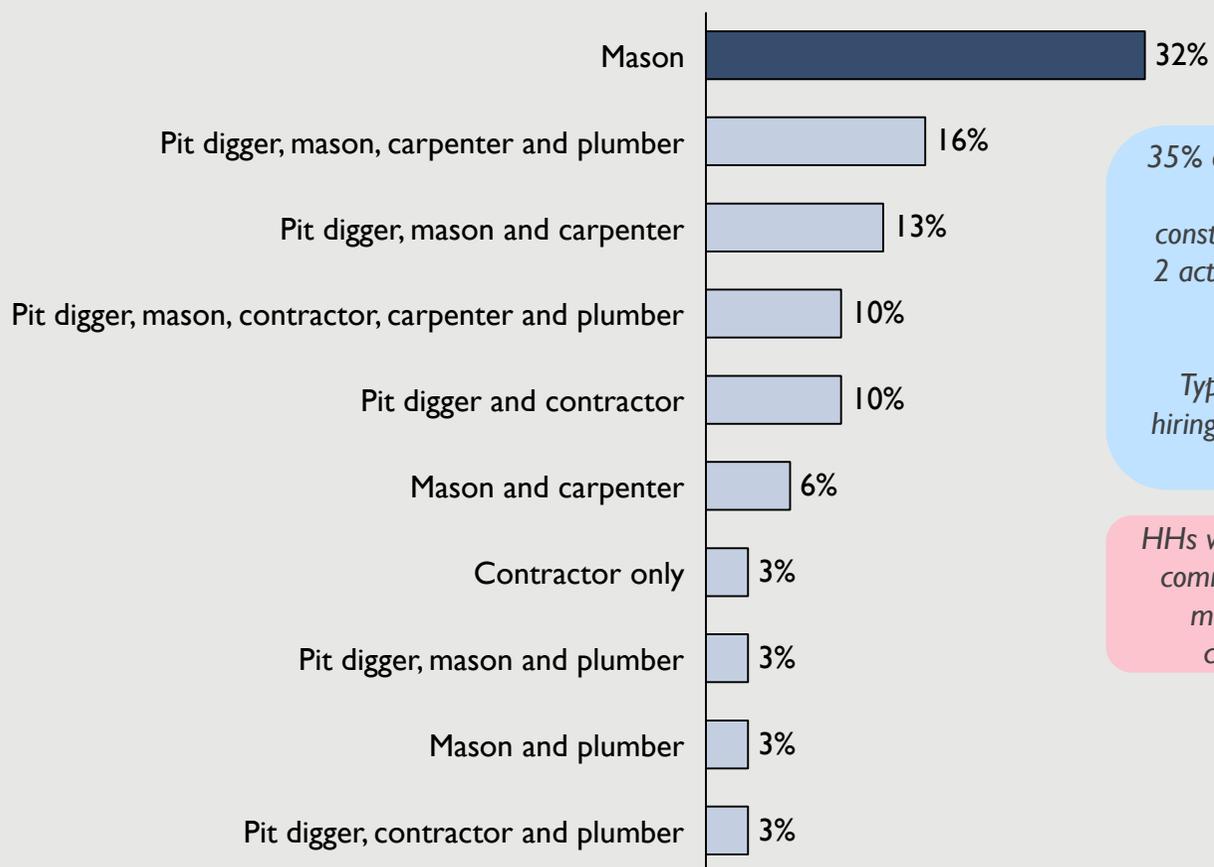


Segment Profiles | Segment B | Buying Process (3/6)

HHs most commonly considered hiring a mason only to construct their toilet



Channels considered for toilet construction



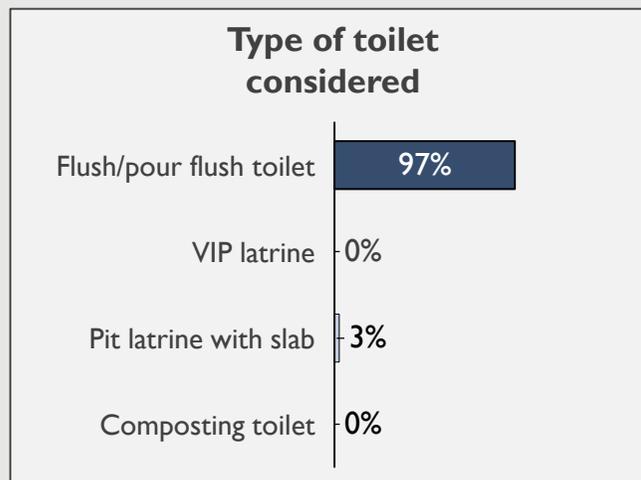
35% of HHs considered hiring 1 actor during toilet construction; 19% considered 2 actors; 45% considered 3-5 actors

Typically HHs considered hiring actors from within their local community

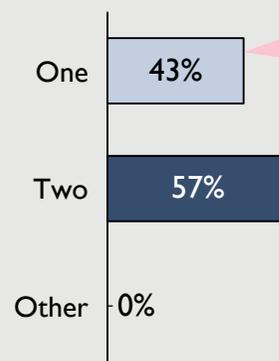
HHs with basic sanitation most commonly hired a pit digger, mason, and plumber to construct their toilets

Segment Profiles | Segment B | Buying Process (4/6)

Most households prefer to construct a flush/pour flush toilet, with two compartments, a 6-12 feet deep offset pit lined with concrete blocks, a concrete or cement cover...



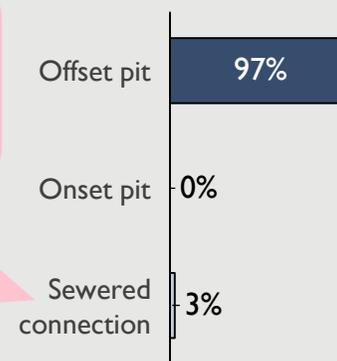
Number of compartments/stances considered



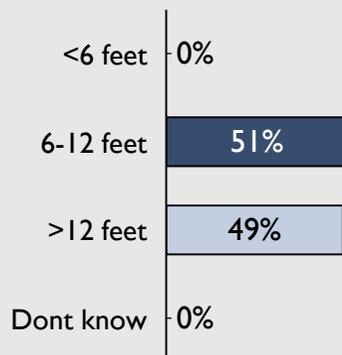
95% of HHs with basic sanitation have one compartment

24% of HHs with basic sanitation have a sewer connection

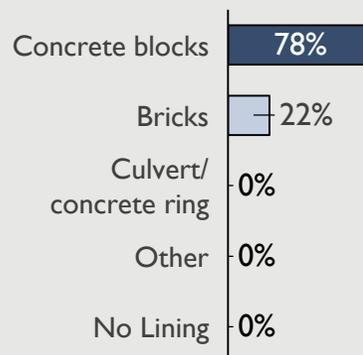
Type of substructure considered



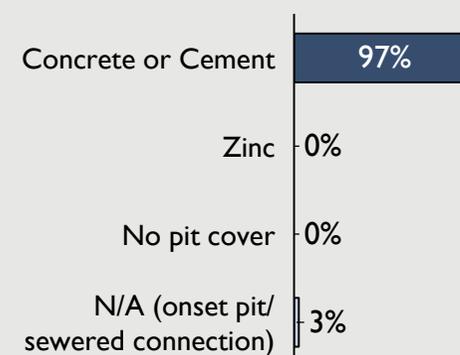
Pit depth considered



Types of pit lining considered



Offset pit cover considered

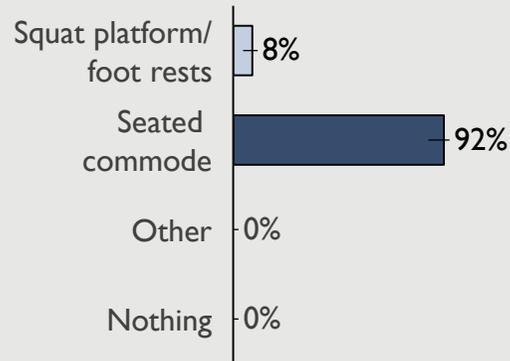


Segment Profiles | Segment B | Buying Process (5/6)

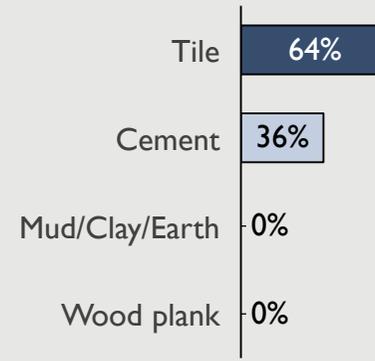
...a tiled floor, a seated commode, walls plastered with cement, a zinc sheet roof and a wooden door



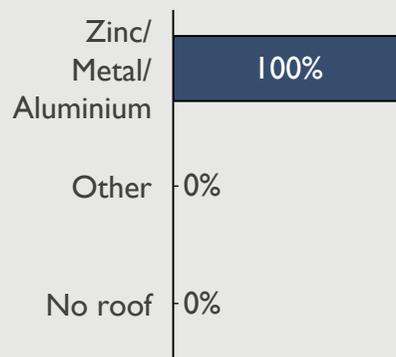
Add-ons considered for the toilet floor



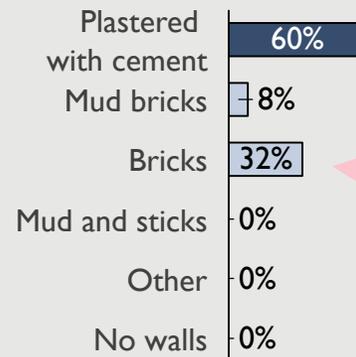
Main material considered for floor surface



Main material considered for roof

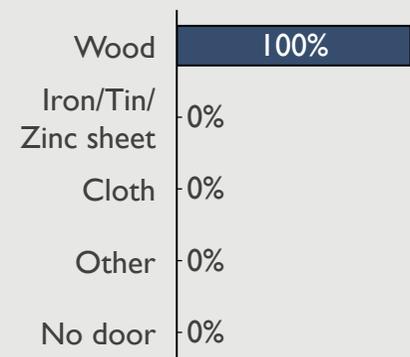


Main material considered for walls



50% of HHs with basic sanitation have brick walls, and 39% have walls plastered with cement

Main material considered for door

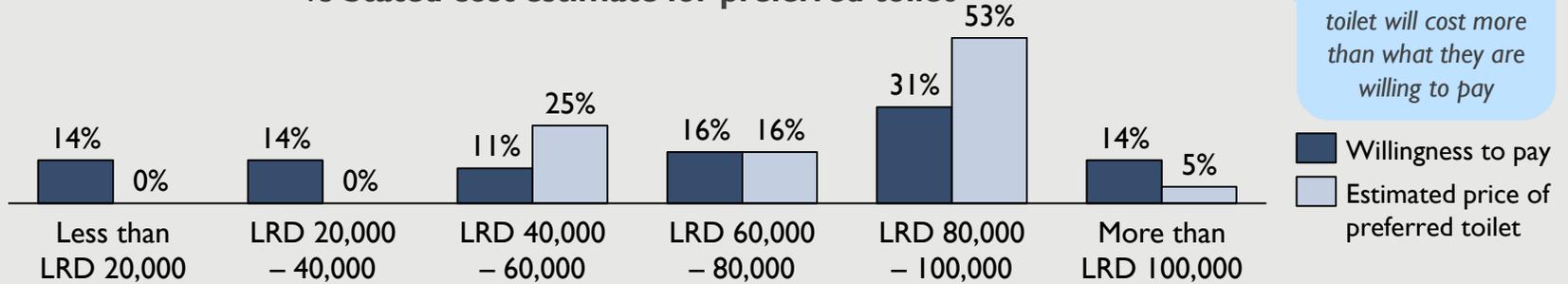


Segment Profiles | Segment B | Buying Process (6/6)

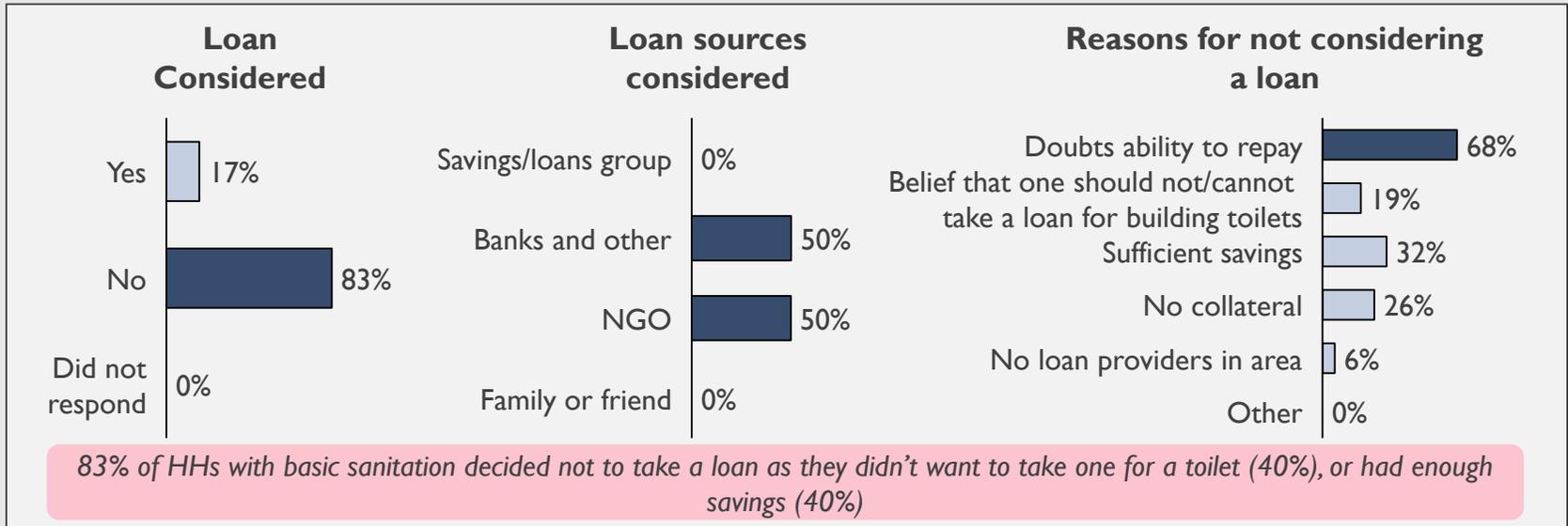
36% of the segment are willing to pay less than the estimated cost for the preferred toilet; less than a fifth of the segment is willing to consider taking a toilet loan, primarily from a bank or an NGO



Stated willingness to pay for an improved toilet that is not meant to be shared vs Stated cost estimate for preferred toilet¹



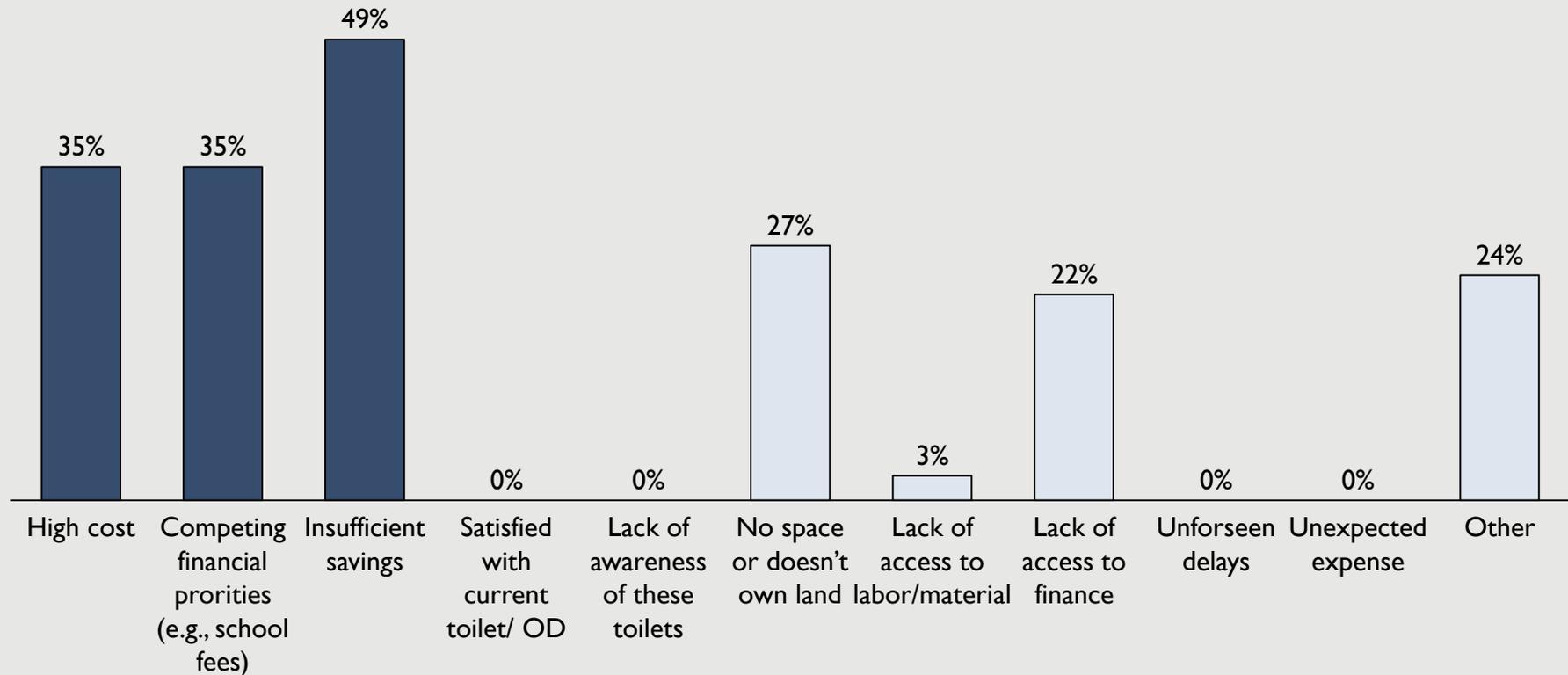
36% of households believe that the toilet will cost more than what they are willing to pay



Segment Profiles | Segment B | Drop-offs from Buying Process

87% of this segment considered investing in BSS but did not proceed with doing so; insufficient savings, high costs, and competing financial priorities were the primary reasons for not investing in BSS

Reasons for not investing in basic sanitation service



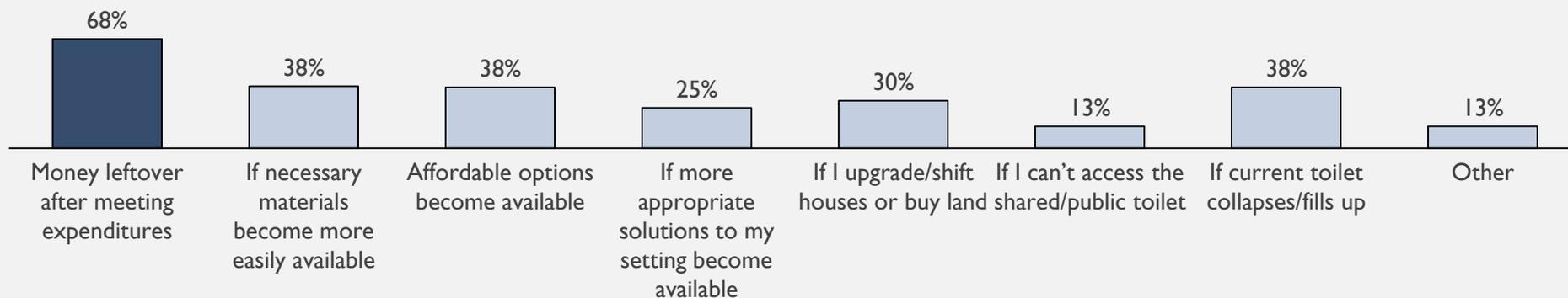
Segment Profiles | Segment B | Future Considerations



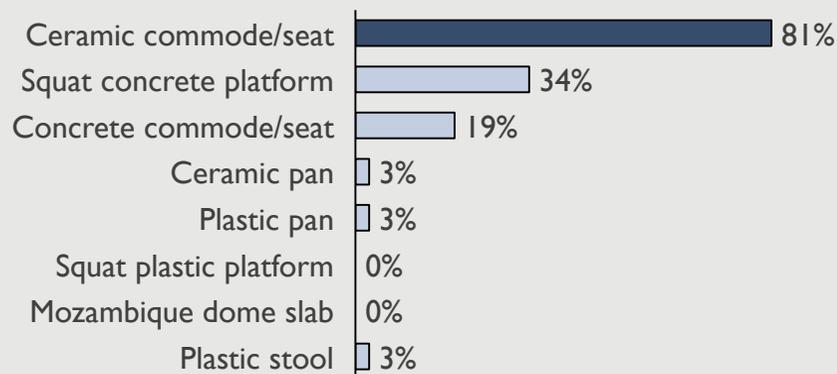
[Click to go back](#)

Two thirds of the segment might reconsider investing in BSS if they can set aside enough savings after meeting their expenses; ceramic commode is the most preferred floor upgrade; typically toilet owners plan to empty the pits once full

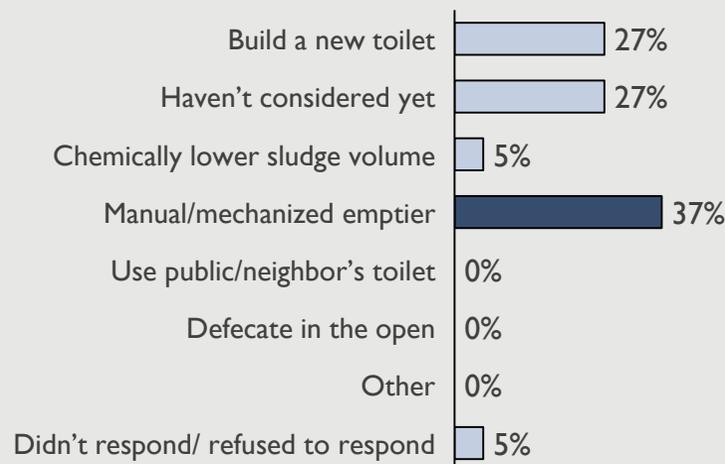
Factors that might increase consideration of a toilet in the future



Toilet floor add-ons considered by HHs without basic sanitation



Plan for when existing toilet pit fills up



Segment Profiles | Segment C

Limited sanitation service:

33%

Unimproved toilet:

44%

No toilet:

23%

Households in **Segment C** are affluent, but either use unimproved toilets or have limited sanitation service...

			Time taken to walk to nearest marketplace									
			≤ 30 min					> 30 minutes				
County			Montserrado	Grand Bassa	Bong	Nimba	Lofa	Montserrado	Grand Bassa	Bong	Nimba	Lofa
House Material	Loan taken	House ownership										
Permanent Material	Yes	Owned	A	E			J				L	
		Not owned	B	F			G					
	No	Not owned		C	H			K				
		Owned	D		I							

...as their preferred toilet costs more than what they are willing to pay, and have other competing financial priorities

Segment Profiles | Segment C | Customer Story

Linda lives and works in Kpelle town, 72nd in Montserrado, with her four children and her sister, who has two children. She has completed her education up till senior high, and works as a dry-goods-seller (selling groceries and utensils) to support her family.

Linda and her family live in their own house, which is built with durable materials. They also own assets such as a mobile phone and a television. They obtain water for bathing and cleaning from a nearby borehole. Their average monthly household expenditure is LRD 45,000, and is spent primarily on food, school fees, and healthcare.

Linda believes that her community should be clean. In her community, she feels that owning a toilet is viewed as a sign of prestige, and practicing open defecation is embarrassing. However, she also believes that living near a toilet is unhygienic if it is not well-maintained, and akin to sleeping with your feces. For this reason, Linda's family uses a pit latrine located a short distance away from their home, which they share with their neighboring household. The toilet has an offset pit, a slab made of cement, with a zinc roof, walls plastered with cement, and a wooden door. Linda is satisfied with the toilet's cleanliness, even though the floor of the toilet has developed several gaps/holes due to regular wear and tear over the last few years. Linda thinks that the toilet would be more comfortable if it had a seated ceramic commode, and that it would be more appealing to visitors if the floor was tiled. She is happy with the offset pit as she thinks it reduces the chances of individuals falling in, heat emanating from the pit, and prevents the user from having to see the contents of the pit.

Linda is willing to spend only up to LRD 40,000 on a new toilet, and believes that her desired toilet with a pit depth of over 12 feet, a ceramic commode and tiled floor will cost upwards of LRD 80,000. This makes her desired toilet unaffordable for her. Linda has no prior experience of taking a loan, and is wary of taking a loan to build a toilet.

Segment Profiles | Segment C | Key Demographic Statistics

Segment size		Demographics		Income & occupation	
% of potential market	12%	Family size (Avg.)	8	Nature of income	
# of households	64K	Gender of HH Head		• Regular	76%
		• Male	37%	• Seasonal	24%
		• Female	63%	Primary occupation²	
		HH Head education¹		• Petty Trading	37%
		• No education	29%	• Skilled Labor	19%
		• Up to Junior High	18%	• Unskilled Labor	16%
		• Senior High or above	53%	• Agriculture	7%

Sanitation profile	
Limited sanitation service	33%
Unimproved toilet	44%
No toilet	23%

Affluence indicators		Access indicators		Attitudes & beliefs ³	
Total monthly expenditure		Assets and other indicators		Distance to nearest market⁴	
High (>LRD 40K)	47%	Mobile phone	93%	<30 minutes	60%
Medium (LRD 20K-40K)	43%	Computer	6%	30 minutes to 1 hour	10%
Low (≤LRD 20K)	10%	Television	29%	Not walking distance	31%
Total asset value (avg.)	135k	Chair	68%	Access to electricity	47%
Total asset value (spread)⁵		Agricultural land	27%	Non-drinking water source⁵	
High (> LRD 120K)	42%	Any mode of transport	14%	Surface water	5%
Medium (LRD 75K-120K)	8%	Home improvement	65%	Other unprotected sources	23%
Low (LRD 35K-75K)	19%	Loan group member	37%	Hand pump, tube well or borehole	39%
Very low (< LRD 35K)	31%	Mobile money user	57%	Other protected sources	32%
				Believe that community cleanliness is important	
				96%	
				Believe it is embarrassing to be seen practicing OD	
				100%	
				Willing to pay for products that bring prestige	
				66%	
				Believe it is taboo to live near a toilet	
				43%	

1. Indicates highest level of education attended; 2. Top four occupations for each segment are shown; 3. Respondents were asked if they 'strongly disagreed', 'disagreed', 'agreed', or 'strongly agreed' to statements related to their attitudes and beliefs. Here the combined percentage of those who 'strongly agreed' or 'agreed' with a statement is reported, barring willingness to pay for prestige products, for which only 'strongly agreed' is shown; 4. Refers to a permanent market with stores; 5. Total % ≠100 as it is rounded off; **Source:** HH interviews (Profile n=233; Detailed n=33), FSG analysis

Segment Profiles | Segment C | Customer Persona

Setting

- **Location:** Urban Montserrado, typically within or near Monrovia
Typical family size: 8 people, with 3 children and no elderly¹
- **Type of house:** Live in their own house, made predominantly of permanent materials
- **Income and occupation:** Typically have regular income, however a quarter have seasonal income; petty trading and skilled labor are the most dominant occupations
- **Mobile phone and mobile money:** Mobile phone usage is widespread, and mobile money is used by more than half the customers in this segment
- **Total value of assets:** HHs are affluent; the average total asset value per HH is LRD ~135,000
- **Loan groups:** A third of the segment are loan group members
- **Loans:** No one from this segment had taken a loan previously

Mental Model

- **Strongly desire respect** from people in their community
- **Value products that make their life more convenient**, and that are **prestigious**
- **Conforming to the norm is not important** to this group, with three quarters suggesting that one should do things 'differently' from their neighbors
- **Place high value on ownership of a toilet.** Nearly everyone believes owning a toilet is a sign of prestige, and nearly a third strongly agree that it is **irresponsible to not have a toilet**
- Majority are **well aware of the health, safety, and privacy benefits** of toilets, and equate owning a toilet to being modern
 - **Community cleanliness is a priority**, however nearly a quarter of the segment practices OD
 - **Strong prevalence of taboo associated with living near or using a toilet**, and with pregnant women using a toilet

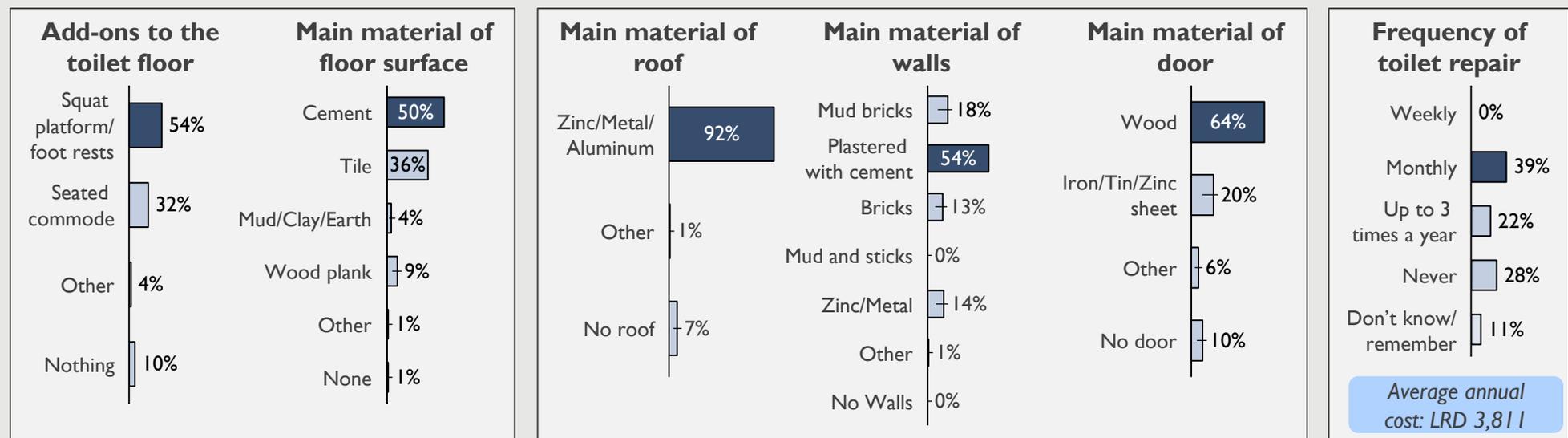
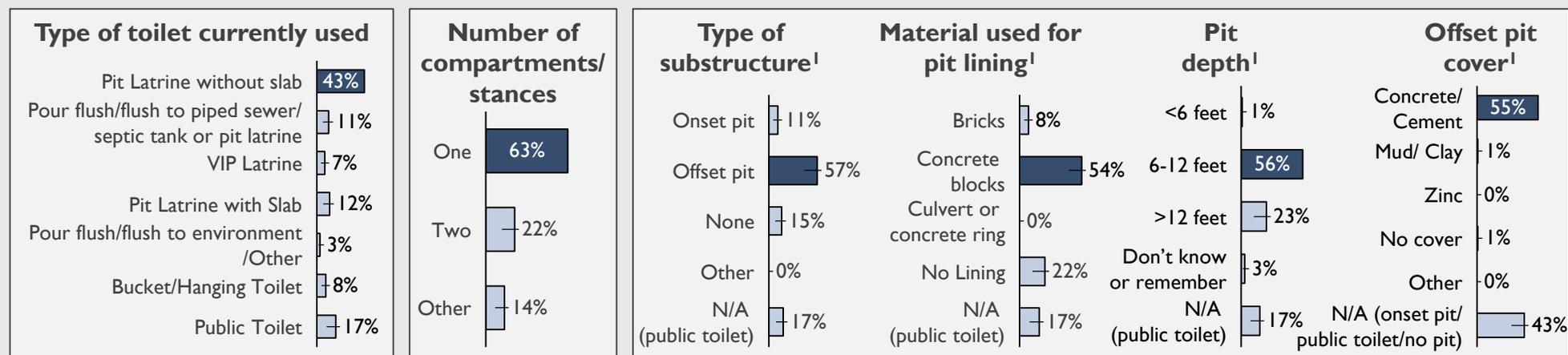


- **Current product and usage:** Improved shared toilet facilities and unimproved toilets; nearly a quarter of the segment practices OD
- **Desired product:** A toilet that is easy to clean with water, unlikely to collapse, provides privacy, and has the following functionalities:
 - **Toilet type:** Flush/pour flush toilet to ensure feces are flushed away and the interface remains clean
 - **Substructure:** Offset pit to reduce pit heat and prevent collapse; depth of >12 ft, lined with concrete blocks
 - **Interface:** Tiled floor, with ceramic commode to provide seated comfort, two compartments (one for the toilet, one for bathing)
 - **Superstructure:** Zinc sheet roof, cement walls, wooden door
- **Estimated cost and ability to pay:** Estimated cost of desired toilet - LRD 75,000; average ability to pay (out-of-pocket) - LRD 67,000
- **Financing:** Only a fifth of the segment would consider taking a loan, with most opting for savings/loan group or an NGO; biggest reason for not taking a loan is a fear of the inability to pay back the loan

The Ask

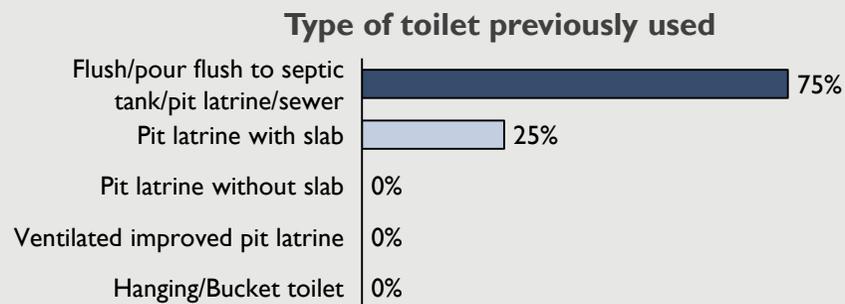
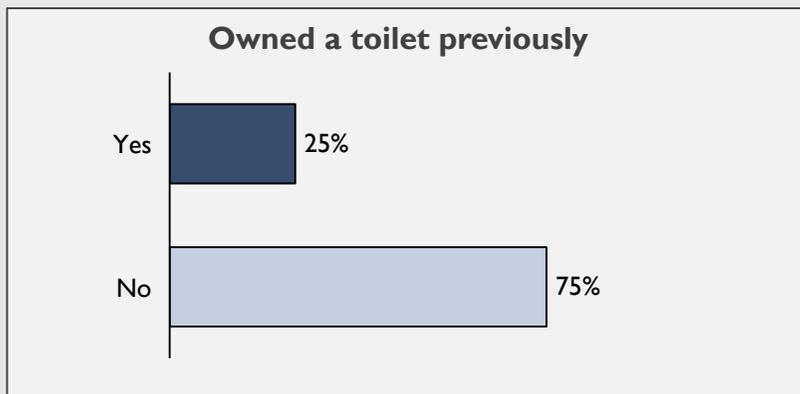
Segment Profiles | Segment C | Current Sanitation Profile for Toilet Users

Toilet users in this segment typically use a pit latrine with a cement floor which has developed holes/ gaps, a squat platform/foot rests add-on, an offset pit, and a superstructure built with permanent materials

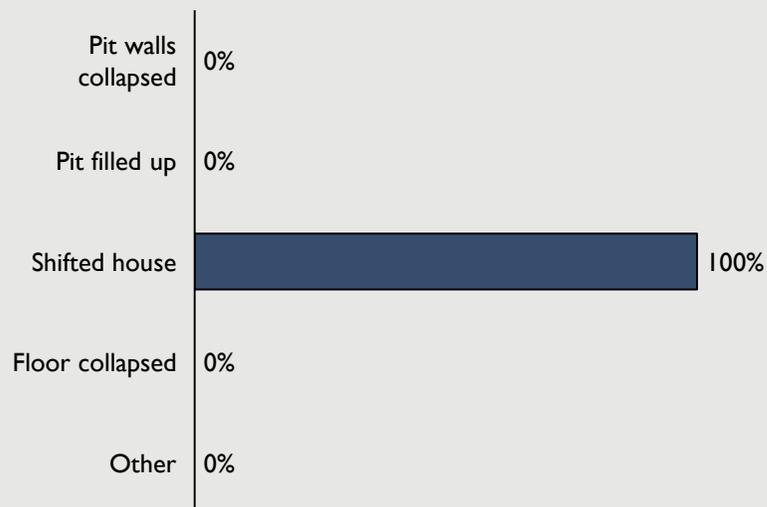


Segment Profiles | Segment C | Past Toilet Usage for HHs Practicing OD

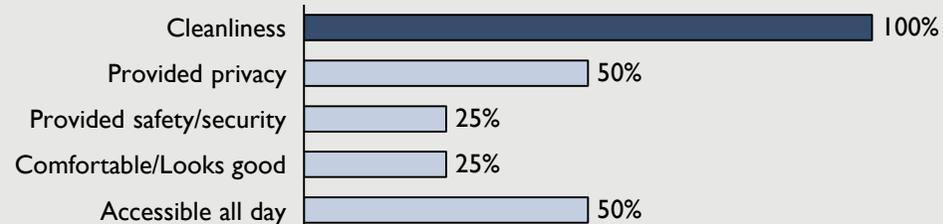
23% of HH in this segment currently practice OD, and most of them did not own a toilet previously; those who had used a toilet previously used a flush/pour flush toilet, and liked that the toilet was clean, private, and easily accessible



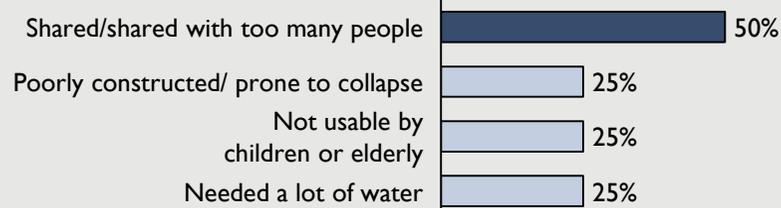
Reasons they stopped using toilet



Top five aspects liked by the segment



Aspects disliked by the segment

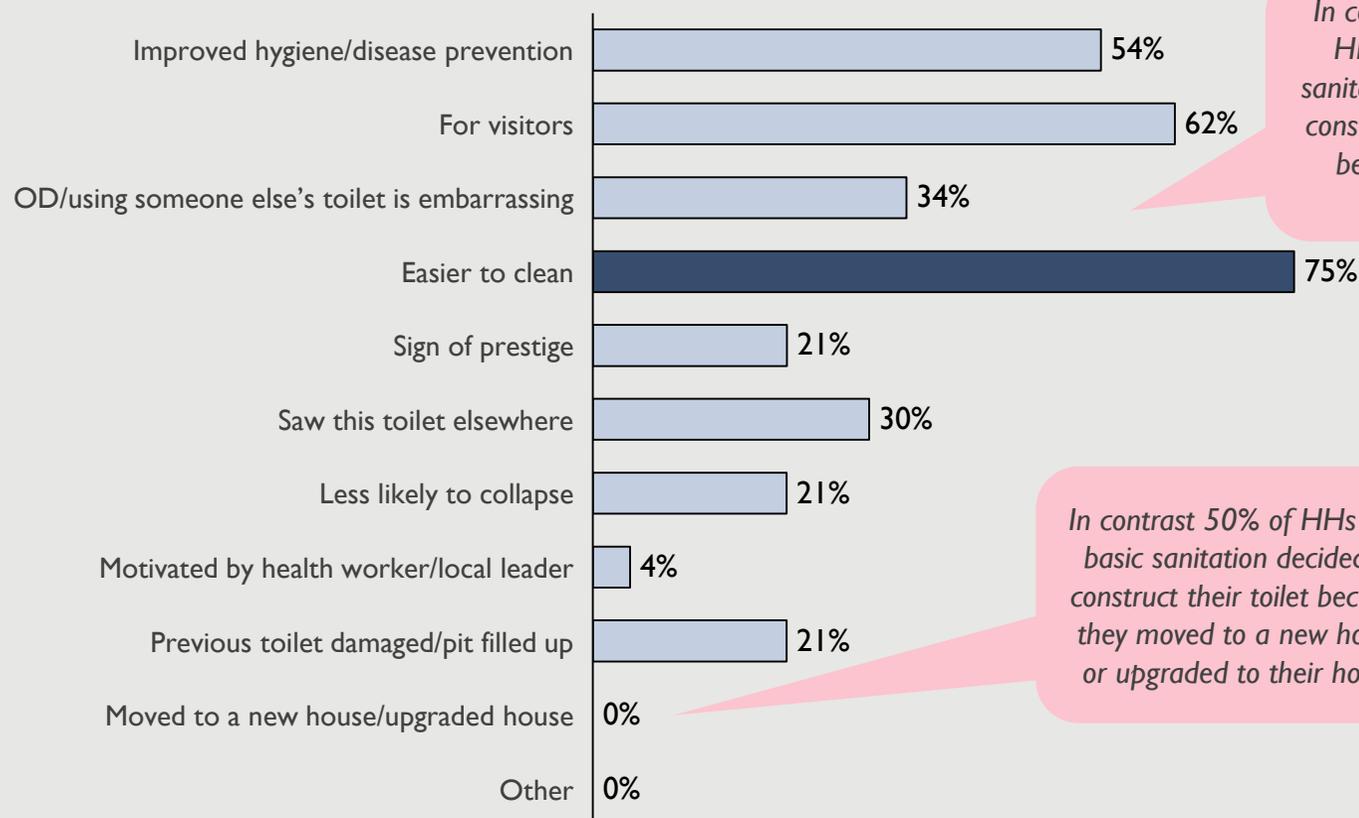


Segment Profiles | Segment C | Buying Process (1/6)

Most HHs considered investing in BSS because it is easier to clean; however, HHs with basic sanitation chose to construct a toilet because they find practicing OD or using someone else's toilet embarrassing, or they moved/upgraded their house



Origination of need for toilet



In contrast 63% of HHs with basic sanitation decided to construct their toilet because of this reason

In contrast 50% of HHs with basic sanitation decided to construct their toilet because they moved to a new house or upgraded to their house

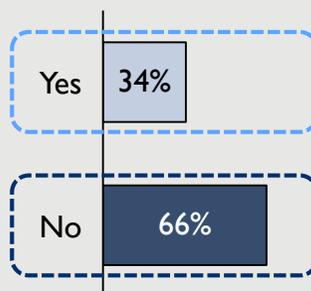
Callout boxes capture key differences exhibited by those with basic sanitation from this segment

Segment Profiles | Segment C | Buying Process (2/6)

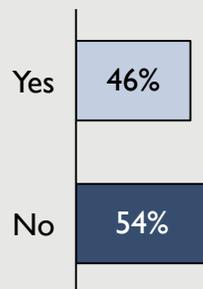
Most HHs did not seek information on how to build a toilet; the biggest reasons for not seeking information include not having a reliable source for information, and because the information is common/prior knowledge for this segment



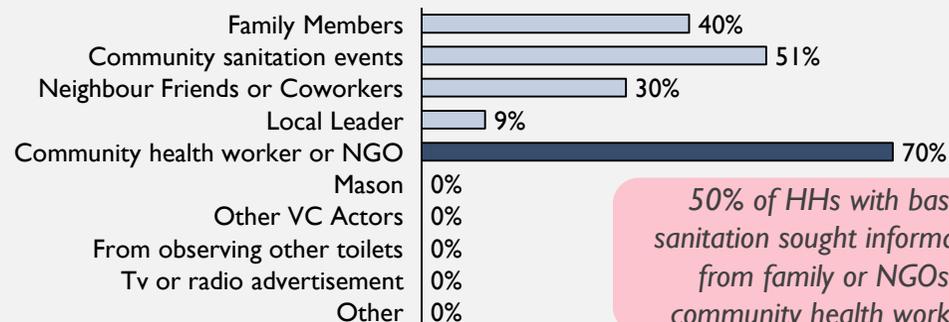
Sought information while considering building a toilet



Attended a CLTS event

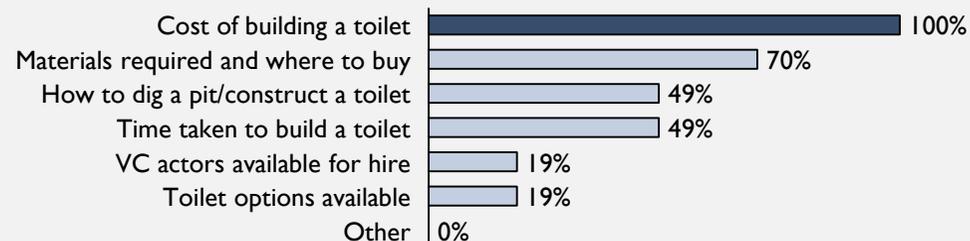


Sources of information about toilets



50% of HHs with basic sanitation sought information from family or NGOs/ community health workers

Nature of information captured



Reasons for not seeking information

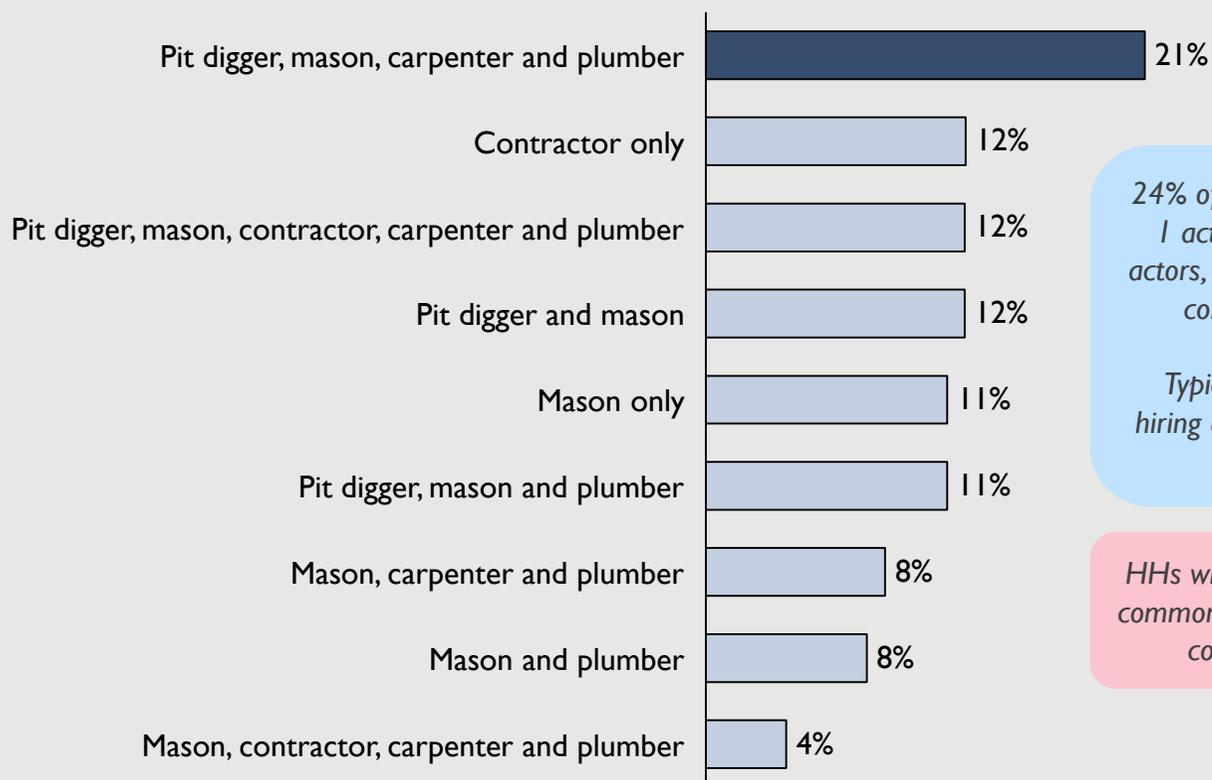


Segment Profiles | Segment C | Buying Process (3/6)

HHs most commonly considered hiring a combination of actors (i.e., pit digger, mason, carpenter and plumber) to construct their toilets



Channels considered for toilet construction



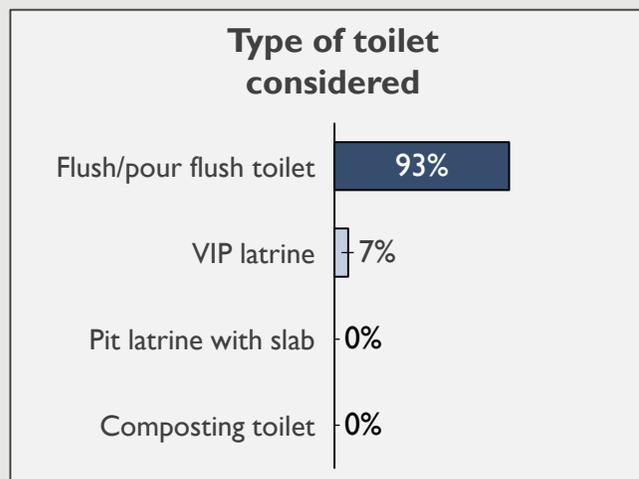
24% of HHs considered hiring 1 actor, 20% considered 2 actors, and the remaining 56% considered 3-5 actors

Typically HHs considered hiring actors from within their local community

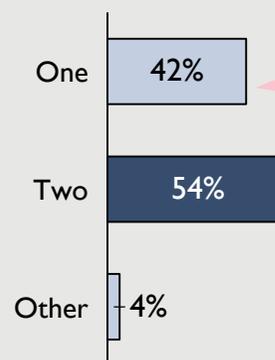
HHs with basic sanitation most commonly hired a mason only to construct their toilets

Segment Profiles | Segment C | Buying Process (4/6)

Most households prefer to construct a flush/pour flush toilet, with two compartments, a >12ft deep offset pit lined with concrete blocks, a concrete or a cement cover...

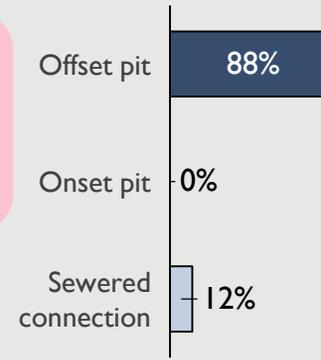


Number of compartments/stances considered

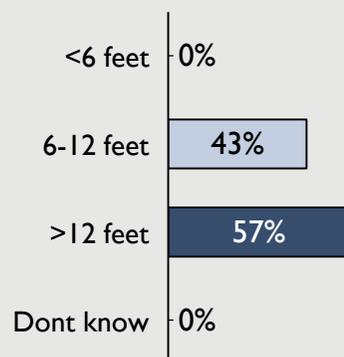


78% of HHs with basic sanitation have one compartment

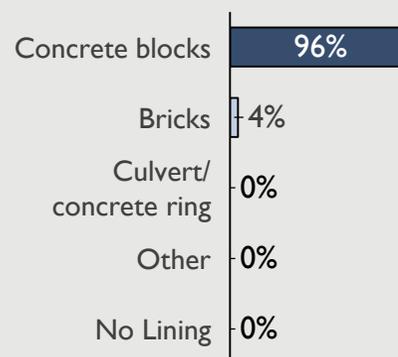
Type of substructure considered



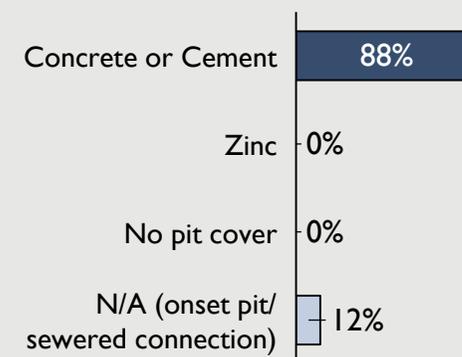
Pit depth considered



Types of pit lining considered



Offset pit cover considered

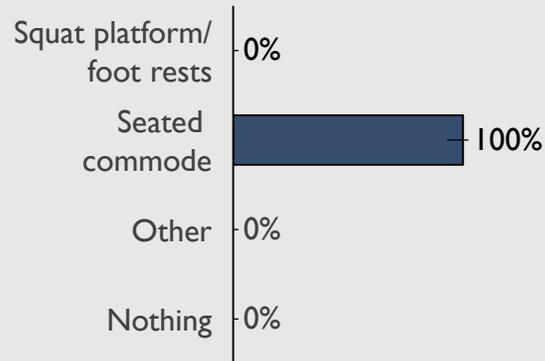


Segment Profiles | Segment C | Buying Process (5/6)

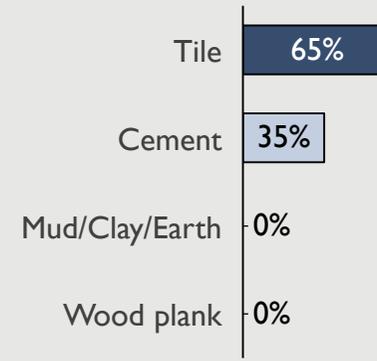
...a tiled floor with a seated commode, cement walls, a zinc sheet roof and a wooden door



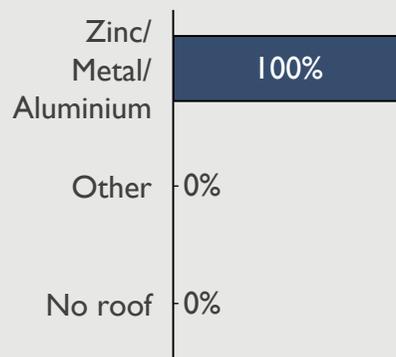
Add-ons considered for the toilet floor



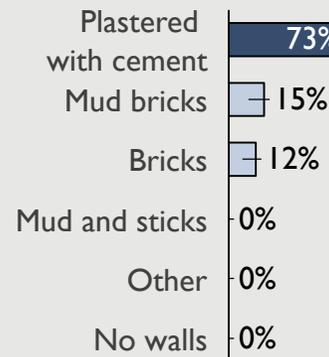
Main material considered for floor surface



Main material considered for roof

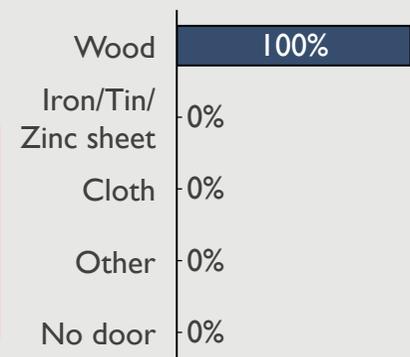


Main material considered for walls



56% of HHs with basic sanitation have walls plastered with cement, and 32% have brick walls

Main material considered for door

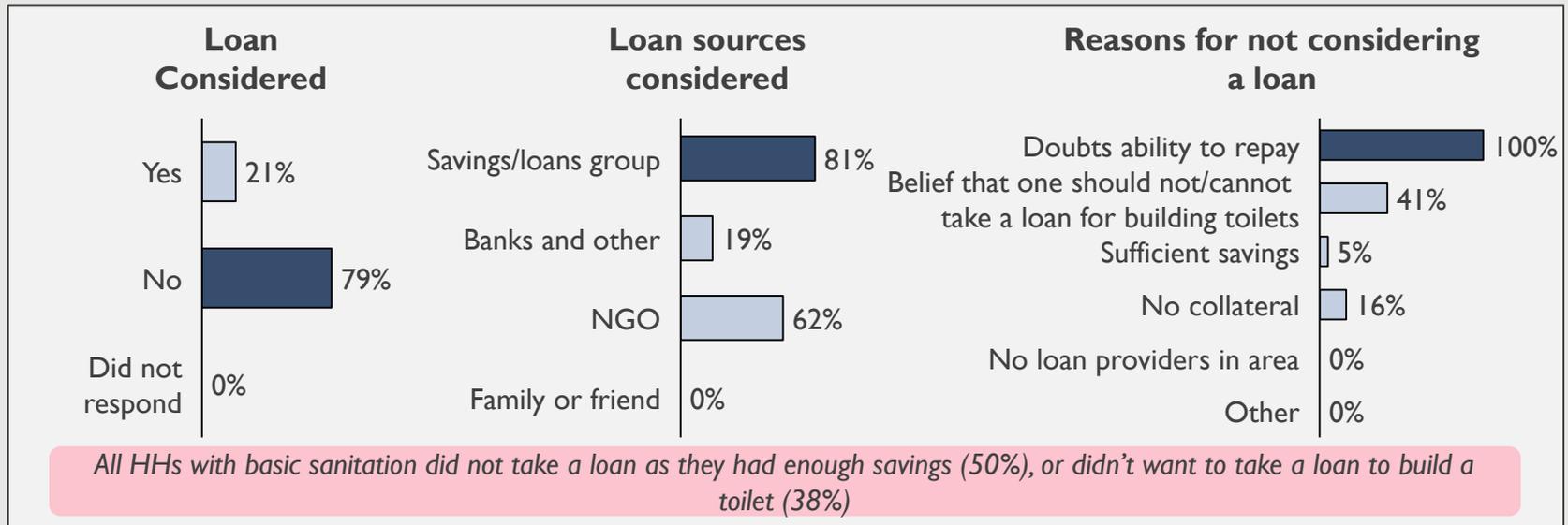
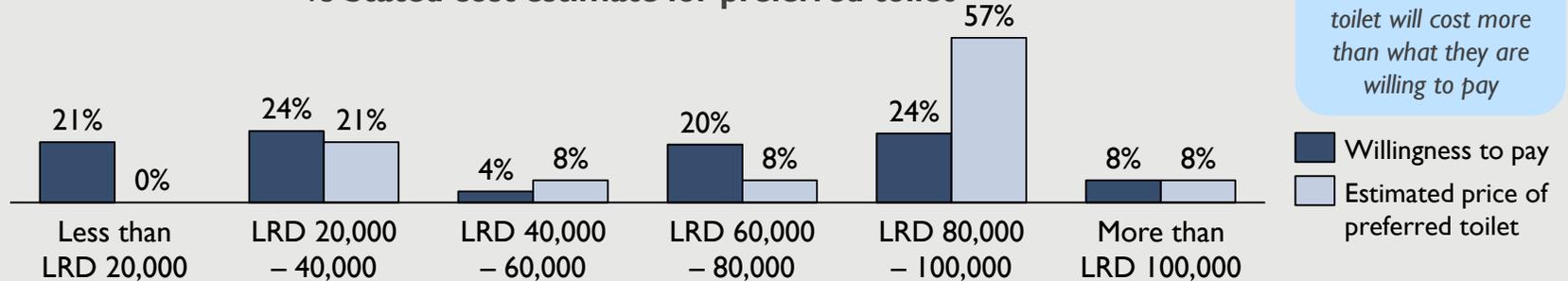


Segment Profiles | Segment C | Buying Process (6/6)

Half of the segment are willing to pay less than the estimated cost for the preferred toilet; only a fifth of the segment are willing to consider taking a toilet construction loan, primarily from a savings/loans group



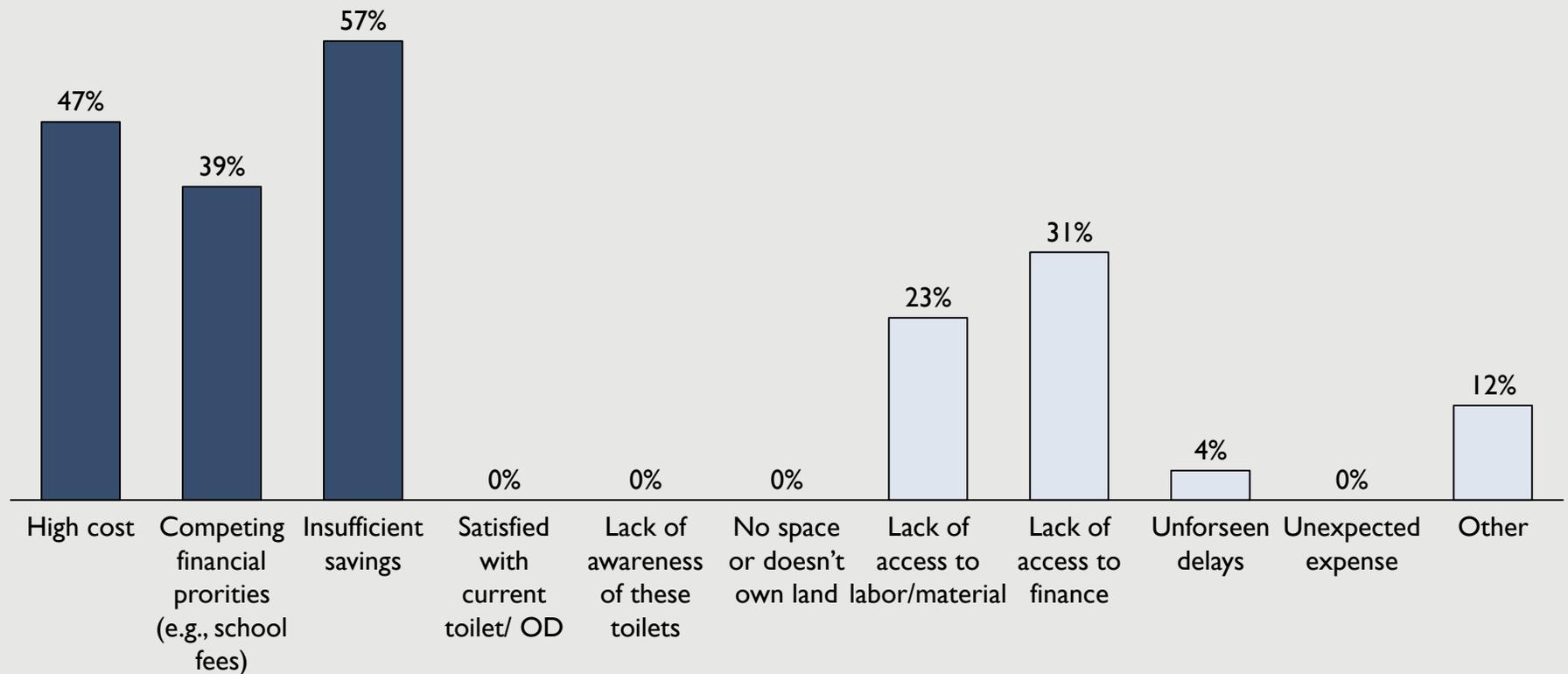
Stated willingness to pay for an improved toilet that is not meant to be shared vs Stated cost estimate for preferred toilet¹



Segment Profiles | Segment C | Drop-offs from Buying Process

92% of this segment considered investing in BSS but did not proceed with doing so; insufficient savings, high costs, and competing financial priorities were the primary reasons for investing in BSS

Reasons for not investing in basic sanitation service



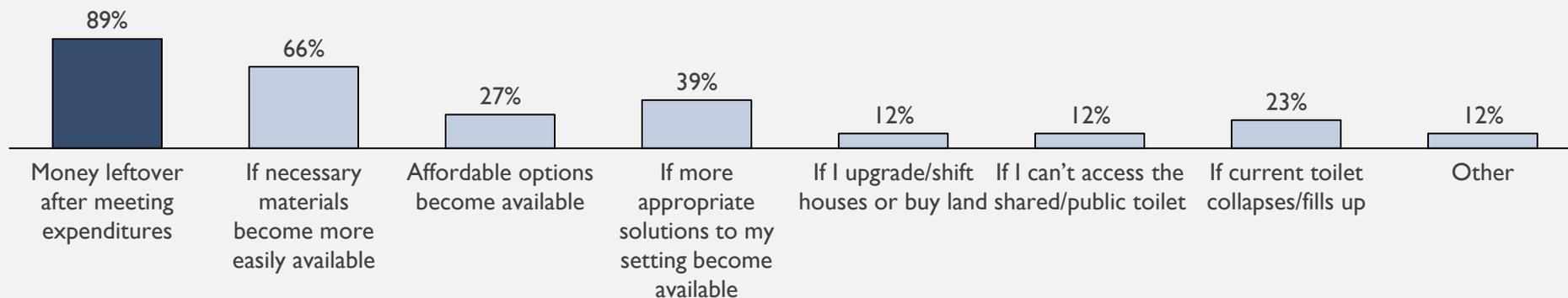
Segment Profiles | Segment C | Future Considerations



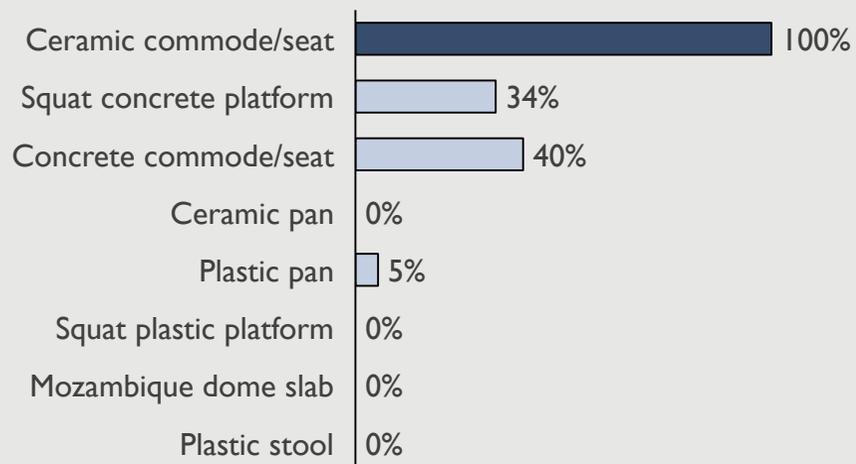
[Click to go back](#)

89% of the segment might reconsider investing in BSS if they can set aside enough savings after meeting their expenses; a ceramic commode is the most preferred floor upgrade; toilet owners plan to chemically lower sludge volumes when their pits fill

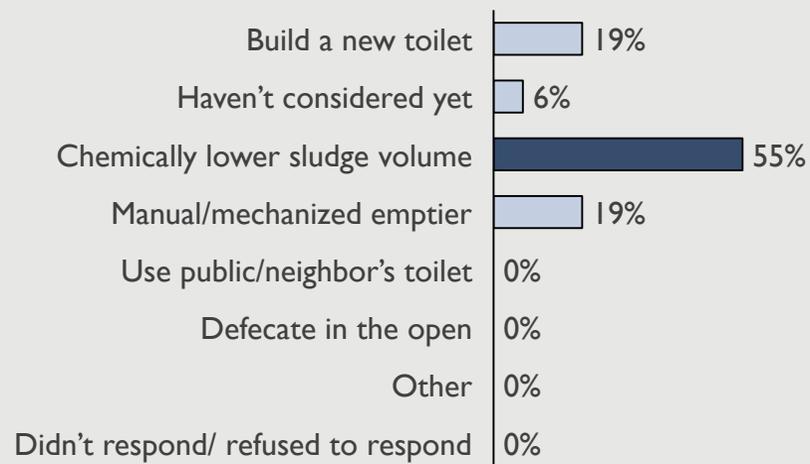
Factors that might increase consideration of a toilet in the future



Toilet floor add-ons considered by HHs without basic sanitation



Plan for when existing toilet pit fills up



Segment Profiles | Segment F

Limited sanitation service:

38%

Unimproved toilet:

20%

No toilet:

42%

Segment F households are affluent, yet most of them either have limited sanitation service or practice OD...

			Time taken to walk to nearest marketplace									
			≤ 30 min					> 30 minutes				
			County									
			Montserrado	Grand Bassa	Bong	Nimba	Lofa	Montserrado	Grand Bassa	Bong	Nimba	Lofa
House Material	Loan taken	House ownership										
Permanent Material	Yes	Owned	A	E								
		Not owned	B	F			J					
	No	Not owned		G								
		Owned	C				L					
Non-Permanent Material	Yes		D			H						
	No		D			I						
								K				

...because of their relatively low willingness to pay for improved toilets, and relatively lower priority given to sanitation

Note: 51% of the segment resides in Grand Bassa, and 49% resides in Bong.

Segment Profiles | Segment F | Customer Story

Mayeadeh lives and works in Fair Ground Community, Grand Bassa with her husband and five children. She has completed her education up till senior high, and works as a petty trader to support her family.

Mayeadeh and her family live in their own house, which is built with durable materials. They also own assets such as a mobile phone, and furniture (e.g., chairs and tables). They obtain water for bathing and cleaning from a protected dug well. Their average monthly household expenditure is LRD 36,000, and is spent primarily on food, healthcare, and school fees. Mayeadeh's regular income has ensured her family's financial stability; she has never needed to take a loan in the past.

Community cleanliness is not a very high priority for Mayeadeh, though she disapproves of open defecation as a practice. She believes that owning a toilet is a sign of prestige, that it garners respect from the community, and that it is hygienic, which helps prevent diseases. Currently, her family uses a pit latrine, in which the slab is made of cement, but has several gaps/holes on the toilet floor. The toilet was built by her neighbors, and is shared between three families. Mayeadeh is satisfied with the toilet's cleanliness, but feels that it is poorly constructed. Since it has only one compartment, her family often needs to wait until the toilet has been vacated.

Mayeadeh has not considered building her own toilet. While a private toilet would provide her family with convenience, privacy, and safety, she feels it would be too large an investment. In fact, she is willing to spend only LRD 20,000 on a new toilet. Her desired toilet is a pour flush toilet to reduce odor and ensure that feces are flushed away, with an offset pit to avoid seeing the pit's contents, a seated ceramic commode, and a permanent superstructure. She believes such a toilet will be appealing to visitors, and could cost up to LRD 60,000. She has never taken a loan in the past, and does not find it worthwhile to take a loan for toilet construction.

Segment Profiles | Segment F | Key Demographic Statistics

Segment size		Demographics		Income & occupation	
% of potential market	3%	Family size (Avg.)	7	Nature of income	
# of households	18K	Gender of HH Head		• Regular	78%
		• Male	45%	• Seasonal	22%
		• Female	55%	Primary occupation²	
		HH Head education¹		• Petty Trading	30%
		• No education	28%	• Agriculture	23%
		• Up to Junior High	34%	• Unskilled Labor	20%
		• Senior High or above	38%	• Skilled Labor	14%
Sanitation profile					
Limited sanitation service	38%				
Unimproved toilet	20%				
No toilet	42%				
Affluence indicators		Access indicators		Attitudes & beliefs ³	
Total monthly expenditure		Assets and other indicators		Distance to nearest market⁴	
High (>LRD 40K)	35%	Mobile phone	85%	<30 minutes	53%
Medium (LRD 20K-40K)	42%	Computer	1%	30 minutes to 1 hour	9%
Low (≤LRD 20K)	23%	Television	6%	Not walking distance	38%
Total asset value (avg.)	85k	Chair	86%	Access to electricity	29%
Total asset value (spread)		Agricultural land	59%	Non-drinking water source	
High (> LRD 120K)	37%	Any mode of transport	11%	Surface water	22%
Medium (LRD 75K-120K)	34%	Home improvement	42%	Other unprotected sources	28%
Low (LRD 35K-75K)	9%	Loan group member	34%	Hand pump, tube well or borehole	22%
Very low (< LRD 35K)	20%	Mobile money user	45%	Other protected sources	28%
				Believe that community cleanliness is important	70%
				Believe it is embarrassing to be seen practicing OD	91%
				Willing to pay for products that bring prestige	34%
				Believe it is taboo to live near a toilet	26%

1. Indicates highest level of education attended; 2. Top four occupations for each segment are shown; 3. Respondents were asked if they 'strongly disagreed', 'disagreed', 'agreed', or 'strongly agreed' to statements related to their attitudes and beliefs. Here the combined percentage of those who 'strongly agreed' or 'agreed' with a statement is reported, barring willingness to pay for prestige products, for which only 'strongly agreed' is shown; 4. Refers to a permanent market with stores;

Source: HH interviews (Profile n=284; Detailed n=70), FSG analysis

Segment Profiles | Segment F | Customer Persona

Setting

- **Location:** Populous urban areas of Grand Bassa, and Bong
- **Typical family size:** 7 people, with 3 children and no elderly¹
- **Type of house:** Live in their own house, made predominantly of permanent materials
- **Income and occupation:** Typically have regular income, however nearly a fifth have seasonal income; petty trading is the dominant occupation, followed by agriculture
- **Mobile phone and mobile money:** Mobile phone usage is widespread, and mobile money is used by slightly less than half the customers in this segment
- **Total value of assets:** HHs are affluent; the average total asset value per HH is LRD ~85,000
- **Loan groups:** A third are loan group members
- **Loans:** This segment have not taken loans for any purpose

Mental Model

- **Desire respect** from their community
- **Value products** that are **prestigious** and make life **convenient**
- **Conforming to the norm is not particularly important** to this group, as more than half suggest that one should do things 'differently' from their neighbors
- **Place high value on ownership of a toilet.** The majority strongly believe owning a toilet is a sign of **prestige**. Majority are well aware of the **health, safety, and privacy benefits** of owning a toilet, and equate owning a toilet to **being modern**
- **HHs are not particularly concerned with community cleanliness**, however they disapprove of **witnessing or being seen practicing OD**
- Agree that it is **irresponsible to not have a toilet**
- **Nearly three quarters prioritize school fees over building a toilet**, relative to other segments



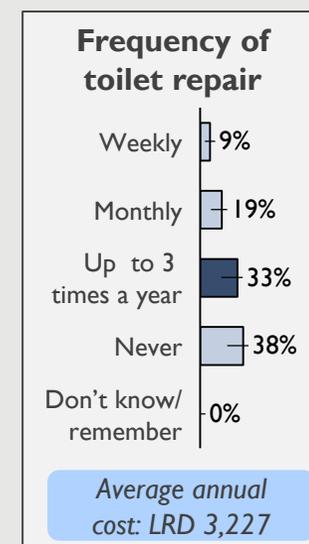
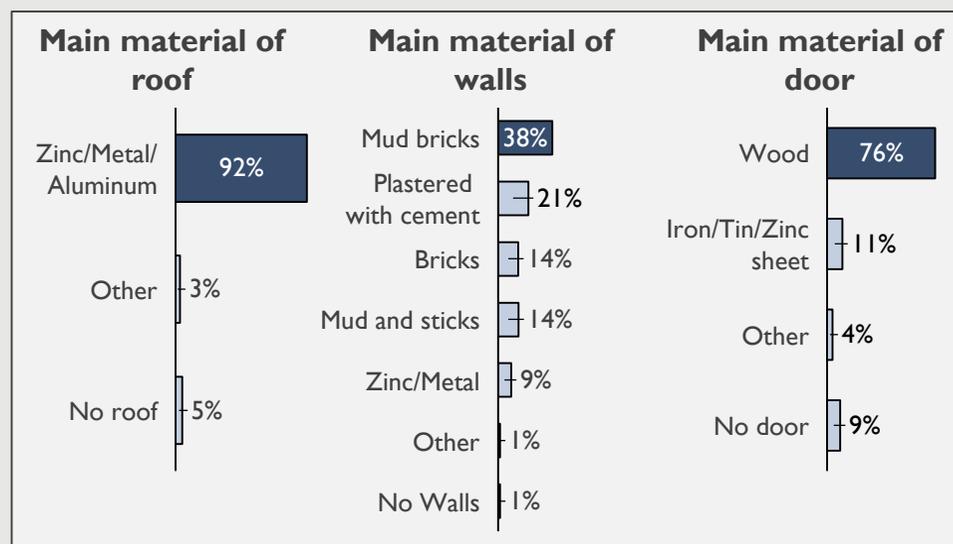
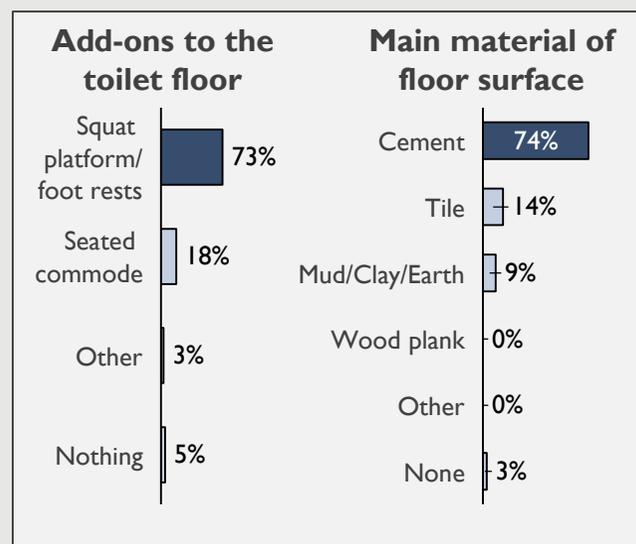
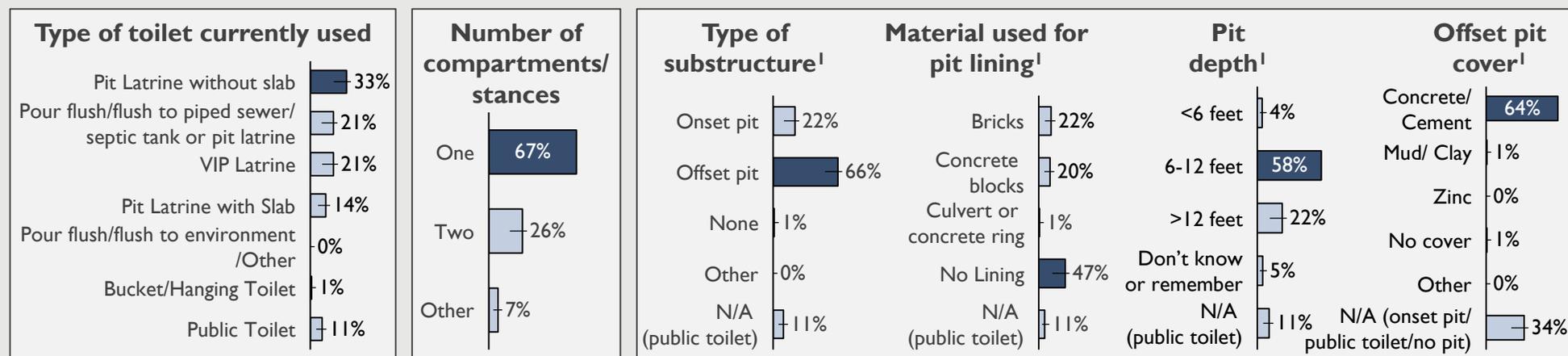
- **Current product and usage:** Prevalence of shared toilet facilities and practicing OD
- **Desired product:** A toilet that is easy to clean with water, is comfortable, is well ventilated, and has the following functionalities:
 - **Toilet type:** Flush/pour flush toilet to reduce odor
 - **Substructure:** Offset pit to limit pit heat and prevent users from seeing the content's of the pit; depth of 6-12ft, lined with concrete blocks

- **Interface:** Cement floor with a seated ceramic commode
- **Superstructure:** Zinc sheet roof, cement walls, wooden door
- **Estimated cost and ability to pay:** Estimated cost of desired toilet - LRD 65,000; average ability to pay (out-of-pocket) - LRD 43,000
- **Financing:** Most of the segment would not take a loan, because they either have enough savings (for those willing to pay up to LRD 40K), or believe that they will be unable to pay back the loan (for those willing to pay LRD 80K-100K or more)

The Ask

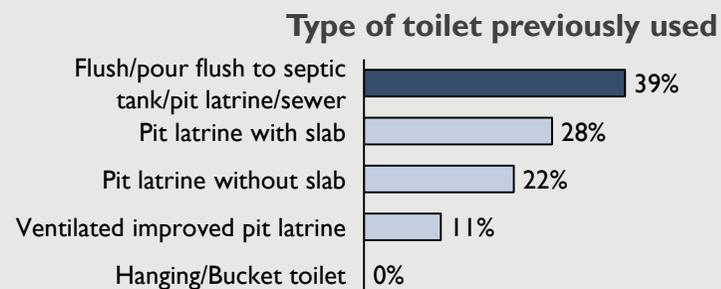
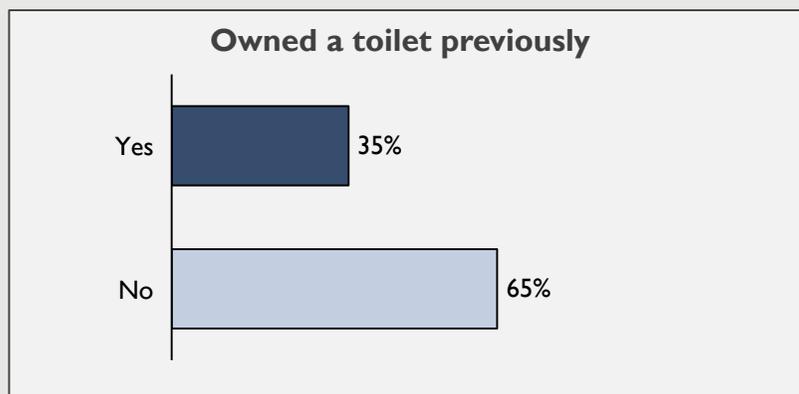
Segment Profiles | Segment F | Current Sanitation Profile for Toilet Users

Toilet users in the segment typically use a pit latrine with a cement floor which has developed gaps/ holes, a squat platform/ foot rests add-on, an offset pit, and a superstructure built with permanent materials

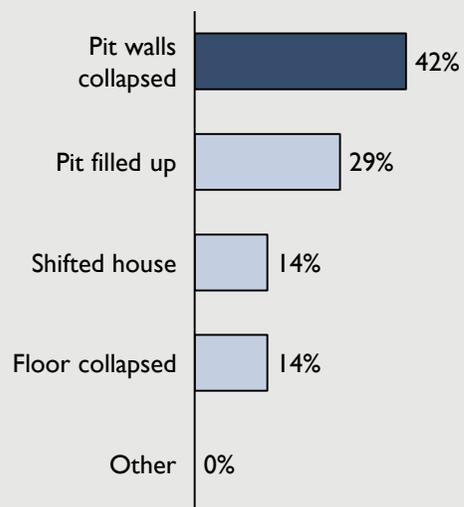


Segment Profiles | Segment F | Past Toilet Usage for HHs Practicing OD

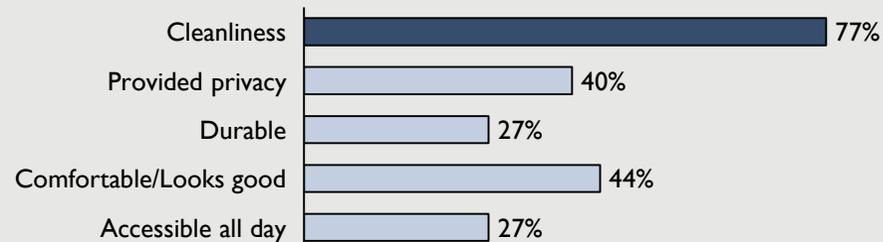
42% of HH in this segment currently practice OD, and most of them did not own a toilet previously; those who used a toilet previously used a flush/pour flush toilet, and liked the cleanliness, comfort and privacy that the toilet provided



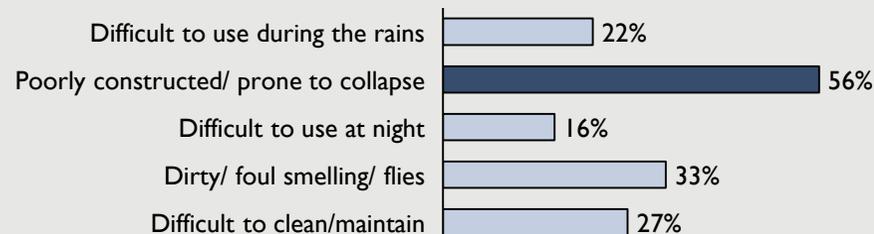
Reasons they stopped using toilet



Top five aspects liked by the segment



Top five aspects disliked by the segment

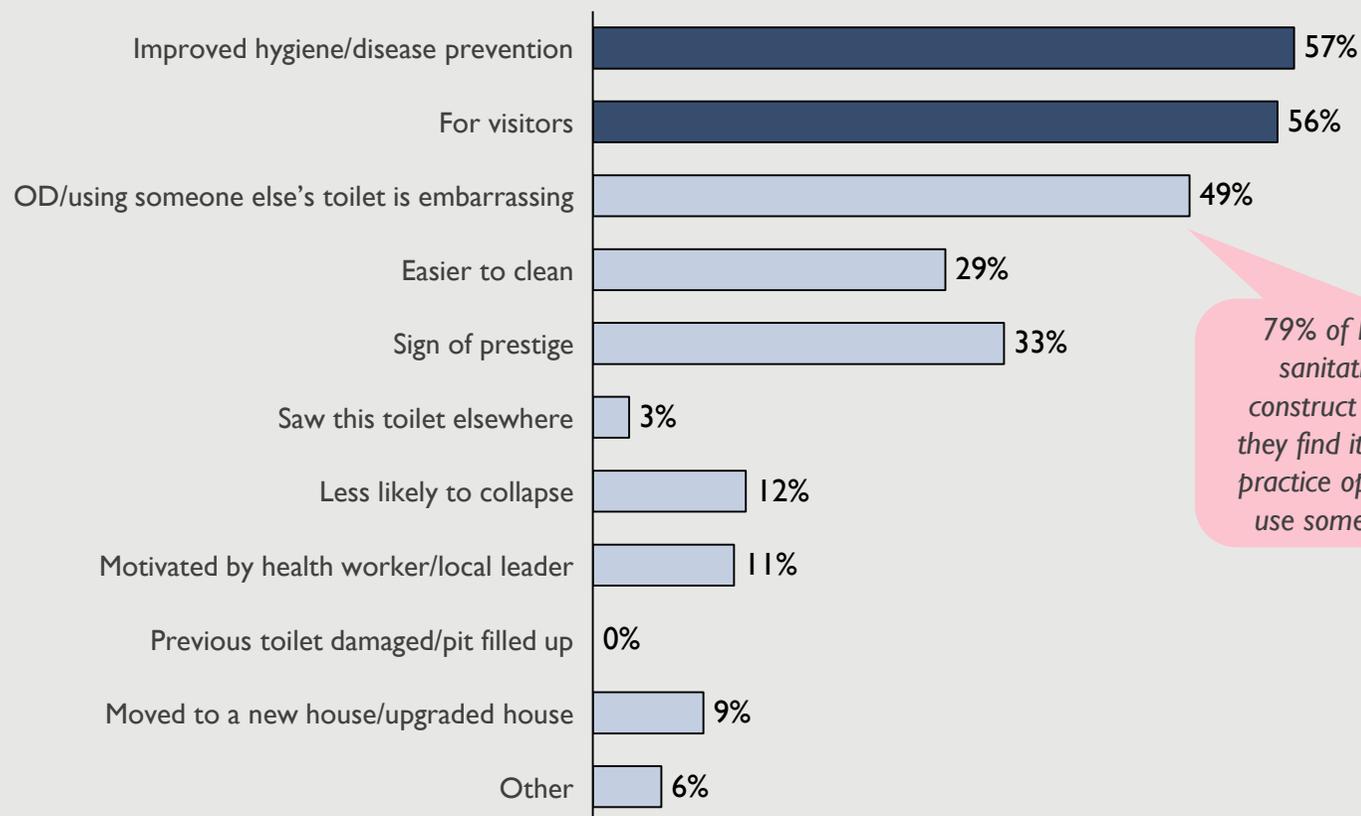


Segment Profiles | Segment F | Buying Process (1/6)

Most households wanted to construct a toilet to improve hygiene and prevent diseases, and because of visitors



Origination of need for toilet



79% of HHs with basic sanitation wanted to construct a toilet because they find it embarrassing to practice open defecation or use someone else's toilet

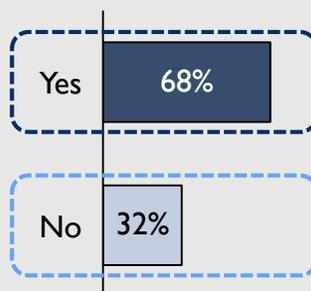
Callout boxes capture key differences exhibited by those with basic sanitation from this segment

Segment Profiles | Segment F | Buying Process (2/6)

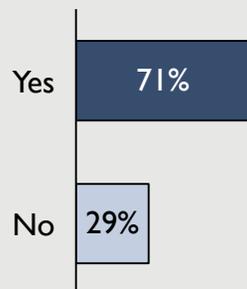
Most households sought information on how to build a toilet and even attended a CLTS event; neighbors/friends/coworkers and family members were the most common sources of information e.g., toilet costs



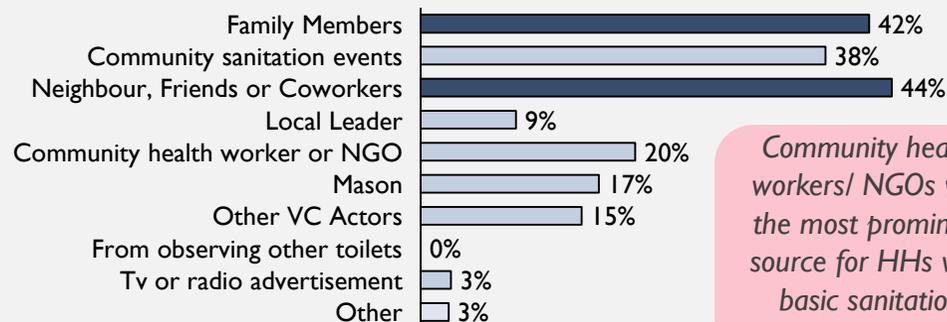
Sought information while considering building a toilet



Attended a CLTS event

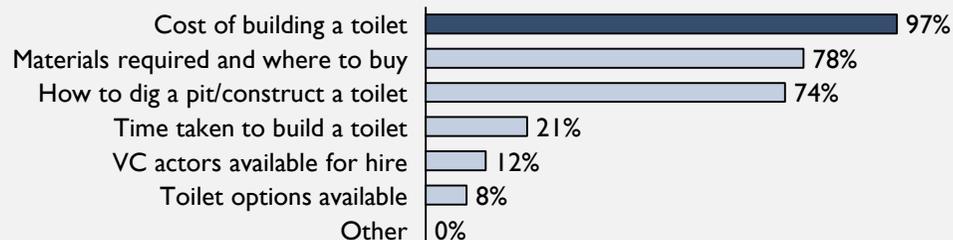


Sources of information about toilets

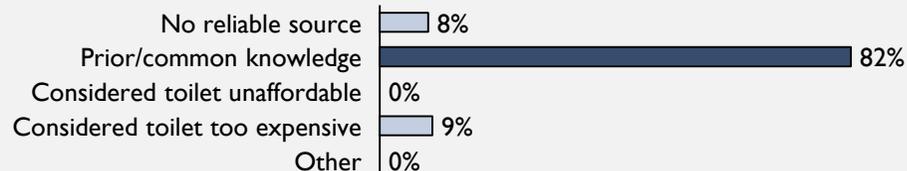


Community health workers/ NGOs was the most prominent source for HHs with basic sanitation (33%)

Nature of information captured



Reasons for not seeking information

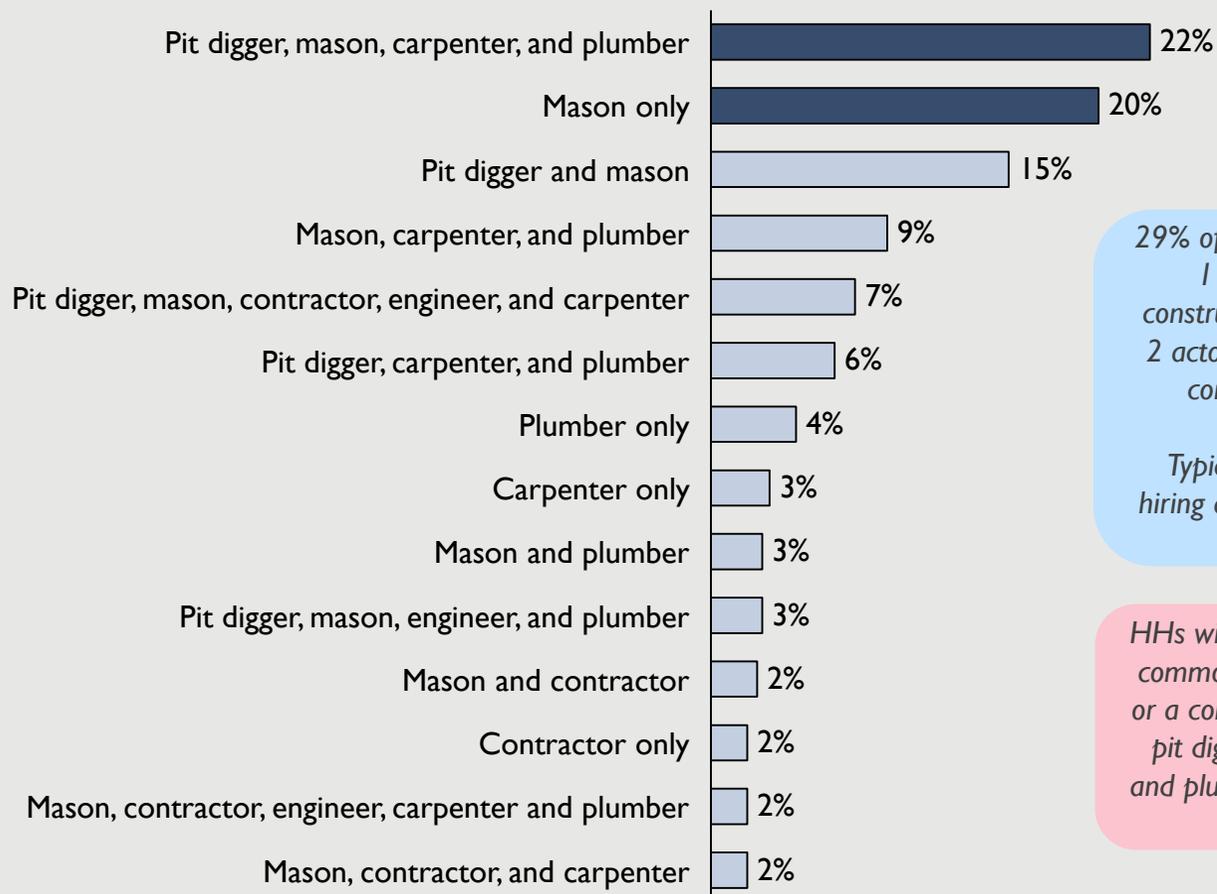


Segment Profiles | Segment F | Buying Process (3/6)

HHs most commonly considered hiring a combination of actors (i.e., pit digger, mason, carpenter and plumber), or considered hiring a mason only, to construct their toilets



Channels considered for toilet construction



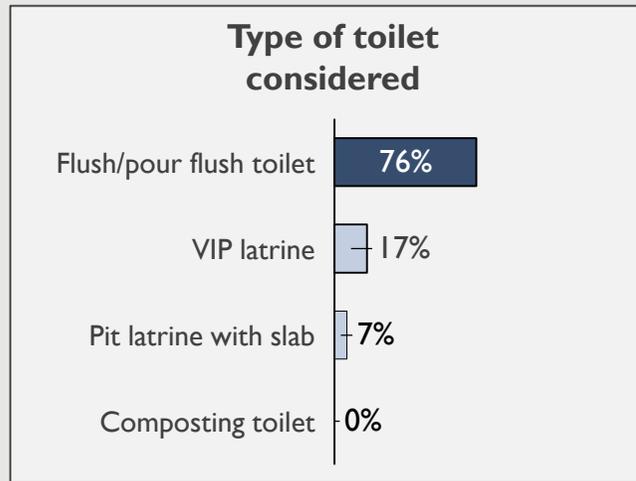
29% of HHs considered hiring 1 actor during toilet construction; 20% considered 2 actors, the remaining 51% considered 3-5 actors

Typically HHs considered hiring actors from within their local community

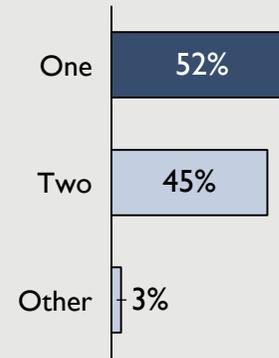
HHs with basic sanitation most commonly hired a mason only or a combination of actors (i.e., pit digger, mason, carpenter, and plumber) to construct their toilets

Segment Profiles | Segment F | Buying Process (4/6)

Most HHs prefer to construct a flush/pour flush toilet, with one compartment, a 6-12 feet deep offset pit lined with concrete blocks, a concrete or a cement cover...

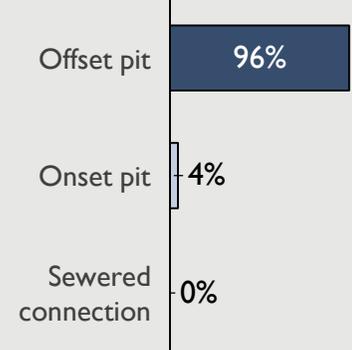


Number of compartments/stances considered

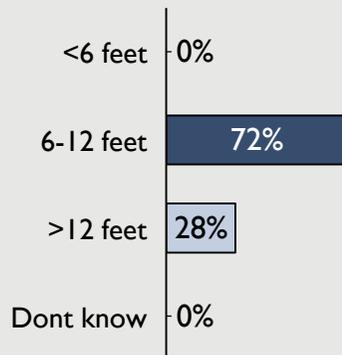


81% of HHs with basic sanitation have one compartment

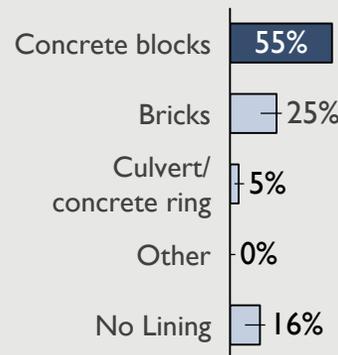
Type of substructure considered



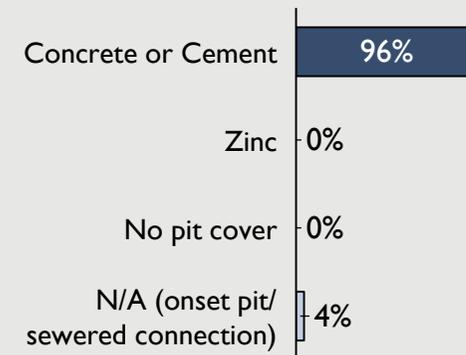
Pit depth considered



Types of pit lining considered



Offset pit cover considered

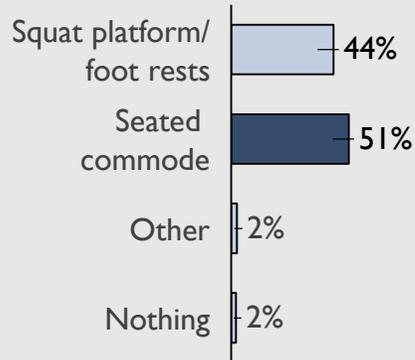


Segment Profiles | Segment F | Buying Process (5/6)

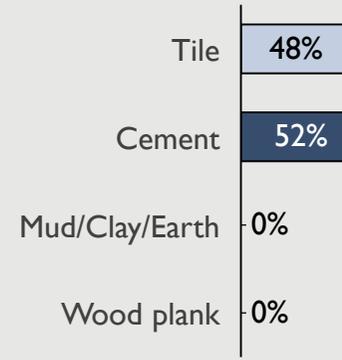
...a cement floor with seated commode, cement walls, a zinc sheet roof and a wooden door



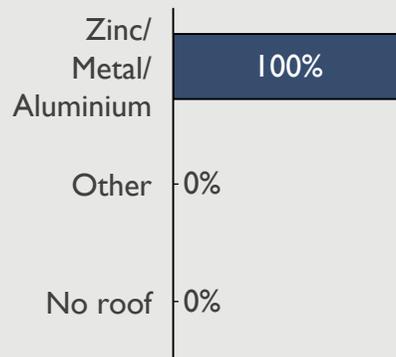
Add-ons considered for the toilet floor



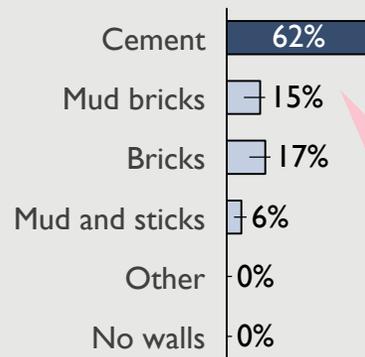
Main material considered for floor surface



Main material considered for roof

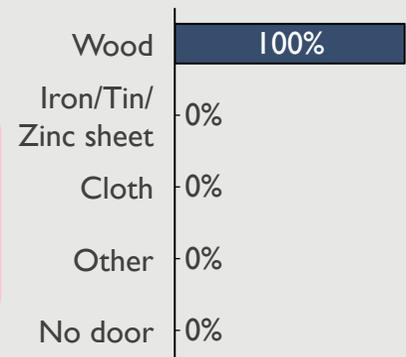


Main material considered for walls



42% of HHs with basic sanitation have mud bricks wall, followed by bricks (26%) and cement (20%)

Main material considered for door

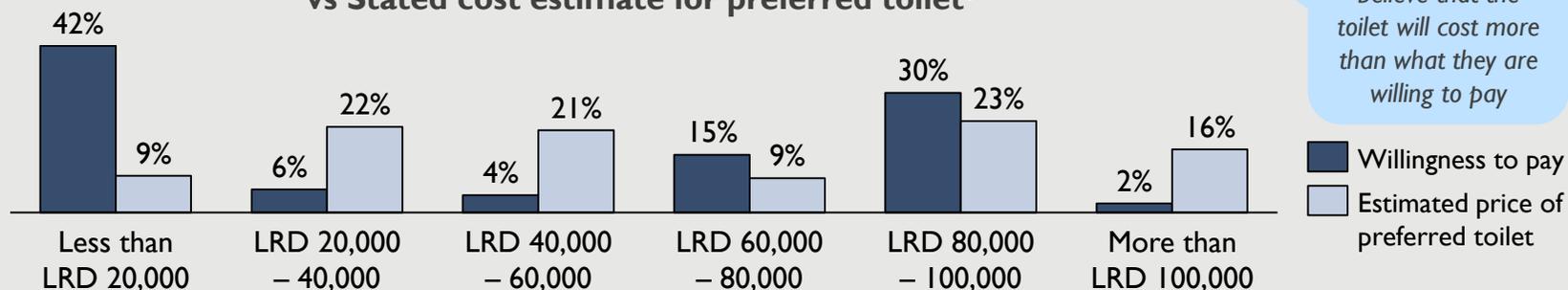


Segment Profiles | Segment F | Buying Process (6/6)

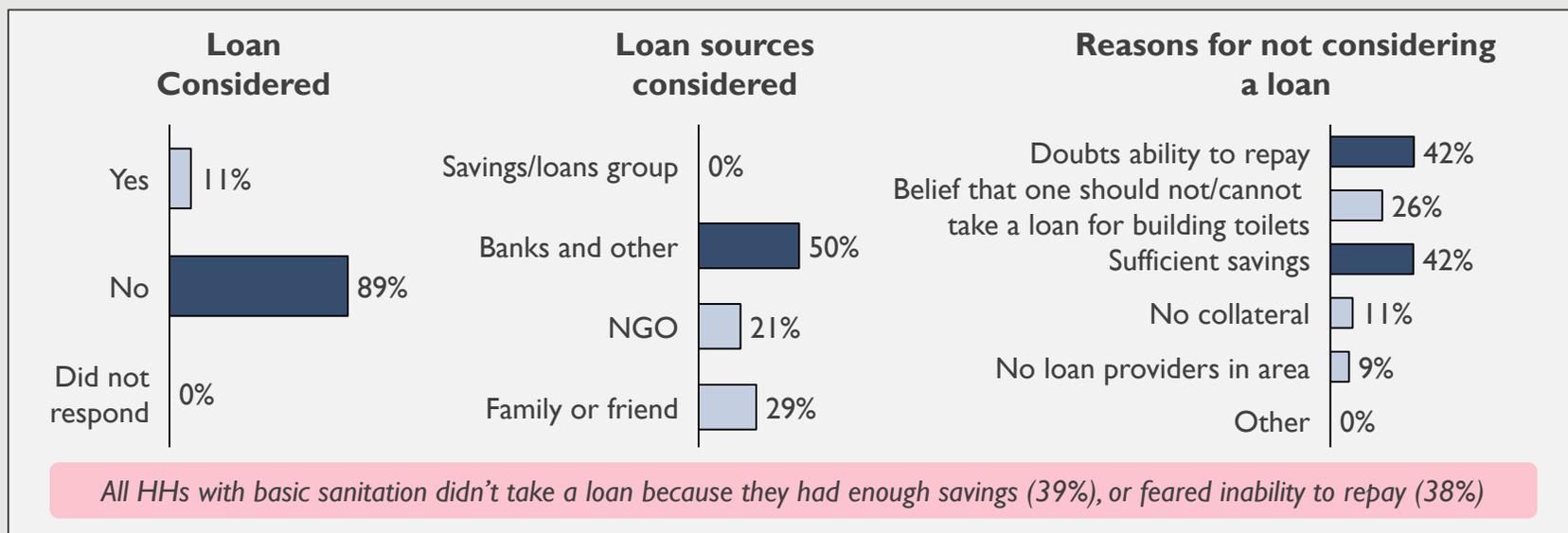
57% of the segment are willing to pay less than the estimated cost for the preferred toilet; only a tenth of the segment are willing to consider taking a toilet construction loan, primarily from a bank



Stated willingness to pay for an improved toilet that is not meant to be shared vs Stated cost estimate for preferred toilet¹



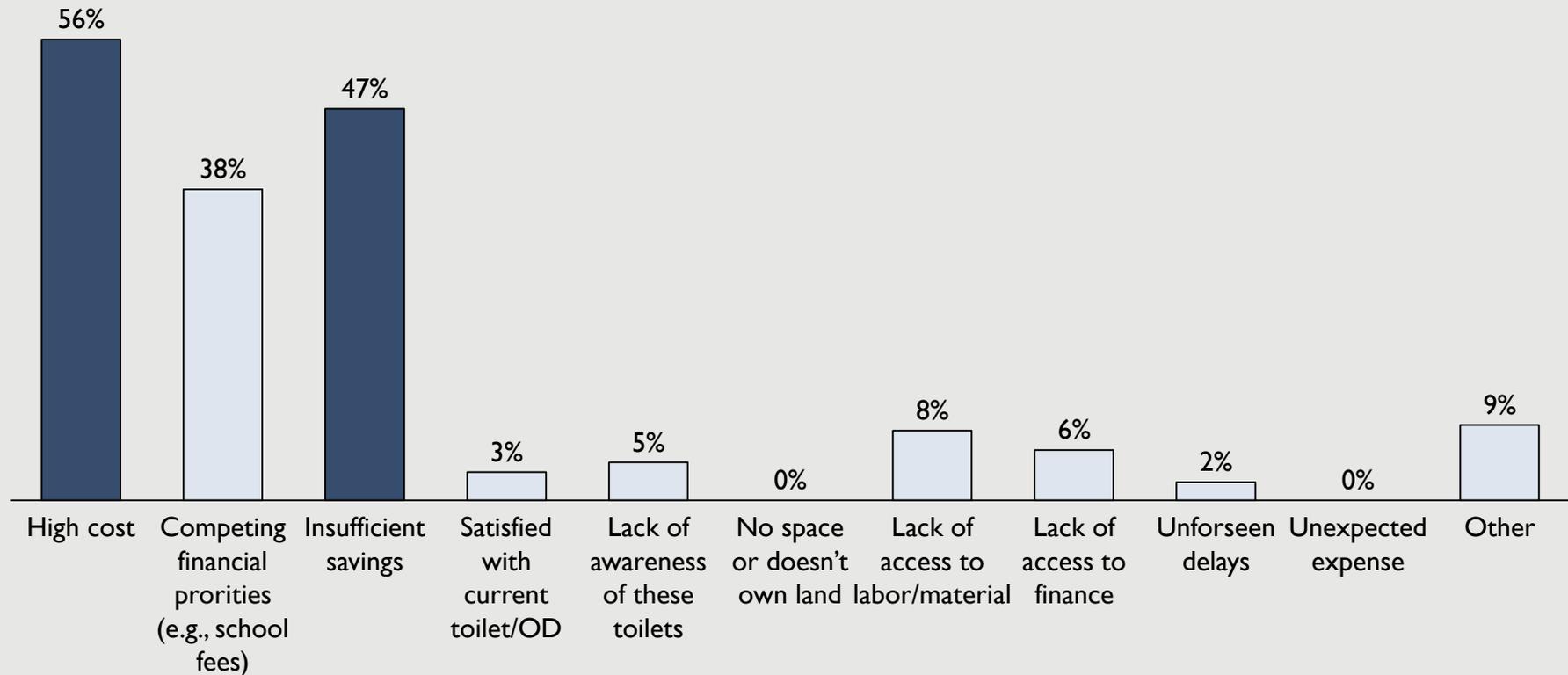
57% of households believe that the toilet will cost more than what they are willing to pay



Segment Profiles | Segment F | Drop-offs from Buying Process

72% of this segment considered investing in BSS but did not proceed with doing so; high costs and insufficient savings were the primary reasons for not investing in BSS

Reasons for not investing in basic sanitation service



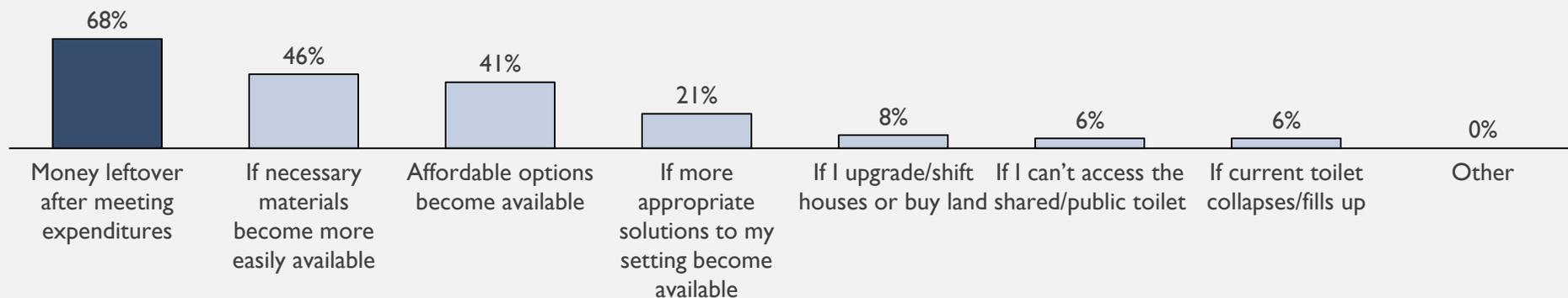
Segment Profiles | Segment F | Future Considerations



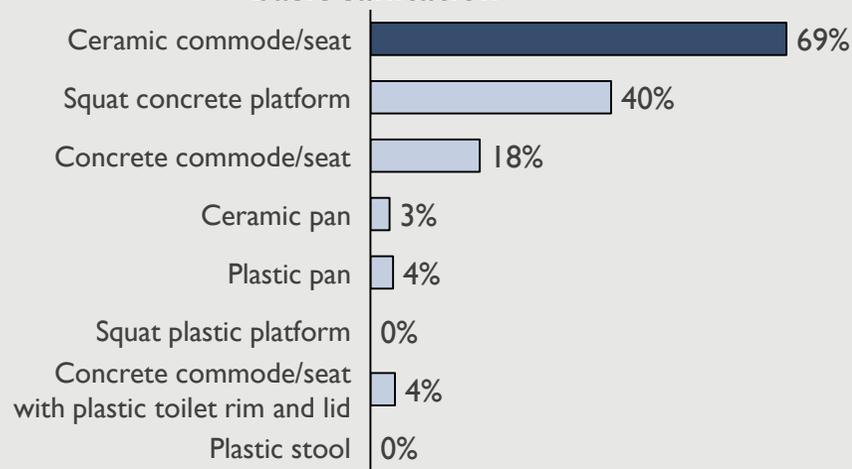
[Click to go back](#)

68% of the segment might reconsider investing in BSS if they can set aside enough savings after meeting their expenses; ceramic commode is the most preferred floor upgrade; most HHs will get their pit emptied when it fills up

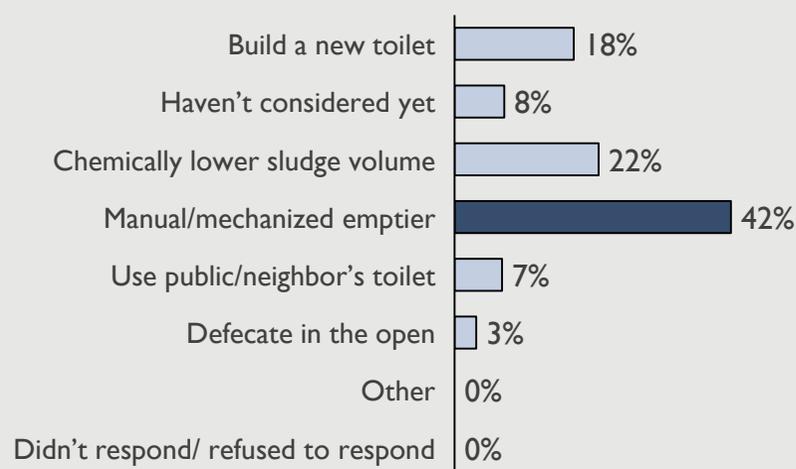
Factors that might increase consideration of a toilet in the future



Toilet floor add-ons considered by HHs without basic sanitation



Plan for when existing toilet pit fills up



Segment Profiles | Segment J

Limited sanitation service:

25%

Unimproved toilet:

24%

No toilet:

51%

Segment J households are affluent, yet around half practice OD, and half either have limited sanitation service or use unimproved toilets...

			Time taken to walk to nearest marketplace									
			≤ 30 min					> 30 minutes				
County			Montserrado	Grand Bassa	Bong	Nimba	Lofa	Montserrado	Grand Bassa	Bong	Nimba	Lofa
House Material	Loan taken	House ownership										
Permanent Material	Yes	Owned	A	E			J					L
		Not owned	B	E								
	No	Not owned		F	G							
		Owned	C									
Non-Permanent Material	Yes		D	H			K					
	No			I								

... as they do not attach much importance to community cleanliness, and lack easy access to construction materials

Note: 56% of the segment resides in Montserrado, 26% in Nimba, 10% in Bong, and 9% resides in Grand Bassa.

Segment Profiles | Segment J | Customer Story

Nanue lives and works in Owengrove, Grand Bassa with his wife, sister and five children. He has completed his education up till senior high, and engages in agriculture and petty trading to support his family.

Nanue and his family live in their own house, which is built with durable materials. They also own agricultural land, and assets such as a mobile phone, television, and furniture. They obtain water for bathing and cleaning from a nearby tube well. Their average monthly household expenditure is LRD 31,000, and is spent primarily on food, health, and transport. His work as a petty trader helps offset the seasonal nature of his agricultural income.

Community cleanliness is not a priority for Nanue. However, he considers it embarrassing to be seen practicing OD or using someone else's toilet, so he has built a low-cost, unimproved pit latrine, with an offset pit so that he doesn't need to see the contents of the pit. He also values the flexibility of being able to use the toilet at any time of the day. However, Nanue believes that his toilet is poorly constructed, and the floor has developed several cracks/holes, which could cause it to collapse at any time. Yet, he prioritizes paying school fees over constructing a new toilet.

Nanue hopes to upgrade his toilet in the future, so that his family can enjoy the convenience and safety of a modern toilet, without giving up the privacy and accessibility they currently enjoy. He is willing to spend LRD 20,000-40,000 on a new toilet, however he believes it could cost him anywhere between LRD 40,000-80,000 to obtain his desired upgrade, including a seated ceramic commode and a permanent superstructure. He does not know of any shops near him that sell ceramic commodes, however he saw them once at shops in the nearby town of Sehkempa. He would need to rent a vehicle to bring the material from Sehkempa, which could further add to the cost. He is skeptical of taking a loan of this amount as he fears he will be unable to pay back the loan.

Segment Profiles | Segment J | Key Demographic Statistics

Segment size		Demographics		Income & occupation	
% of potential market	11%	Family size (Avg.)	8	Nature of income	
# of households	59K	Gender of HH Head		• Regular	67%
Sanitation profile		• Male	49%	• Seasonal	33%
Limited sanitation service	25%	HH Head education¹		Primary occupation²	
Unimproved toilet	24%	• Female	51%	• Agriculture	31%
No toilet	51%	HH Head education¹		• Petty Trading	22%
		• No education	25%	• Unskilled Labor	20%
		• Up to Junior High	23%	• Skilled Labor	11%
		• Senior High or above	52%		
Affluence indicators		Access indicators		Attitudes & beliefs ³	
Total monthly expenditure		Assets and other indicators		Distance to nearest market⁴	
High (>LRD 40K)	32%	Mobile phone	79%	<30 minutes	8%
Medium (LRD 20K-40K)	37%	Computer	3%	30 minutes to 1 hour	35%
Low (≤LRD 20K)	31%	Television	21%	Not walking distance	57%
Total asset value (avg.)	107k	Chair	73%	Access to electricity	30%
Total asset value (spread)⁵		Agricultural land	55%	Non-drinking water source⁵	
High (> LRD 120K)	24%	Any mode of transport	18%	Surface water	35%
Medium (LRD 75K-120K)	30%	Home improvement	47%	Other unprotected sources	9%
Low (LRD 35K-75K)	27%	Loan group member	41%	Hand pump, tube well or borehole	35%
Very low (< LRD 35K)	18%	Mobile money user	44%	Other protected sources	20%
				Believe that community cleanliness is important	
				46%	
				Believe it is embarrassing to be seen practicing OD	
				85%	
				Willing to pay for products that bring prestige	
				43%	
				Believe it is taboo to live near a toilet	
				6%	

1. Indicates highest level of education attended; 2. Top four occupations for each segment are shown; 3. Respondents were asked if they 'strongly disagreed', 'disagreed', 'agreed', or 'strongly agreed' to statements related to their attitudes and beliefs. Here the combined percentage of those who 'strongly agreed' or 'agreed' with a statement is reported, barring willingness to pay for prestige products, for which only 'strongly agreed' is shown; 4. Refers to a permanent market with stores; 5. Total % ≠100 as it is rounded off; **Source:** HH interviews (Profile n=355; Detailed n=61), FSG analysis

Segment Profiles | Segment J | Customer Persona

Setting

- **Location:** Remote areas of Grand Bassa, Nimba, Bong and Lofa
- **Typical family size:** 8 people with 3 children and no elderly¹
- **Type of house:** Live in their own house, made predominantly of permanent materials
- **Income and occupation:** Typically have regular income, however a third have seasonal income; agriculture is the dominant occupation, followed by petty trading
- **Mobile phone and mobile money:** Mobile phone usage is widespread, and mobile money is used by slightly less than half the customers in this segment
- **Total value of assets:** HHs are affluent; the average total asset value per HH is LRD ~107,000
- **Loan groups:** Less than half are loan group members
- **Loans:** A third of the segment has taken loans in the past primarily for business or house construction/repair; typically loans are taken from savings/loan groups



Mental Model

- **Desire respect** from their community
- **Value products** that are **prestigious** and make life **convenient**
- **Conforming to the norm is not particularly important** to this group, as more than half disagree that one shouldn't do things 'differently' from their neighbors
- **Place high value on ownership of a toilet.** The majority strongly believe owning a toilet is a sign of **prestige**. Majority are well aware of the **health, safety, and privacy benefits** of owning a toilet, and equate owning a toilet to **being modern**
- **Do not care as much for community cleanliness**, however to **witness** or to be seen **practicing OD is considered embarrassing**
- Agree that it is **irresponsible to not have a toilet**
- Strongly **prioritize school fees over building a toilet**, relative to other segments

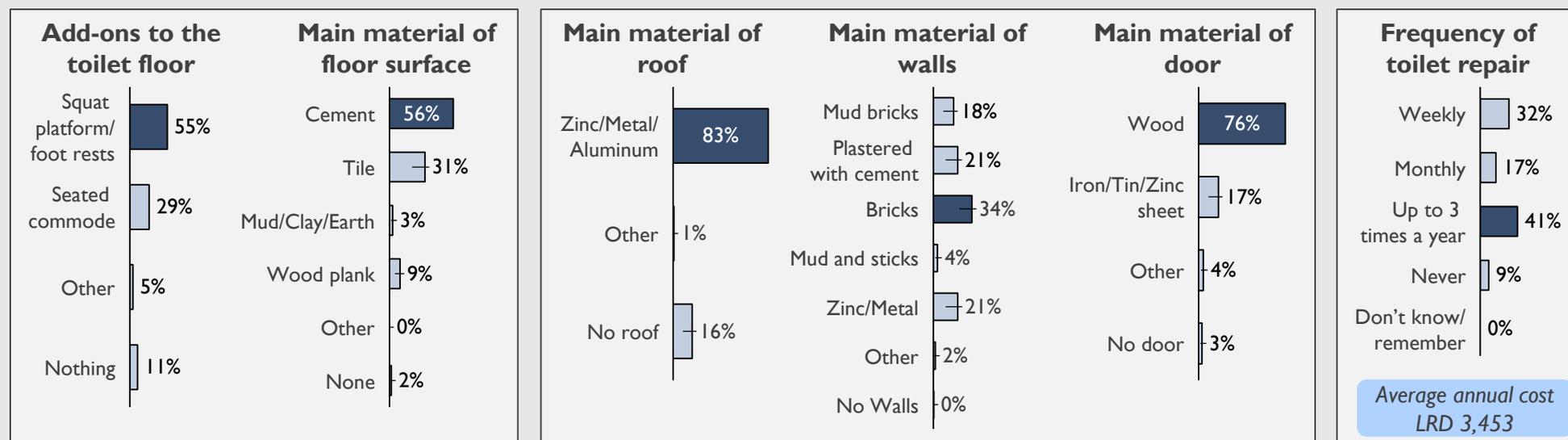
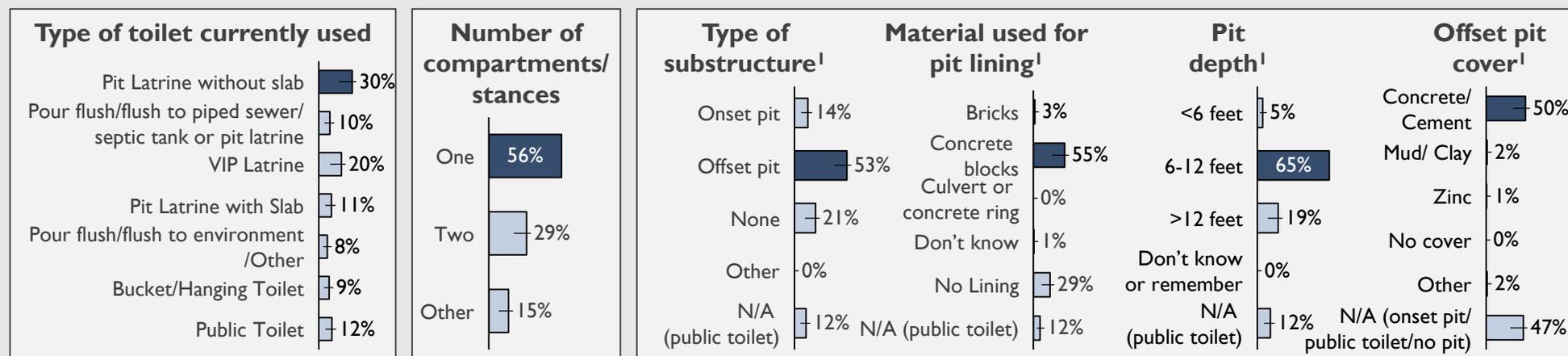
- **Current product and usage:** Improved shared toilet facilities and unimproved toilets; more than half the segment practice OD
- **Desired product:** A toilet that is easy to clean with water, provides privacy, is well ventilated, and has the following functionalities:
 - **Toilet type:** Pour flush toilet to prevent odor/ flies
 - **Substructure:** Offset pit to reduce pit heat and prevent users from seeing the contents of the pit; pit depth of 6-12 ft, lined with concrete blocks

- **Interface:** Cement/tiled floor, seated ceramic commode/cement squat platform
- **Superstructure:** Zinc sheet roof, brick/cement walls, wooden door
- **Estimated cost and ability to pay:** Estimated cost of desired toilet - LRD 64,000; average ability to pay (out-of-pocket) - LRD 53,000
- **Financing:** more than half the segment would consider taking a loan, with most opting for savings/loan group; biggest reason for not taking a loan is a fear of the inability to pay back the loan

The Ask

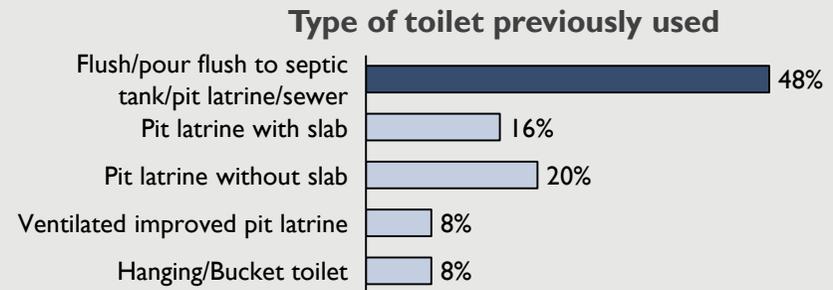
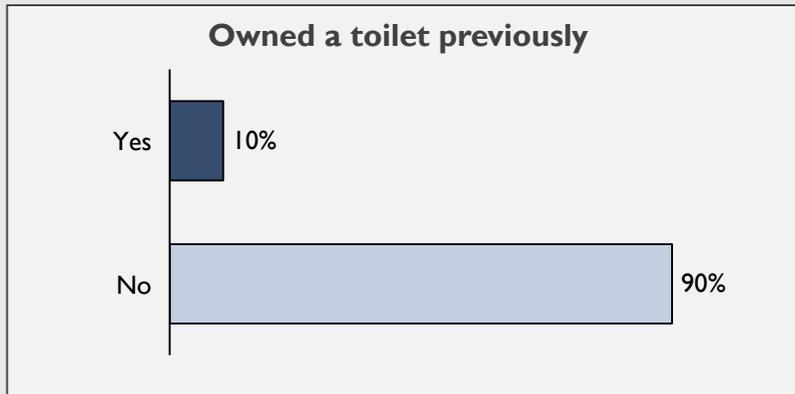
Segment Profiles | Segment J | Current Sanitation Profile for Toilet Users

Toilet users in this segment typically use a pit latrine, with a cement floor which has developed holes/ gaps, an offset pit, cement squat platform/foot rests add-on, and a superstructure built with permanent materials

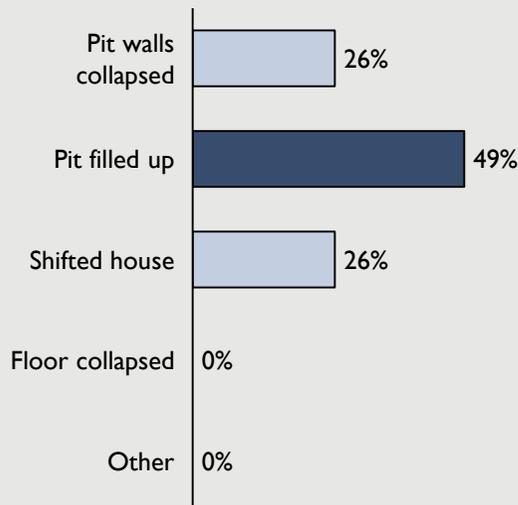


Segment Profiles | Segment J | Past Toilet Usage for HHs Practicing OD

Nearly half the HH in this segment currently practice OD, and most of them did not own a toilet previously; those who did, used a flush/ pour flush toilet, liked the cleanliness and privacy that the toilet provided them



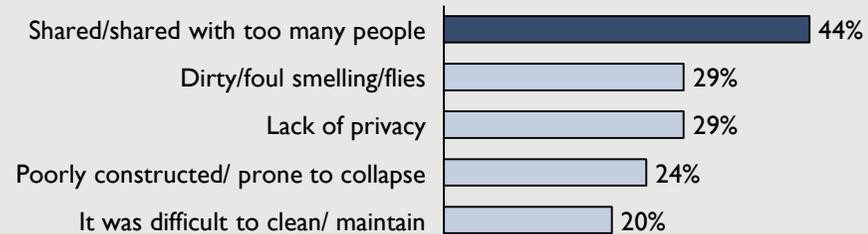
Reasons they stopped using toilet



Top five aspects liked by the segment



Top five aspects disliked by the segment

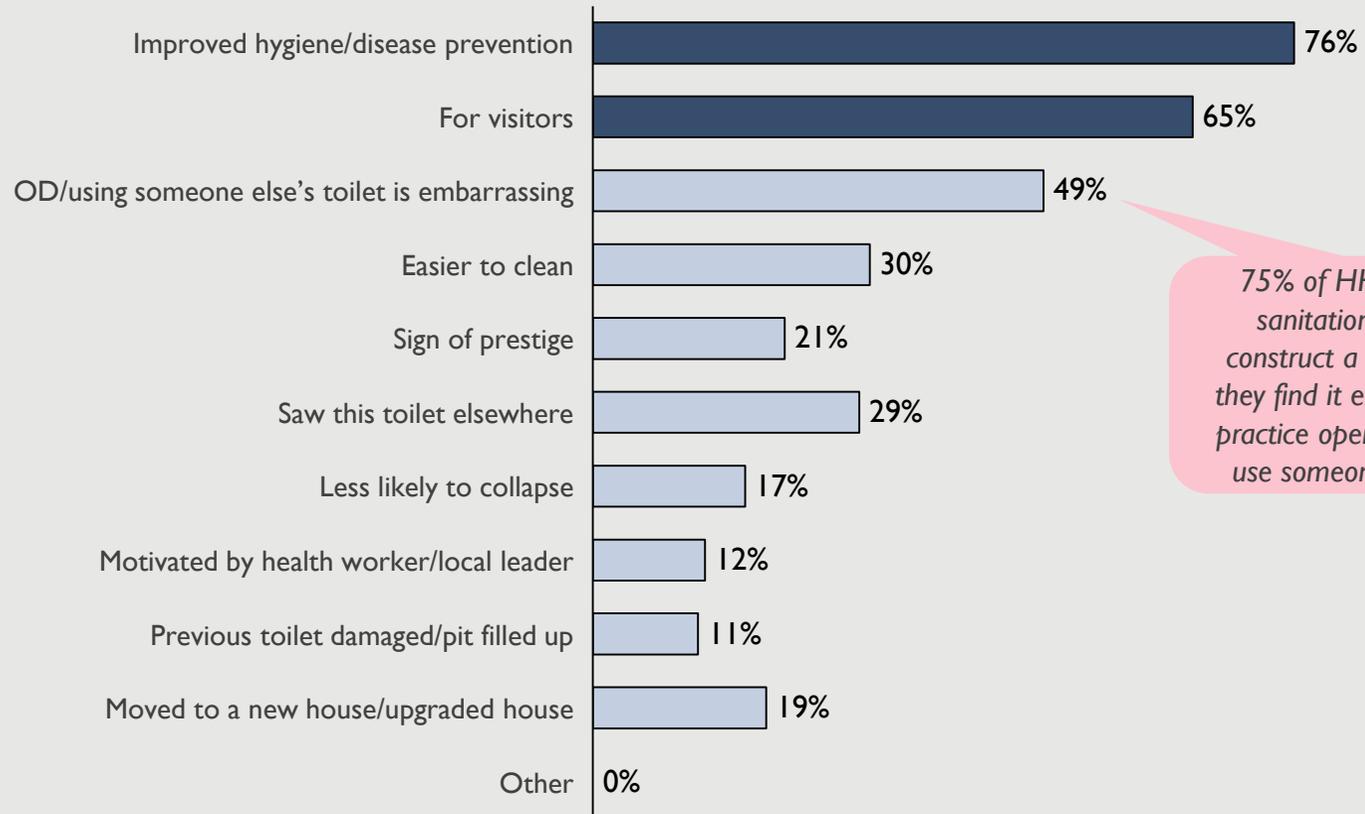


Segment Profiles | Segment J | Buying Process (1/6)

Most households wanted a toilet to improve hygiene and help prevent diseases, and because of visitors



Origination of need for toilet



75% of HHs with basic sanitation wanted to construct a toilet because they find it embarrassing to practice open defecation or use someone else's toilet

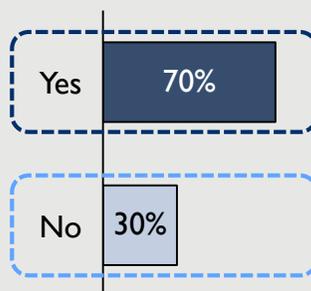
Callout boxes capture key differences exhibited by those with basic sanitation from this segment

Segment Profiles | Segment J | Buying Process (2/6)

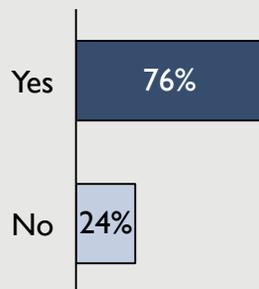
Most households sought information on how to build a toilet and even attended a CLTS event; NGOs/ community health workers and community sanitation events were the most common sources of information, e.g., toilet cost



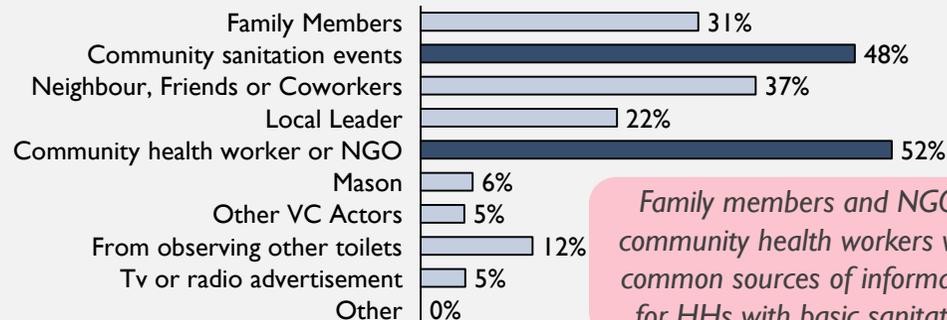
Sought information while considering building a toilet



Attended a CLTS event

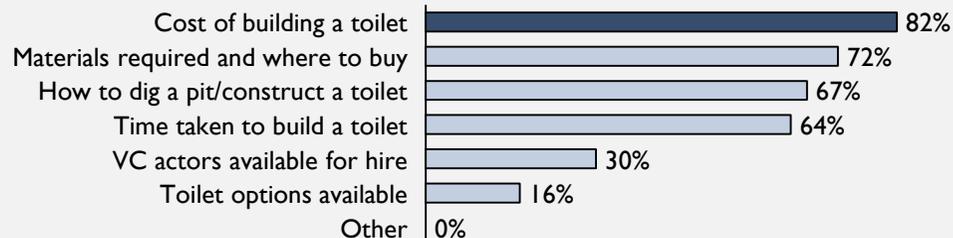


Sources of information about toilets

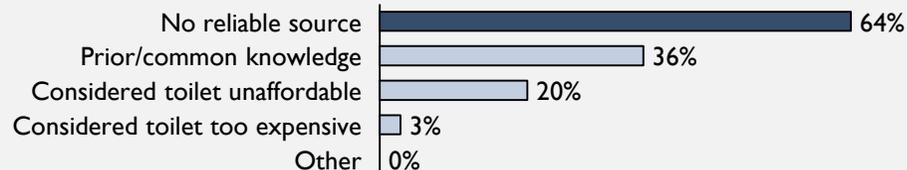


Family members and NGOs/ community health workers were common sources of information for HHs with basic sanitation

Nature of information captured



Reasons for not seeking information

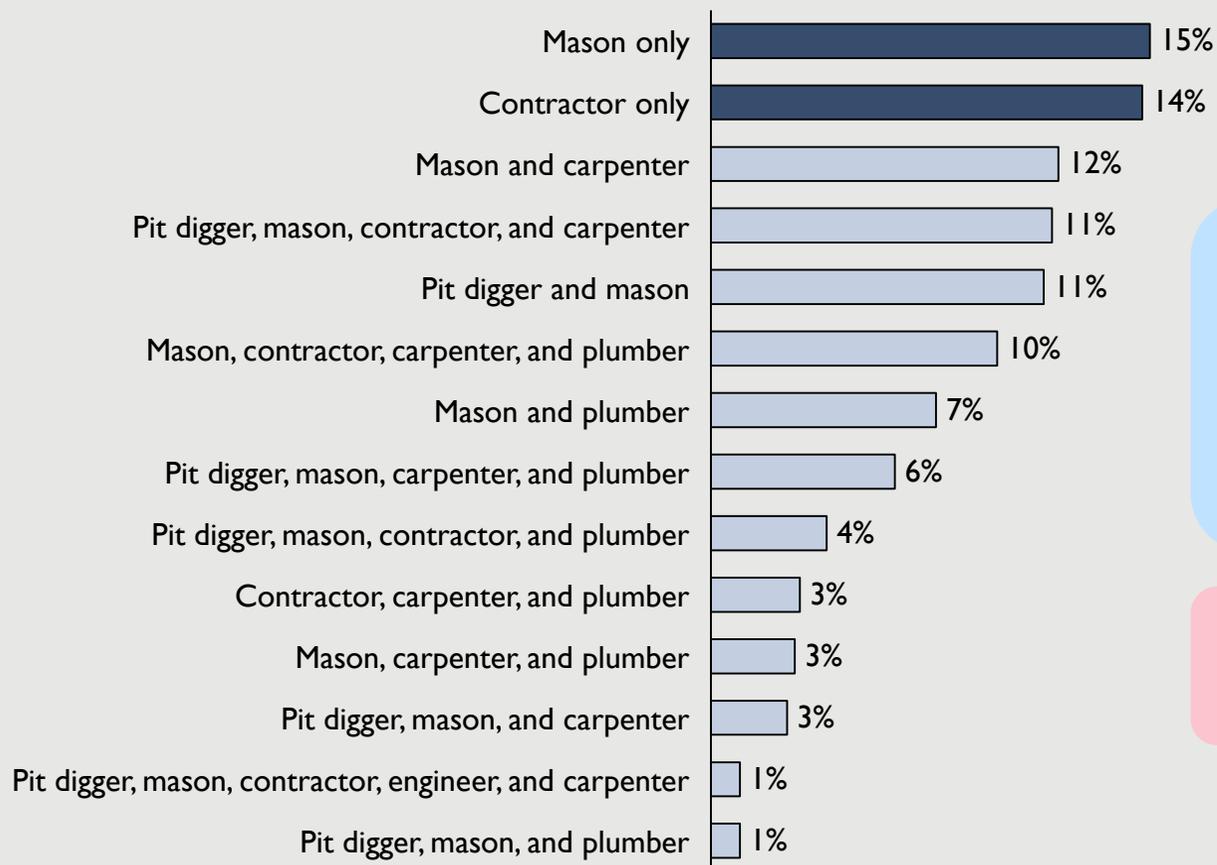


Segment Profiles | Segment J | Buying Process (3/6)

HHs most commonly considered hiring a mason only or a contractor only to construct their toilets



Channels considered for toilet construction



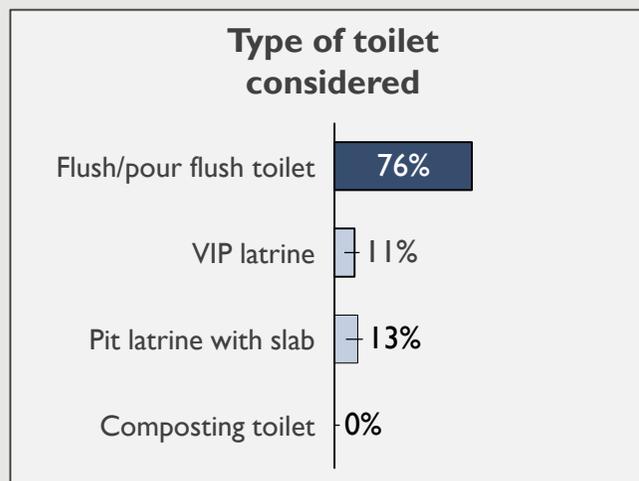
29% of HHs considered hiring 1 actors to construct their toilets, 30% considered 2 actors, and the remaining 41% considered 3-5 actors

Typically HHs considered hiring actors from within their local community

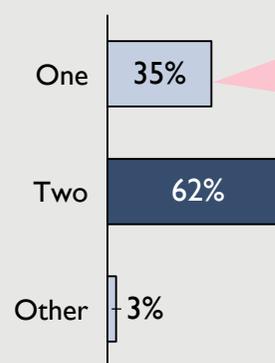
HHs with basic sanitation most commonly hired a mason only to construct their toilets

Segment Profiles | Segment J | Buying Process (4/6)

Most households prefer to construct a flush/pour flush toilet, with two compartments, a 6-12 feet deep offset pit lined with concrete blocks, a concrete/ cement cover...

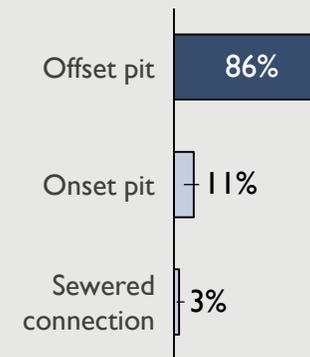


Number of compartments/stances considered

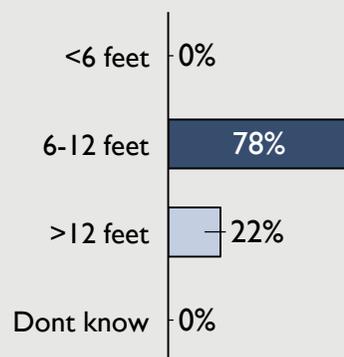


89% of HHs with basic sanitation have one compartment

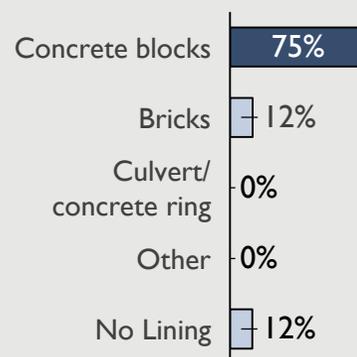
Type of substructure considered



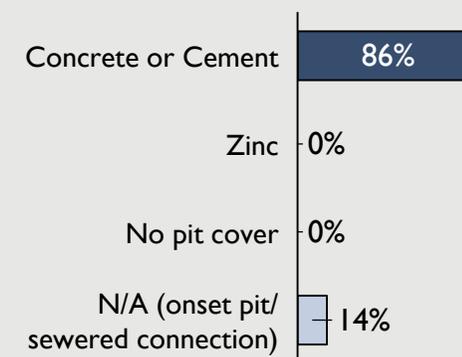
Pit depth considered



Types of pit lining considered



Offset pit cover considered

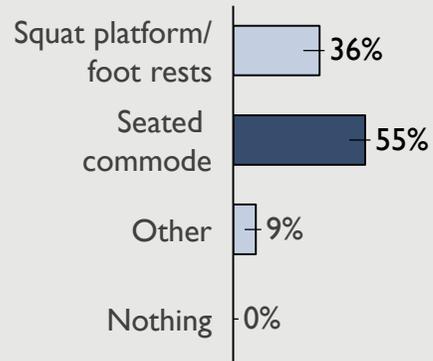


Segment Profiles | Segment J | Buying Process (5/6)

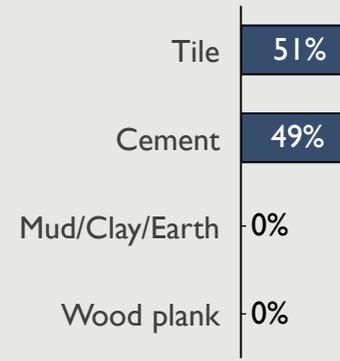
...the floor can be tiled or cemented, with a seated commode, brick or cement walls, a zinc sheet roof and a wooden door



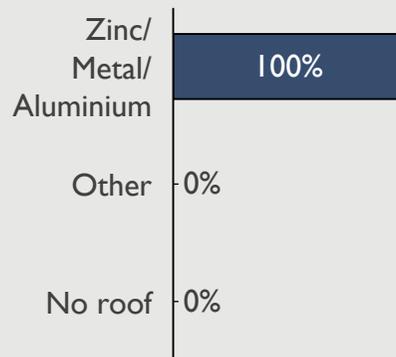
Add-ons considered for the toilet floor



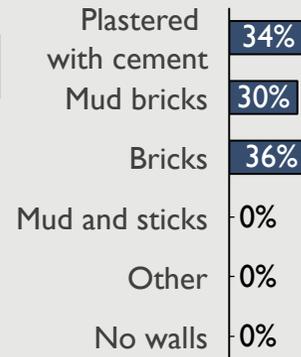
Main material considered for floor surface



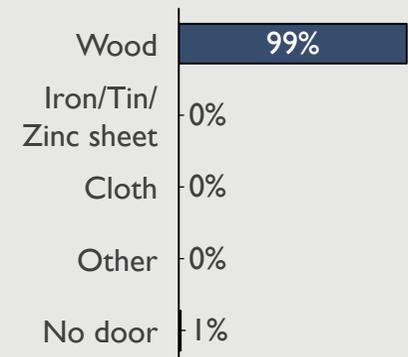
Main material considered for roof



Main material considered for walls



Main material considered for door



Segment Profiles | Segment J | Buying Process (6/6)

60% of the segment are willing to pay less than the estimated cost for the preferred toilet; more than half the segment are willing to consider taking a toilet construction loan, primarily from a savings/loans group

Origination

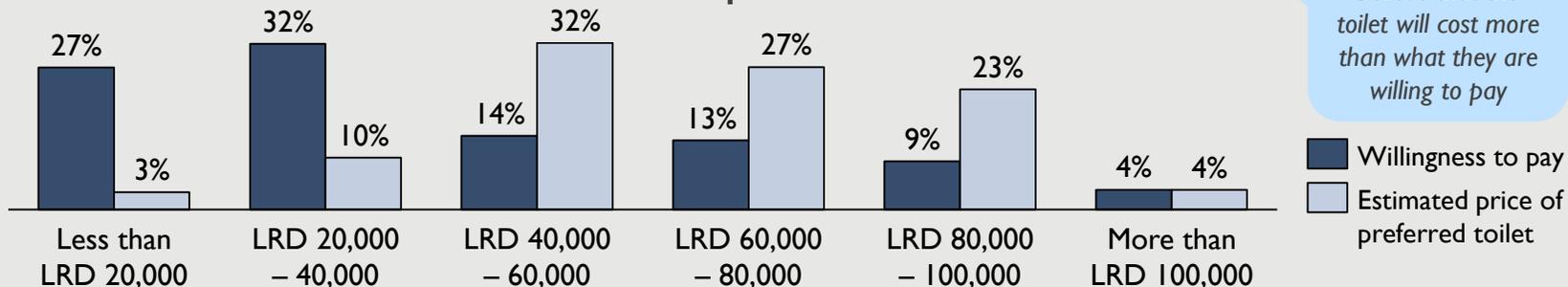
Information Gathering

Channel Selection

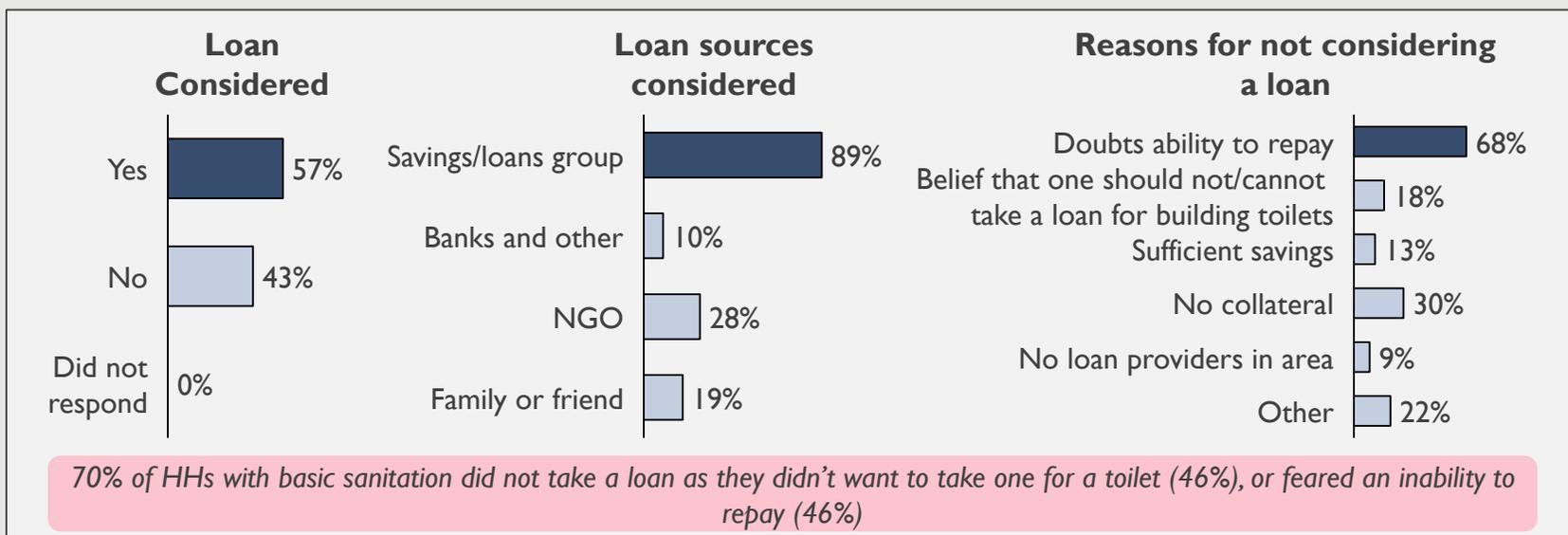
Product Selection

Product Purchase

Stated willingness to pay for an improved toilet that is not meant to be shared vs Stated cost estimate for preferred toilet¹



60% of households believe that the toilet will cost more than what they are willing to pay

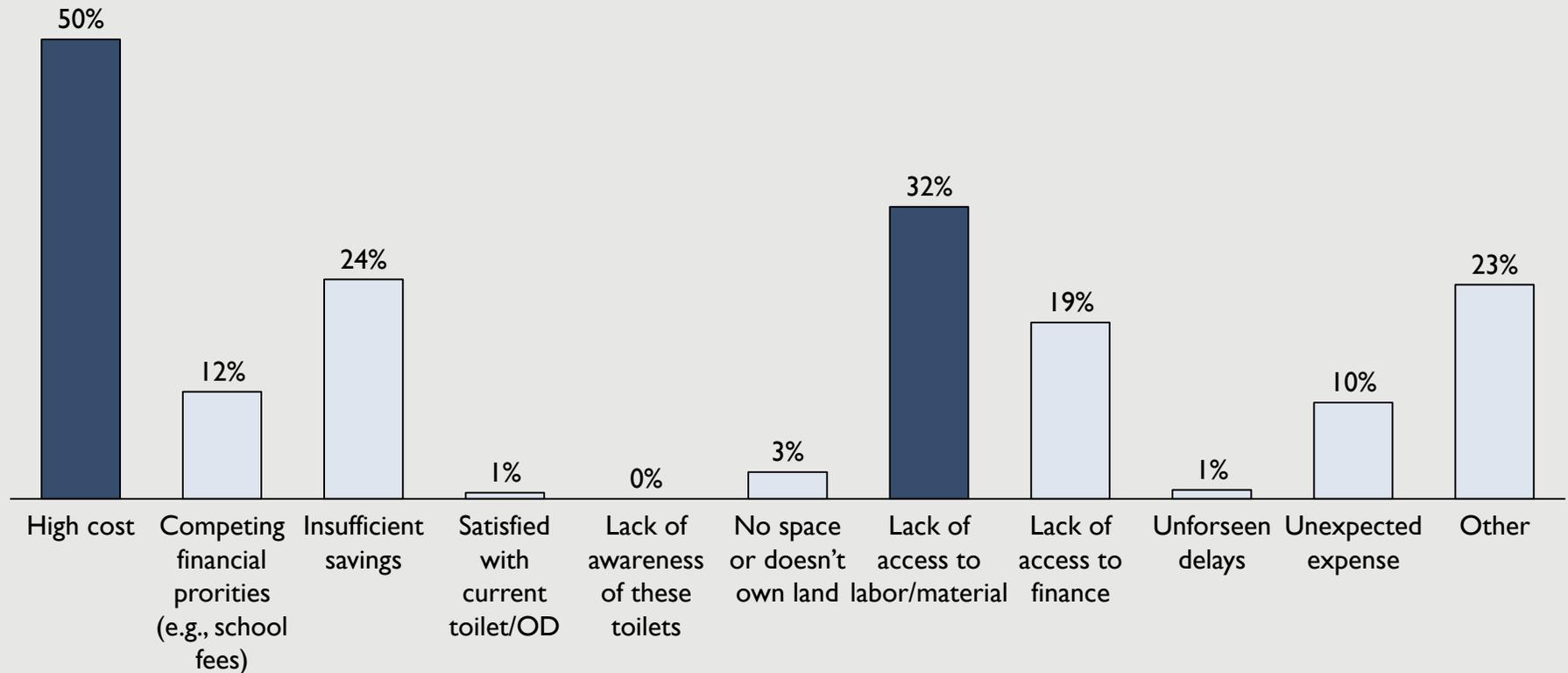


70% of HHs with basic sanitation did not take a loan as they didn't want to take one for a toilet (46%), or feared an inability to repay (46%)

Segment Profiles | Segment J | Drop-offs from Buying Process

90% of this segment considered investing in BSS but did not proceed with doing so; high costs and a lack of access to labor or materials were the primary reasons for not investing in BSS

Reasons for not investing in basic sanitation service



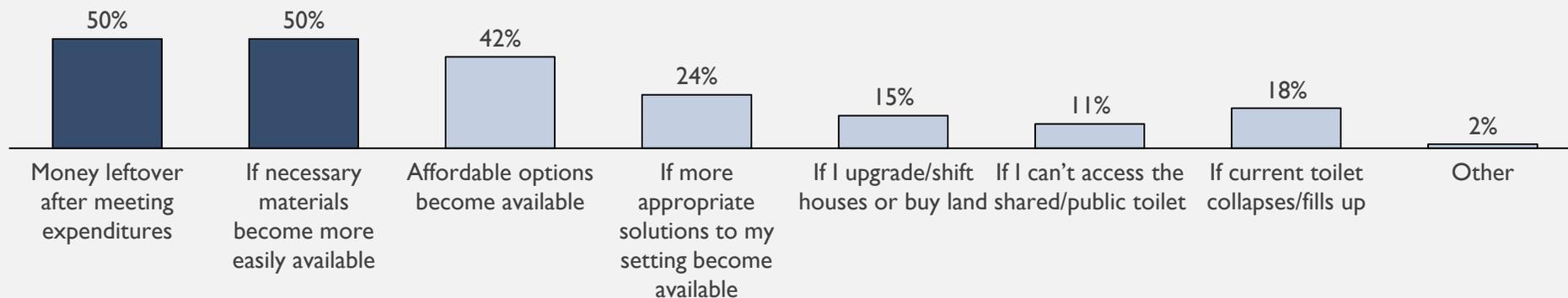
Segment Profiles | Segment J | Future Considerations



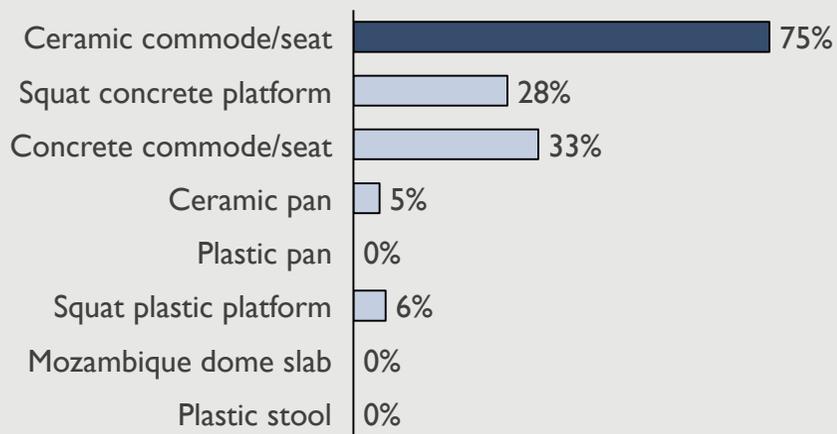
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50% of the segment might reconsider investing in BSS if they can set aside enough savings after meeting their expenses, and if access to materials is made easier; the ceramic commode is the most sought-after floor upgrade

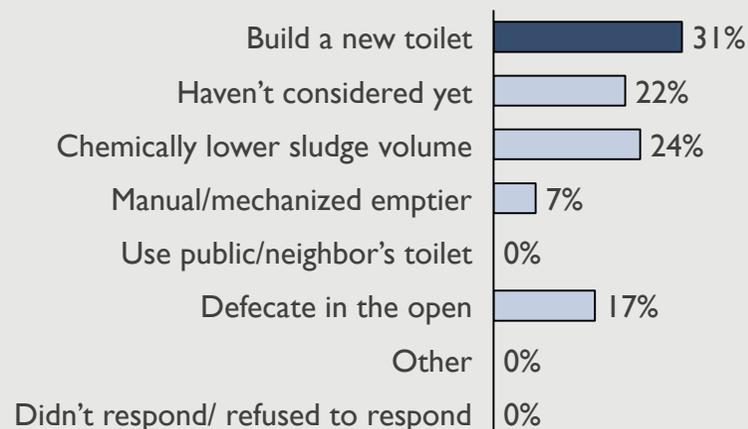
Factors that might increase consideration of a toilet in the future



Toilet floor add-ons considered by HHs without basic sanitation



Plan for when existing toilet pit fills up



Segment Profiles | Segments that may Need a Soft Loan

Segments E and G may need a soft loan in order to purchase an improved toilet...



			Time taken to walk to nearest marketplace ¹													
			≤ 30 minutes					> 30 minutes								
County			Montserrado	Grand Bassa	Bong	Nimba	Lofa	Montserrado	Grand Bassa	Bong	Nimba	Lofa				
House Material	Loan taken	House ownership														
Permanent Material ²	Yes	Owned	A	E					J							
		Not owned	B													
	No	Not owned		F	G											
		Owned	C													
Non-Permanent Material ³	Yes		D	H			K									
	No			I												
								L								

Distribution of HHs without basic sanitation service by ability to pay for an improved toilet (%)

Let's understand their behavior better.

Segment Profiles | Segment E

Limited sanitation service:

27%

Unimproved toilet:

13%

No toilet:

60%

Even though they are relatively affluent, most Segment E households practice OD or have limited sanitation service...

			Time taken to walk to nearest marketplace									
			≤ 30 min					> 30 minutes				
County			Montserrado	Grand Bassa	Bong	Nimba	Lofa	Montserrado	Grand Bassa	Bong	Nimba	Lofa
House Material	Loan taken	House ownership										
Permanent Material	Yes	Owned	A	E							L	
		Not owned	B				J					
	No	Not owned		F	G							
		Owned	C									
Non-Permanent Material	Yes		D	H								
	No			I		K						

...as they lack the savings needed to make an upfront investment in an improved toilet

Note: 60% of the segment resides in Nimba, 21% in Bong, 10% in Lofa and 9% resides in Grand Bassa.

Segment Profiles | Segment E | Customer Story

Larry lives and works in Fair Ground community, Grand Bassa with his wife, sister and six children. He has no formal education and works in agriculture to support his family.

Larry and his family live in their own house, which is built with durable materials. Their average monthly household expenditure amounts to LRD 26,000. Most of these expenses go towards food, healthcare, and school fees. Larry's family also owns several assets, including agricultural land, a mobile phone and furniture. However, they currently do not have access to electricity, and obtain water for bathing and cleaning from a hand pump nearby. Larry has begun looking at other cash crops he can grow, and has begun petty trading, to offset his seasonal agricultural income.

Community cleanliness is a priority for Larry, and owning and using a toilet is perceived to be prestigious. At present, his family uses an improved toilet, which was built by their neighbors, and is shared between three households. In the short term, Larry feels the shared toilet is a responsible and economical option, as it prevents his family from practicing OD, while saving them the cost of having to construct their own toilet. Larry also appreciates the fact that he does not have to be responsible for maintaining and cleaning the toilet.

However, Larry hopes to build his own toilet in the future, so that his family can enjoy the convenience and safety of a modern toilet, without worrying about privacy and accessibility. He is willing to spend up to LRD 60,000 to construct his desired toilet, which includes foot rests/cement squat platform, a permanent superstructure, an offset pit to reduce heat emanating from the pit and prevent the toilet from caving in, and a pit depth greater than 12 feet. He knows that it will be challenging to save this amount of money from his meagre income. However, since he has previously taken a loan to pay for his children's education, he is also open to taking a loan from a savings/loans group for toilet construction.

Segment Profiles | Segment E | Key Demographic Statistics

Segment size		Demographics		Income & occupation	
% of potential market	8%	Family size (Avg.)	9	Nature of income	
# of households	43K	Gender of HH Head		• Regular	73%
		• Male	50%	• Seasonal	27%
		• Female	50%	Primary occupation²	
		HH Head education¹		• Agriculture	39%
		• No education	37%	• Unskilled Labor	24%
		• Up to Junior High	23%	• Petty Trading	19%
		• Senior High or above	40%	• Skilled Labor	9%
Sanitation profile					
Limited sanitation service	27%				
Unimproved toilet	13%				
No toilet	60%				

Affluence indicators		Access indicators		Attitudes & beliefs ³	
Total monthly expenditure		Assets and other indicators		Distance to nearest market⁴	
High (>LRD 40K)	20%	Mobile phone	77%	<30 minutes	31%
Medium (LRD 20K-40K)	36%	Computer	1%	30 minutes to 1 hour	18%
Low (≤LRD 20K)	44%	Television	4%	Not walking distance	51%
Total asset value (avg.)	66k	Chair	57%	Access to electricity	17%
Total asset value (spread)⁵		Agricultural land	74%	Non-drinking water source	
High (> LRD 120K)	25%	Any mode of transport	15%	Surface water	29%
Medium (LRD 75K-120K)	15%	Home improvement	29%	Other unprotected sources	24%
Low (LRD 35K-75K)	24%	Loan group member	66%	Hand pump, tube well or borehole	32%
Very low (< LRD 35K)	36%	Mobile money user	41%	Other protected sources	15%
				Believe that community cleanliness is important	
				82%	
				Believe it is embarrassing to be seen practicing OD	
				94%	
				Willing to pay for products that bring prestige	
				36%	
				Believe it is taboo to live near a toilet	
				18%	

1. Indicates highest level of education attended; 2. Top four occupations for each segment are shown; 3. Respondents were asked if they 'strongly disagreed', 'disagreed', 'agreed', or 'strongly agreed' to statements related to their attitudes and beliefs. Here the combined percentage of those who 'strongly agreed' or 'agreed' with a statement is reported, barring willingness to pay for prestige products, for which only 'strongly agreed' is shown; 4. Refers to a permanent market with stores; **Source:** HH interviews (Profile n=390; Detailed n=95), FSG analysis

Segment Profiles | Segment E | Customer Persona

Setting

- **Location:** Grand Bassa, Nimba, Bong and Lofa
- **Typical family size:** 9 people, with 3 children and no elderly¹
- **Type of house:** Live in their own house, made predominantly of permanent materials
- **Income and occupation:** Typically have regular income, however a quarter have seasonal income; agriculture is the dominant occupation, followed by unskilled labor
- **Mobile phone and mobile money:** Mobile phone usage is common, and mobile money is used by slightly less than half the customers in this segment
- **Total value of assets:** HHs are relatively affluent; the average total asset value per HH is LRD ~66,000
- **Loan groups:** Two thirds are loan group members
- **Loans:** The entire segment has taken loans in the past, primarily to pay school fees; loans are typically taken from savings/loans groups



Mental Model

- **Strongly desire respect** from their community
- **Value prestigious products** that make life **convenient**
- **Conforming to the norm is not particularly important** to this group, as more than half suggest that one should do things 'differently' from their neighbors
- **Place high value on ownership of a toilet.** The majority believe owning a toilet is a sign of **prestige**. HHs have moderate understanding of the **health, safety, and privacy benefits** of owning a toilet, and equate owning a toilet to **being modern**
- **Value community cleanliness moderately**, however **witnessing** or be seen **practicing OD is considered embarrassing**
 - Majority agree that it is **irresponsible to not have a toilet**
 - A quarter of the segment **do not prioritize school fees over building a toilet**

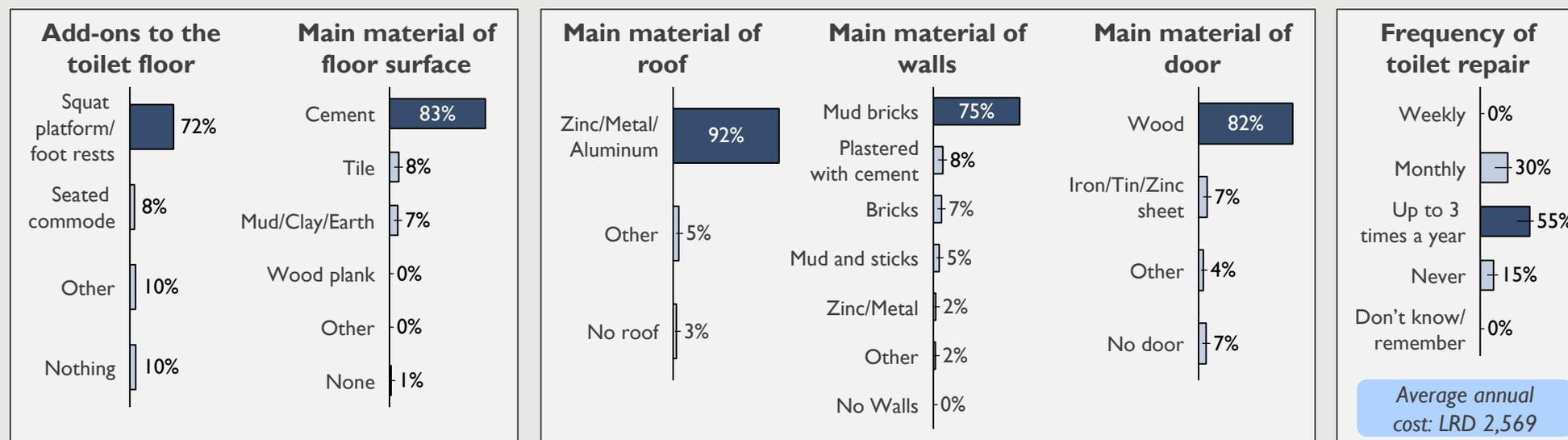
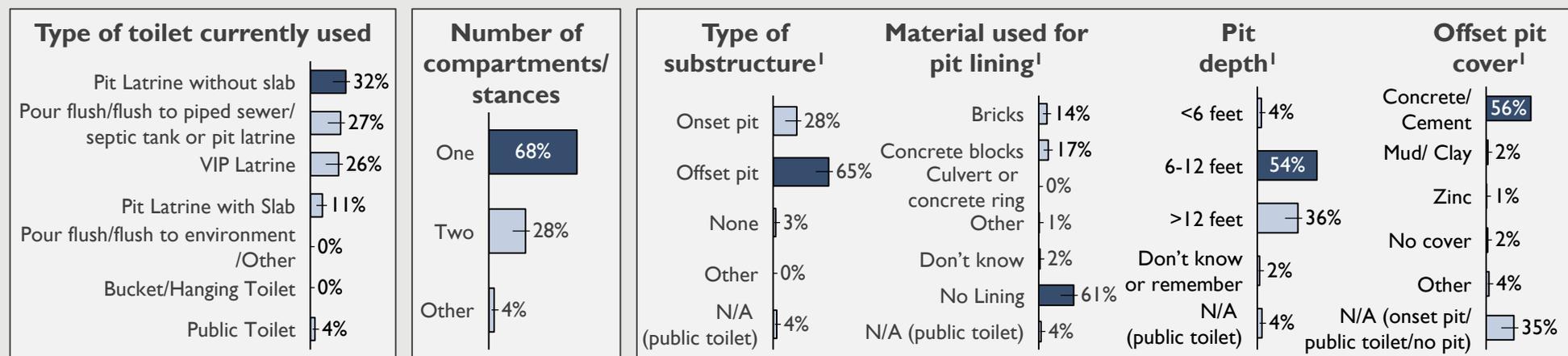
- **Current product and usage:** Improved shared toilet facilities and unimproved toilets; more than half the segment practice OD
- **Desired product:** A toilet that is easy to clean with water, provides privacy, is comfortable, and has the following functionalities:
 - **Toilet type:** Pour flush toilet to ensure feces are flushed away and prevent flies and disease
 - **Substructure:** Offset pit to reduce pit heat and prevent collapse; depth of >12 ft, lined with concrete blocks

- **Interface:** Cement floor with foot rests/cement squat platform, two compartments
- **Superstructure:** Zinc sheet roof, cement walls, wooden door
- **Estimated cost and ability to pay:** Estimated cost of desired toilet - LRD 57,000; average ability to pay (out-of-pocket) - LRD 33,000
- **Financing:** at least half the segment would consider taking a loan, with most opting for savings/loan group; biggest reason for not taking a loan is a fear of the inability to pay back the loan

The Ask

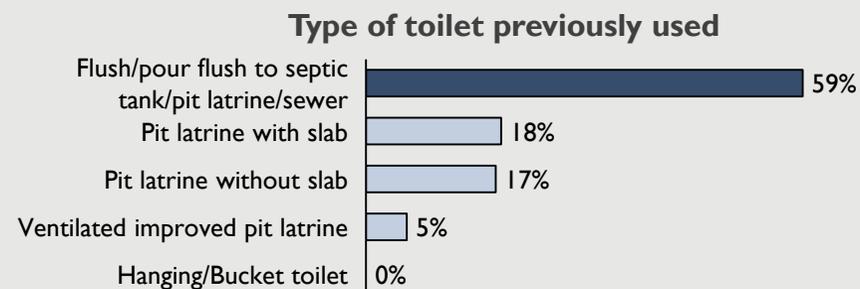
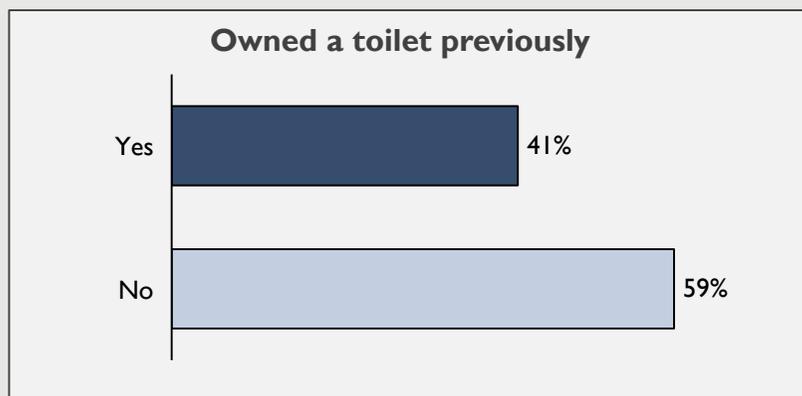
Segment Profiles | Segment E | Current Sanitation Profile for Toilet Users

Toilet users in this segment typically uses a pit latrine with a cement floor which has developed gaps/ holes, a squat platform/foot rests add-on, an offset pit, and a superstructure built with permanent materials

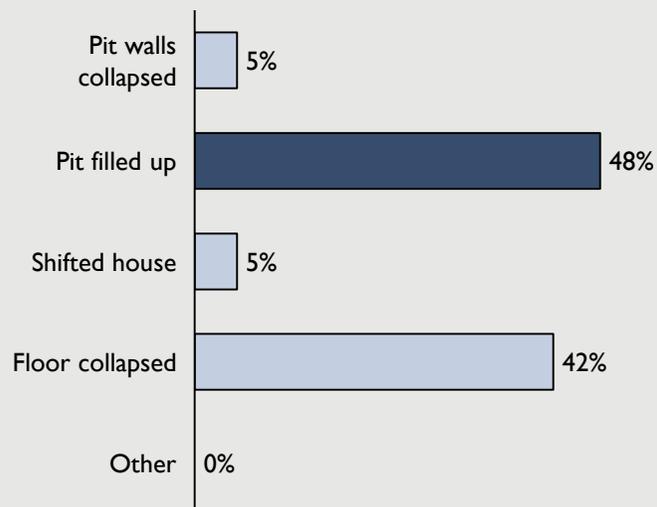


Segment Profiles | Segment E | Past Toilet Usage for HHs Practicing OD

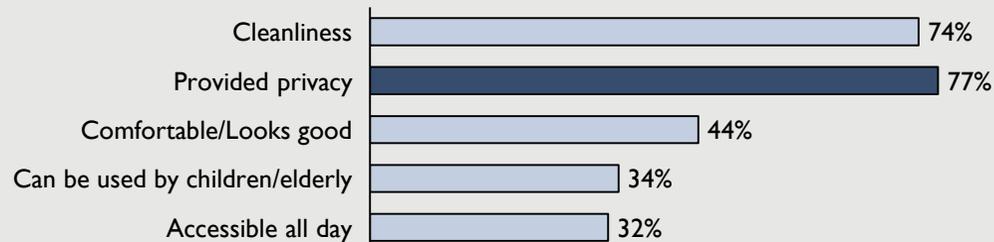
60% of HHs in this segment currently practice OD, and most of them did not own a toilet previously; those who did, used a pour flush toilet, and liked the cleanliness and privacy afforded to them



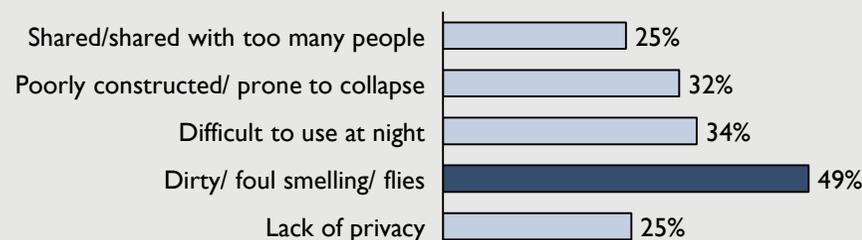
Reasons they stopped using toilet



Top five aspects liked by the segment



Top five aspects disliked by the segment

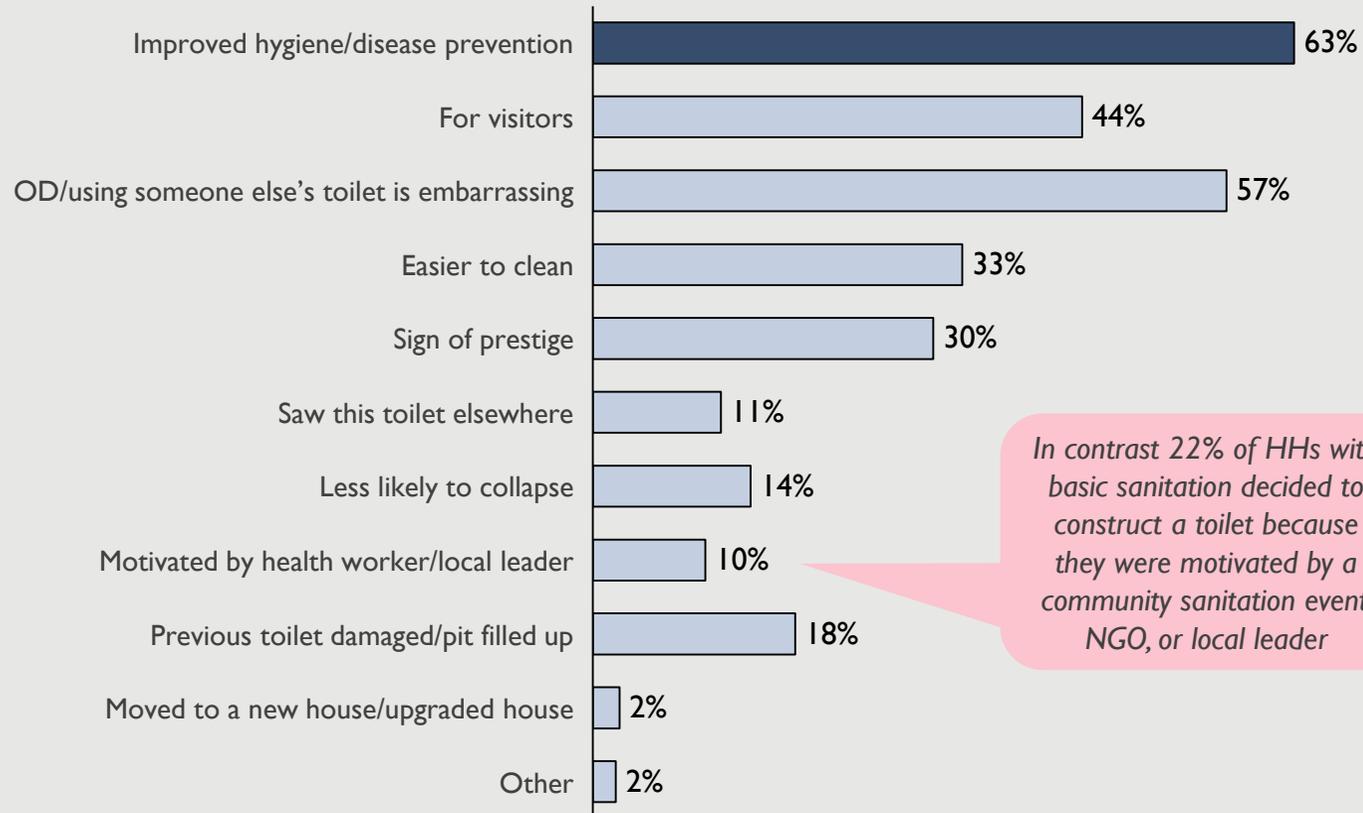


Segment Profiles | Segment E | Buying Process (1/6)

Most households wanted a toilet to improve hygiene and prevent diseases; 22% of HHs with basic sanitation reportedly chose to construct a toilet because they were motivated by a community sanitation event or a local leader/NGO worker



Origination of need for toilet



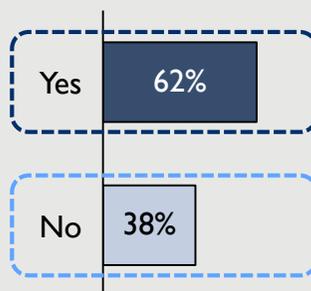
In contrast 22% of HHs with basic sanitation decided to construct a toilet because they were motivated by a community sanitation event, NGO, or local leader

Segment Profiles | Segment E | Buying Process (2/6)

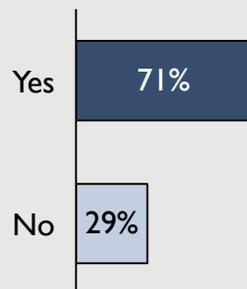
Most households sought information on how to build a toilet and even attended a CLTS event; NGO/community health workers and neighbor/friends/coworkers were the most common sources of information



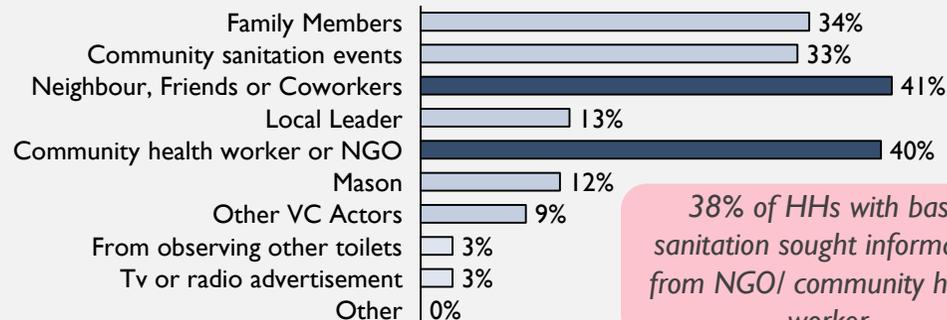
Sought information while considering building a toilet



Attended a CLTS event

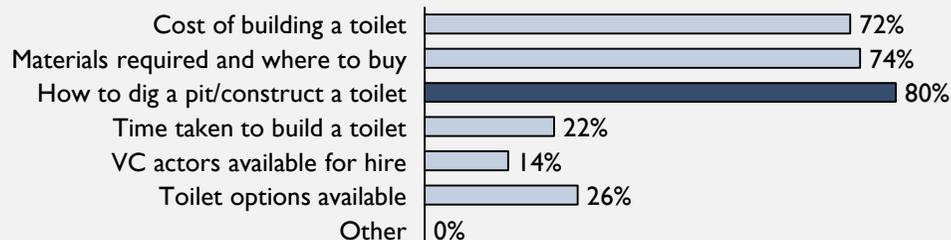


Sources of information about toilets



38% of HHs with basic sanitation sought information from NGO/ community health worker

Nature of information captured



Reasons for not seeking information

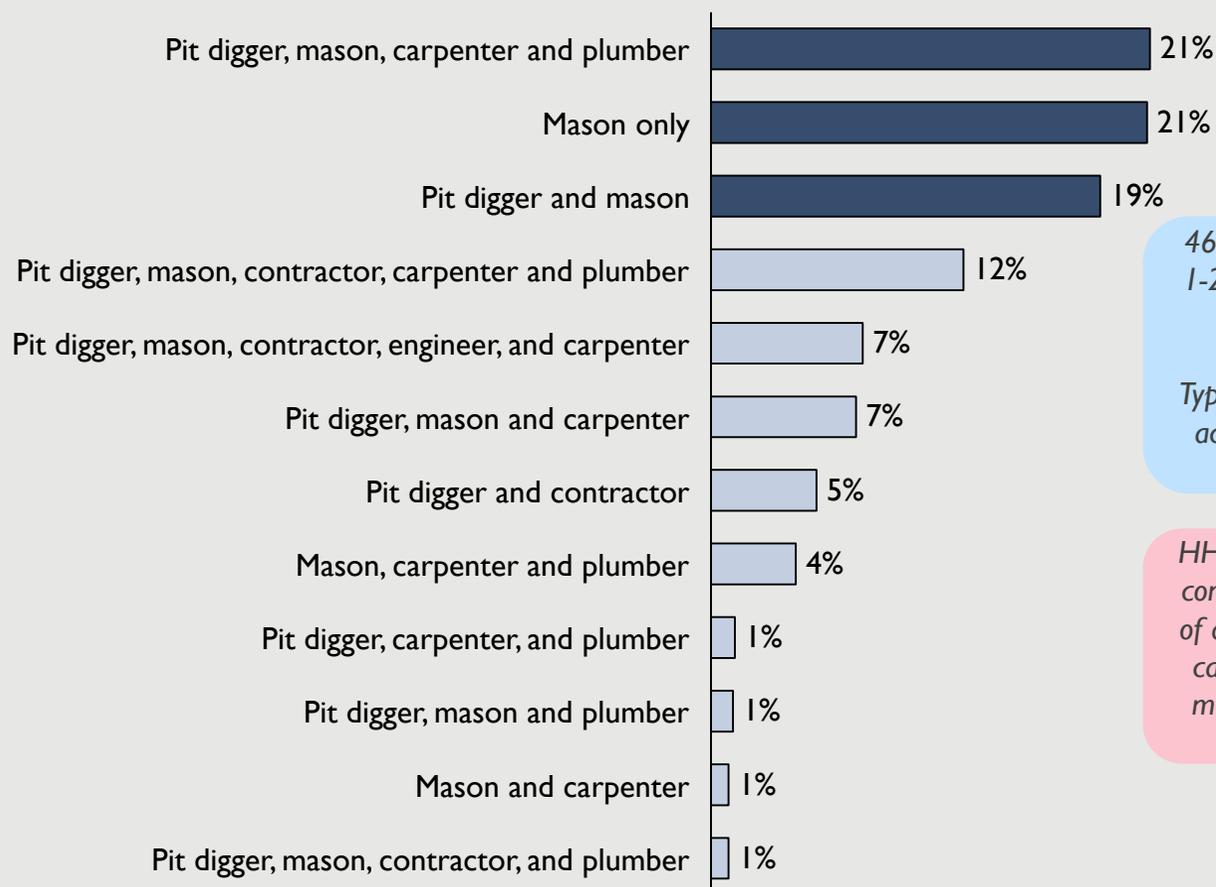


Segment Profiles | Segment E | Buying Process (3/6)

HHs most commonly considered hiring a combination of actors (i.e., pit digger, mason, carpenter and plumber), or considered hiring a mason only, or a pit digger and a mason, to construct their toilets



Channels considered for toilet construction



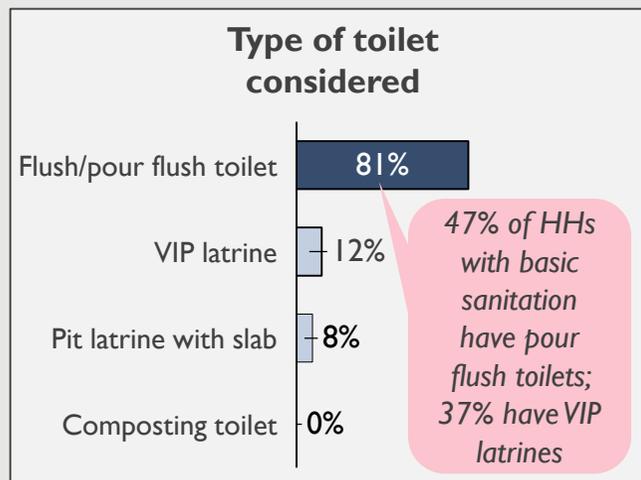
46% of HHs considered hiring 1-2 actors, the remaining 54% considered 3-5 actors

Typically HHs considered hiring actors from within their local community

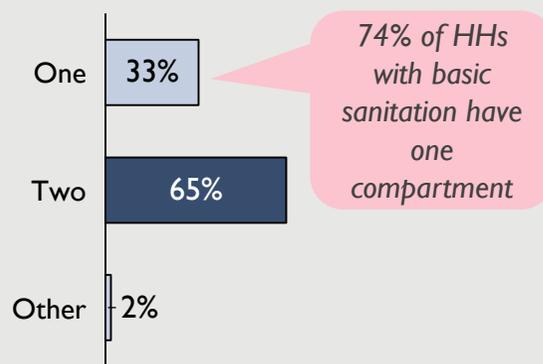
HHs with basic sanitation most commonly hired a combination of actors (i.e., pit digger, mason, carpenter, and plumber) or a mason only to construct their toilets

Segment Profiles | Segment E | Buying Process (4/6)

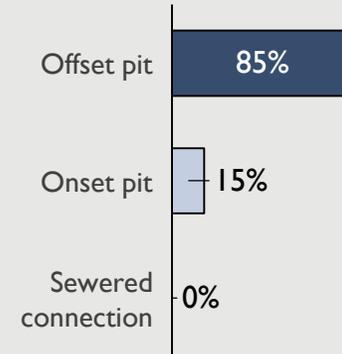
Most HH prefer to construct a pour flush toilet, with two compartments, a >12 feet deep offset pit, lined with concrete blocks, a concrete or a cement cover...



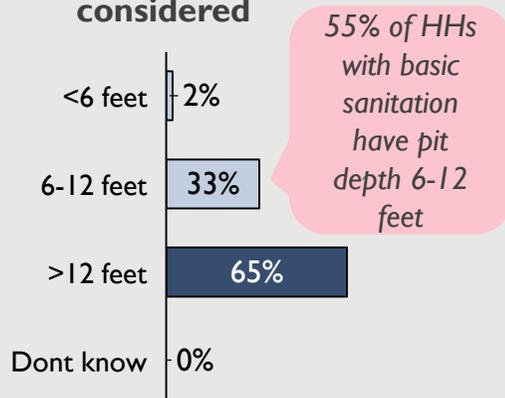
Number of compartments/stances considered



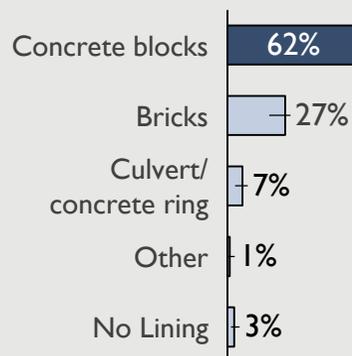
Type of substructure considered



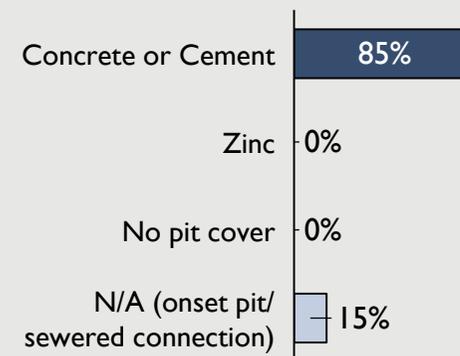
Pit depth considered



Types of pit lining considered



Offset pit cover considered

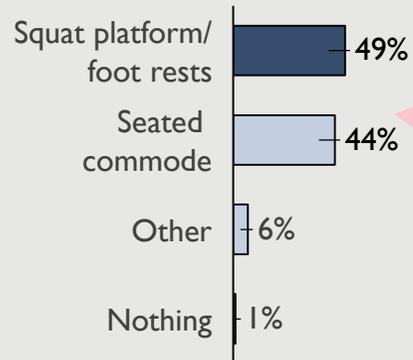


Segment Profiles | Segment E | Buying Process (5/6)

...a floor built with cement, with foot rests/ squat platform, cement walls, a zinc sheet roof and a wooden door

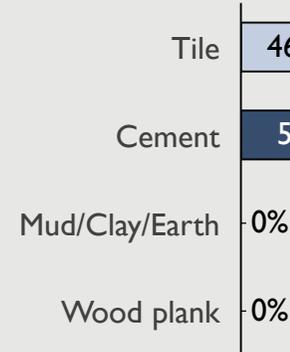


Add-ons considered for the toilet floor



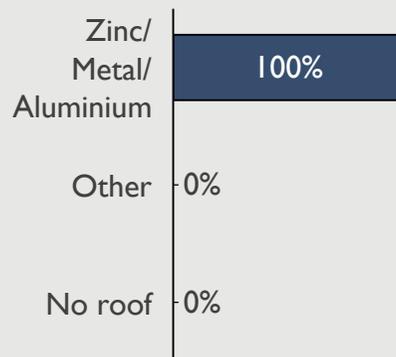
33% of HHs with basic sanitation have installed a seated ceramic commode; 33% have foot rests/cement squat platform

Main material considered for floor surface

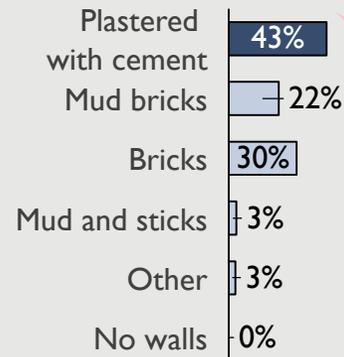


81% of HHs with basic sanitation have cement floor; remaining 19% have tiled floors

Main material considered for roof

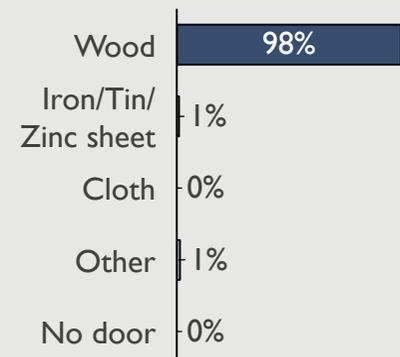


Main material considered for walls



74% of HHs with basic sanitation have mud bricks walls, followed by brick walls (9%) and walls plastered with cement (9%)

Main material considered for door

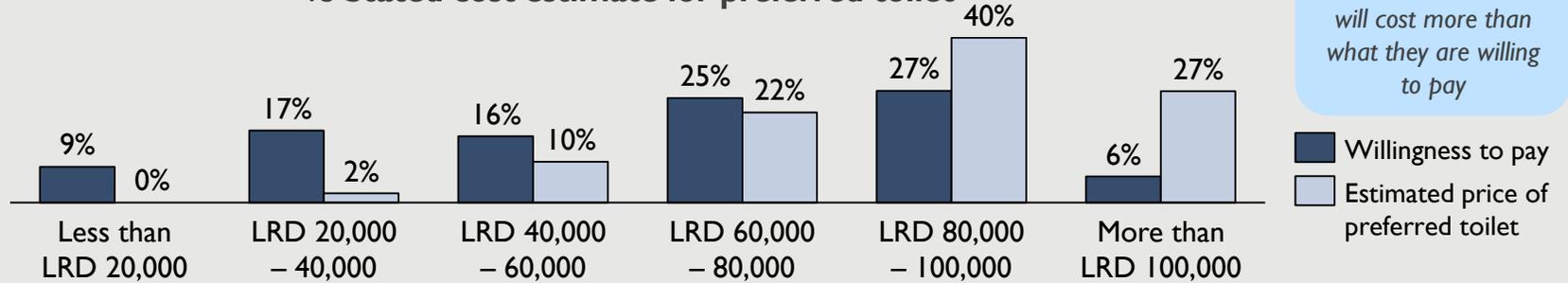


Segment Profiles | Segment E | Buying Process (6/6)

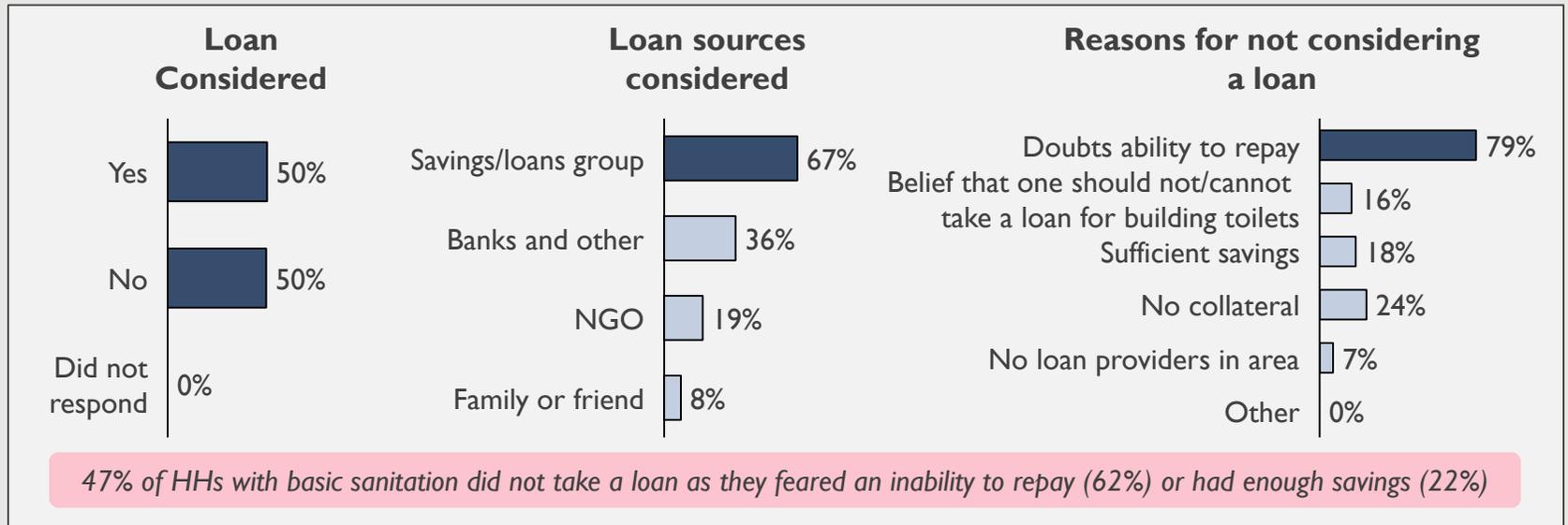
60% of the segment are willing to pay less than the estimated cost for the preferred toilet; half of the segment are willing to consider taking a toilet construction loan, primarily from a savings/loans group



Stated willingness to pay for an improved toilet that is not meant to be shared vs Stated cost estimate for preferred toilet¹



60% of households believe that the toilet will cost more than what they are willing to pay

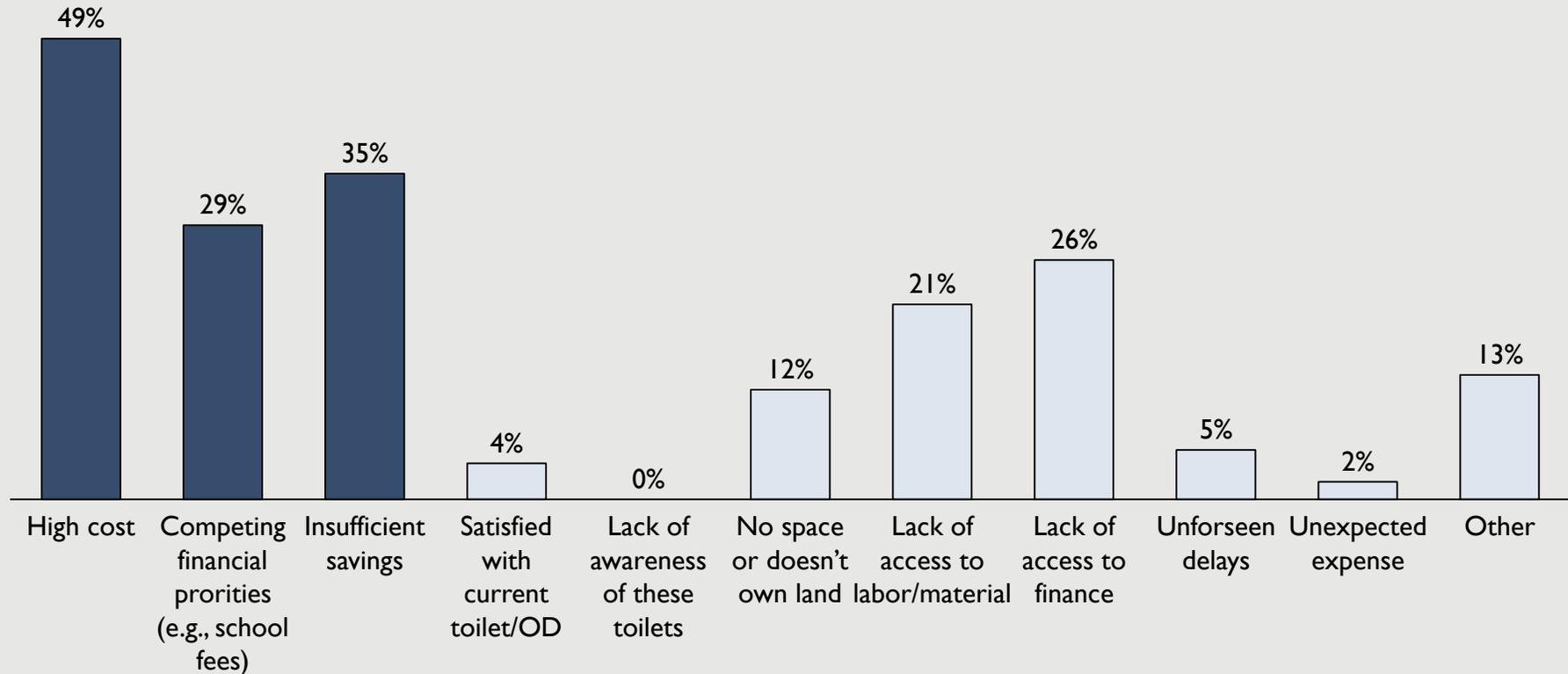


47% of HHs with basic sanitation did not take a loan as they feared an inability to repay (62%) or had enough savings (22%)

Segment Profiles | Segment E | Drop-offs from Buying Process

88% of the segment considered investing in BSS but did not proceed with doing so; high costs, competing financial priorities, and insufficient savings were the primary reasons for not investing in BSS

Reasons for not investing in basic sanitation service



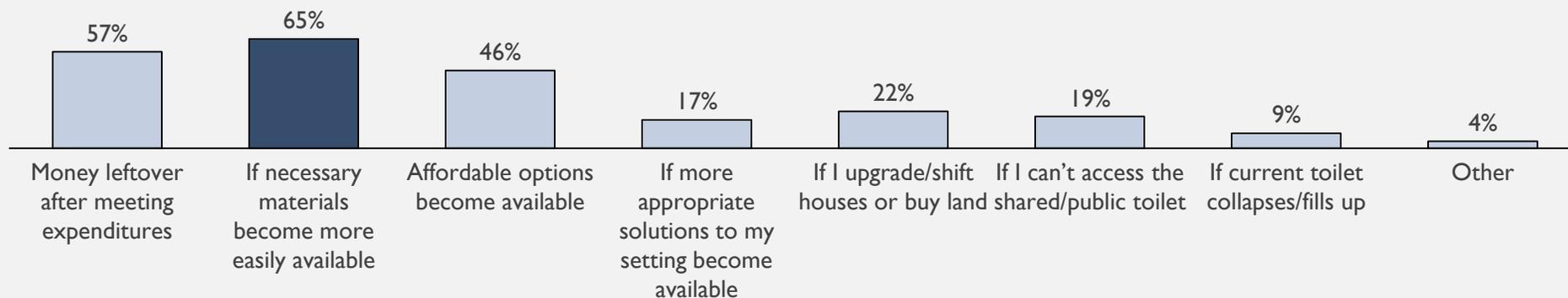
Segment Profiles | Segment E | Future Considerations



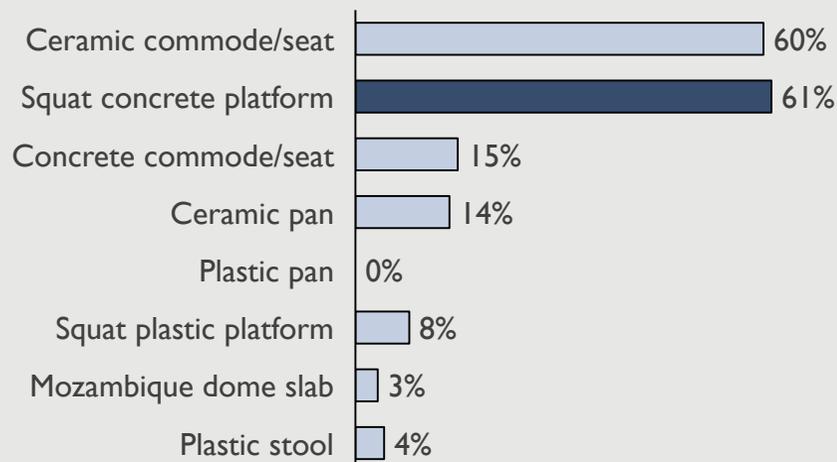
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65% of the segment might reconsider investing in BSS if the necessary materials to construct a toilet become more easily available; ceramic commode and squat concrete platform are the two most preferred floor upgrades

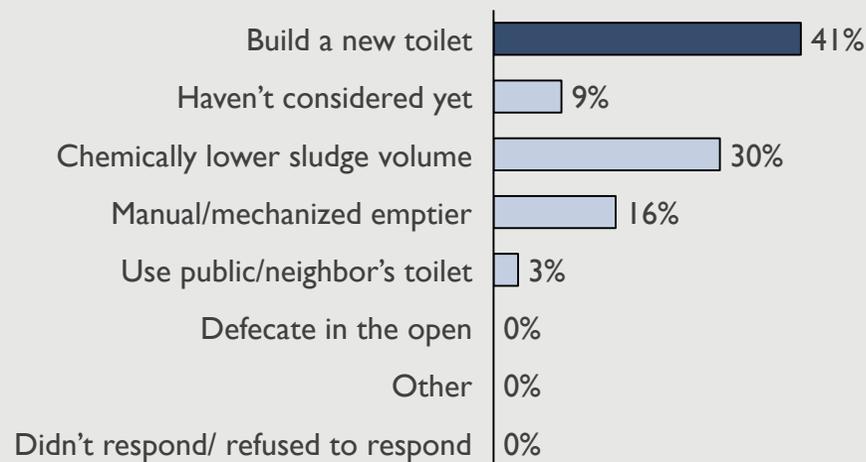
Factors that might increase consideration of a toilet in the future



Toilet floor add-ons considered by HHs without basic sanitation



Plan for when existing toilet pit fills up



Segment Profiles | Segment G

Limited sanitation service:

24%

Unimproved toilet:

14%

No toilet:

62%

The majority of households in Segment G practice OD or have limited sanitation service...

			Time taken to walk to nearest marketplace										
			≤ 30 min					> 30 minutes					
			County										
			Montserrado	Grand Bassa	Bong	Nimba	Lofa	Montserrado	Grand Bassa	Bong	Nimba	Lofa	
House Material	Loan taken	House ownership											
Permanent Material	Yes	Owned	A	E									
		Not owned	B						J				
	No	Not owned		F		G							
		Owned	C						L				
Non-Permanent Material	Yes		D		H								
	No				I			K					

...because of their competing financial priorities, lack of liquidity, and no prior experience of taking a loan

Note: 74% of the segment resides in Nimba, and 26% resides in Lofa.

Segment Profiles | Segment G | Customer Story

Kebbeh lives and works in Telemai, Salayea, Lofa with her mother, aunt, two sisters, and five children. She has completed her education up till senior high, and is engaged in agriculture to support her family.

Kebbeh and her family own select assets, including farming land, a mobile phone, and some pieces of furniture; they are relatively affluent. Their monthly household expenditure is LRD 19,000, and is spent primarily on food, healthcare, and school fees. Given that Kebbeh's agricultural income is sometimes limited, she chooses to spend her money frugally. They also currently do not have access to electricity, and obtain water for bathing from a nearby river.

Kebbeh believes that community cleanliness is important and believes that owning a toilet is a sign of prestige. Although she believes that it is embarrassing to be seen practicing open defecation, her family currently defecates in the bushes, as the neighbor's toilet they previously used, has filled up. She is very dissatisfied with not having access to her own toilet, and plans to construct one for her family when she can save enough money. Currently, she prioritizes other expenses – such as paying school fees for her children; she feels that educating her children will allow them to construct better toilets in the future.

Kebbeh plans to spend up to LRD 20,000 on a new toilet. However, she believes it will cost her between LRD 60,000 to 80,000 to get her desired toilet, which includes a commode, a tiled floor, an offset pit to protect her from heat emanating from the pit and from the floor collapsing. This amount is far more than she can manage to save. She is also concerned with having to travel long distances to source construction materials. While she would be open to considering a loan from her savings/loan group, she does not know the process or whether they offer loans for toilet construction. In particular, she has never taken a loan before, and she also doubts her ability to repay the loan.

Segment Profiles | Segment G | Key Demographic Statistics

Segment size		Demographics		Income & occupation	
% of potential market	5%	Family size (Avg.)	10	Nature of income	
# of households	28K	Gender of HH Head		• Regular	70%
		• Male	43%	• Seasonal	30%
		• Female	57%	Primary occupation²	
		HH Head education¹		• Agriculture	51%
		• No education	31%	• Petty Trading	15%
		• Up to Junior High	26%	• Unskilled Labor	15%
		• Senior High or above	44%	• Other	7%
Sanitation profile					
Limited sanitation service	24%				
Unimproved toilet	14%				
No toilet	62%				
Affluence indicators		Access indicators		Attitudes & beliefs ³	
Total monthly expenditure		Assets and other indicators		Distance to nearest market⁴	
High (>LRD 40K)	10%	Mobile phone	64%	<30 minutes	36%
Medium (LRD 20K-40K)	30%	Computer	1%	30 minutes to 1 hour	17%
Low (≤LRD 20K)	61%	Television	1%	Not walking distance	48%
Total asset value (avg.)	47k	Chair	51%	Access to electricity	20%
Total asset value (spread)		Agricultural land	76%	Non-drinking water source	
High (> LRD 120K)	5%	Any mode of transport	9%	Surface water	40%
Medium (LRD 75K-120K)	17%	Home improvement	20%	Other unprotected sources	22%
Low (LRD 35K-75K)	22%	Loan group member	47%	Hand pump, tube well or borehole	23%
Very low (< LRD 35K)	56%	Mobile money user	28%	Other protected sources	15%
				Believe that community cleanliness is important	
				85%	
				Believe it is embarrassing to be seen practicing OD	
				97%	
				Willing to pay for products that bring prestige	
				42%	
				Believe it is taboo to live near a toilet	
				8%	

1. Indicates highest level of education attended; 2. Top four occupations for each segment are shown; 3. Respondents were asked if they 'strongly disagreed', 'disagreed', 'agreed', or 'strongly agreed' to statements related to their attitudes and beliefs. Here the combined percentage of those who 'strongly agreed' or 'agreed' with a statement is reported, barring willingness to pay for prestige products, for which only 'strongly agreed' is shown; 4. Refers to a permanent market with stores;

Source: HH interviews (Profile n=234; Detailed n=57), FSG analysis

Segment Profiles | Segment G | Customer Persona

Setting

- **Location:** Populous urban areas of Nimba and Lofa
- **Typical family size:** 10 people, with 3 children and 1 elderly¹
- **Type of house:** Live in their own house, made predominantly of permanent materials
- **Income and occupation:** Typically have regular income, however slightly less than a third have seasonal income; agriculture is the dominant occupation, practiced by half the segment, followed by petty trading
- **Mobile phone and mobile money:** Two thirds of the segment own mobile phones, and slightly more than a quarter of the segment use mobile money
- **Total value of assets:** HHs are relatively affluent; the average total asset value per HH is LRD ~47,000
- **Loan groups:** Less than half the segment are loan group members
- **Loans:** This segment has no prior loan taking history

Mental Model

- **Strongly desire respect** from their community
- **Value products** that are **prestigious** and make life **convenient**
- **Conforming to the norm is not important** to this group, as more than half suggest that one should do things 'differently' from their neighbors
- **Place high value on ownership of a toilet.** The majority strongly believe owning a toilet is a sign of **prestige**. HHs have some idea of the **health, safety, and privacy benefits** of owning a toilet, and equate owning a toilet to **being modern**
 - **Care about community cleanliness, and witnessing** or be seen **practicing OD is considered embarrassing**
 - Agree that it is **irresponsible to not have a toilet**
 - Majority of the segment **prioritize school fees over building a toilet**



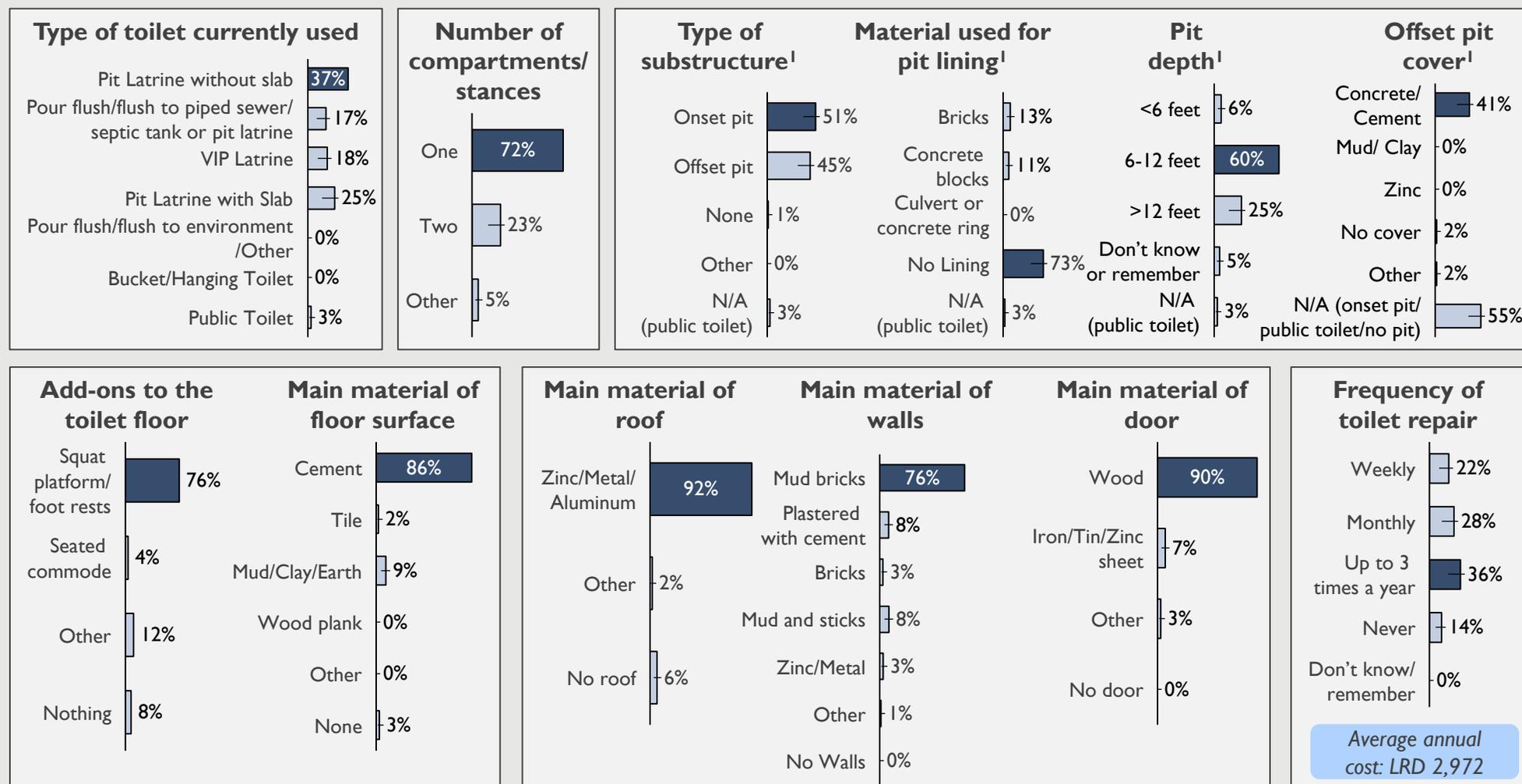
- **Current product and usage:** Improved shared toilet facilities and unimproved toilets; nearly two thirds of the segment practice OD
- **Desired product:** A toilet that is easy to clean with water, provides privacy, is well ventilated, and has the following functionalities:
 - **Toilet type:** Flush/pour flush toilet to reduce odor and make it easier to clean
 - **Substructure:** Offset pit to reduce pit heat and prevent collapse; Pit depth of >12 ft, lined with concrete blocks

- **Interface:** Cement floor with seated ceramic commode/ foot rests
- **Superstructure:** Zinc sheet roof, mud brick walls, wooden door
- **Estimated cost and ability to pay:** Estimated cost of desired toilet - LRD 62,000; average ability to pay (out-of-pocket) - LRD 24,000
- **Financing:** more than half the segment would consider taking a loan, with most opting for savings/loan group; biggest reason for not taking a loan is a fear of the inability to pay back the loan

The Ask

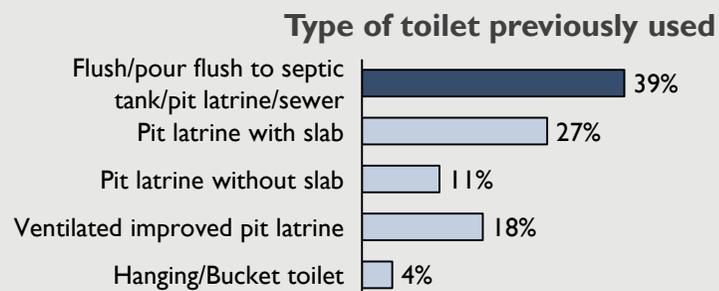
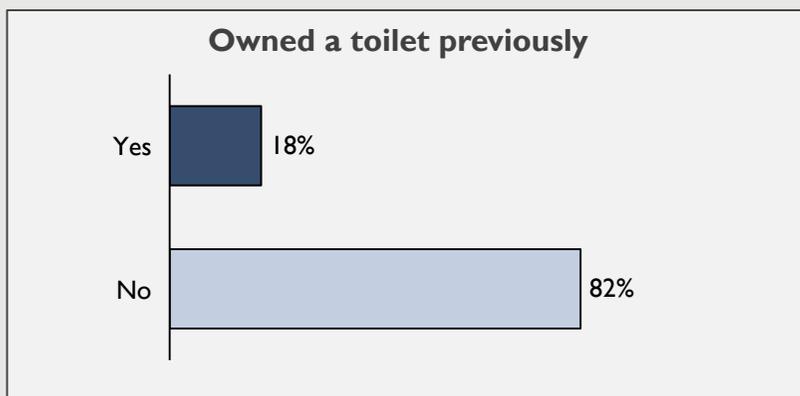
Segment Profiles | Segment G | Current Sanitation Profile for Toilet Users

Toilet users in this segment typically use a pit latrine with a cement floor which has developed gaps/ holes, a cement squat platform/ foot rests add-on, an onset pit, and a superstructure built with permanent materials

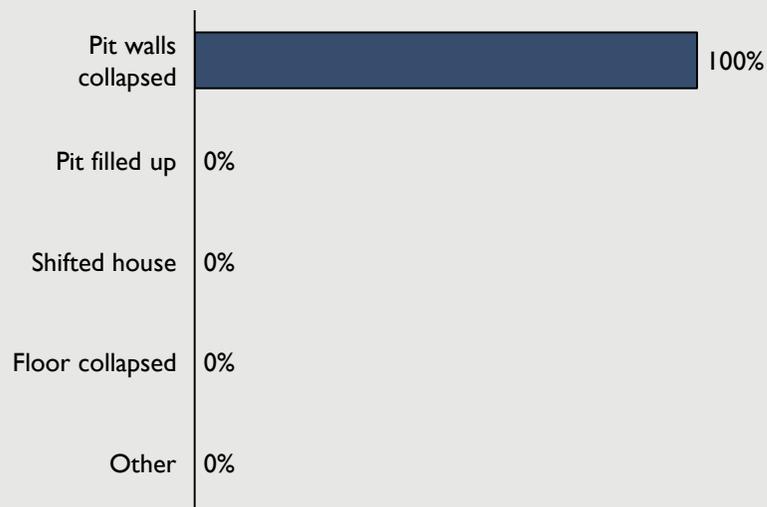


Segment Profiles | Segment G | Past Toilet Usage for HHs Practicing OD

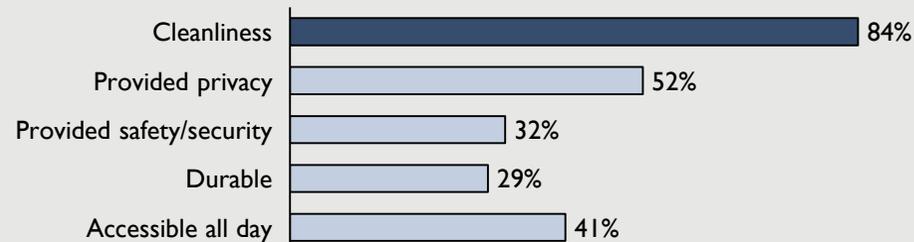
62% HH in this segment currently practice OD, and most of them did not own a toilet previously; those who did, used a flush/ pour flush toilet, and liked the cleanliness and privacy the toilet provided them



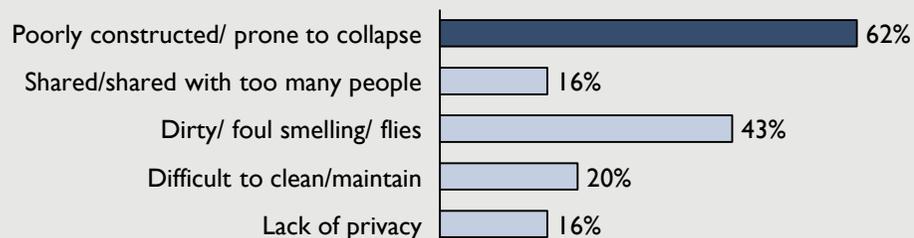
Reasons they stopped using toilet



Top five aspects liked by the segment



Top five aspects disliked by the segment

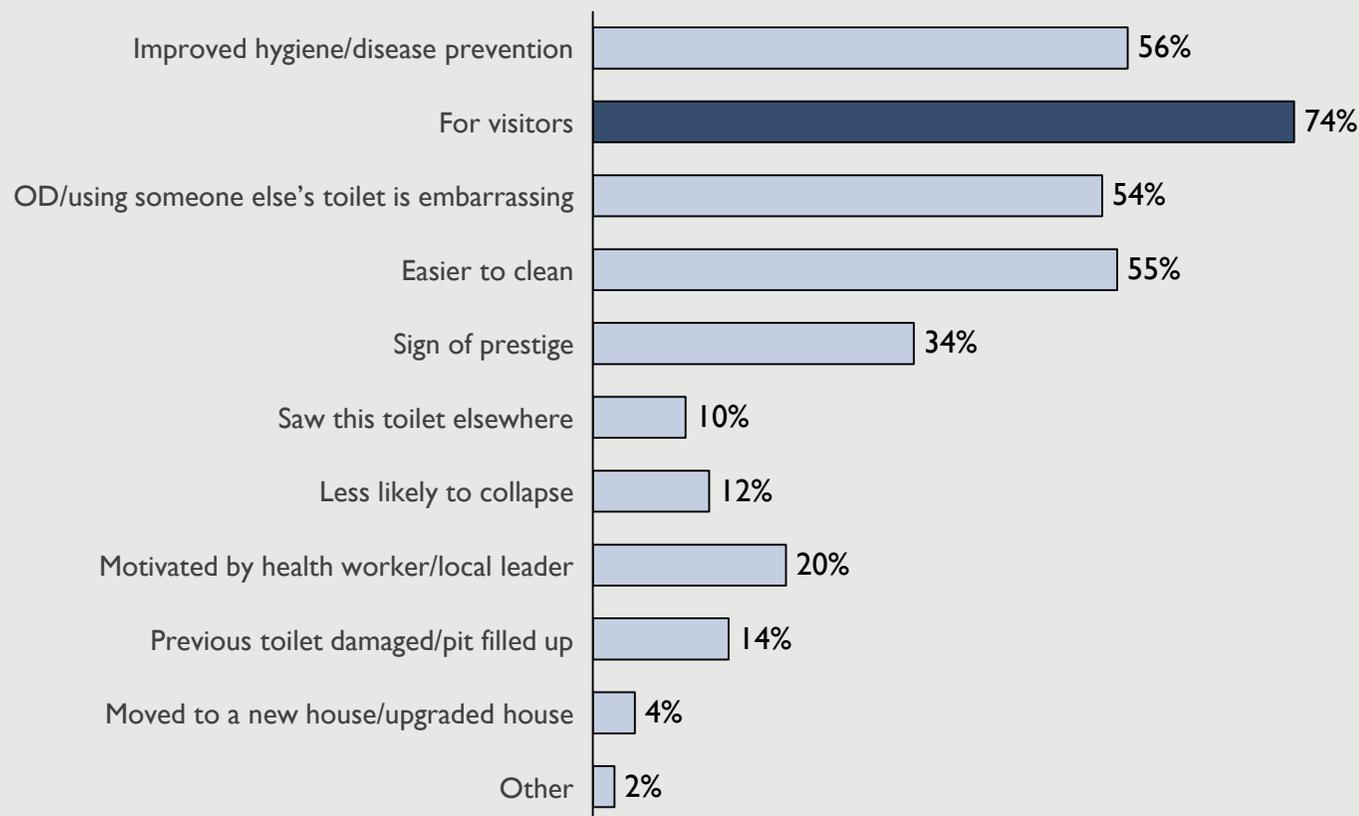


Segment Profiles | Segment G | Buying Process (1/6)

Most households chose to construct a toilet for visitors; ease of cleaning, hygiene/ disease prevention, and the embarrassment of practicing OD/ using someone else's toilet, were also prominent drivers



Origination of need for toilet

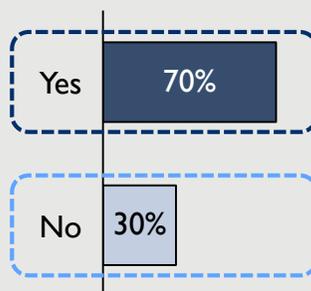


Segment Profiles | Segment G | Buying Process (2/6)

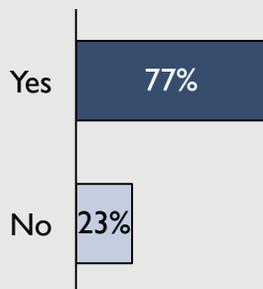
Most households sought information on how to build a toilet and even attended a CLTS event; NGO and community health workers were the most common sources of information e.g., toilet costs and materials required



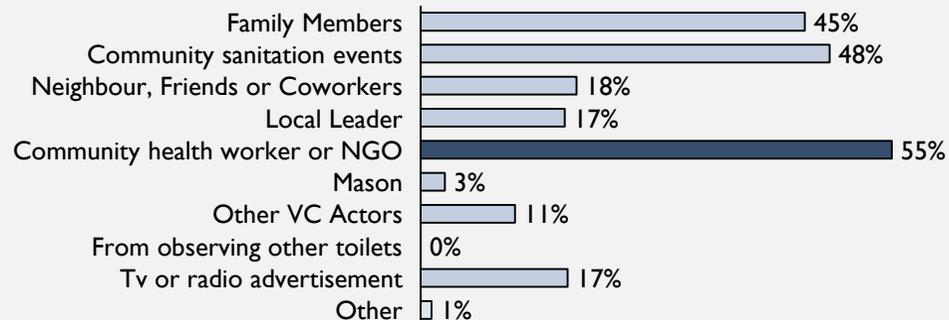
Sought information while considering building a toilet



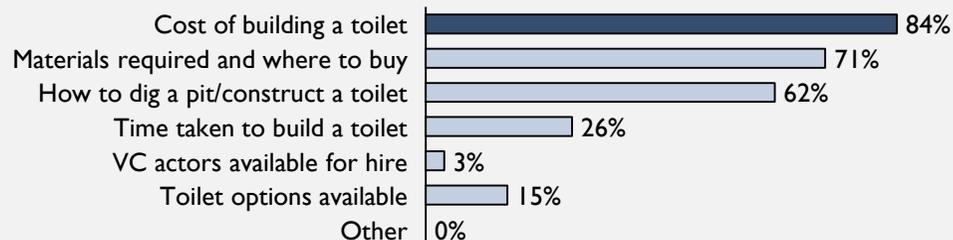
Attended a CLTS event



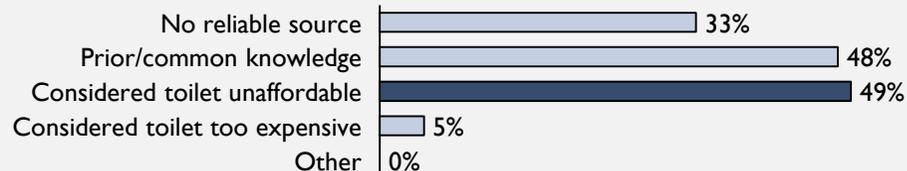
Sources of information about toilets



Nature of information captured



Reasons for not seeking information

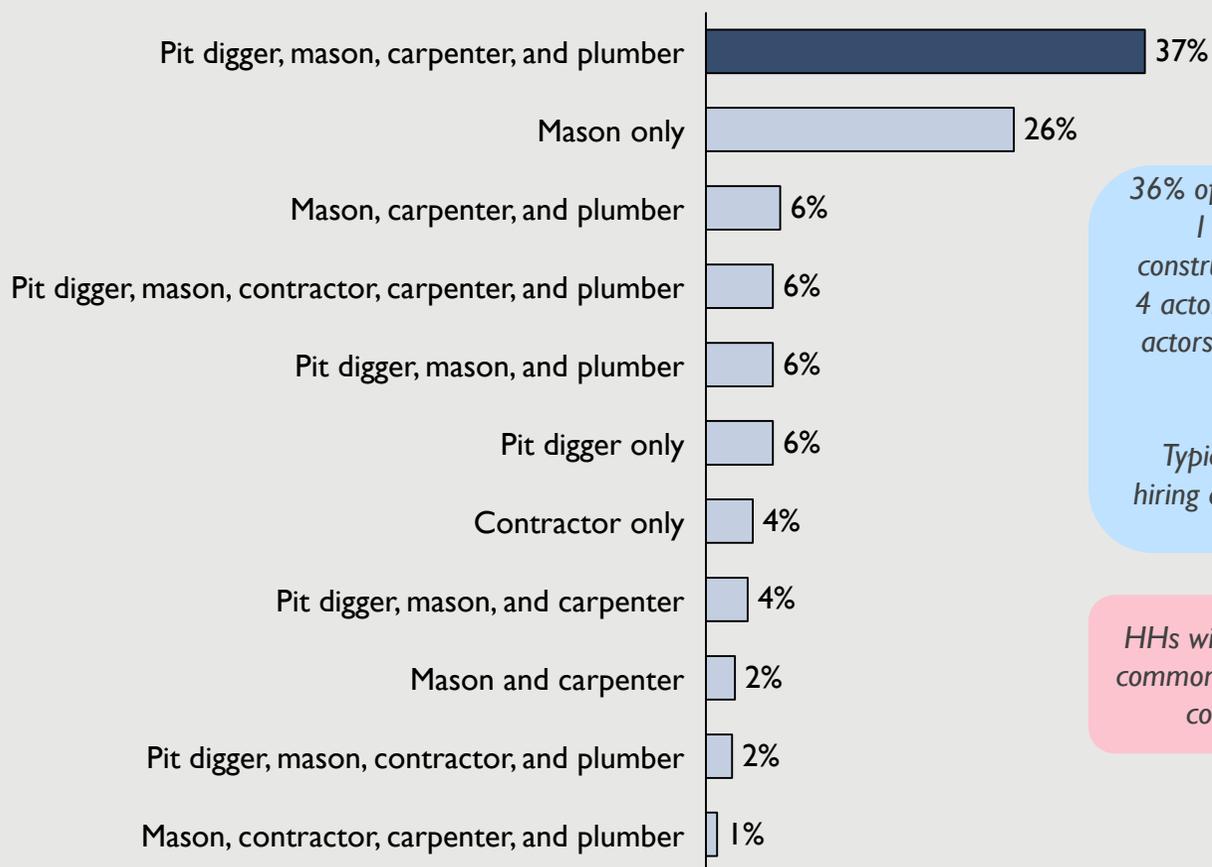


Segment Profiles | Segment G | Buying Process (3/6)

HHs most commonly considered hiring a combination of actors (i.e., pit digger, mason, carpenter and plumber) to construct their toilets



Channels considered for toilet construction



36% of HHs considered hiring 1 actor during toilet construction; 40% considered 4 actors, 18% considered 2-3 actors, and 6% considered 5 actors

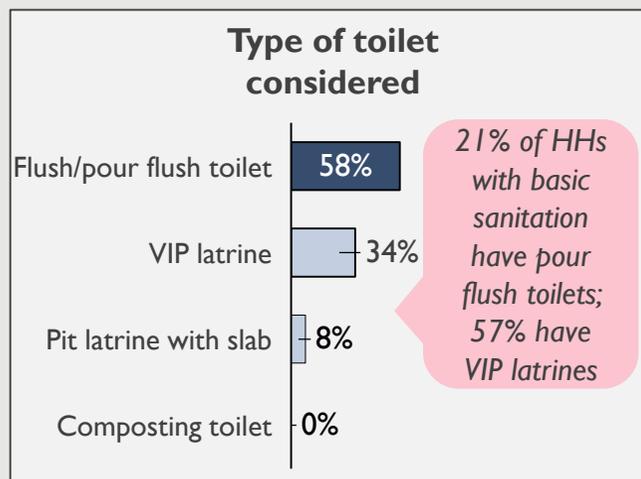
Typically HHs considered hiring actors from within their local community

HHs with basic sanitation most commonly hired a mason only to construct their toilets

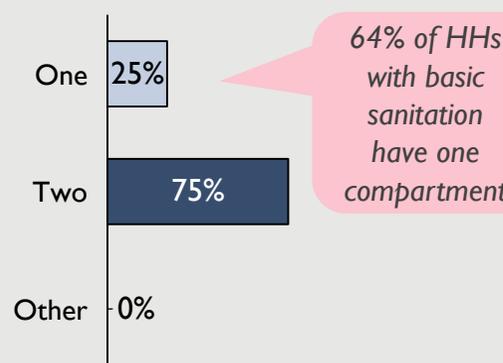
Callout boxes capture key differences exhibited by those with basic sanitation from this segment

Segment Profiles | Segment G | Buying Process (4/6)

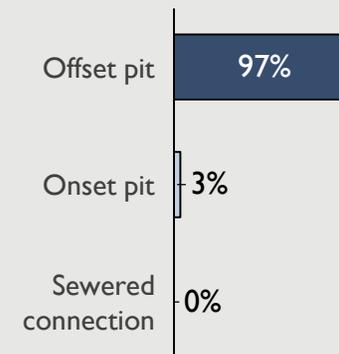
Most HH prefer to construct a pour flush toilet, with two compartments, a >12 feet deep offset pit lined with concrete blocks, a concrete/ cement cover...



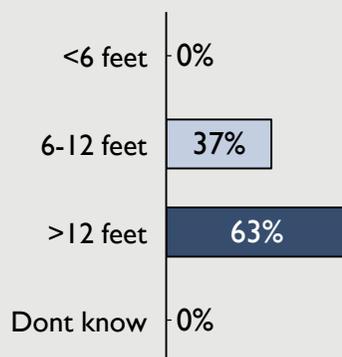
Number of compartments/stances considered



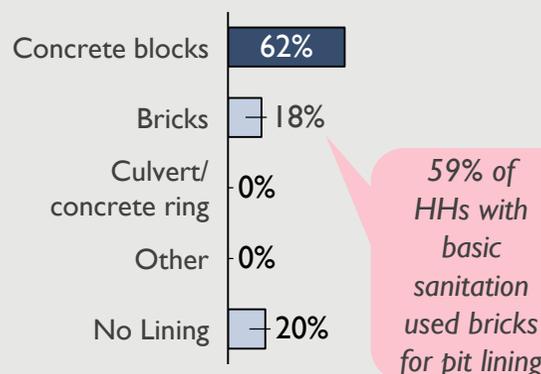
Type of substructure considered



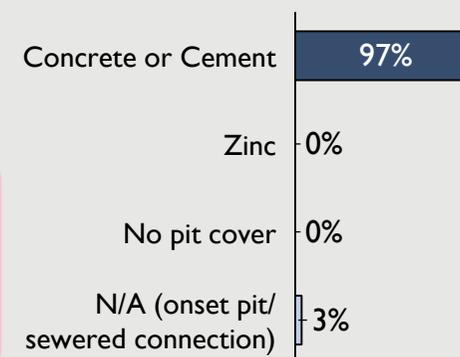
Pit depth considered



Types of pit lining considered



Offset pit cover considered

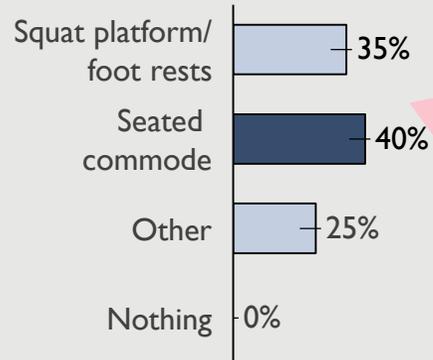


Segment Profiles | Segment G | Buying Process (5/6)

...a cement floor, with a seated commode, mud brick walls, a zinc sheet roof and a wooden door

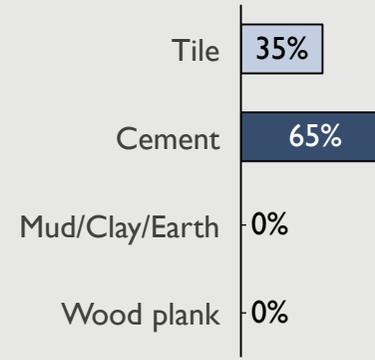


Add-ons considered for the toilet floor

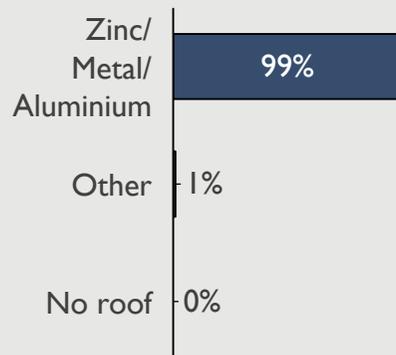


12% of HHs with basic sanitation have installed a seated ceramic commode; 81% have foot rests/cement squat platform

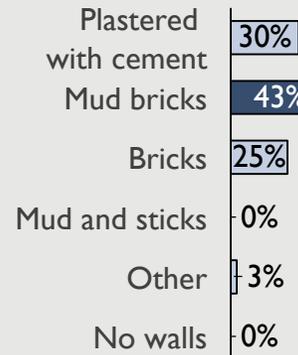
Main material considered for floor surface



Main material considered for roof

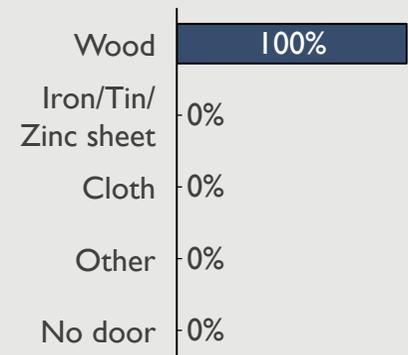


Main material considered for walls



79% of HHs with basic sanitation have mud brick walls

Main material considered for door

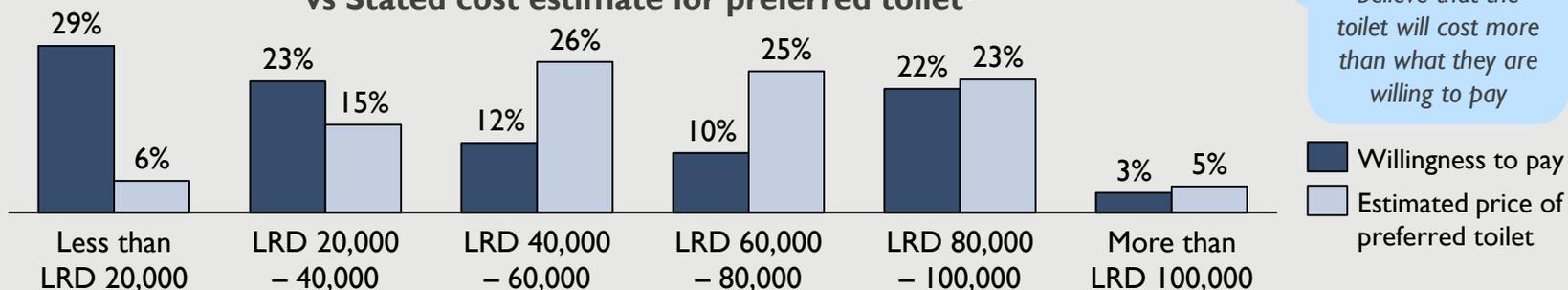


Segment Profiles | Segment G | Buying Process (6/6)

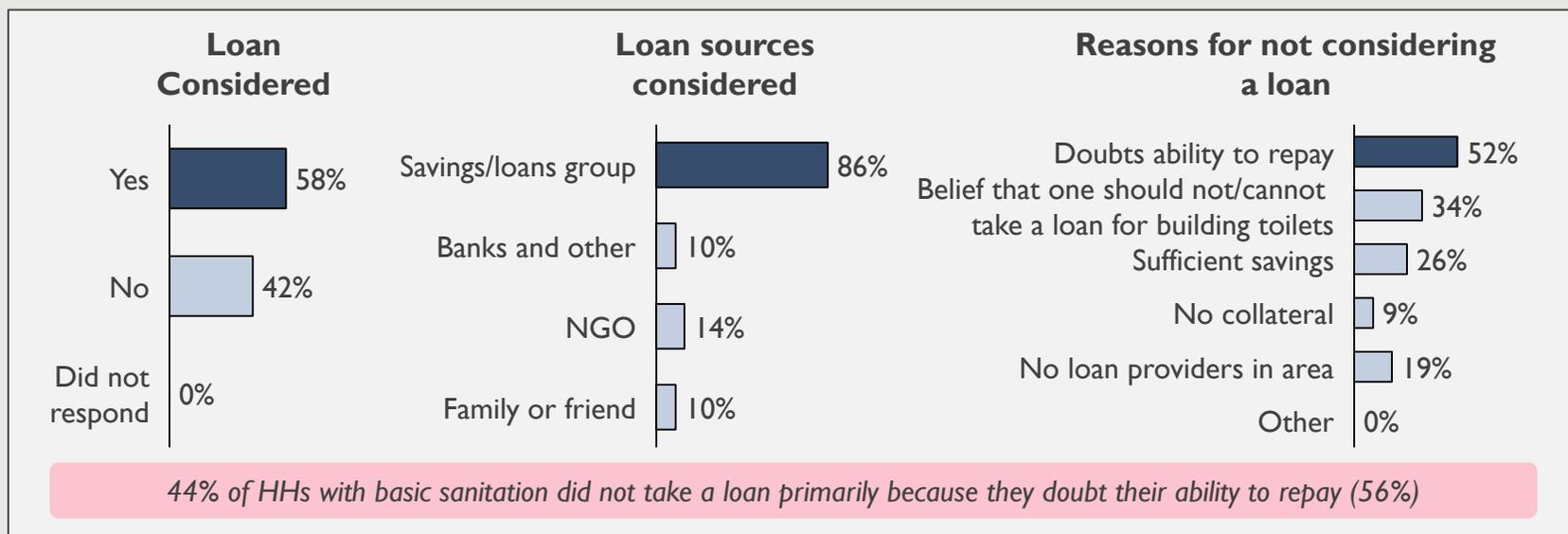
43% of the segment are willing to pay less than the estimated cost for the preferred toilet; nearly half of the segment are willing to consider taking a loan, primarily from a savings/loans group, to construct a toilet



Stated willingness to pay for an improved toilet that is not meant to be shared vs Stated cost estimate for preferred toilet¹



43% of households believe that the toilet will cost more than what they are willing to pay

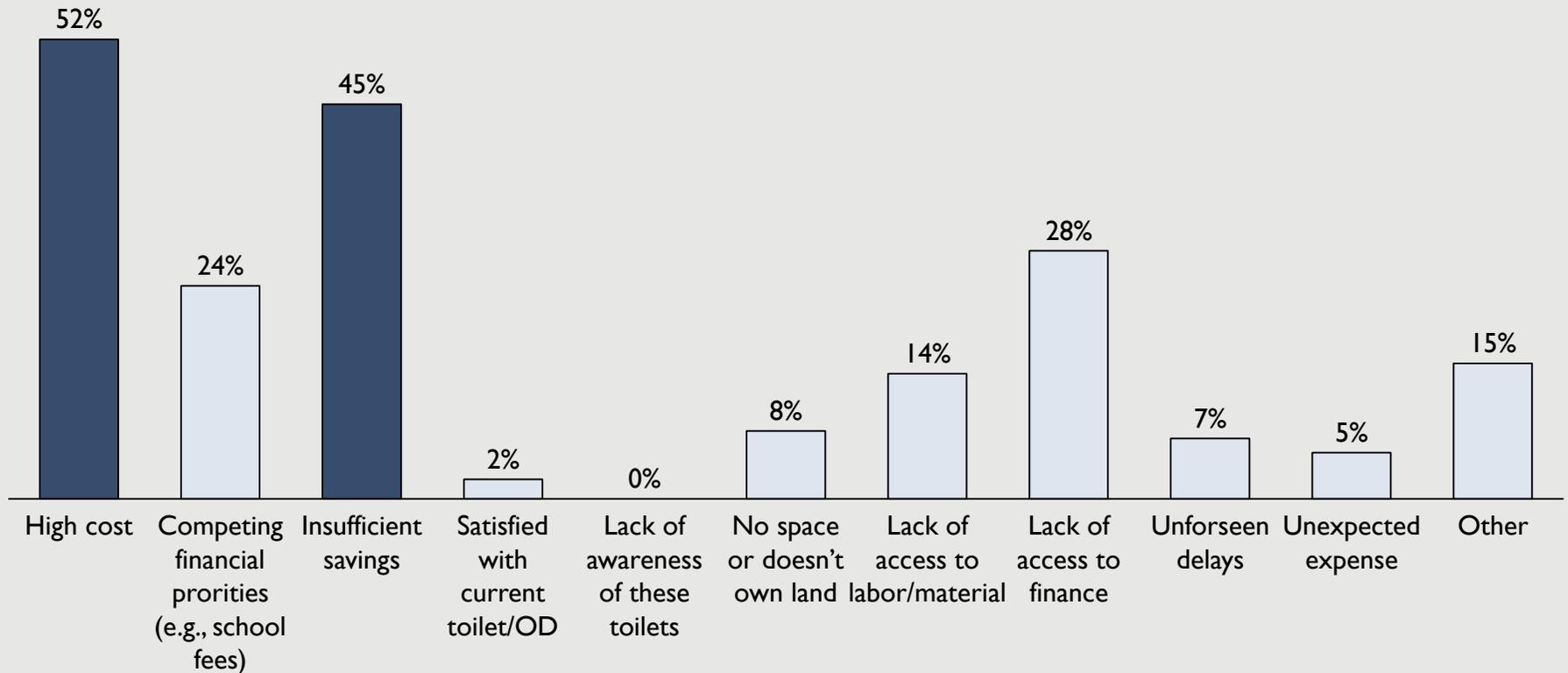


44% of HHs with basic sanitation did not take a loan primarily because they doubt their ability to repay (56%)

Segment Profiles | Segment G | Drop-offs from Buying Process

92% of this segment considered investing in BSS but did not proceed with doing so; high cost and insufficient savings were the primary reasons for not investing in BSS

Reasons for not investing in basic sanitation service



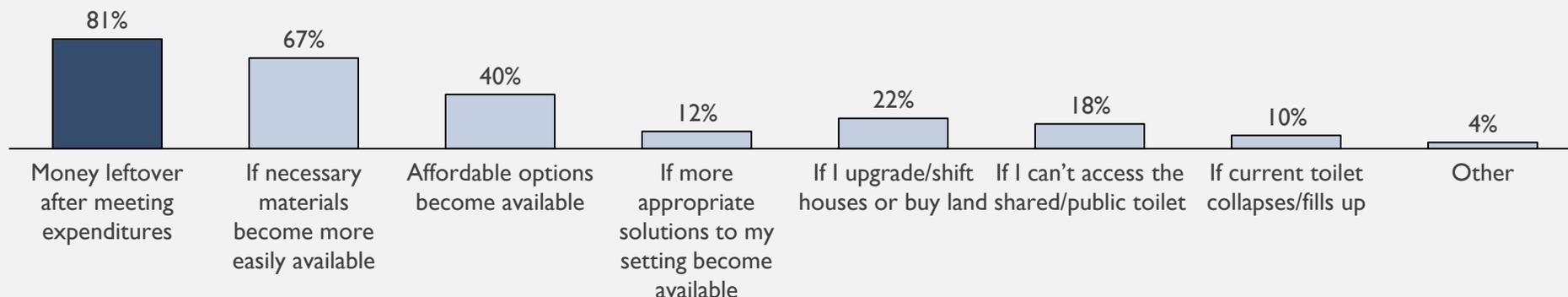
Segment Profiles | Segment G | Future Considerations



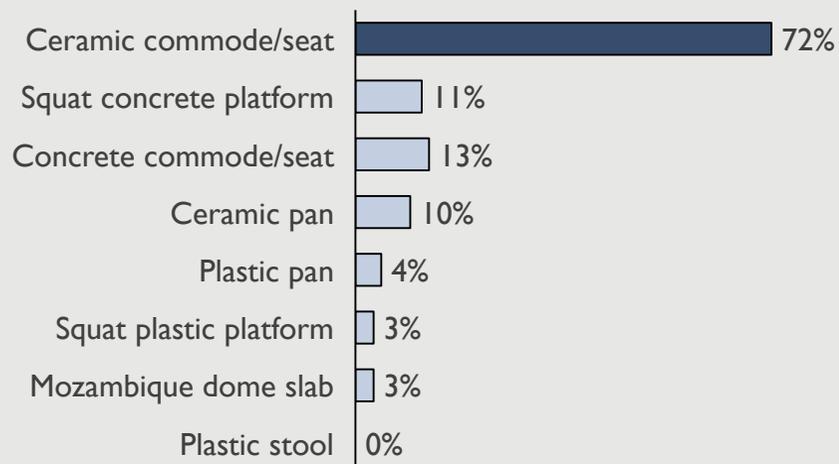
[Click to go back](#)

81% of the segment might reconsider investing in BSS if they can set aside enough savings after meeting their expenses; ceramic commode is the most preferred floor upgrade; HHs will build a new toilet when their toilet pit fills

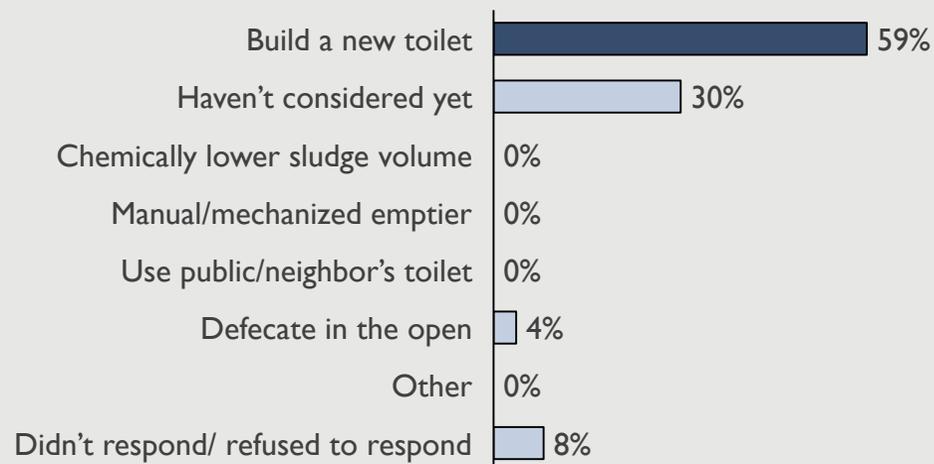
Factors that might increase consideration of a toilet in the future



Toilet floor add-ons considered by HHs without basic sanitation

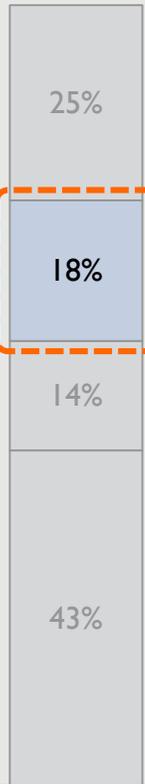


Plan for when existing toilet pit fills up



Segment Profiles | Segments that may need a soft loan and partial subsidy

Segments H and I may need a soft loan and a partial subsidy in order to purchase an improved toilet...



			Time taken to walk to nearest marketplace ¹									
			≤ 30 minutes					> 30 minutes				
County			Montserrado	Grand Bassa	Bong	Nimba	Lofa	Montserrado	Grand Bassa	Bong	Nimba	Lofa
House Material	Loan taken	House ownership										
Permanent Material ²	Yes	Owned	A	E			J					
		Not owned	B									
	No	Not owned		F	G	L						
		Owned	C									
Non-Permanent Material ³	Yes		D	H			K					
	No			I								

Distribution of HHs without basic sanitation service by ability to pay for an improved toilet (%)

Let's understand their behavior better.

Segment Profiles | Segment H

Limited sanitation service:

7%

Unimproved toilet:

7%

No toilet:

87%

Households in Segment H have the highest rate of OD amongst all the segments...

			Time taken to walk to nearest marketplace		≤ 30 min					> 30 minutes					
			County					Montserrado	Grand Bassa	Bong	Nimba	Lofa	Montserrado	Grand Bassa	Bong
House Material	Loan taken	House ownership													
Permanent Material	Yes	Owned	A	E					J					L	
		Not owned	B	F					G						
	No	Not owned		C	H					K					
		Owned	D		I										

...as they are relatively less affluent, and consider OD to be a convenient and common practice

Note: 71% of the segment resides in Nimba, 22% in Bong and 7% resides in Grand Bassa.

Segment Profiles | Segment H | Customer Story

Kulah lives and works in Jorquelleh No. 3, Bong with her three children and five grandchildren. She has no formal education, and works in agriculture.

She and her family are relatively less affluent, and their agricultural income just about sustains her large family. They live in a house with walls made of mud bricks, and a mud floor, and only own a few assets such as agricultural land, a mobile phone and a radio. They also don't have access to electricity. Their average monthly household expenditure is LRD 22,000. She hopes that once her grandchildren are educated, they will take up skilled jobs, as agricultural income is insufficient and unreliable.

Kulah believes that her community should be clean. Her family visits a nearby bush to relieve themselves every morning. Kulah considers this to be the most convenient option available to everyone in her community, as it ensures some level of privacy and the feces can be concealed. Her family used to have access to a community toilet near their previous home. However, they had to shift when their land was allocated to be a plantation, and now there is no community toilet close to their current home.

Kulah hopes that she will be able to construct a toilet in the future, so that her family can enjoy the privacy and prestige of owning a modern toilet. But at the moment, she feels it would be unaffordable, particularly due to the cost of constructing and then maintaining a toilet for a family as big as hers. She is willing to spend up to LRD 20,000 on a new toilet, however she feels that this will not be enough for a toilet that is durable, which may cost LRD 40,000 to 80,000. Kulah desires a pour flush toilet with a cement squat platform as she feels using water for anal cleansing is more hygienic. She also believes that at present she will be unable to save the amount of money needed due to the unpredictable nature of her income. She took a loan in the past to pay for her children's school fees, but is not very comfortable taking a loan for a toilet, as she fears she would not be able to repay the loan.

Segment Profiles | Segment H | Key Demographic Statistics

Segment size		Demographics		Income & occupation	
% of potential market	8%	Family size (Avg.)	9	Nature of income	
# of households	41K	Gender of HH Head		• Regular	72%
		• Male	46%	• Seasonal	28%
		• Female	54%	Primary occupation²	
		HH Head education¹		• Agriculture	51%
		• No education	46%	• Unskilled Labor	23%
		• Up to Junior High	20%	• Petty Trading	14%
		• Senior High or above	34%	• Skilled Labor	7%
Sanitation profile					
Limited sanitation service	7%				
Unimproved toilet	7%				
No toilet	87%				
Affluence indicators		Access indicators		Attitudes & beliefs ³	
Total monthly expenditure		Assets and other indicators		Distance to nearest market⁴	
High (>LRD 40K)	12%	Mobile phone	55%	<30 minutes	19%
Medium (LRD 20K-40K)	36%	Computer	0%	30 minutes to 1 hour	18%
Low (≤LRD 20K)	51%	Television	0%	Not walking distance	63%
Total asset value (avg.)	29k	Chair	32%	Access to electricity	17%
Total asset value (spread)		Agricultural land	87%	Non-drinking water source⁵	
High (> LRD 120K)	3%	Any mode of transport	8%	Surface water	49%
Medium (LRD 75K-120K)	14%	Home improvement	29%	Other unprotected sources	17%
Low (LRD 35K-75K)	16%	Loan group member	57%	Hand pump, tube well or borehole	27%
Very low (< LRD 35K)	67%	Mobile money user	31%	Other protected sources	8%
				Believe that community cleanliness is important	
				79%	
				Believe it is embarrassing to be seen practicing OD	
				86%	
				Willing to pay for products that bring prestige	
				46%	
				Believe it is taboo to live near a toilet	
				14%	

1. Indicates highest level of education attended; 2. Top four occupations for each segment are shown; 3. Respondents were asked if they 'strongly disagreed', 'disagreed', 'agreed', or 'strongly agreed' to statements related to their attitudes and beliefs. Here the combined percentage of those who 'strongly agreed' or 'agreed' with a statement is reported, barring willingness to pay for prestige products, for which only 'strongly agreed' is shown; 4. Refers to a permanent market with stores ; 5. Total % ≠100 as it is rounded off; **Source:** HH interviews (Profile n=269; Detailed n=48), FSG analysis

Segment Profiles | Segment H | Customer Persona

Setting

- **Location:** Populous urban areas of Grand Bassa, Nimba and Bong
- **Typical family size:** 9 people, with 3 children and 1 elderly¹
- **Type of house:** Live in their own house, made predominantly of temporary materials
- **Income and occupation:** Typically have regular income, however slightly over a quarter have seasonal income; agriculture is the dominant occupation, followed by unskilled labor
- **Mobile phone and mobile money:** Only half the segment have mobile phones, and only a third of the segment uses mobile money
- **Total value of assets:** HHs are relatively less affluent; the average total asset value per HH is LRD ~29,000
- **Loan groups:** More than half are loan group members
- **Loans:** All HH in this segment have taken loans in the past, primarily for school fees; typically loans are taken from savings/loan groups

Mental Model

- **Desire respect** from their community
- **Value products** that are **prestigious** and make life **convenient**
- **Conforming to the norm is not particularly important** to this group, as more than half suggest that one should do things 'differently' from their neighbors
- **Place high value on ownership of a toilet.** The majority strongly believe owning a toilet is a sign of **prestige**. Most HHs have some idea of the **health, safety, and privacy benefits** of owning a toilet, and equate owning a toilet to **being modern**
- **Community cleanliness is important but not a high priority**, however to **witness** or to be seen **practicing OD is considered embarrassing**
 - Agree that it is **irresponsible to not have a toilet**
 - More than a quarter of the segment disagrees that **school fees is a priority over building a toilet**



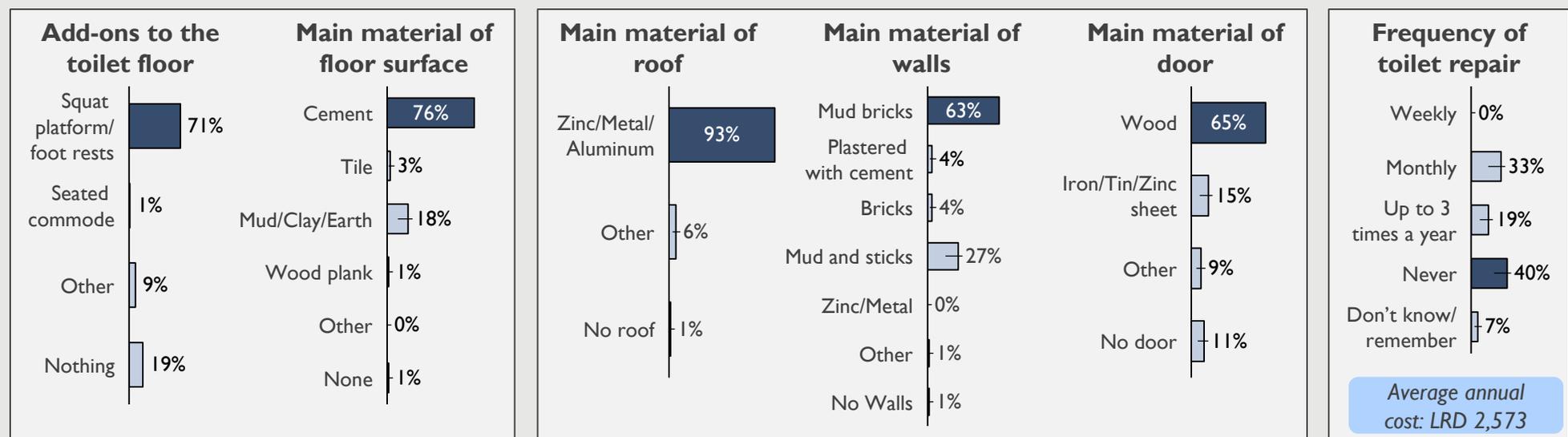
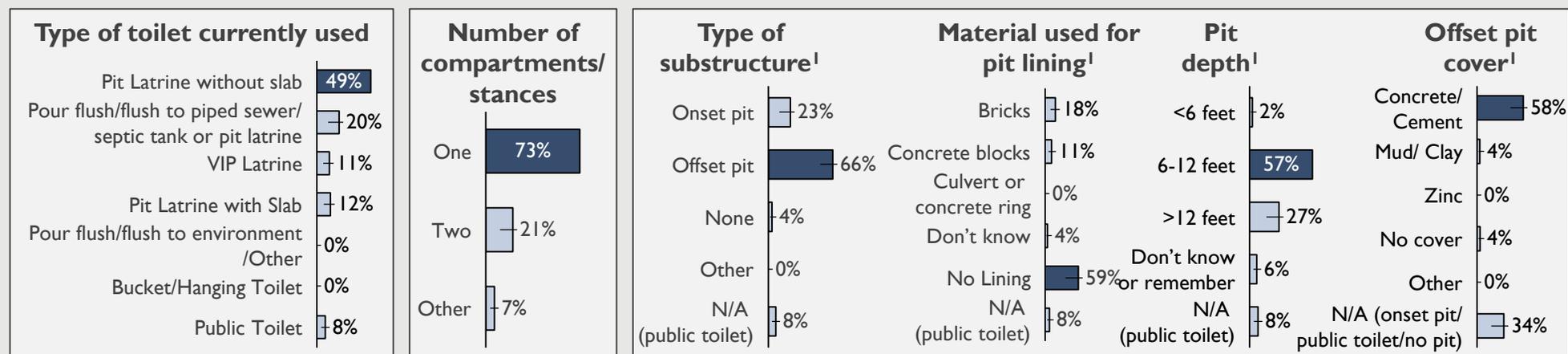
- **Current product and usage:** Most HHs practice OD; Some HHs used improved limited or unimproved toilets
- **Desired product:** A toilet that is easy to clean with water, is comfortable, is well ventilated, and has the following functionalities:
 - **Toilet type:** Pour flush toilet to ensure feces are flushed away and prevent odor and disease
 - **Substructure:** offset pit to reduce pit heat; depth of >6 ft, lined with concrete blocks

- **Interface:** Cement floor, with foot rests/cement squat platform
- **Superstructure:** Zinc sheet roof, cement/ brick walls, wooden door
- **Estimated cost and ability to pay:** Estimated cost of desired toilet - LRD 63,000; average ability to pay (out-of-pocket) - LRD 14,000
- **Financing:** less than half the segment would consider taking a loan, with most opting for savings/loan group; biggest reason for not taking a loan is a fear of the inability to pay back the loan

The Ask

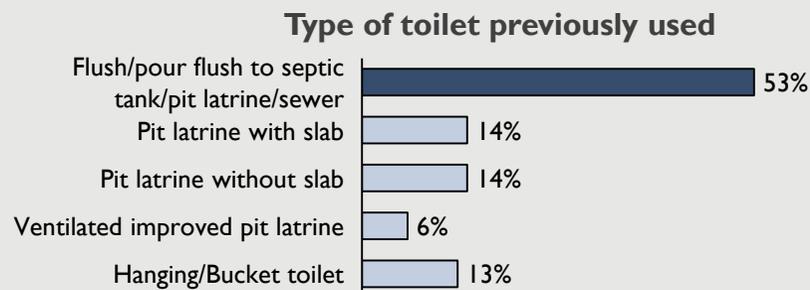
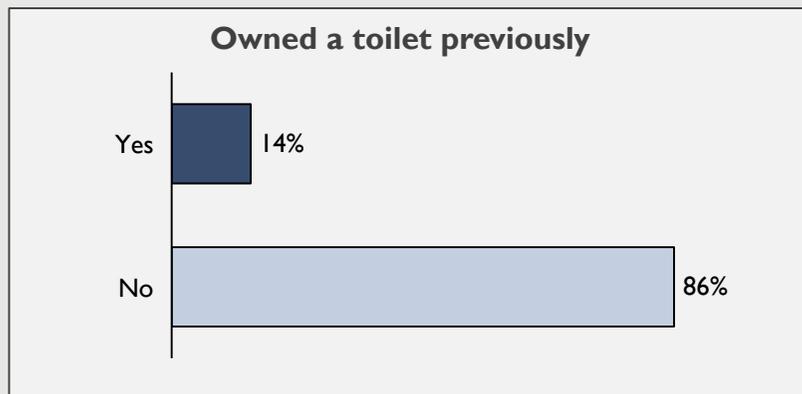
Segment Profiles | Segment H | Current Sanitation Profile for Toilet Users

Toilet users in this segment typically use a pit latrine, with a cement floor which has developed gaps/ holes, a cement squat platform/foot rests add-on, an offset pit, and a superstructure built with permanent materials

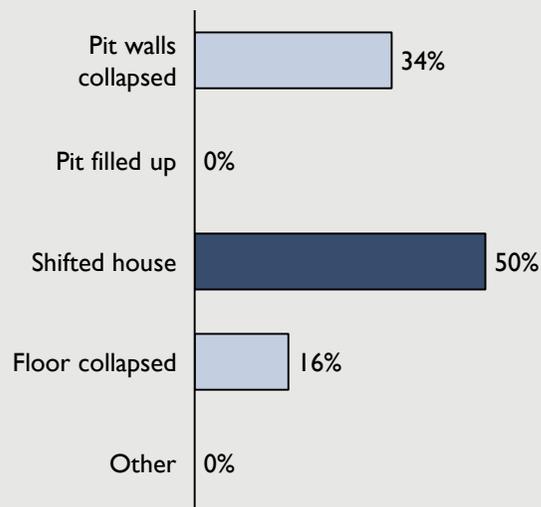


Segment Profiles | Segment H | Past Toilet Usage for HHs Practicing OD

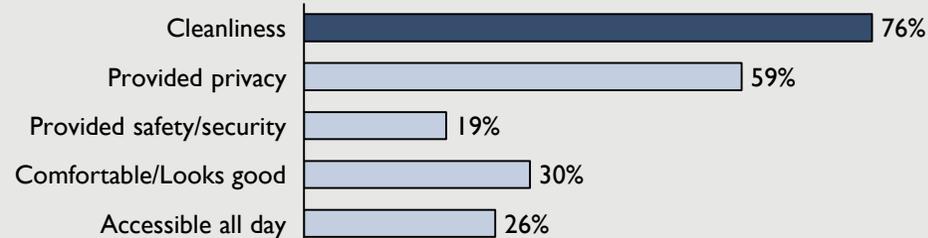
87% of HHs in this segment currently practice OD, and most of them did not own a toilet previously; those who did, used a pour flush toilet, and liked the cleanliness and privacy afforded them



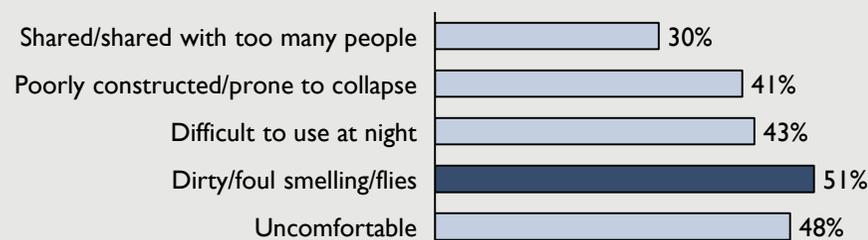
Reasons they stopped using toilet



Top five aspects liked by the segment



Top five aspects disliked by the segment

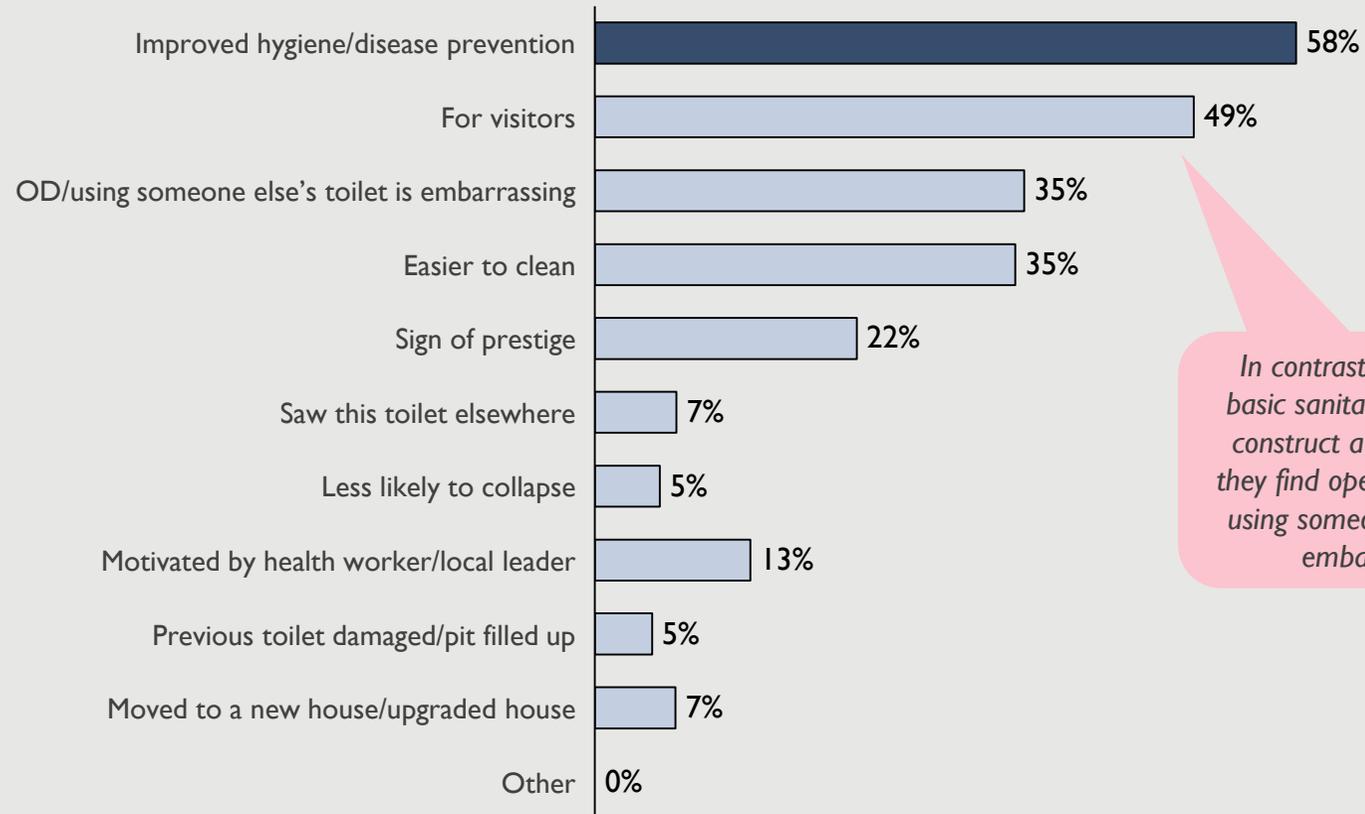


Segment Profiles | Segment H | Buying Process (1/6)

Most HHs wanted a toilet to improve hygiene and prevent diseases; however, all HHs with basic sanitation reportedly chose to construct a toilet because they find practicing OD or using someone else's toilet embarrassing



Origination of need for toilet



In contrast, all HHs with basic sanitation decided to construct a toilet because they find open defecation or using someone else's toilet embarrassing.

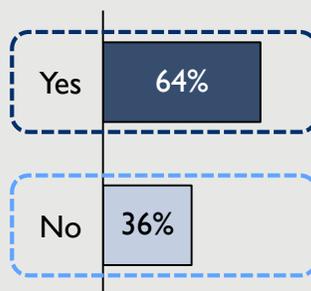
Callout boxes capture key differences exhibited by those with basic sanitation from this segment

Segment Profiles | Segment H | Buying Process (2/6)

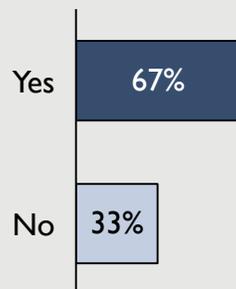
Most households sought information on how to build a toilet and even attended a CLTS event; family members and community sanitation events were the most common sources of information



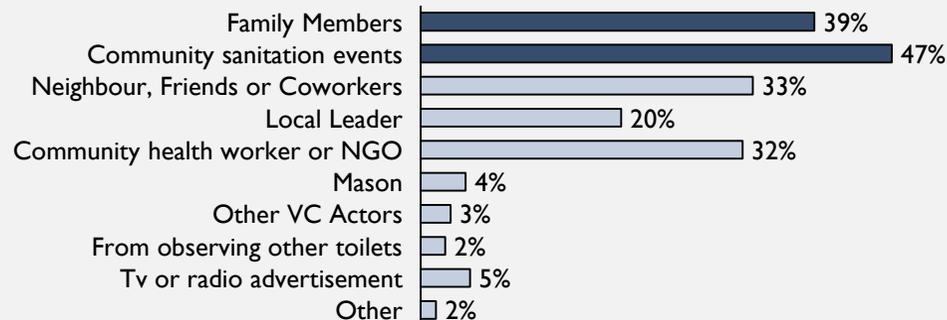
Sought information while considering building a toilet



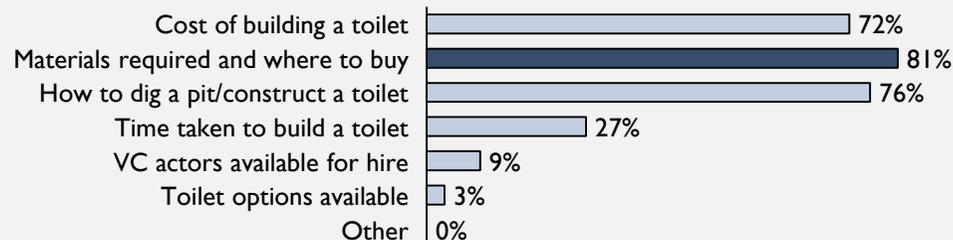
Attended a CLTS event



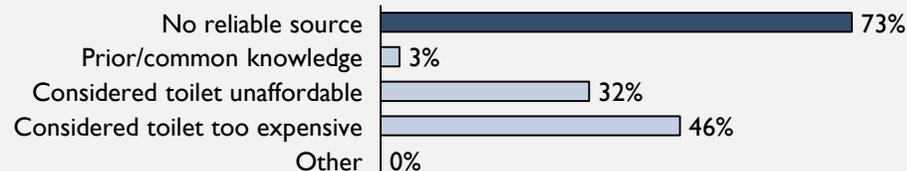
Sources of information about toilets



Nature of information captured

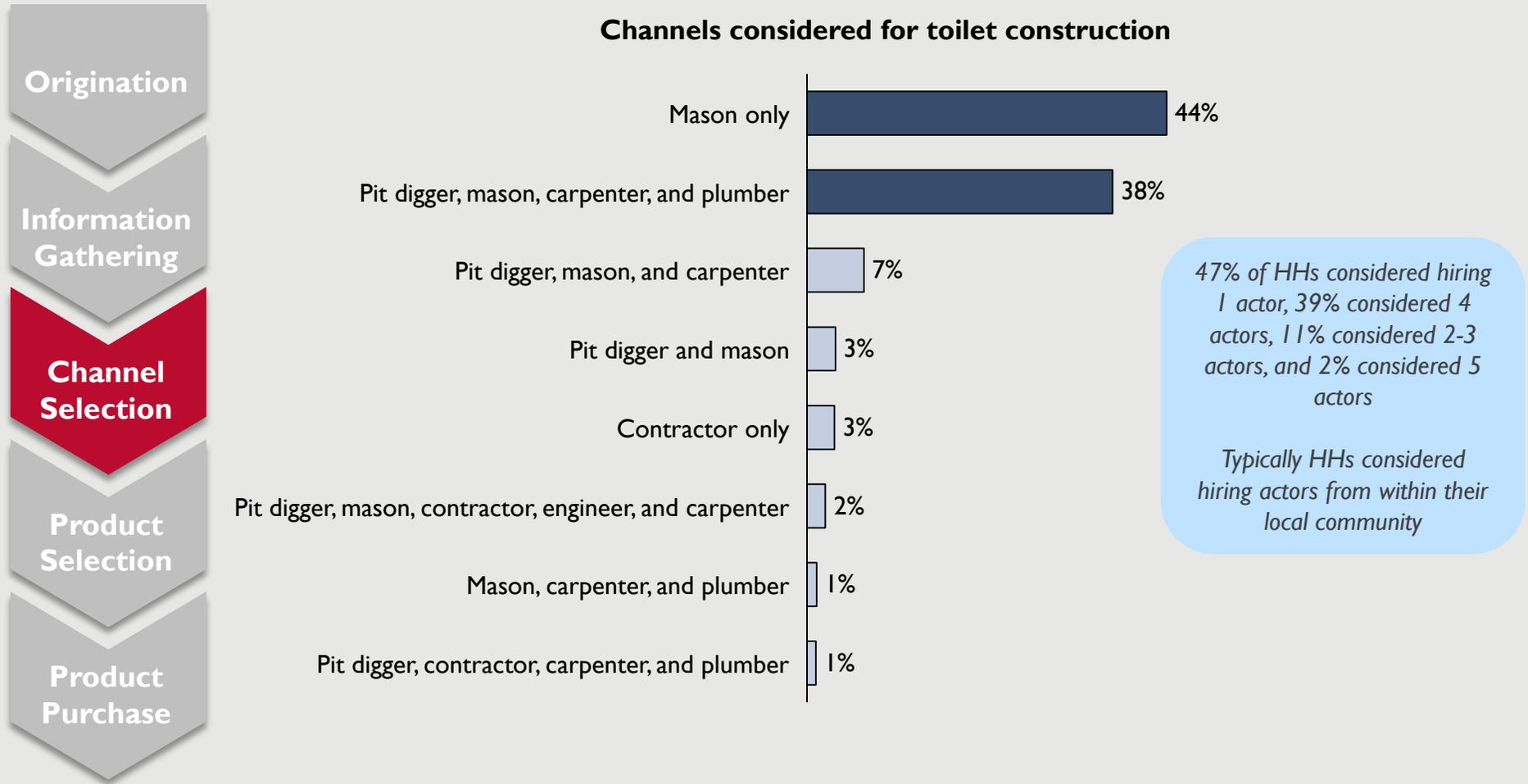


Reasons for not seeking information



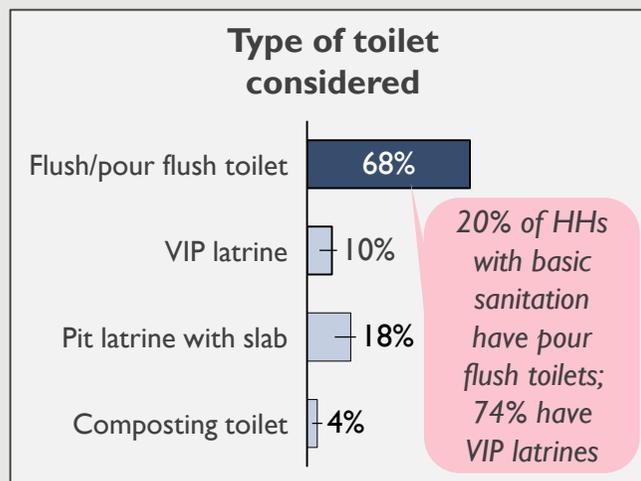
Segment Profiles | Segment H | Buying Process (3/6)

HHs most commonly considered hiring a mason only, or considered hiring a combination of actors (i.e., pit digger, mason, carpenter and plumber), to construct their toilets

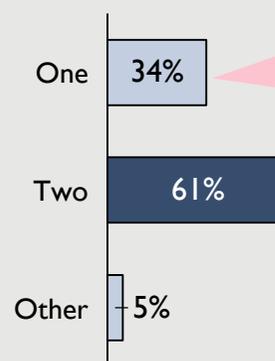


Segment Profiles | Segment H | Buying Process (4/6)

Most HH prefer to construct a pour flush toilet, with two compartments, a >12 feet deep offset pit lined with concrete blocks, a concrete or a cement cover...

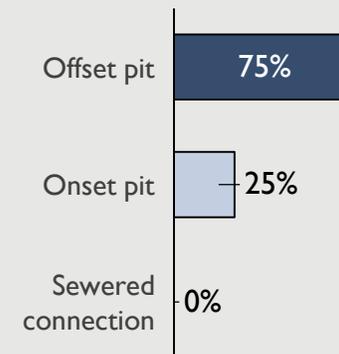


Number of compartments/stances considered



82% of HHs with basic sanitation have one compartment

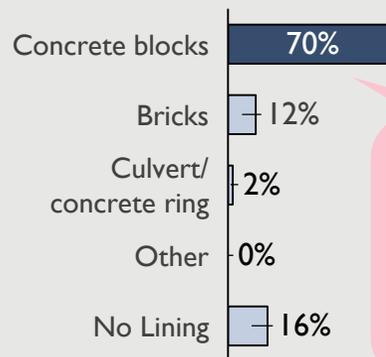
Type of substructure considered



Pit depth considered

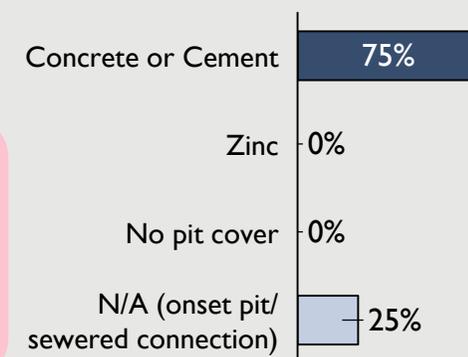


Types of pit lining considered



31% of HHs with basic sanitation used concrete blocks, and 50% used bricks for pit lining

Offset pit cover considered

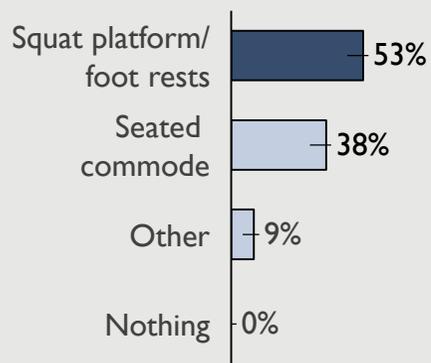


Segment Profiles | Segment H | Buying Process (5/6)

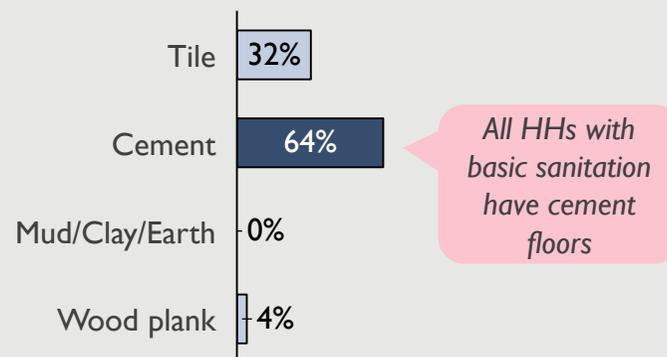
...a floor built with cement, with foot rests/ squat platform, brick walls, a zinc sheet roof and a wooden door



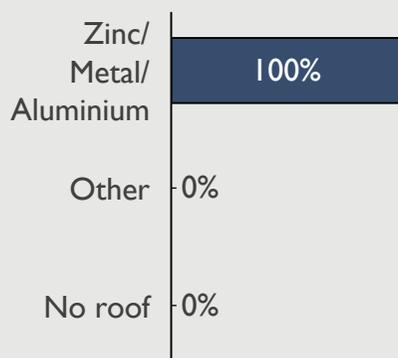
Add-ons considered for the toilet floor



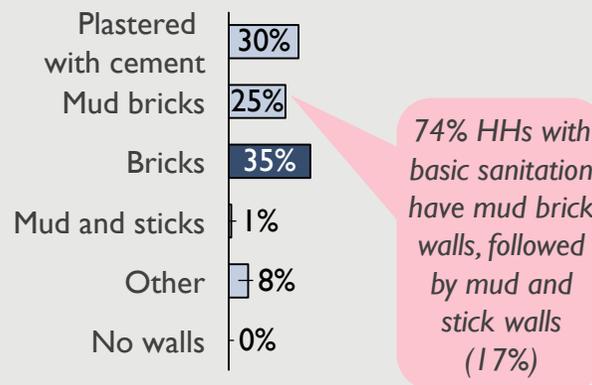
Main material considered for floor surface



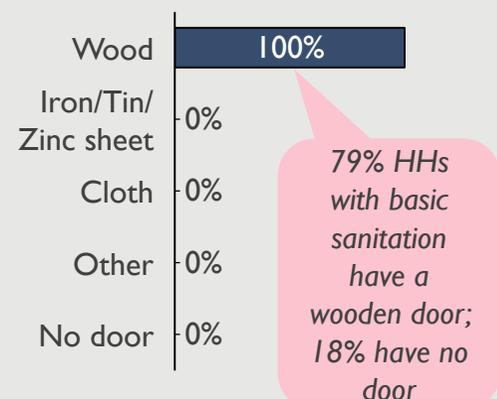
Main material considered for roof



Main material considered for walls



Main material considered for door



Segment Profiles | Segment H | Buying Process (6/6)

32% of the segment are willing to pay less than the estimated cost for the preferred toilet; more than half the segment are willing to consider taking a toilet construction loan, primarily from a savings/loans group

Origination

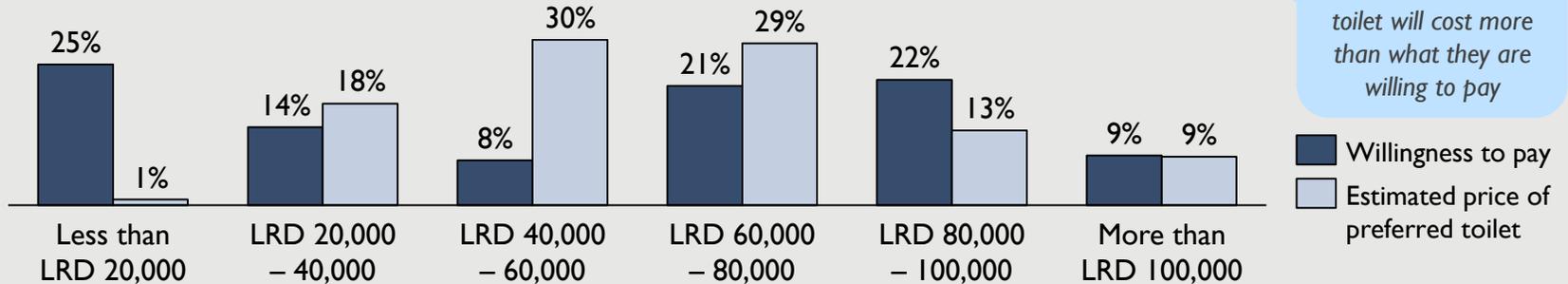
Information Gathering

Channel Selection

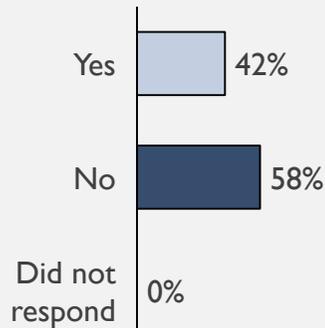
Product Selection

Product Purchase

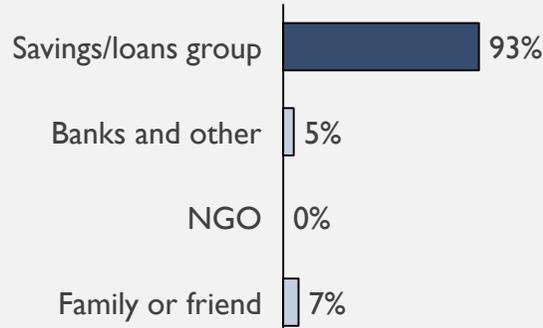
Stated willingness to pay for an improved toilet that is not meant to be shared vs Stated cost estimate for preferred toilet¹



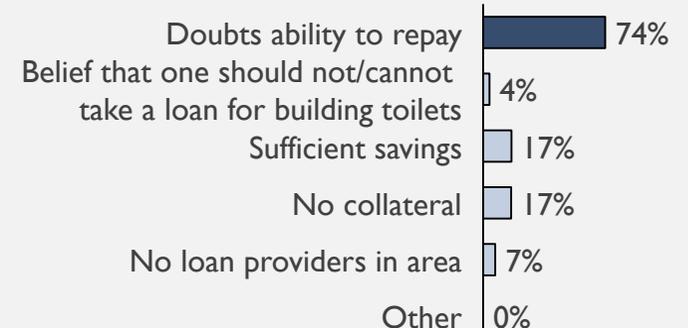
Loan Considered



Loan sources considered



Reasons for not considering a loan

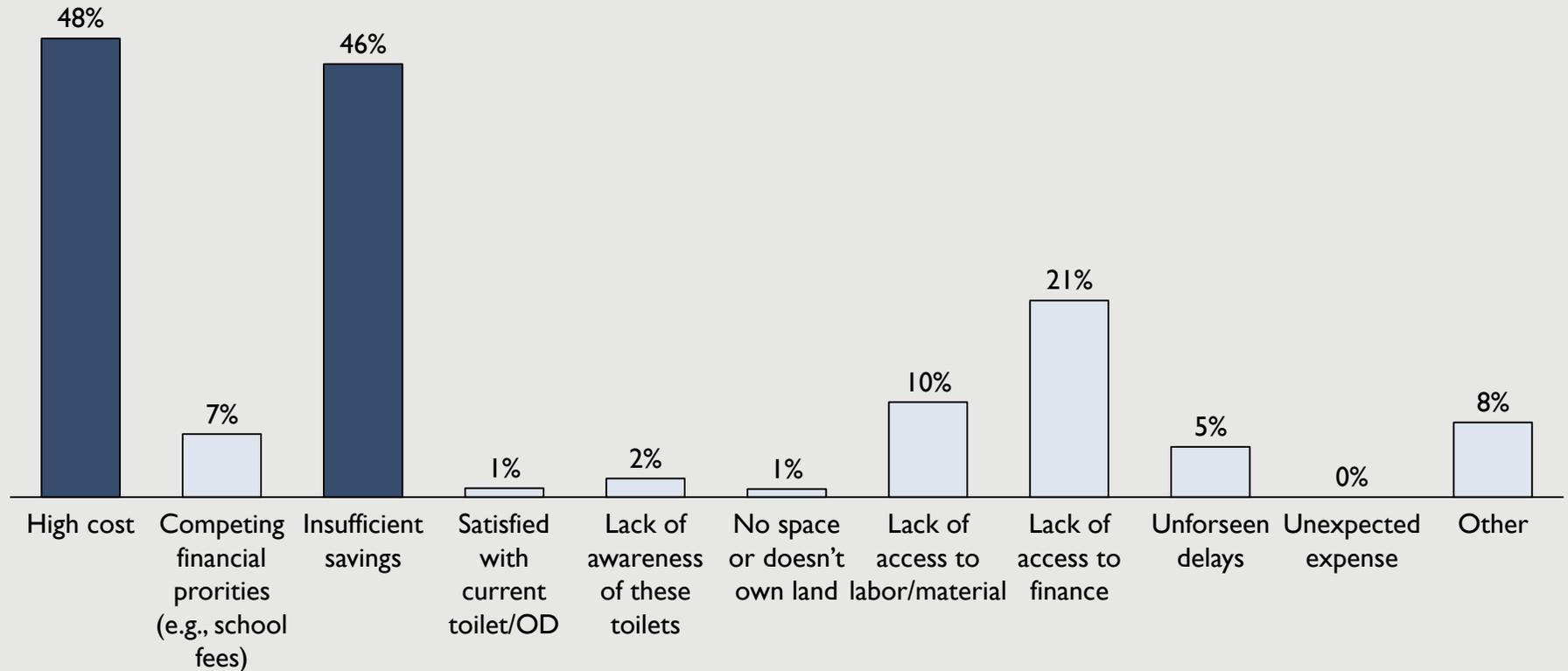


27% of HHs with basic sanitation did not to take a loan as they feared an inability to repay

Segment Profiles | Segment H | Drop-offs from Buying Process

85% of this segment considered investing in BSS but did not proceed with doing so; high costs and insufficient savings are the primary reasons for not investing in BSS

Reasons for not investing in basic sanitation service

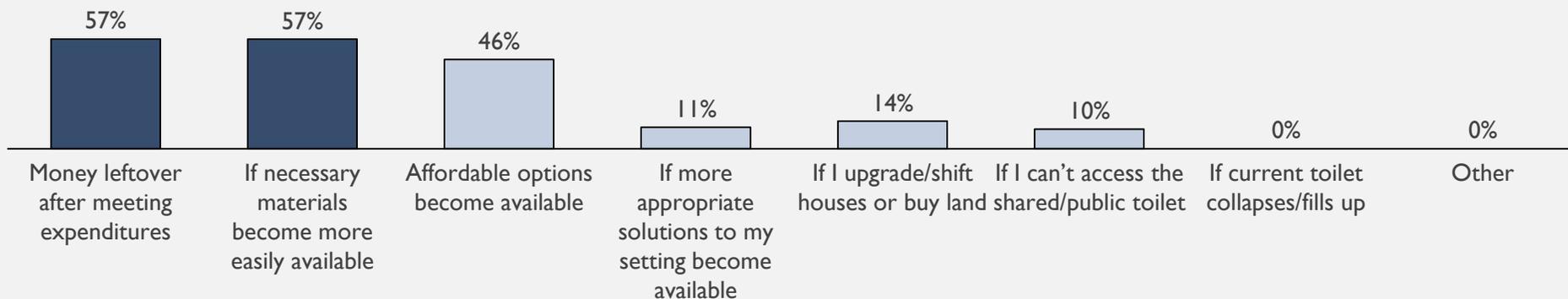


Segment Profiles | Segment H | Future Considerations

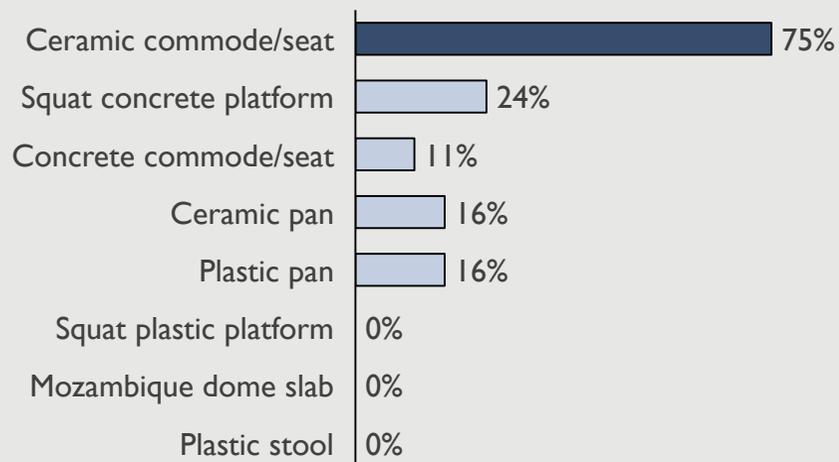


57% of the segment might reconsider investing in BSS if they can set aside enough savings after meeting their expenses, and if necessary materials become more easily available; the ceramic commode is the preferred floor upgrade

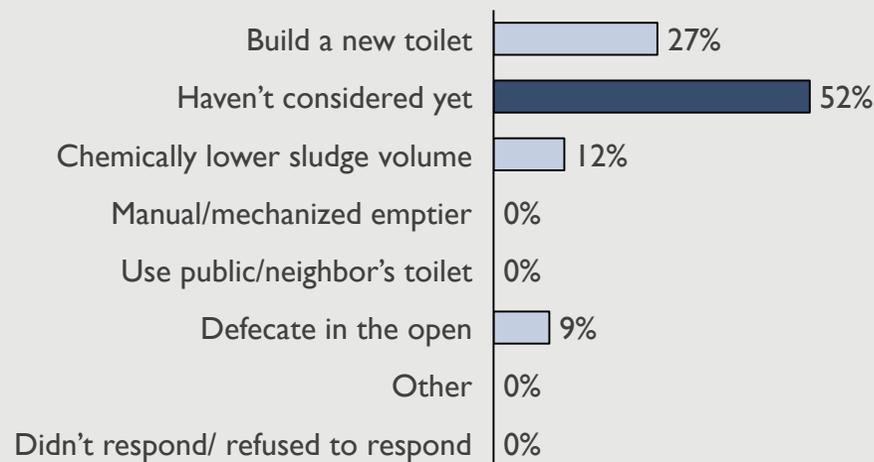
Factors that might increase consideration of a toilet in the future



Toilet floor add-ons considered by HHs without basic sanitation



Plan for when existing toilet pit fills up



Segment Profiles | Segment I

Limited sanitation service:

10%

Unimproved toilet:

9%

No toilet:

81%

Most households in Segment I practice OD because they accept it as a common practice,...

			Time taken to walk to nearest marketplace										
			≤ 30 min					> 30 minutes					
			County										
			Montserrado	Grand Bassa	Bong	Nimba	Lofa	Montserrado	Grand Bassa	Bong	Nimba	Lofa	
House Material	Loan taken	House ownership											
Permanent Material	Yes	Owned	A	E					J				
		Not owned	B	F					G				
	No	Not owned	C	H					K				
		Owned	D	I					L				

...have competing financial priorities, have liquidity constraints, and have no prior experience of taking a loan

Note: 30% of the segment resides in Bong, 29% in Nimba, 28% in Lofa and 13% in Grand Bassa.

Segment Profiles | Segment I | Customer Story

Saye lives and works in Gbein, Yarpea Mahn, Nimba with his wife, four children, and two brothers. He has no formal education, and is engaged in agriculture to support his family.

Saye and his family live in their own house, which is built with non-durable materials. They also don't have access to electricity and obtain water for bathing and cleaning from a nearby river. They own select assets, including agricultural land, some furniture, and a mobile phone; they are relatively less affluent. Their average monthly household expenditure is LRD 20,000, and is spent primarily on food, healthcare, and school fees. Saye and his wife work hard to provide for their family, and are hesitant to take loans to cover any shortfall they may have in meeting their expenses.

While Saye values community cleanliness, his family defecates in a bush adjacent to their house. OD has become a common practice in Saye's community ever since the nearby community toilet built by an NGO broke down during the rains. Saye acknowledges that it becomes difficult for his children to relieve themselves outside during the rainy season. He knows that the safety and privacy of his family could be improved with a toilet, but he cannot afford to construct one right now, and currently prioritizes paying school fees.

Saye believes that as money and construction materials become more readily available to him in the future, he will be able to construct a toilet for his family. He is willing to pay between LRD 40,000-60,000 on a new toilet. However, he believes that a modern pour flush toilet with his desired features, including an offset pit, cement squat platform, cement floor, and a lockable wooden door will cost between LRD 80,000-100,000. At present, he cannot save that much money. He is also hesitant to take a loan because he has never taken one before, and fears he will not be able to repay it, and may lose his collateral in the process.

Segment Profiles | Segment I | Key Demographic Statistics

Segment size		Demographics		Income & occupation	
% of potential market	10%	Family size (Avg.)	8	Nature of income	
# of households	55K	Gender of HH Head		• Regular	75%
		• Male	49%	• Seasonal	25%
		• Female	51%	Primary occupation²	
		HH Head education¹		• Agriculture	53%
		• No education	50%	• Unskilled Labor	20%
		• Up to Junior High	25%	• Petty Trading	15%
		• Senior High or above	25%	• Skilled Labor	7%
Sanitation profile					
Limited sanitation service	10%				
Unimproved toilet	9%				
No toilet	81%				
Affluence indicators		Access indicators		Attitudes & beliefs ³	
Total monthly expenditure		Assets and other indicators		Distance to nearest market	
High (>LRD 40K)	10%	Mobile phone	58%	<30 minutes	30%
Medium (LRD 20K-40K)	33%	Computer	0%	30 minutes to 1 hour	15%
Low (≤LRD 20K)	57%	Television	1%	Not walking distance	54%
Total asset value (avg.)	34k	Chair	48%	Access to electricity	10%
Total asset value (spread)		Agricultural land	81%	Non-drinking water source⁴	
High (> LRD 120K)	2%	Any mode of transport	6%	Surface water	47%
Medium (LRD 75K-120K)	18%	Home improvement	26%	Other unprotected sources	18%
Low (LRD 35K-75K)	21%	Loan group member	33%	Hand pump, tube well or borehole	28%
Very low (< LRD 35K)	59%	Mobile money user	22%	Other protected sources	8%
				Believe that community cleanliness is important	80%
				Believe it is embarrassing to be seen practicing OD	90%
				Willing to pay for products that bring prestige	43%
				Believe it is taboo to live near a toilet	26%

1. Indicates highest level of education attended; 2. Top four occupations for each segment are shown; 3. Respondents were asked if they 'strongly disagreed', 'disagreed', 'agreed', or 'strongly agreed' to statements related to their attitudes and beliefs. Here the combined percentage of those who 'strongly agreed' or 'agreed' with a statement is reported, barring willingness to pay for prestige products, for which only 'strongly agreed' is shown; 4. Refers to a permanent market with stores; 5. Total % ≠100 as it is rounded off; **Source:** HH interviews (Profile n=485; Detailed n=83), FSG analysis

Segment Profiles | Segment I | Customer Persona

Setting

- **Location:** Populous areas of Grand Bassa, Nimba, Bong and Lofa
- **Typical family size:** 8 people, with 3 children and no elderly¹
- **Type of house:** Live in their own house, made predominantly of temporary materials
- **Income and occupation:** Typically have regular income, however a quarter have seasonal income; agriculture is the dominant occupation, followed by unskilled labor
- **Mobile phone and mobile money:** Slightly more than half the segment own mobile phones, and mobile money is used by slightly more than a fifth of the segment
- **Total value of assets:** HHs are relatively less affluent; the average total asset value per HH is LRD ~34,000
- **Loan groups:** A third are loan group members
- **Loans:** Only a tenth of the segment have taken loans in the past, primarily for business or house construction/repair; loans are typically taken from savings/loan groups

Mental Model

- **Desire respect** from their community
- **Value products** that are **prestigious** and make life **convenient**
- **Conforming to the norm is not particularly important** to this group, as more than half suggest that one should do things 'differently' from their neighbors
- **Place high value on ownership of a toilet.** The majority believe owning a toilet is a sign of **prestige**. HHs have some idea of the **health, safety, and privacy benefits** of owning a toilet, and equate owning a toilet to **being modern**
- **Community cleanliness is important but not a top priority**, however to **witness** or to be seen **practicing OD is considered embarrassing**
- Agree that it is **irresponsible to not have a toilet**
- Two thirds of the segment **prioritize school fees over building a toilet**



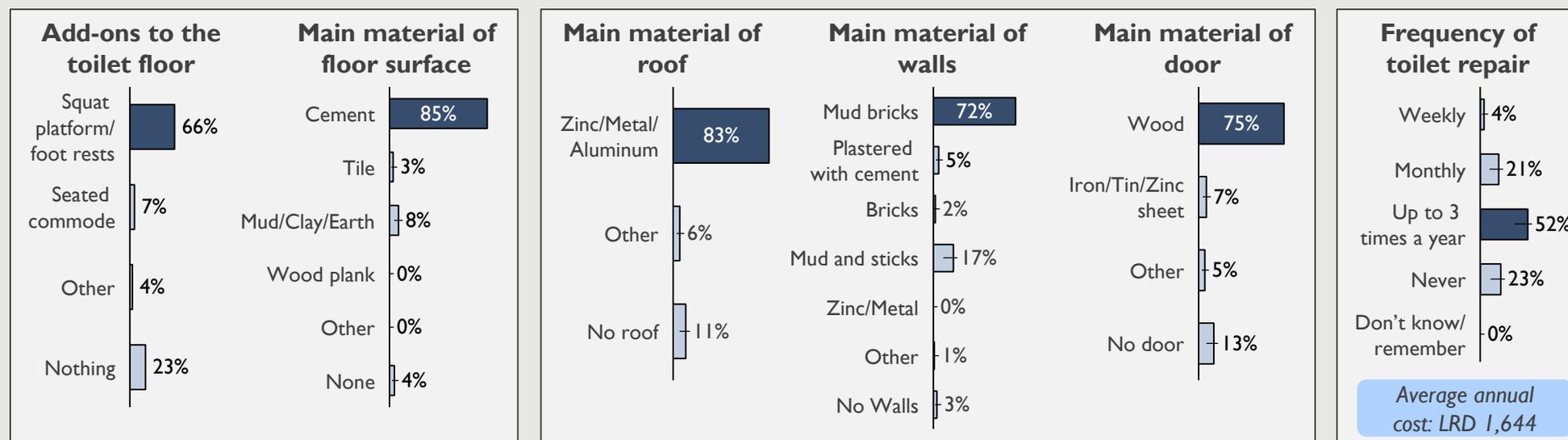
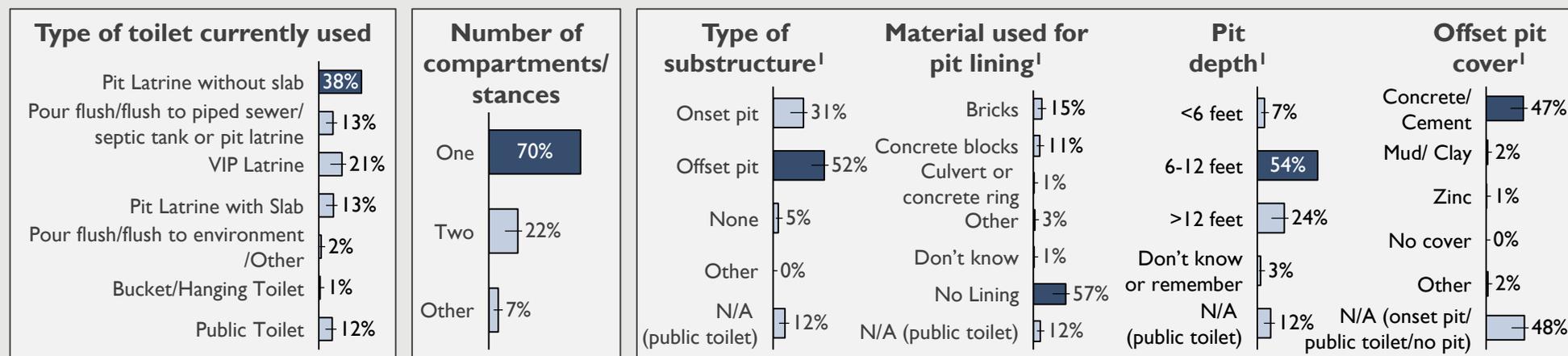
- **Current product and usage:** OD practice is widespread, with traces of Improved shared toilet facilities and unimproved toilets
- **Desired product:** A toilet that is easy to clean with water, provides privacy, is comfortable, and has the following functionalities:
 - **Toilet type:** Flush/pour flush toilet to reduce odor and prevent flies
 - **Substructure:** Offset pit to reduce pit heat; depth of >6ft, lined with concrete blocks

- **Interface:** Cement floor, with seated ceramic commode
- **Superstructure:** Zinc sheet roof, cement/ brick walls, wooden door
- **Estimated cost and ability to pay:** Estimated cost of desired toilet - LRD 73,000; average ability to pay (out-of-pocket) - LRD 17,000
- **Financing:** Half the segment would consider taking a loan, with most opting for savings/loan group; biggest reason for not taking a loan is a fear of the inability to pay back the loan

The Ask

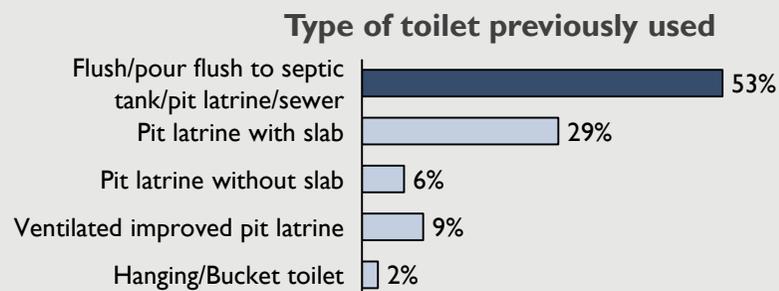
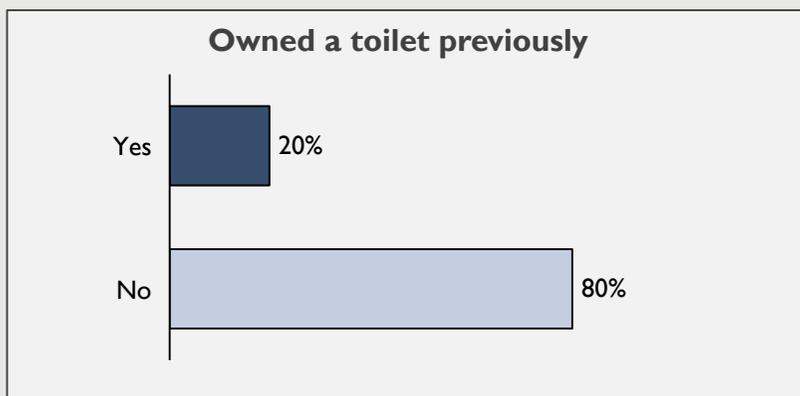
Segment Profiles | Segment I | Current Sanitation Profile for Toilet Users

Toilet users in this segment typically use a pit latrine a cement floor which has developed holes/ gaps, a cement squat platform/ foot rests add-on, an offset pit, and a superstructure built with permanent materials

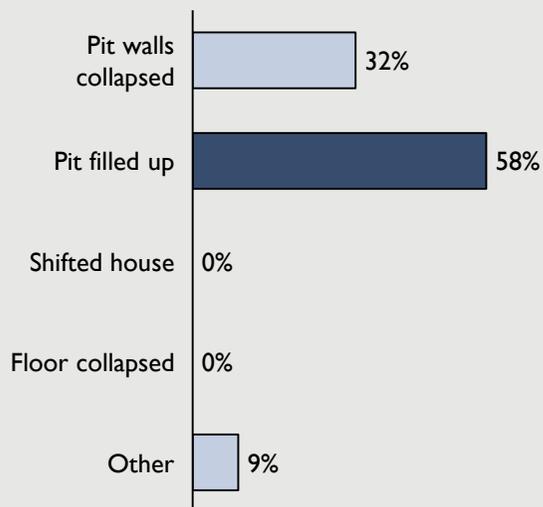


Segment Profiles | Segment I | Past Toilet Usage for HHs Practicing OD

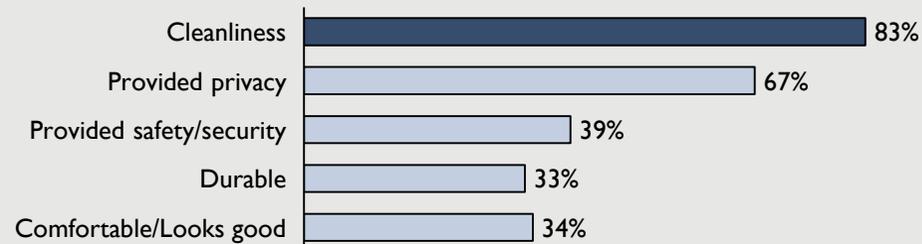
81% HH in this segment currently practice OD, and most of them did not own a toilet previously; those who did, used a flush/pour flush toilet, and liked the cleanliness and privacy that the toilet provided to them



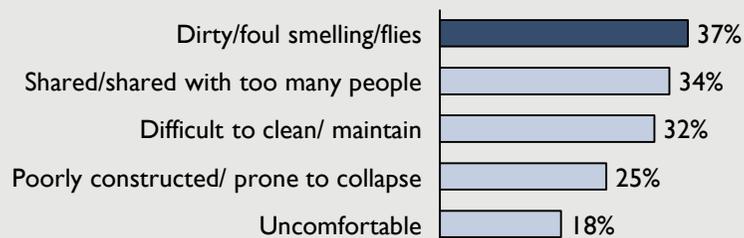
Reasons they stopped using toilet



Top five aspects liked by the segment



Top five aspects disliked by the segment

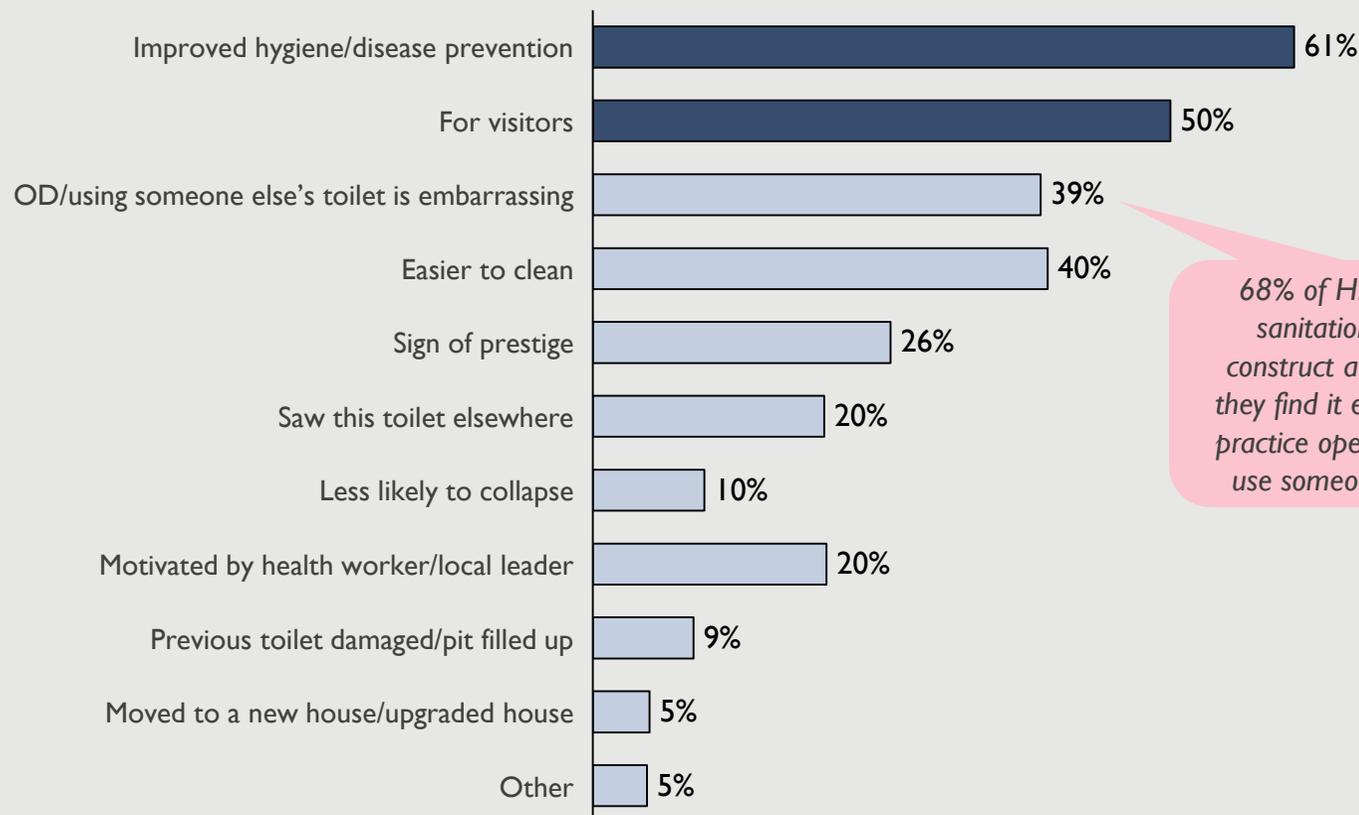


Segment Profiles | Segment I | Buying Process (1/6)

Most households wanted to construct a toilet to improve hygiene and prevent diseases, and because of visitors



Origination of need for toilet



68% of HHs with basic sanitation wanted to construct a toilet because they find it embarrassing to practice open defecation or use someone else's toilet

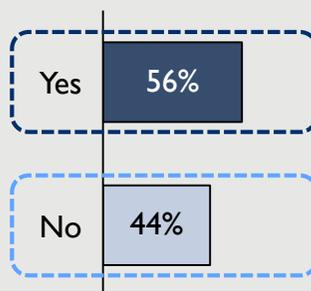
Callout boxes capture key differences exhibited by those with basic sanitation from this segment

Segment Profiles | Segment I | Buying Process (2/6)

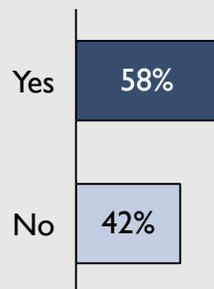
Most households sought information on how to build a toilet and even attended a CLTS event; community sanitation events were common sources of information, e.g., how to build a toilet and materials required



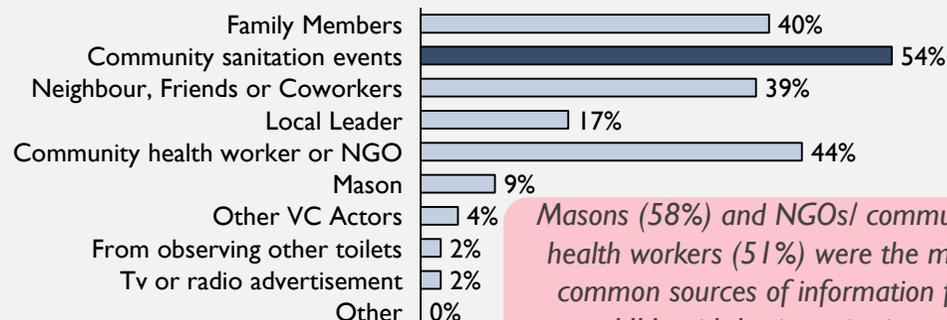
Sought information while considering building a toilet



Attended a CLTS event

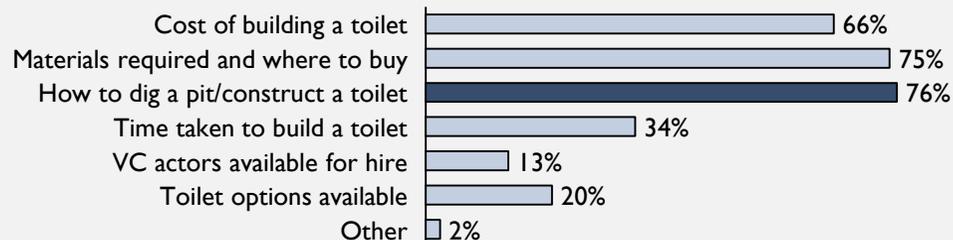


Sources of information about toilets

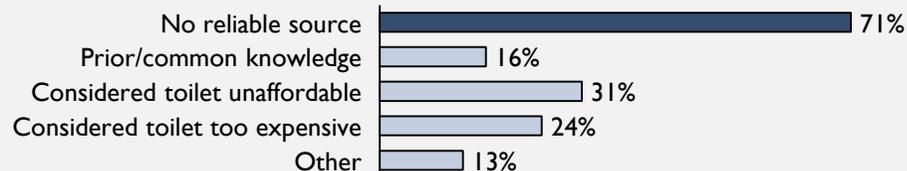


Masons (58%) and NGOs/ community health workers (51%) were the most common sources of information for HHs with basic sanitation

Nature of information captured



Reasons for not seeking information

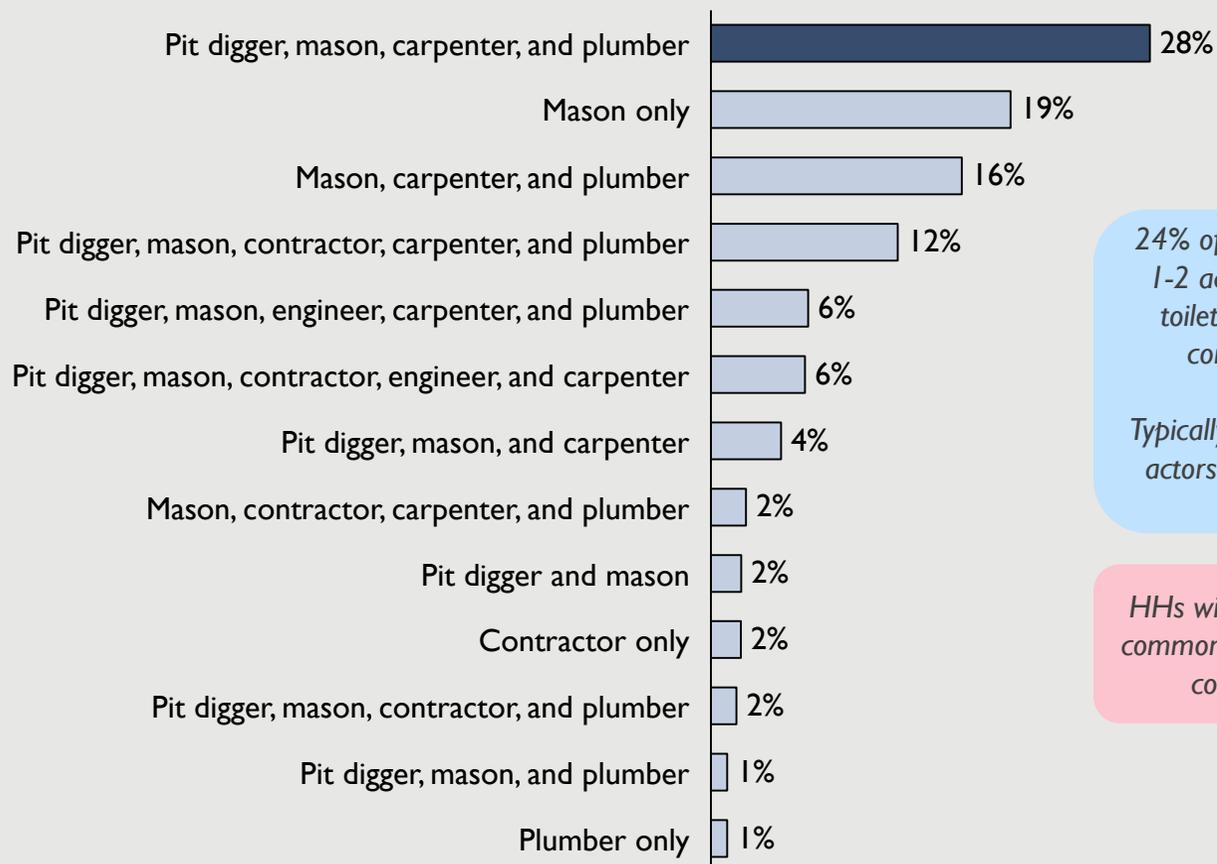


Segment Profiles | Segment I | Buying Process (3/6)

HHs most commonly considered hiring a combination of actors (i.e., pit digger, mason, carpenter and plumber) to construct their toilets



Channels considered for toilet construction



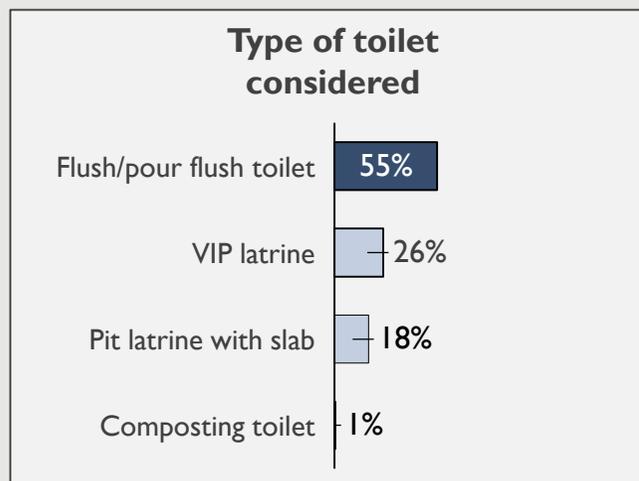
24% of HHs considered hiring 1-2 actors to construct their toilets, the remaining 76% considered 3-5 actors

Typically HHs considered hiring actors from within their local community

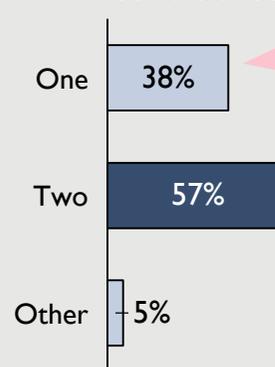
HHs with basic sanitation most commonly hired a mason only to construct their toilets

Segment Profiles | Segment I | Buying Process (4/6)

Most HHs prefer to construct a pour flush toilet, with two compartments, a 6-12 feet deep offset pit lined with concrete blocks, a concrete/ cement cover...



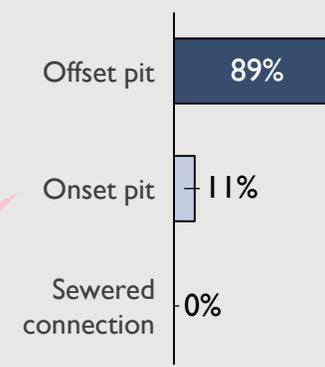
Number of compartments/stances considered



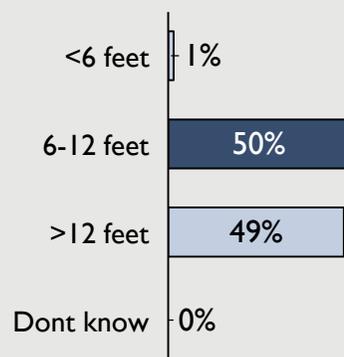
77% of HHs with basic sanitation have one compartment

42% of HHs with basic sanitation have an onset pit

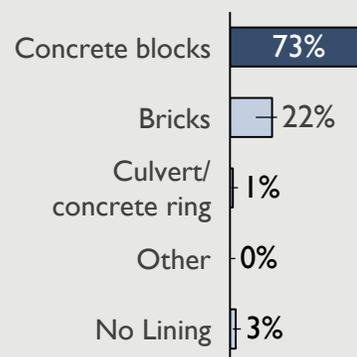
Type of substructure considered



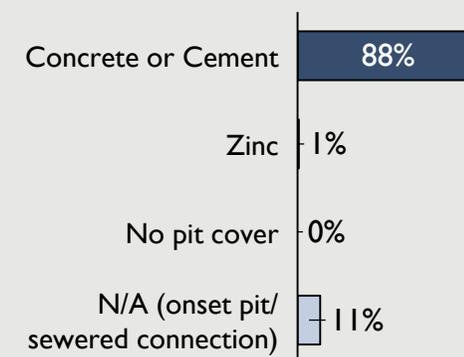
Pit depth considered



Types of pit lining considered



Offset pit cover considered

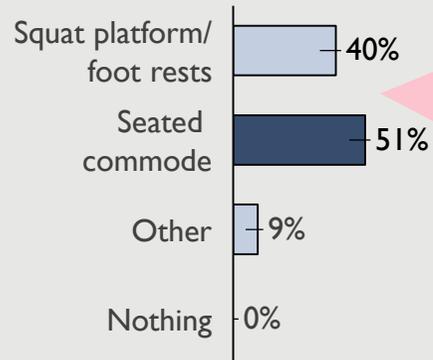


Segment Profiles | Segment I | Buying Process (5/6)

...a cement floor, with seated commode, cement walls, a zinc sheet roof, and a wooden door

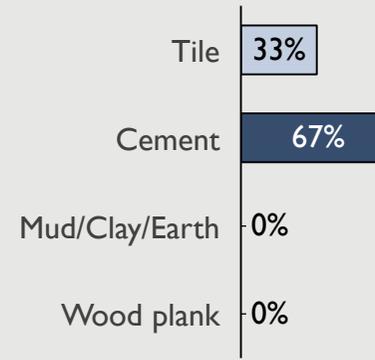


Add-ons considered for the toilet floor

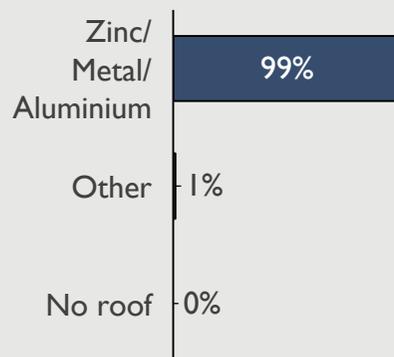


Only 4% of HHs with basic sanitation have installed a seated ceramic commode; 67% have foot rests/cement squat platform

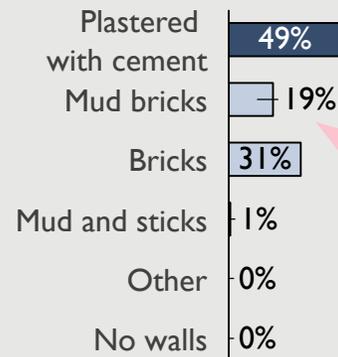
Main material considered for floor surface



Main material considered for roof

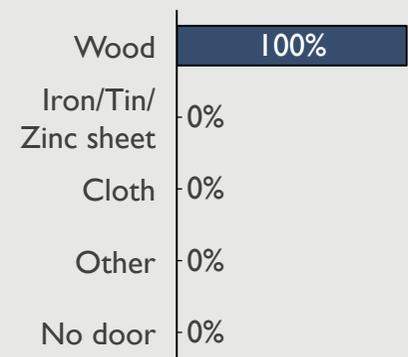


Main material considered for walls



72% of HHs with basic sanitation have mud brick walls, and 17% have mud and stick walls

Main material considered for door

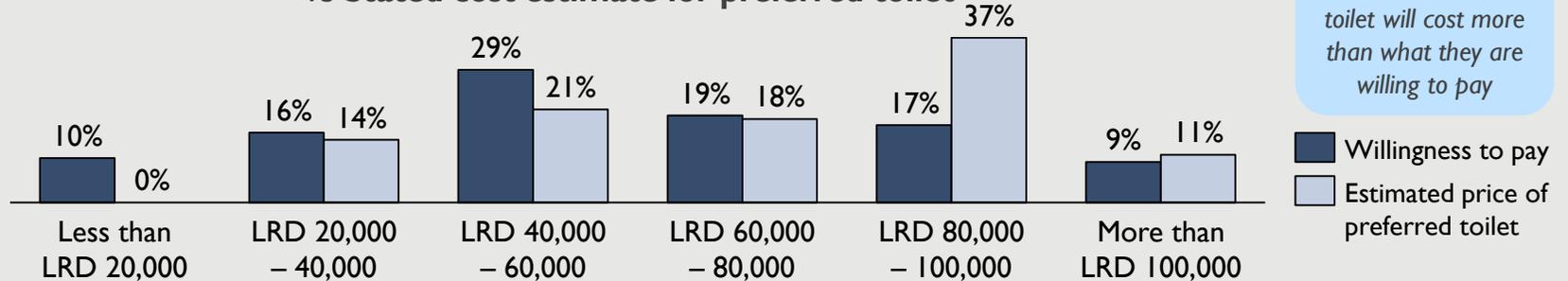


Segment Profiles | Segment I | Buying Process (6/6)

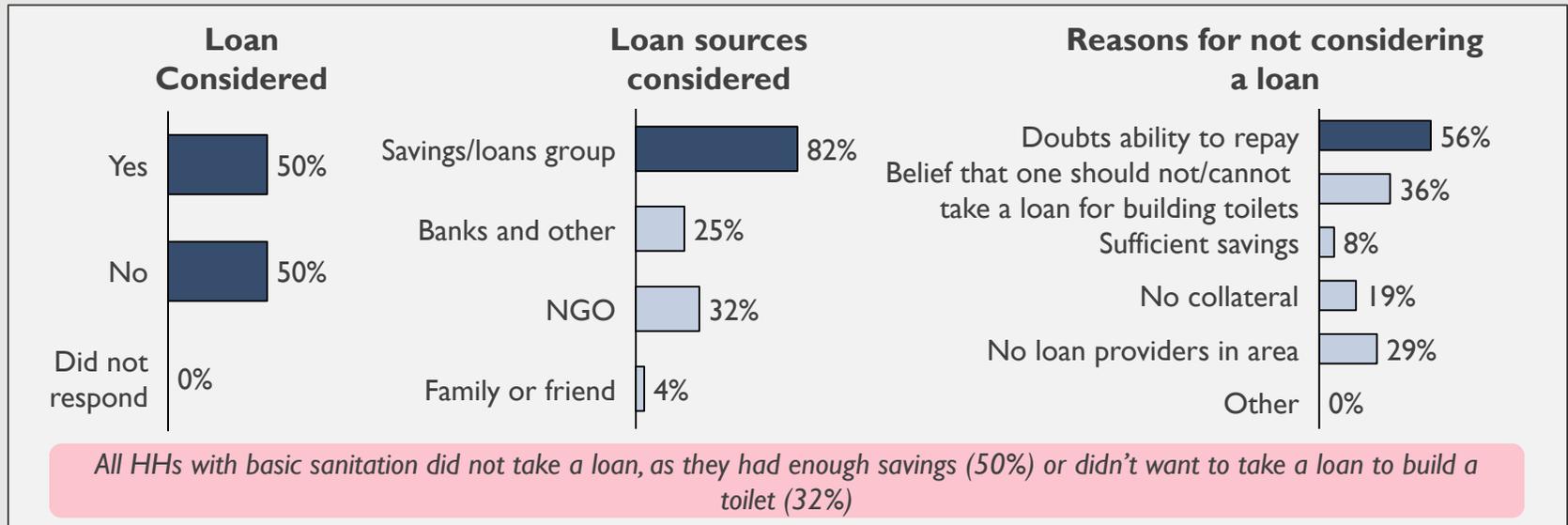
37% of the segment are willing to pay less than the estimated cost for the preferred toilet; half of the segment are willing to consider taking a toilet construction loan, primarily from a savings/loans group



Stated willingness to pay for an improved toilet that is not meant to be shared vs Stated cost estimate for preferred toilet¹



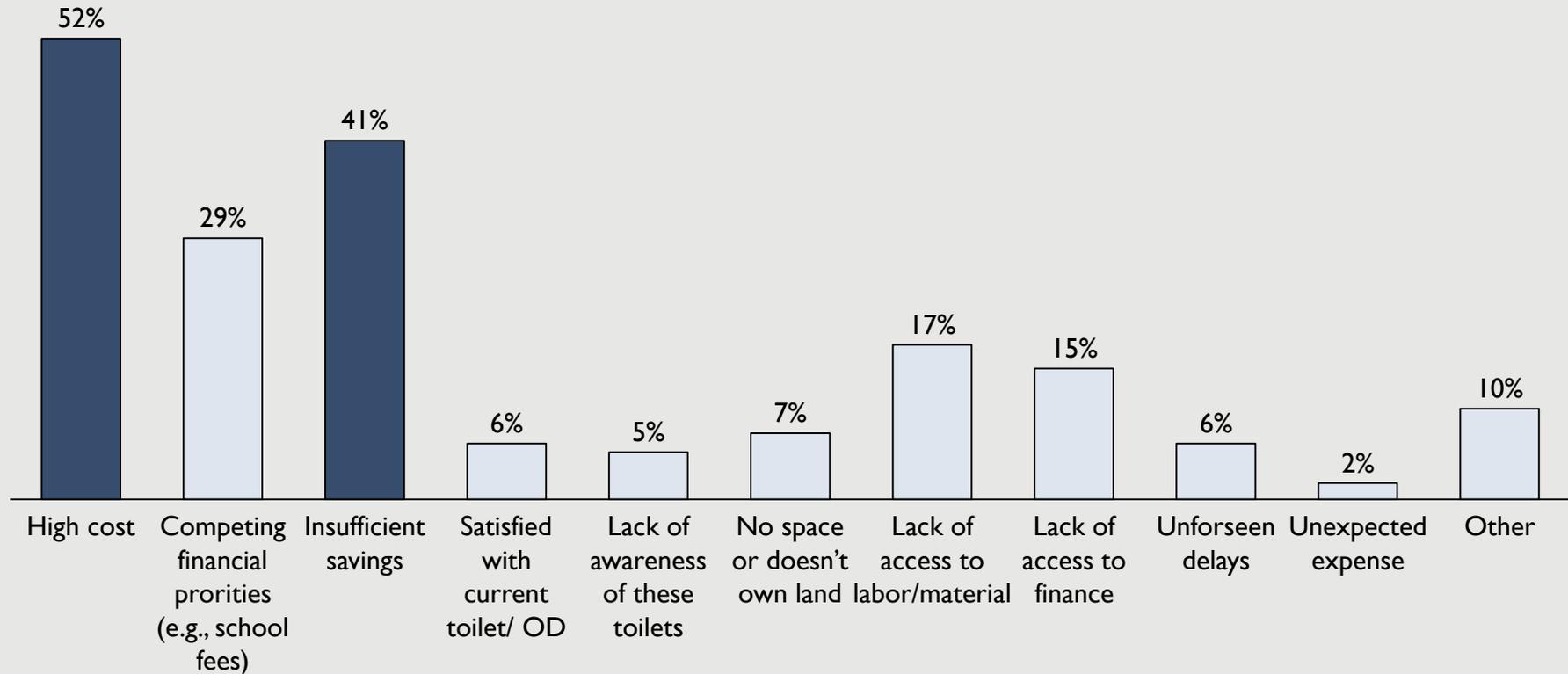
37% of households believe that the toilet will cost more than what they are willing to pay



Segment Profiles | Segment I | Drop-offs from Buying Process

81% of this segment considered investing in BSS but did not proceed with doing so; high costs and insufficient savings were the primary reasons for not investing in BSS

Reasons for not investing in basic sanitation service

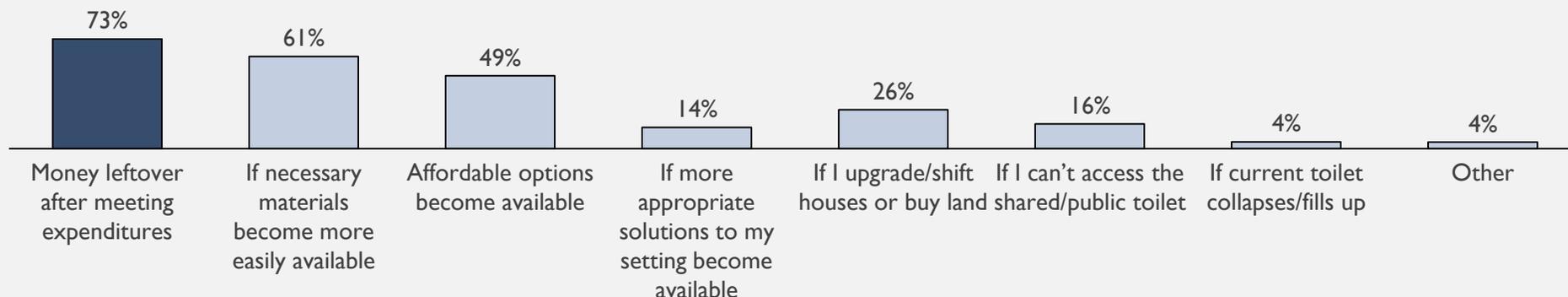


Segment Profiles | Segment I | Future Considerations

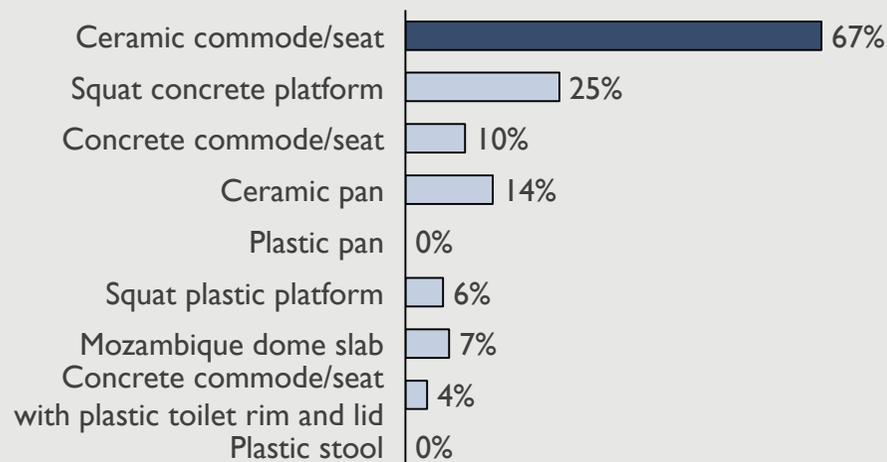


73% of the segment might reconsider investing in BSS if they can set aside enough savings after meeting their expenses; ceramic commode is the most preferred floor upgrade; most HHs will build a new toilet when their pit fills

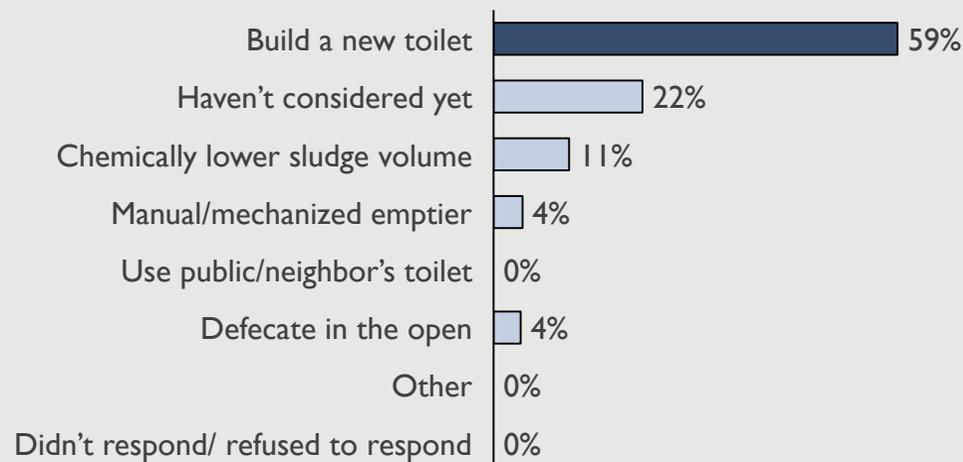
Factors that might increase consideration of a toilet in the future



Toilet floor add-ons considered by HHs without basic sanitation

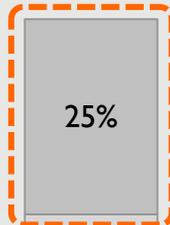


Plan for when existing toilet pit fills up



Segment Profiles | Segments that may Need Nearly Full Subsidy

Segments D, K, and L may need nearly a full subsidy in order to purchase an improved toilet...



			Time taken to walk to nearest marketplace ¹									
			≤ 30 minutes					> 30 minutes				
County			Montserrado	Grand Bassa	Bong	Nimba	Lofa	Montserrado	Grand Bassa	Bong	Nimba	Lofa
House Material	Loan taken	House ownership										
Permanent Material ²	Yes	Owned	A	E			J					
		Not owned	B									
	No	Not owned		F	G		L					
		Owned	C									
Non-Permanent Material ³	Yes		D	H		K						
	No			I								

Distribution of HHs without basic sanitation service by ability to pay for an improved toilet (%)

Let's understand their behavior better.

Segment Profiles | Segment D

Limited sanitation service:

8%

Unimproved toilet:

23%

No toilet:

68%

Although they value the benefits of basic sanitation service, HHs in Segment D practice OD or have limited sanitation service...

			Time taken to walk to nearest marketplace		≤ 30 min					> 30 minutes					
			County					Montserrado	Grand Bassa	Bong	Nimba	Lofa	Montserrado	Grand Bassa	Bong
House Material	Loan taken	House ownership													
Permanent Material	Yes	Owned	A	E					J					L	
		Not owned	B	F					K						
	No	Not owned		F		G									
		Owned	C												
Non-Permanent Material	Yes		D	H											
	No			I			K								

...as they are among the least affluent in our sample, and are uncomfortable living near a toilet

Segment Profiles | Segment D | Customer Story

Jackson lives and works in Careysburg, Montserrat with his wife, sister and four children. He has no formal education, and works as a street cleaner to support his family.

He and his family reside in one of the poorest communities in Montserrat. They live in a house with walls made of mud bricks, and a mud floor. They own limited assets, such as a mobile phone. Jackson's income is irregular, and he sometimes has to borrow money from a friend to pay for his children's school fees, or to repair/replace his tools. He has no access to electricity, and obtains water for bathing and cleaning from a nearby river.

Jackson believes that community cleanliness is important, and that using a toilet is a matter of pride for him and his family. He believes that owning a toilet is a sign of prestige and modernity, and wants his community to respect him. His family use an unimproved toilet facility, which is shared with other members of the community. The toilet is a pit latrine, made with a mud floor and walls, with foot rests added to the floor, a lockable wooden door, and zinc roof. Jackson and his family are largely satisfied with using the toilet as it offers them privacy and is safe. However in the rainy months, it is difficult to access the toilet as it is located a short distance away from their house. While this is inconvenient, Jackson does not want the toilet to be near his house as he feels it is unhygienic. Additionally, the toilet can get uncomfortable to use during the rains, because of the mud floor.

Jackson would like to build an individual pour flush toilet to reduce smell, with a seated ceramic commode to ensure that urine or feces do not dirty the floor. He is willing to pay LRD 20,000 for the toilet. However, he thinks that this would not be enough to build a modern toilet that is easy to keep clean and provides the comfort and security that his family values. Jackson would be open to taking a loan to finance toilet construction, but he is unsure if the bank would offer him the required amount, as he feels they would doubt his ability to repay the loan.

Segment Profiles | Segment D | Key Demographic Statistics

Segment size		Demographics		Income & occupation	
% of potential market	2%	Family size (Avg.)	7	Nature of income	
# of households	11K	Gender of HH Head		• Regular	50%
		• Male	53%	• Seasonal	50%
		• Female	47%	Primary occupation²	
		HH Head education¹		• Unskilled Labor	46%
		• No education	46%	• Agriculture	42%
		• Up to Junior High	54%	• Petty Trading	8%
		• Senior High or above	0%	• Skilled Labor	4%
Sanitation profile					
Limited sanitation service	8%				
Unimproved toilet	23%				
No toilet	68%				

Affluence indicators		Access indicators		Attitudes & beliefs ³	
Total monthly expenditure		Assets and other indicators		Distance to nearest market⁴	
High (>LRD 40K)	31%	Mobile phone	53%	<30 minutes	12%
Medium (LRD 20K-40K)	54%	Computer	0%	30 minutes to 1 hour	0%
Low (≤LRD 20K)	15%	Television	0%	Not walking distance	88%
Total asset value (avg.)	14k	Chair	35%	Access to electricity	3%
Total asset value (spread)		Agricultural land	81%	Non-drinking water source⁵	
High (> LRD 120K)	0%	Any mode of transport	3%	Surface water	73%
Medium (LRD 75K-120K)	4%	Home improvement	35%	Other unprotected sources	8%
Low (LRD 35K-75K)	0%	Loan group member	23%	Hand pump, tube well or borehole	12%
Very low (< LRD 35K)	96%	Mobile money user	12%	Other protected sources	8%
				Believe that community cleanliness is important	
				100%	
				Believe it is embarrassing to be seen practicing OD	
				100%	
				Willing to pay for products that bring prestige	
				72%	
				Believe it is taboo to live near a toilet	
				52%	

1. Indicates highest level of education attended; 2. Top four occupations for each segment are shown; 3. Respondents were asked if they 'strongly disagreed', 'disagreed', 'agreed', or 'strongly agreed' to statements related to their attitudes and beliefs. Here the combined percentage of those who 'strongly agreed' or 'agreed' with a statement is reported, barring willingness to pay for prestige products, for which only 'strongly agreed' is shown; 4. Refers to a permanent market with stores; 5. Total % ≠100 as it is rounded off; **Source:** HH interviews (Profile n=29; Detailed n=9), FSG analysis

Segment Profiles | Segment D | Customer Persona

Setting

- **Location:** Urban Montserrado, typically within or near Monrovia
Typical family size: 7 people, with 3 children and no elderly¹
- **Type of house:** Live in their own house, made predominantly of temporary materials
- **Income and occupation:** The segment is split in half between seasonal and regular income; unskilled labor and agriculture are the dominant occupations
- **Mobile phone and mobile money:** Only half the segment own a mobile phone; mobile money is used by only a tenth of the segment
- **Total value of assets:** HHs are not affluent; the average total asset value per HH is LRD ~14,000
- **Loan groups:** Nearly a quarter are loan group members
- **Loans:** Only a fifth of the segment have taken loans in the past, primarily for school fees or business; most borrowed from a friend

Mental Model

- **Strongly desire respect** from their community
- **Value products** that are **prestigious** and make life **convenient**
- **Conforming to the norm is not important** to this group, as more than three quarters suggest that one should do things 'differently' from their neighbors
- **Place high value on ownership of a toilet.** The majority strongly believe owning a toilet is a sign of **prestige**. Majority have some idea of the **health, safety, and privacy benefits** of owning a toilet, and equate owning a toilet to **being modern**
- **Care about community cleanliness**, and to **witness** or to be seen **practicing OD is considered embarrassing**
 - Agree that it is **irresponsible to not have a toilet**
 - Strongly **prioritize school fees over building a toilet**, relative to other segments
 - **Strong prevalence of taboo associated with living near or using a toilet**



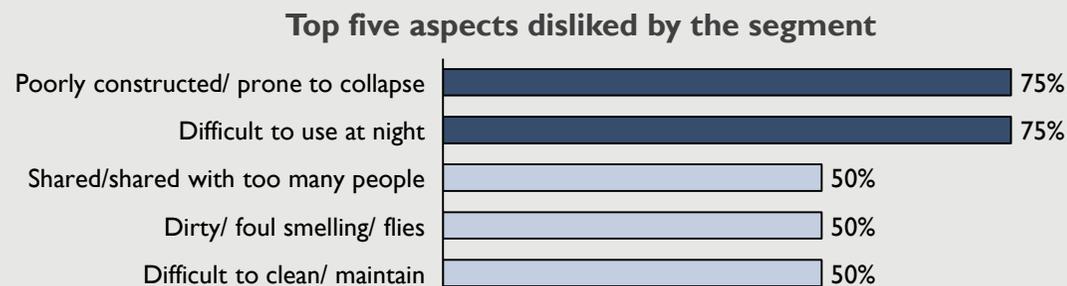
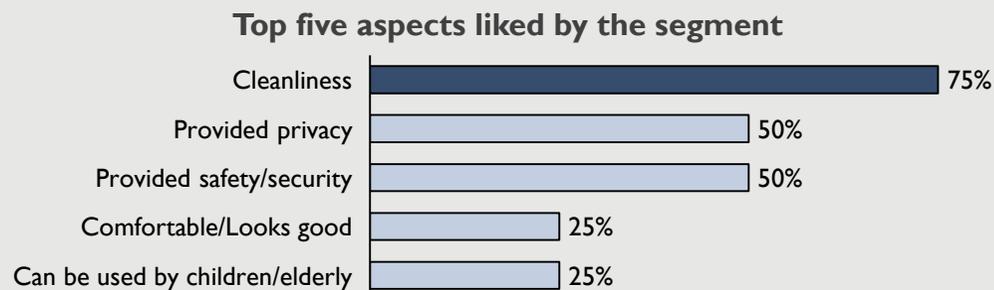
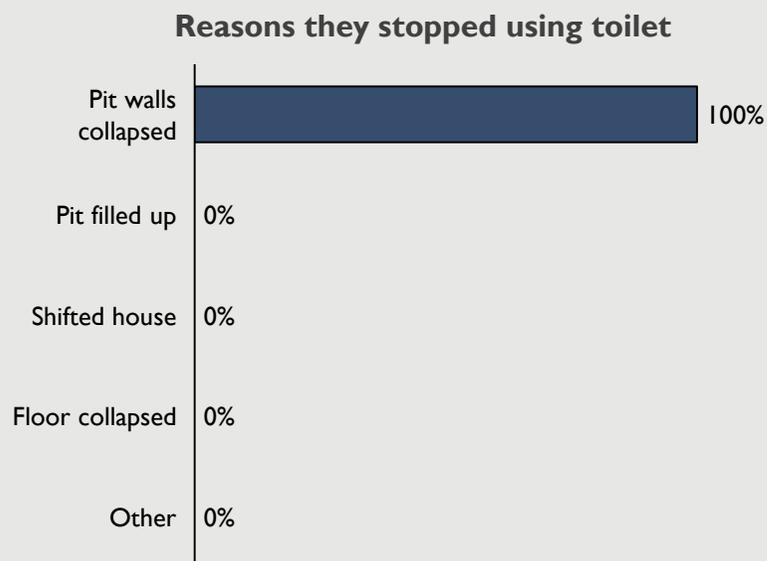
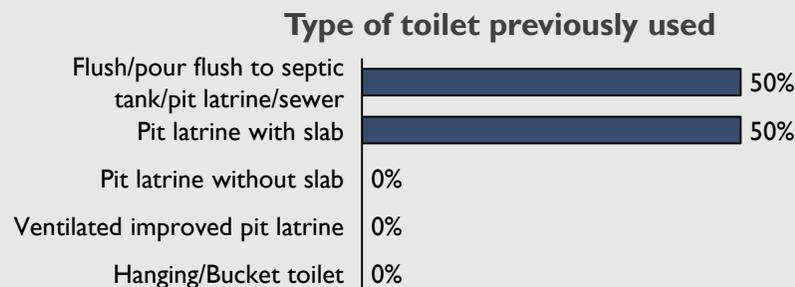
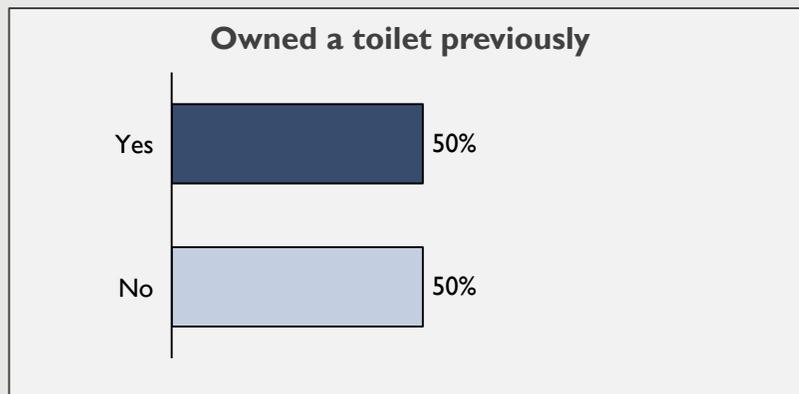
- **Current product and usage:** Two thirds of the segment practice OD, and a quarter use unimproved toilets
- **Desired product:** A toilet that is easy to clean with water, is unlikely to collapse and comfortable, is well ventilated, and has the following functionalities:
 - **Toilet type:** Pour flush toilet to reduce smell
 - **Substructure:** Offset pit to reduce pit heat; depth of 6-12ft, lined with concrete blocks

- **Interface:** Tiled floor, seated ceramic commode to ensure floor is not dirtied, two compartments (one for the toilet, one for bathing)
- **Superstructure:** Zinc sheet roof, cement walls, wooden door
- **Estimated cost and ability to pay:** Estimated cost of desired toilet - LRD 57,000; average ability to pay (out-of-pocket) - LRD 7,000
- **Financing:** nearly three quarters of the segment would consider taking a loan, with most opting take one from a bank; biggest reason for not taking a loan is a fear of the inability to pay back the loan

The Ask

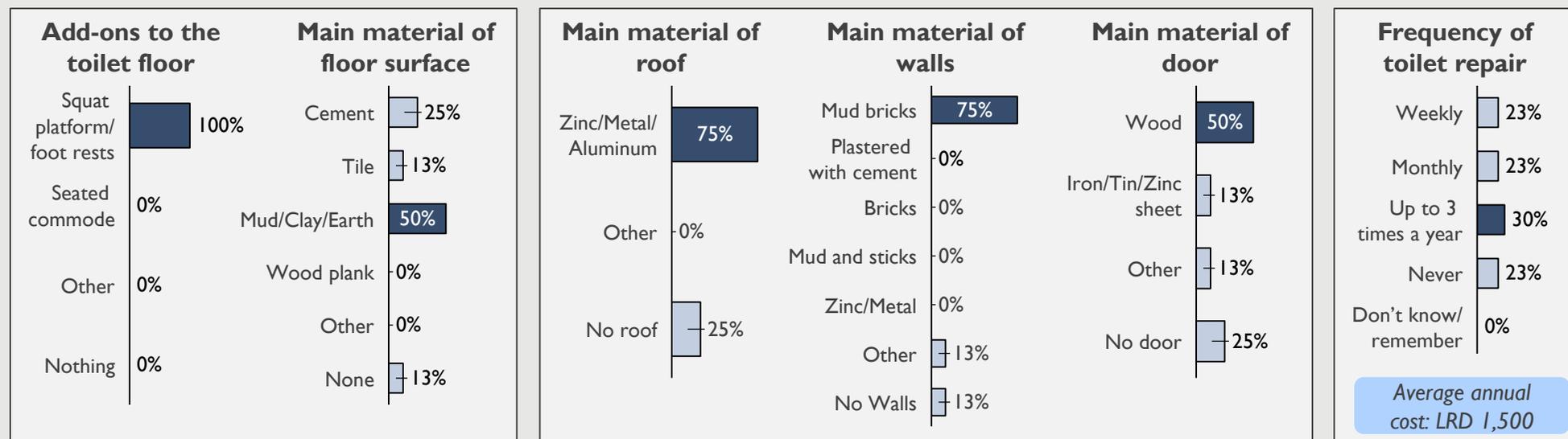
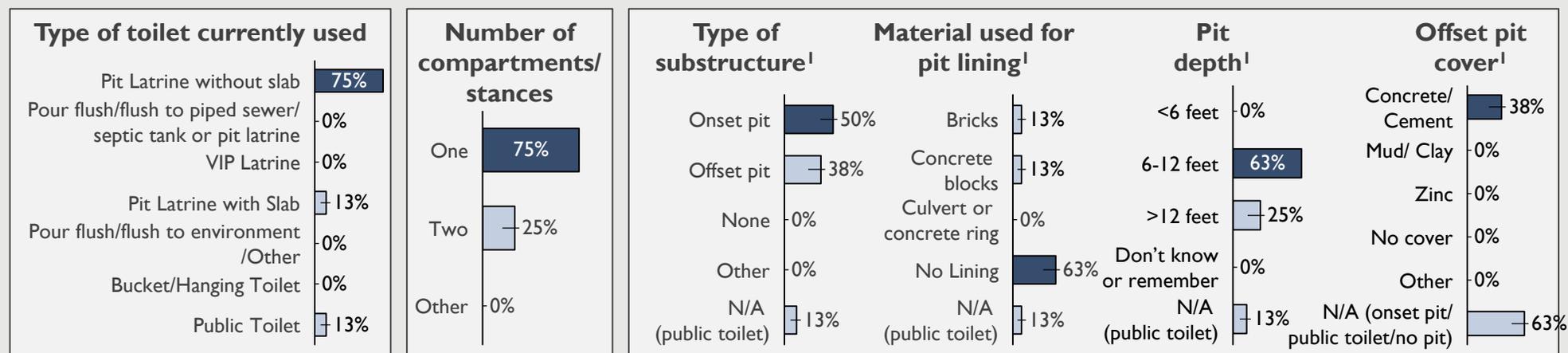
Segment Profiles | Segment D | Past Toilet Usage for HHs Practicing OD

68% of HHs in this segment currently practice OD, and half of them did not own a toilet previously; those who did, used a pour flush toilet or pit latrine with slab, and liked the cleanliness, privacy, and safety/security offered to them



Segment Profiles | Segment D | Current Sanitation Profile for Toilet Users

Toilet users in this segment typically use a pit latrine with a mud/clay/earth floor, with a squat platform/ foot rests add-on, an onset pit, and a superstructure built with permanent materials

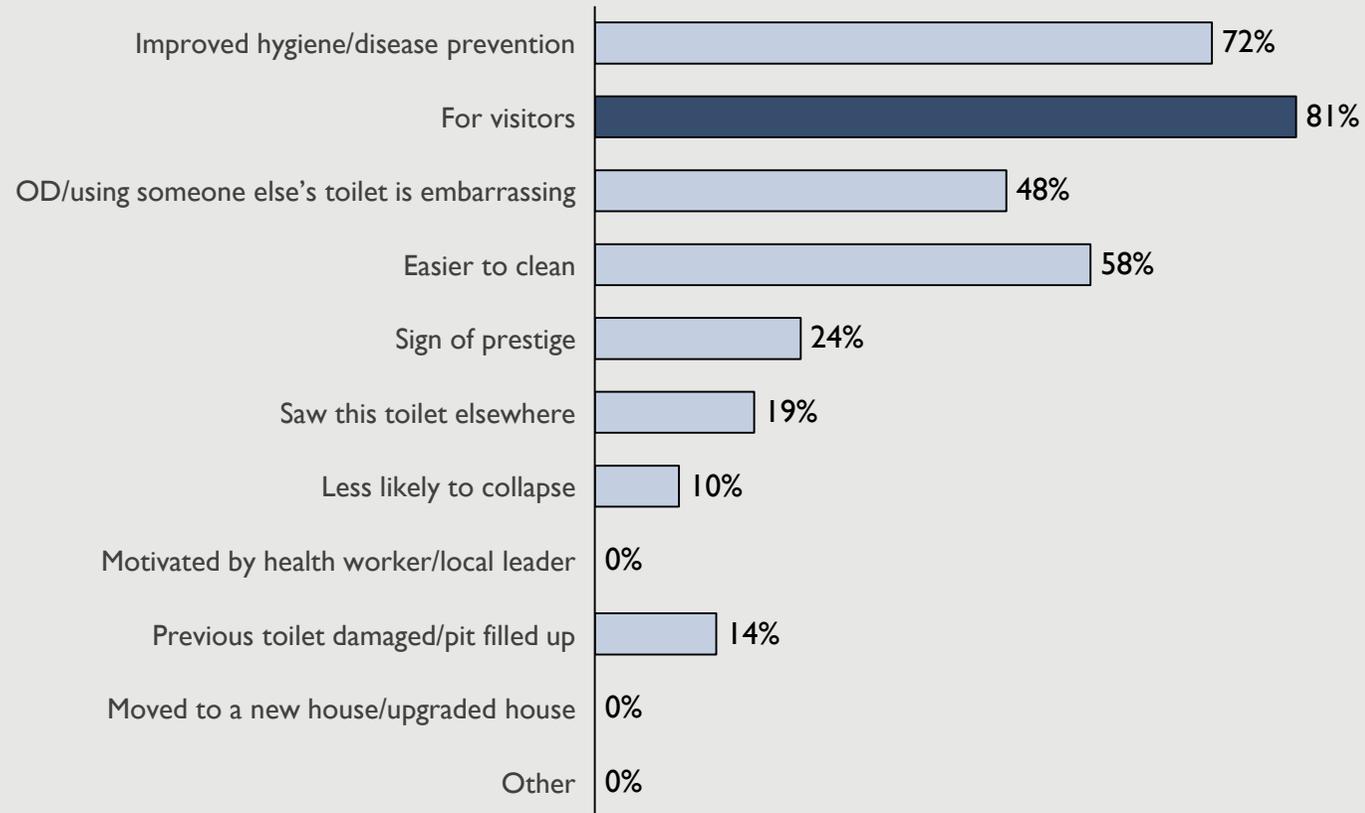


Segment Profiles | Segment D | Buying Process (1/6)

Most HH wanted to invest in an improved toilet that is not meant to be shared, because of visitors, and because it provides improved hygiene, helping prevent diseases

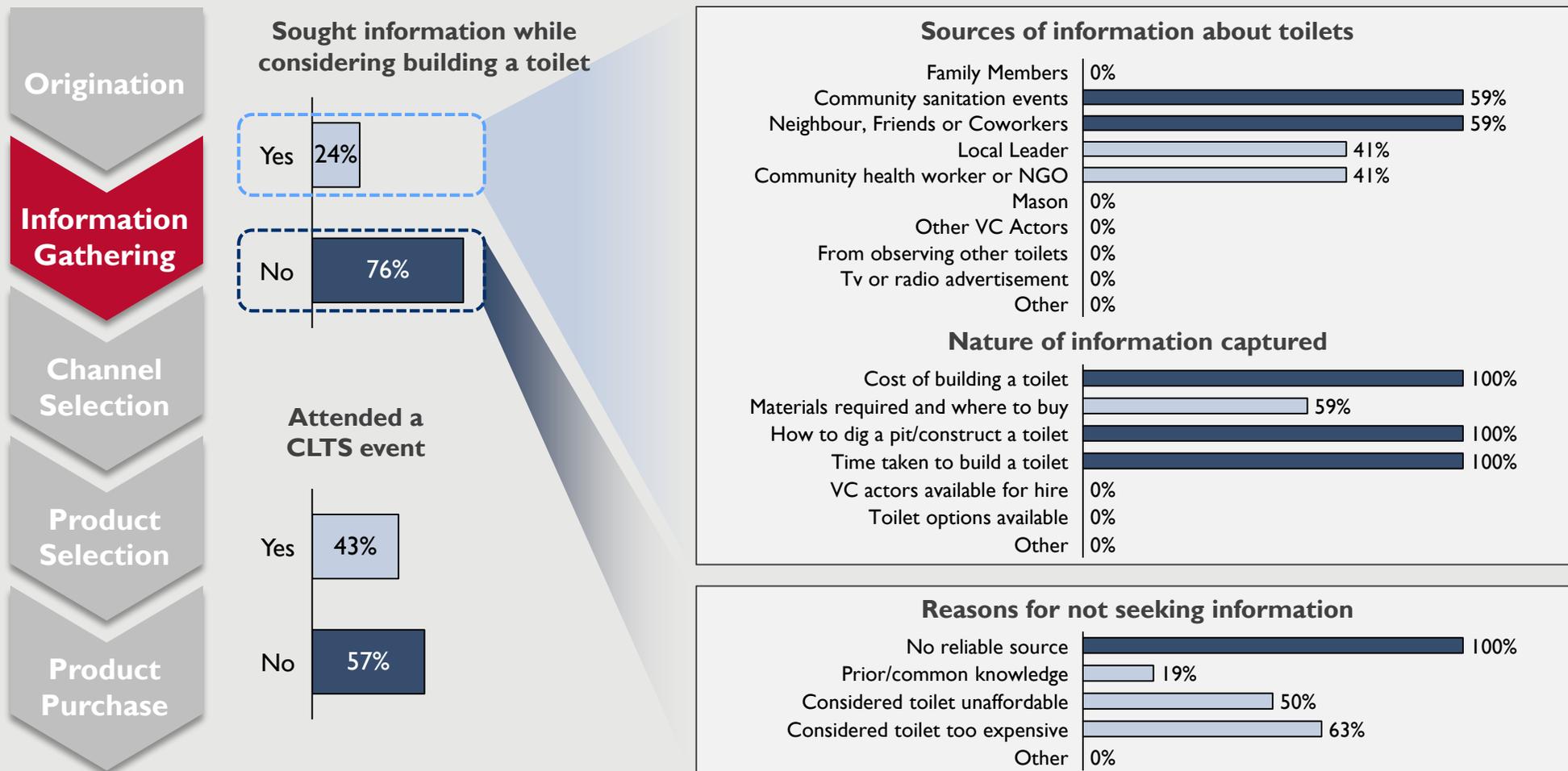


Origination of need for toilet



Segment Profiles | Segment D | Buying Process (2/6)

Most HH did not seek information on how to build a toilet because there were no reliable sources, and because HHs considered toilets too expensive

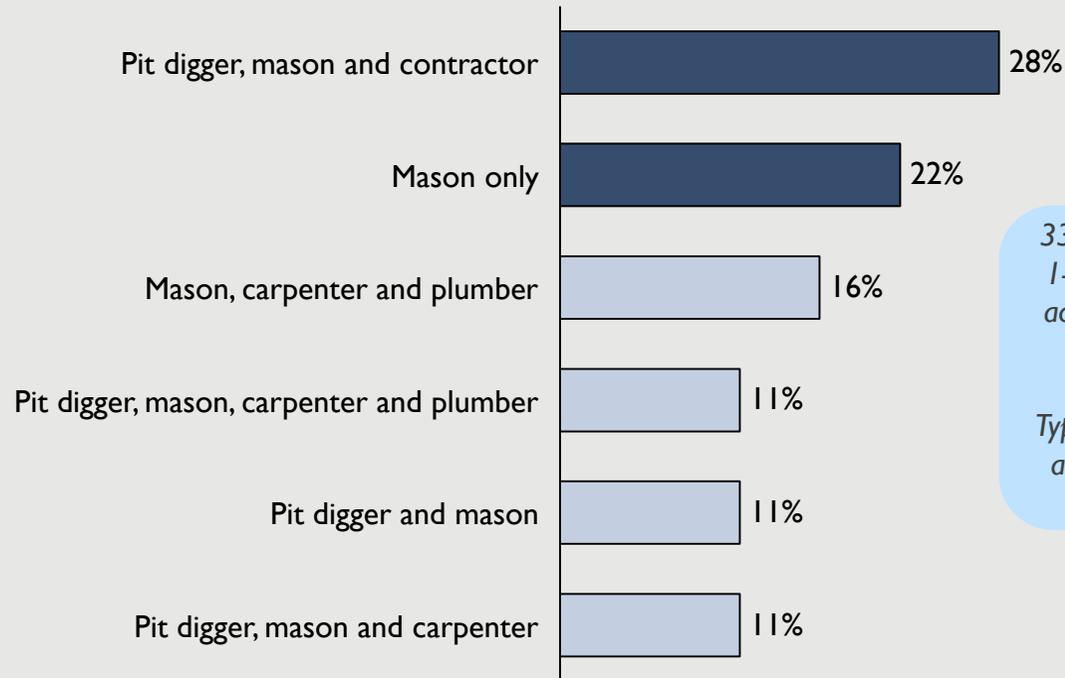


Segment Profiles | Segment D | Buying Process (3/6)

HHs most commonly considered hiring a combination of actors (i.e., pit digger, mason and contractor), or considered hiring a mason only, to construct their toilets



Channels considered for toilet construction

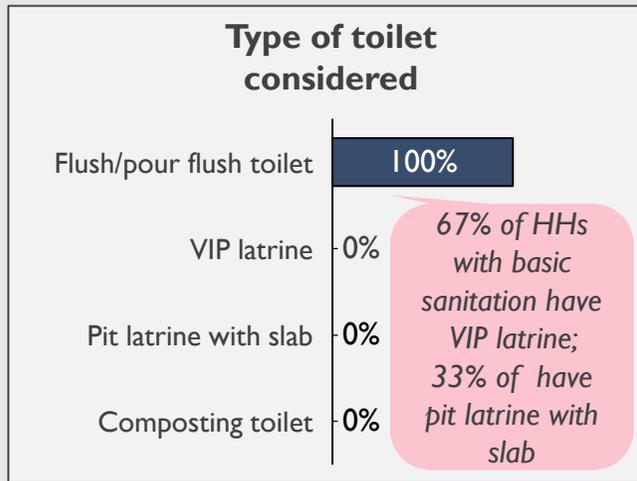


33% of HHs considered hiring 1-2 actors, 56% considered 3 actors, and 11% considered 4 actors

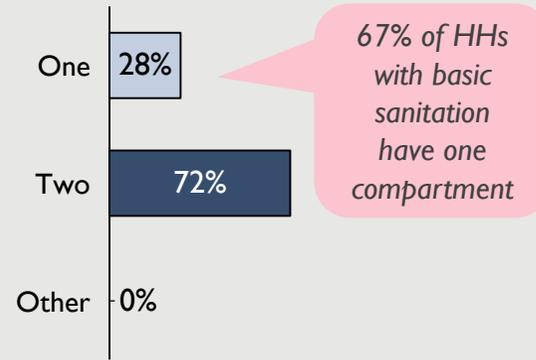
Typically HHs considered hiring actors from within their local community

Segment Profiles | Segment D | Buying Process (4/6)

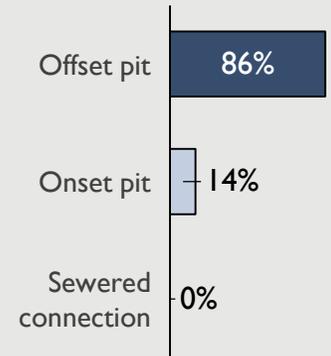
Most HHs prefer to construct a pour flush toilet, with two compartments, a 6-12 feet deep offset pit, lined with concrete blocks, a concrete or cement cover...



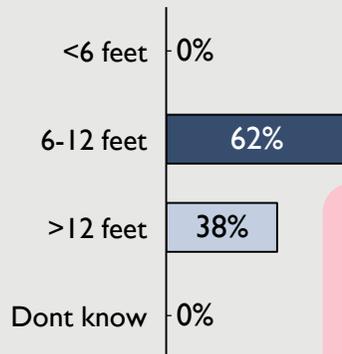
Number of compartments/stances considered



Type of substructure considered

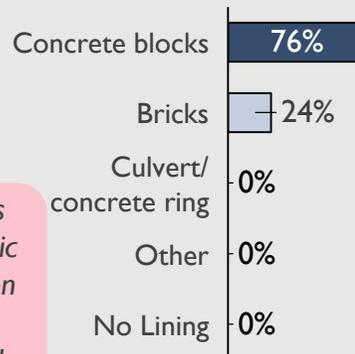


Pit depth considered

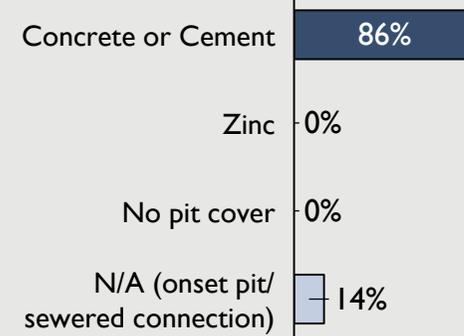


All HHs with basic sanitation have a pit depth of 6-12 ft

Types of pit lining considered



Offset pit cover considered



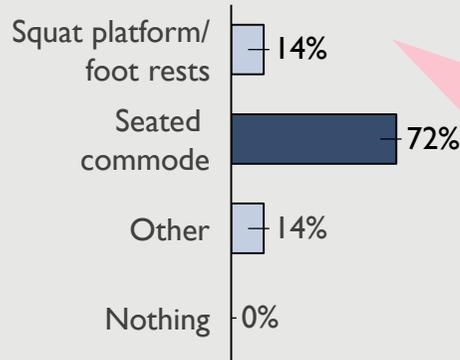
Callout boxes capture key differences exhibited by those with basic sanitation from this segment

Segment Profiles | Segment D | Buying Process (5/6)

...a tiled floor, with a seated commode, cement walls, a zinc sheet roof and a wooden door

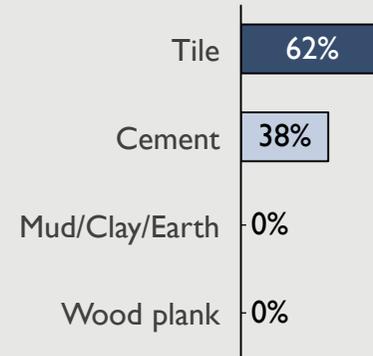


Add-ons considered for the toilet floor

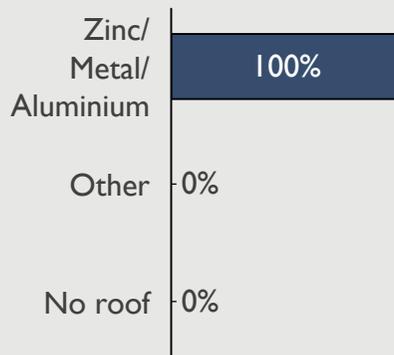


33% of HHs with basic sanitation have installed a ceramic commode; 33% have foot rests/cement squat platform

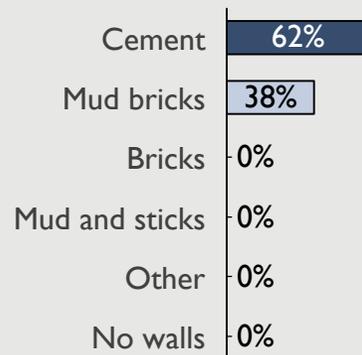
Main material considered for floor surface



Main material considered for roof

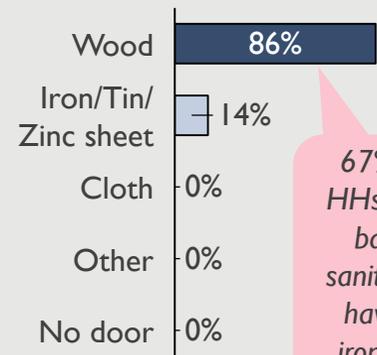


Main material considered for walls



67% of HHs with basic sanitation have mud bricks walls, followed by zinc/metal sheet walls (33%)

Main material considered for door



67% of HHs with basic sanitation have a iron/tin/zinc sheet

Segment Profiles | Segment D | Buying Process (6/6)

47% of the segment are willing to pay less than the estimated cost for the preferred toilet; nearly three quarters of the segment are willing to consider taking a toilet construction loan, primarily from a bank

Origination

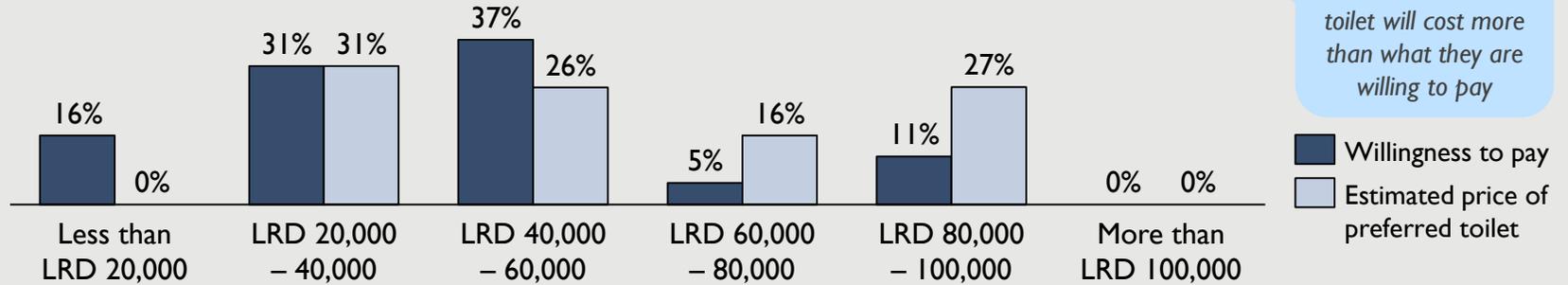
Information Gathering

Channel Selection

Product Selection

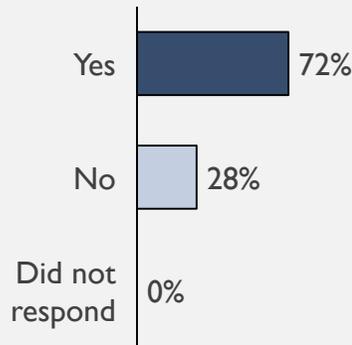
Product Purchase

Stated willingness to pay for an improved toilet that is not meant to be shared vs Stated cost estimate for preferred toilet¹

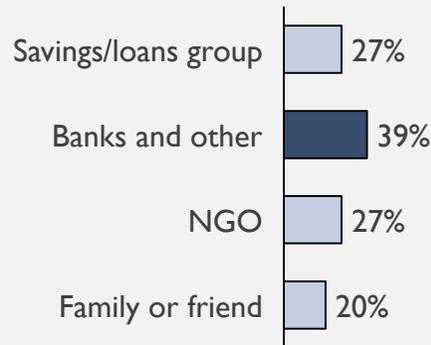


47% of households believe that the toilet will cost more than what they are willing to pay

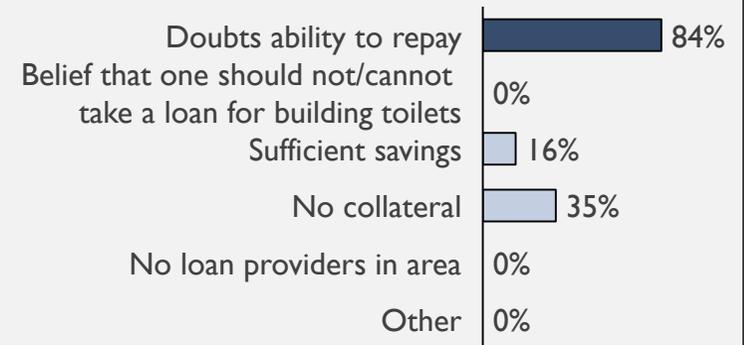
Loan Considered



Loan sources considered



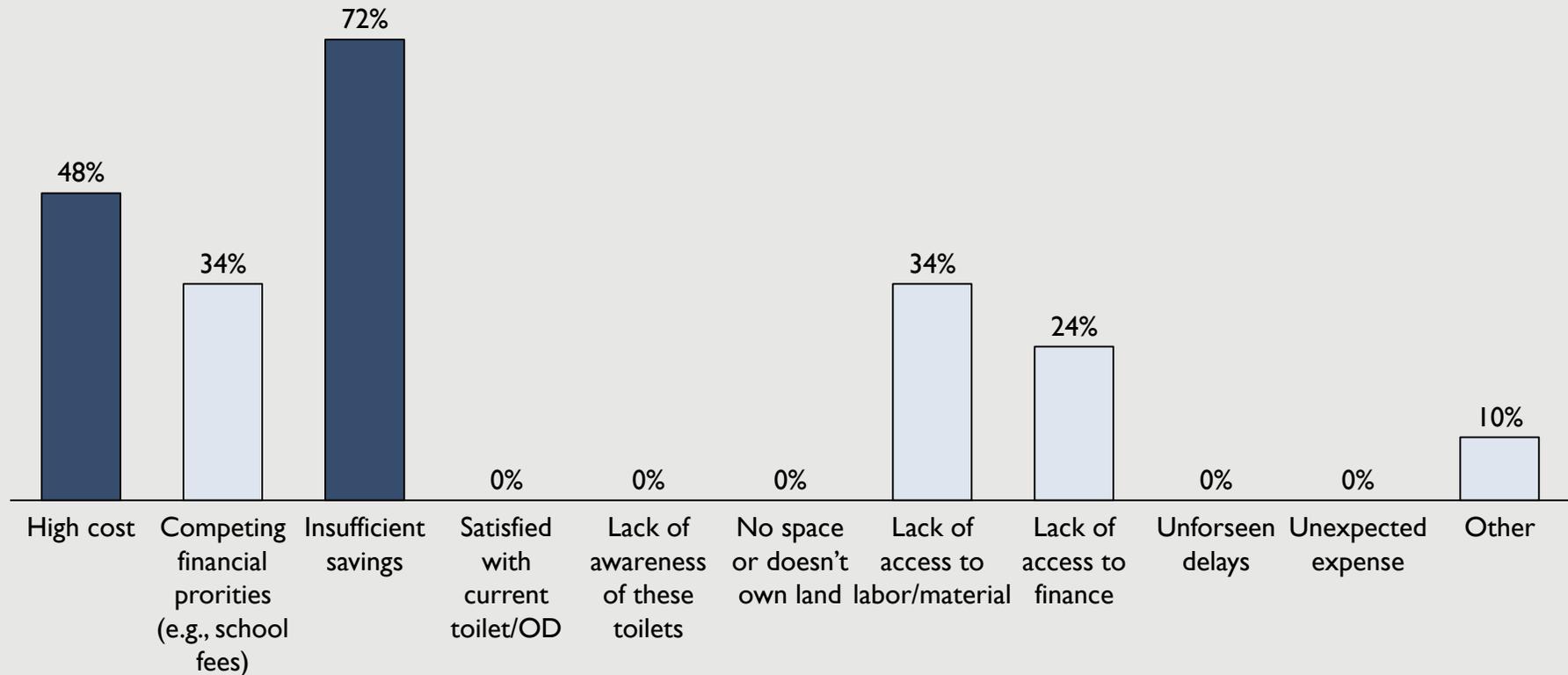
Reasons for not considering a loan



Segment Profiles | Segment D | Drop-offs from Buying Process

All HHs in this segment considered investing in BSS but did not proceed with doing so; insufficient savings and high costs were the primary reasons for not investing in BSS

Reasons for not investing in basic sanitation service



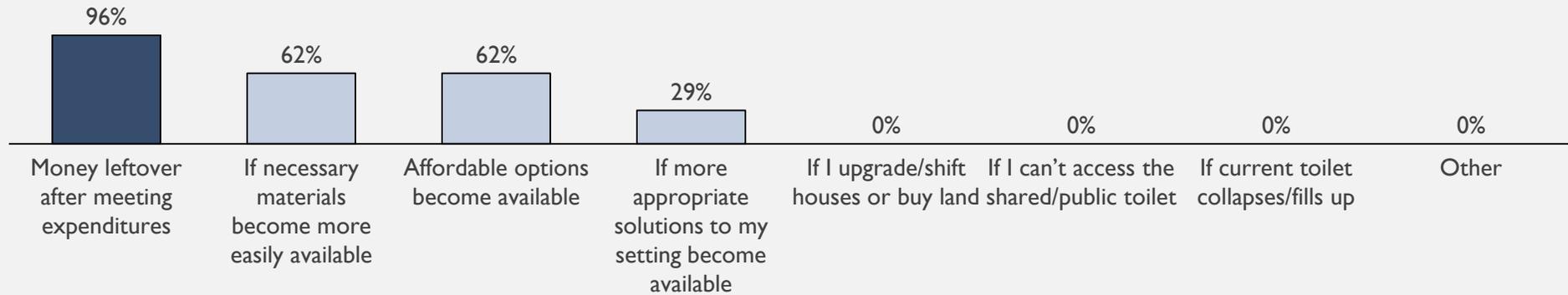
Segment Profiles | Segment D | Future Considerations



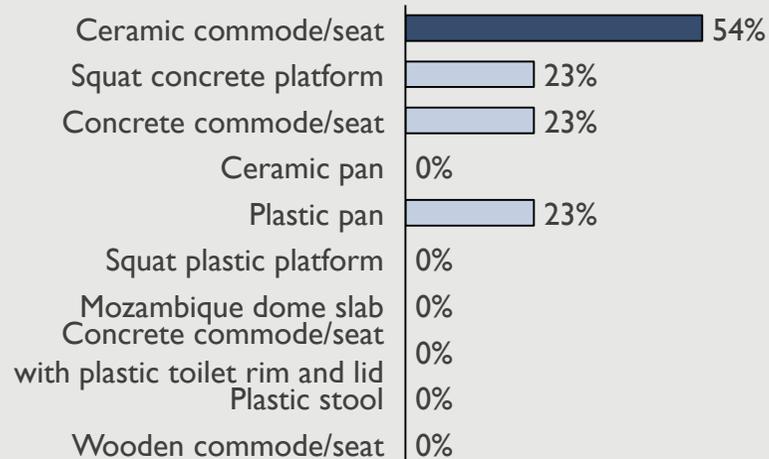
[Click to go back](#)

96% of the segment might reconsider investing in BSS if they can set aside enough savings after meeting their expenses; ceramic commode is the most preferred floor upgrade; most toilet owners will build a new toilet after pit fills

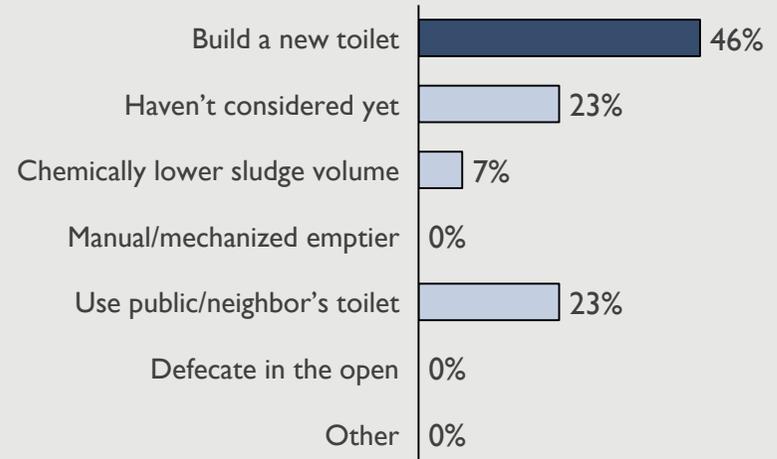
Factors that might increase consideration of a toilet in the future



Toilet floor add-ons considered by HHs without basic sanitation



Plan for when existing toilet pit fills up



Segment Profiles | Segment K

Limited sanitation service:

9%

Unimproved toilet:

6%

No toilet:

84%

Households in Segment K primarily practice OD as they are among the least affluent,...

			Time taken to walk to nearest marketplace									
			≤ 30 min					> 30 minutes				
			County									
			Montserrado	Grand Bassa	Bong	Nimba	Lofa	Montserrado	Grand Bassa	Bong	Nimba	Lofa
House Material	Loan taken	House ownership										
Permanent Material	Yes	Owned	A	E			J				L	
		Not owned	B	F		G						
	No	Not owned		F		G						
		Owned	C	H			K					
Non-Permanent Material	Yes	D	H			K						
	No		I									

... do not attach much importance to community cleanliness, and consider OD to be a convenient practice

Note: 33% of the segment resides in Bong, 23% in Montserrado, 22% in Grand Bassa, and 22% in resides in Nimba.

Segment Profiles | Segment K | Customer Story

Ben lives and works in Dark Forest community, Suakoko, Bong with his wife, brother, cousin and three children. He has no formal education, and works in agriculture.

Ben and his family are not affluent; they live in a house with walls made of mud and sticks, and a mud floor. They have no access to electricity, and own very limited assets, such as a mobile phone. Their average monthly household expenditure is LRD 23,000 and is spent primarily on food, healthcare, and education. Ben's agricultural income varies depending on the crop output and the prevailing rates in the market, which sometimes affects his ability to meet his daily expenses.

Community cleanliness is not a very high priority for Ben. He and his family visit a nearby lake to defecate, and carry out other daily activities (e.g., bathing, washing clothes). They also carry back water for cooking and cleaning their home. They know that defecating in the lake is unhygienic and can lead to water-borne diseases and skin problems, but feel it is the most convenient option, and allows them to use water to clean themselves after. While there is a public toilet in his community constructed by an NGO, it is located far away from his house. Ben's family used to use an unimproved toilet at his neighbors house; however, it eventually collapsed because of the non-durable materials used to construct it.

Ben hopes to build a toilet in the future, so that his family can enjoy the prestige, privacy, convenience, and safety of a toilet. He is willing to spend up to a maximum of LRD 20,000 on a new toilet. However, based on some information he gathered, Ben believes constructing his desired flush toilet will cost him LRD 40,000-60,000, and will have to travel a significant distance in order to source the necessary construction materials. He feels he cannot save this amount of money from his income, and is uncomfortable with taking a loan of this amount as he believes he will be unable to pay it back.

Segment Profiles | Segment K | Key Demographic Statistics

Segment size		Demographics		Income & occupation	
% of potential market	15%	Family size (Avg.)	7	Nature of income	
# of households	82K	Gender of HH Head		• Regular	65%
		• Male	52%	• Seasonal	35%
		• Female	48%	Primary occupation²	
		HH Head education¹		• Agriculture	49%
		• No education	51%	• Unskilled Labor	36%
		• Up to Junior High	32%	• Petty Trading	8%
		• Senior High or above	17%	• Skilled Labor	3%
Sanitation profile					
Limited sanitation service	9%				
Unimproved toilet	6%				
No toilet	84%				
Affluence indicators		Access indicators		Attitudes & beliefs ³	
Total monthly expenditure		Assets and other indicators		Distance to nearest market⁴	
High (>LRD 40K)	13%	Mobile phone	54%	<30 minutes	2%
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Total asset value (avg.)	24k	Chair	39%	Access to electricity	7%
Total asset value (spread)		Agricultural land	83%	Non-drinking water source	
High (> LRD 120K)	2%	Any mode of transport	4%	Surface water	56%
Medium (LRD 75K-120K)	4%	Home improvement	26%	Other unprotected sources	20%
Low (LRD 35K-75K)	16%	Loan group member	36%	Hand pump, tube well or borehole	22%
Very low (< LRD 35K)	78%	Mobile money user	18%	Other protected sources	2%
				Believe that community cleanliness is important	
				60%	
				Believe it is embarrassing to be seen practicing OD	
				89%	
				Willing to pay for products that bring prestige	
				21%	
				Believe it is taboo to live near a toilet	
				29%	

1. Indicates highest level of education attended; 2. Top four occupations for each segment are shown; 3. Respondents were asked if they 'strongly disagreed', 'disagreed', 'agreed', or 'strongly agreed' to statements related to their attitudes and beliefs. Here the combined percentage of those who 'strongly agreed' or 'agreed' with a statement is reported, barring willingness to pay for prestige products, for which only 'strongly agreed' is shown; 4. Refers to a permanent market with stores;

Source: HH interviews (Profile n=630; Detailed n=85), FSG analysis

Segment Profiles | Segment K | Customer Persona

Setting

- **Location:** Remote areas of Montserrado, Grand Bassa, Nimba, Bong
- **Typical family size:** 7 people, with 3 children and no elderly¹
- **Type of house:** Live in their own house, made predominantly of temporary materials
- **Income and occupation:** Typically have regular income, however a third have seasonal income; agriculture is the dominant occupation, followed by unskilled labor
- **Mobile phone and mobile money:** Half the segment own a mobile phone, and mobile money is used by nearly a fifth of the customers in this segment
- **Total value of assets:** HHs are not affluent; the average total asset value per HH is LRD ~24,000
- **Loan groups:** A third are loan group members
- **Loans:** Nearly a third of the segment have taken loans in the past, primarily for school fees or medical expenses; loans are typically taken from savings/loan groups



Mental Model

- **Desire respect** from their community
- **Value products** that are **prestigious** and make life **convenient**
- **Conforming to the norm is not particularly important** to this group, as more than half suggest that one should do things 'differently' from their neighbors
- **Place high value on ownership of a toilet.** The majority strongly believe owning a toilet is a sign of **prestige**. Most of the segment have some idea of the **health, safety, and privacy benefits** of owning a toilet, and equate owning a toilet to **being modern**
- **Do not care as much for community cleanliness**, however **witnessing** or be seen **practicing OD is considered embarrassing**
 - Agree that it is **irresponsible to not have a toilet**
 - Strongly **prioritize school fees over building a toilet**, relative to other segments

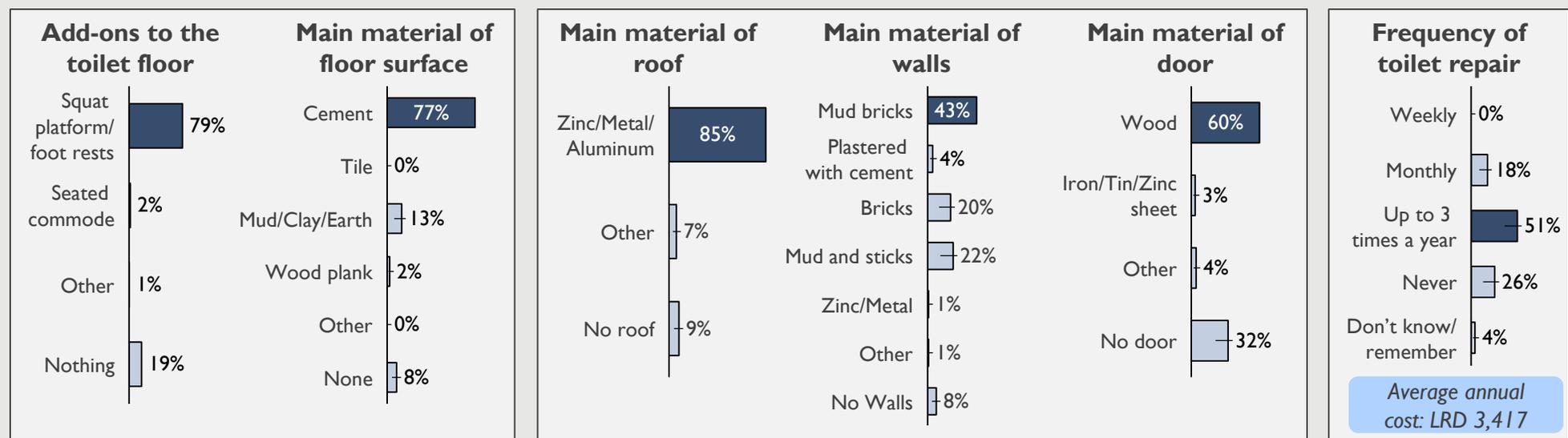
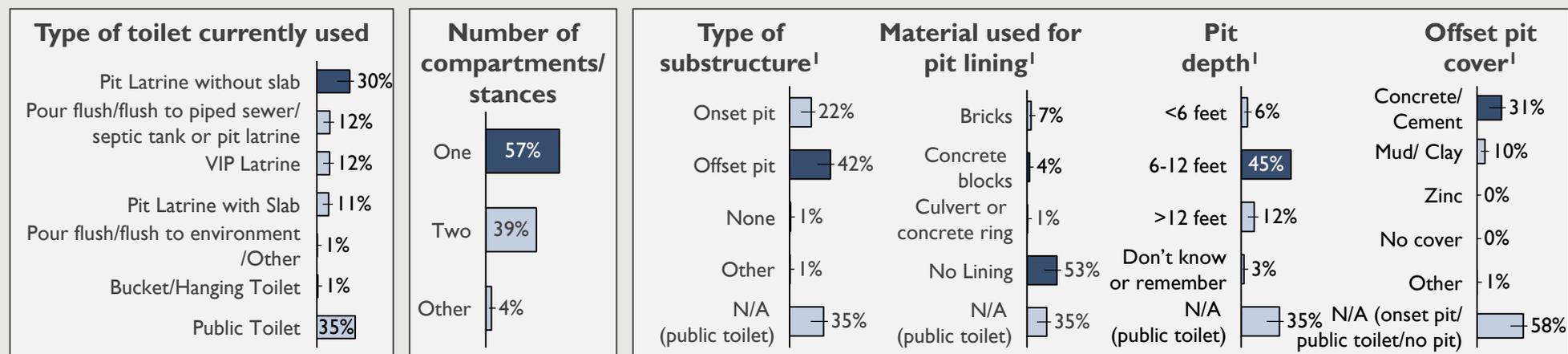
- **Current product and usage:** The majority of this segment practices OD, with some HHs also using improved limited or unimproved toilets
- **Desired product:** A toilet that is easy to clean with water, provides privacy, is well ventilated, and has the following functionalities:
 - **Toilet type:** Pour flush toilet to flush away feces and reduce odor
 - **Substructure:** Offset pit to reduce pit heat and prevent the user from having to see the contents of the pit; Pit depth of >6 ft, lined with concrete blocks

- **Interface:** Cement floor, foot rests/cement squat platform
- **Superstructure:** Zinc sheet roof, cement walls, wooden door
- **Estimated cost and ability to pay:** Estimated cost of desired toilet - LRD 71,000; average ability to pay (out-of-pocket) - LRD 12,000
- **Financing:** more than half the segment would consider taking a loan, with most opting for savings/loans group; biggest reason for not taking a loan is a fear of the inability to pay back the loan

The Ask

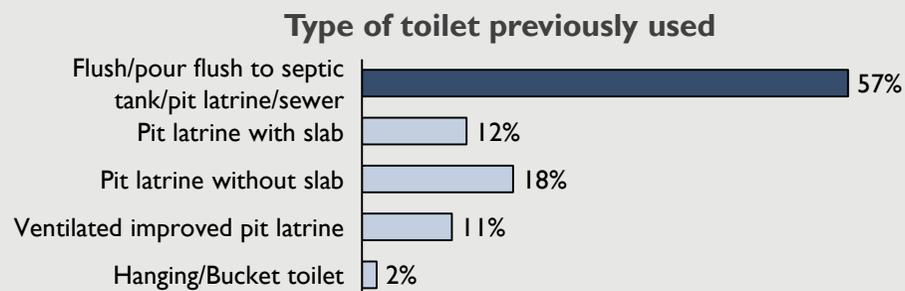
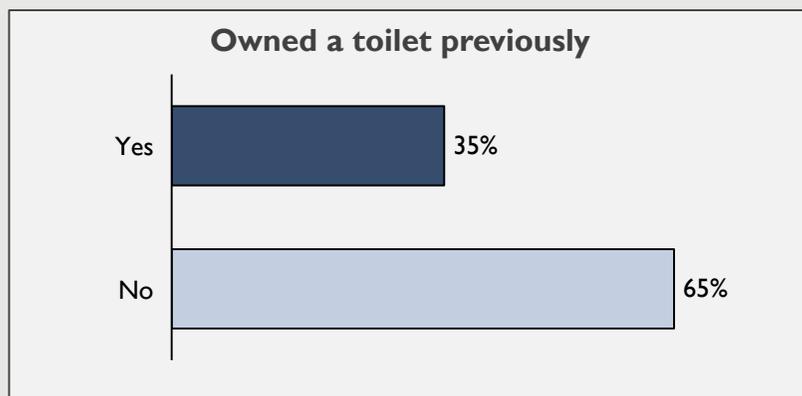
Segment Profiles | Segment K | Current Sanitation Profile for Toilet Users

Toilet users in this segment typically use a pit latrine with a cement floor which has developed holes/ gaps, a cement squat platform/ foot rests add-on, an offset pit, and a superstructure built with permanent materials

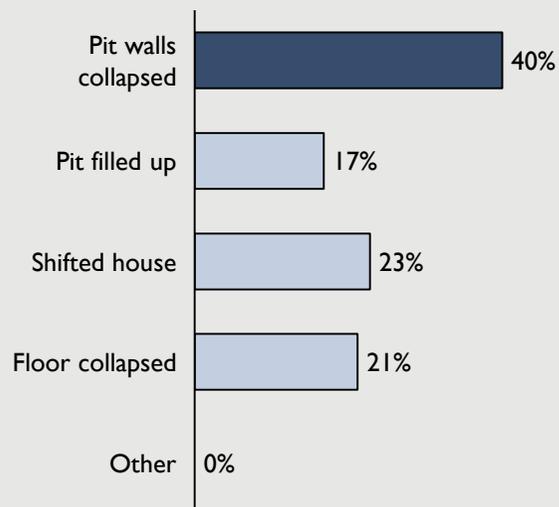


Segment Profiles | Segment K | Past Toilet Usage for HHs Practicing OD

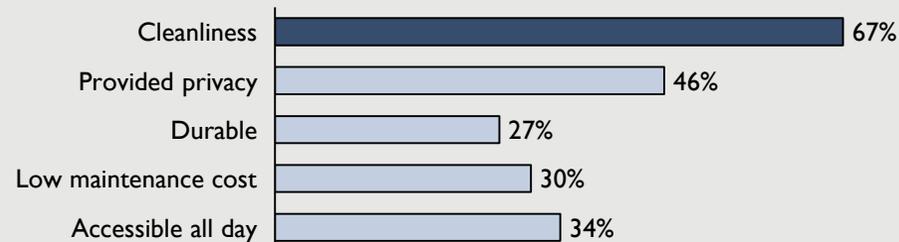
84% of HHs in this segment currently practice OD, and most of them did not own a toilet previously; those who did, used a flush/pour flush toilet, and liked the cleanliness and privacy that the toilet provided them



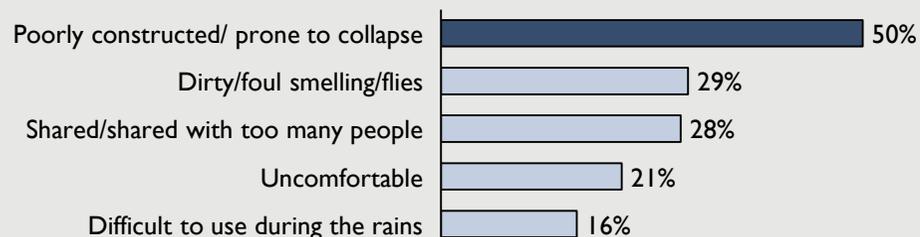
Reasons they stopped using toilet



Top five aspects liked by the segment



Top five aspects disliked by the segment

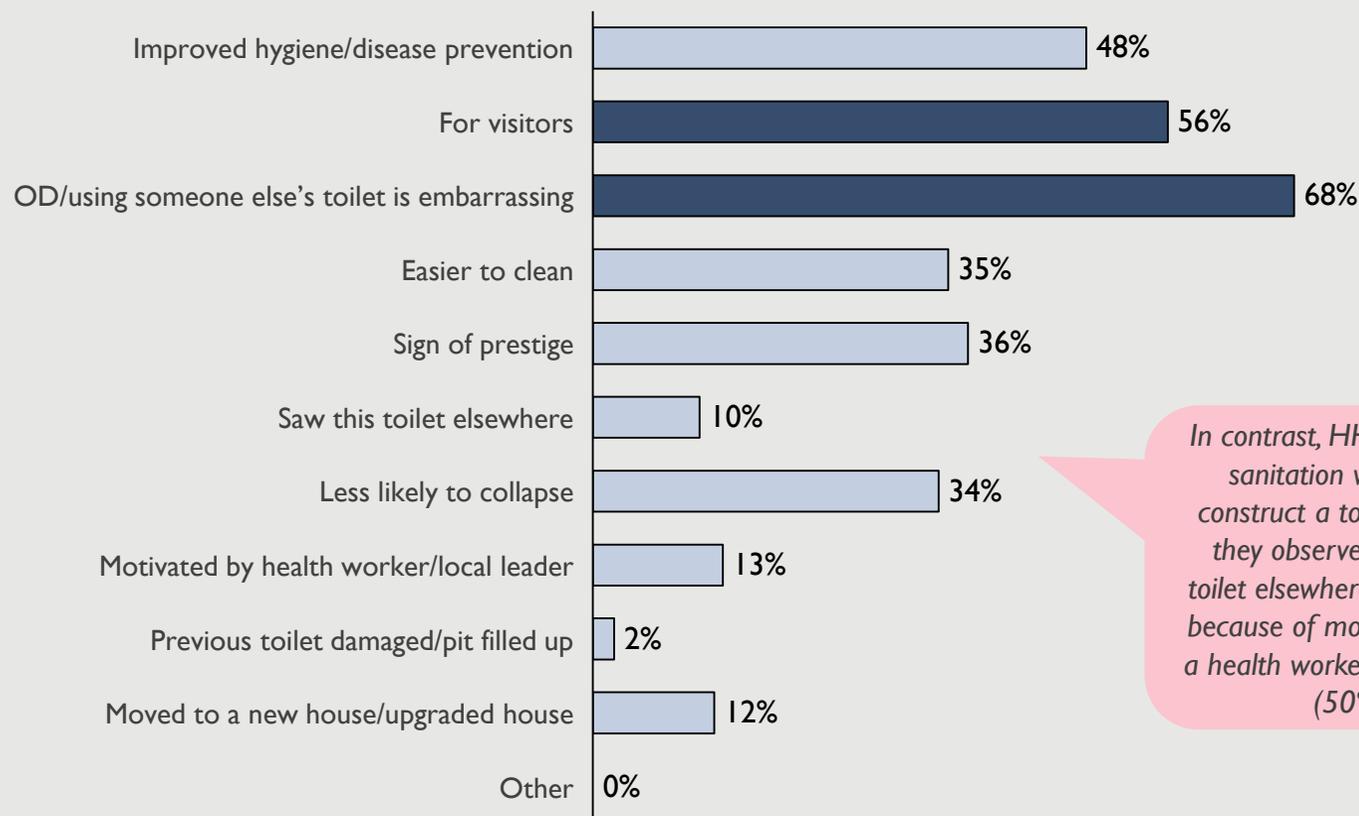


Segment Profiles | Segment K | Buying Process (1/6)

Most households wanted to construct a toilet because they find practicing OD or using someone else's toilet embarrassing, and because of visitors



Origination of need for toilet



In contrast, HHs with basic sanitation wanted to construct a toilet because they observed a similar toilet elsewhere (50%), and because of motivation from a health worker/local leader (50%)

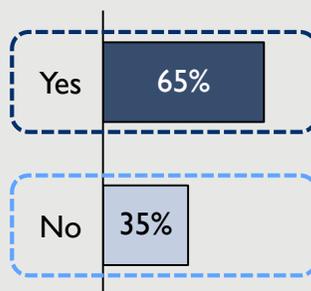
Callout boxes capture key differences exhibited by those with basic sanitation from this segment

Segment Profiles | Segment K | Buying Process (2/6)

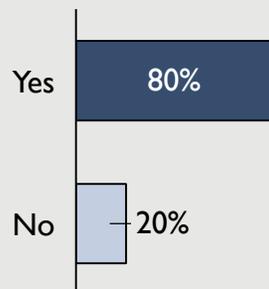
Most households sought information on how to build a toilet and even attended a CLTS event; NGO and community health workers were the most common sources of information, e.g., the toilet cost and materials required to build a toilet



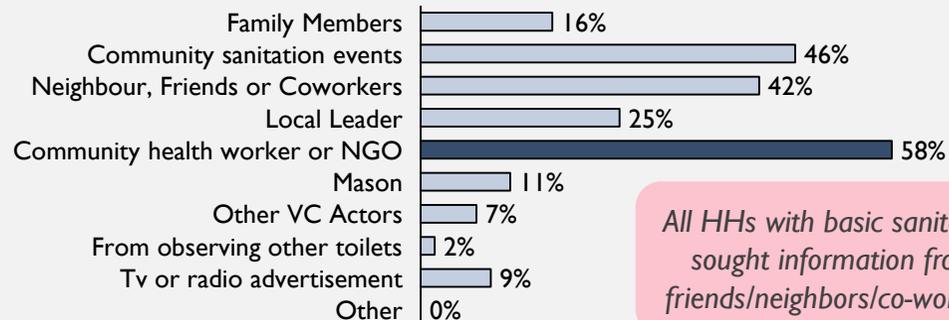
Sought information while considering building a toilet



Attended a CLTS event

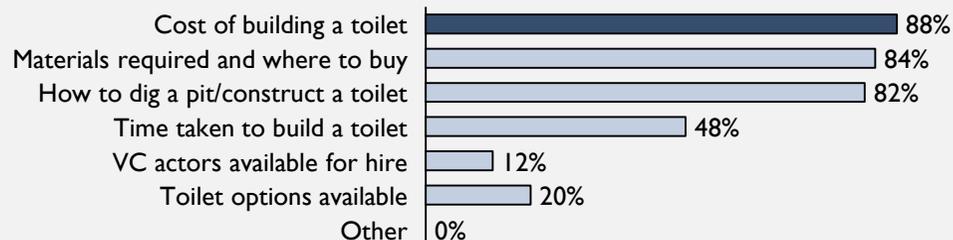


Sources of information about toilets



All HHs with basic sanitation sought information from friends/neighbors/co-workers

Nature of information captured



Reasons for not seeking information

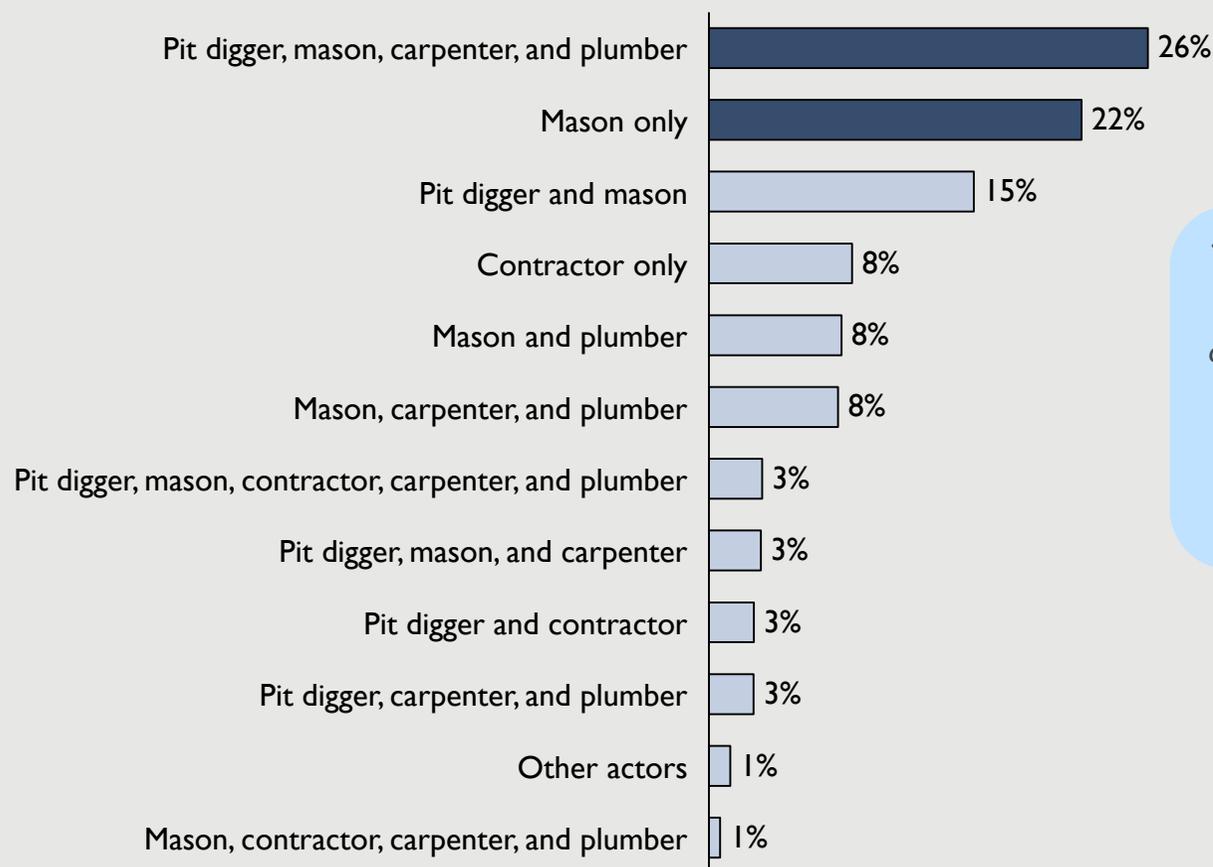


Segment Profiles | Segment K | Buying Process (3/6)

HHs most commonly considered hiring a combination of actors (i.e., pit digger, mason, carpenter and plumber), or considered hiring a mason only, to construct their toilets



Channels considered for toilet construction

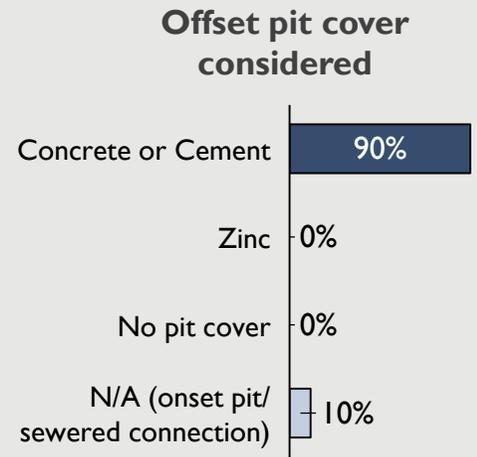
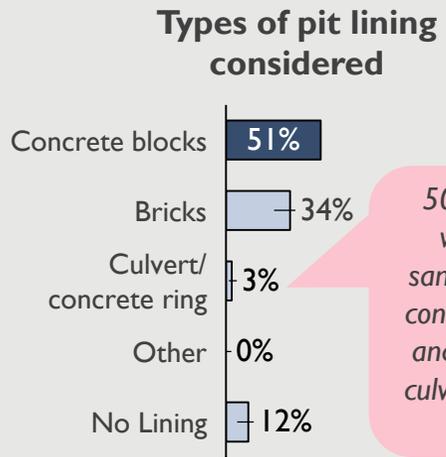
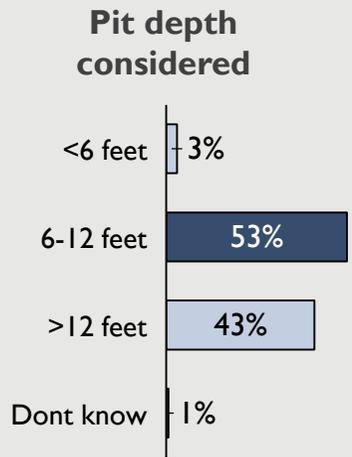
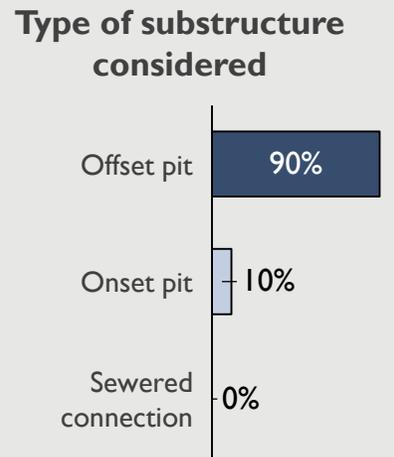
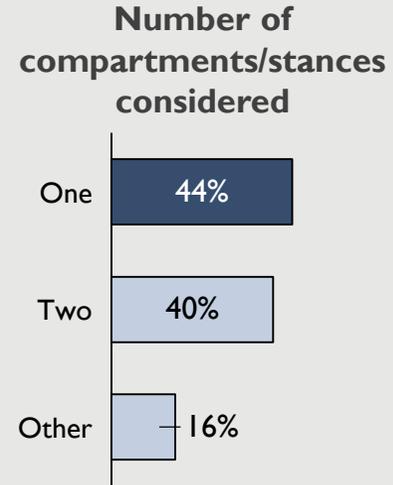
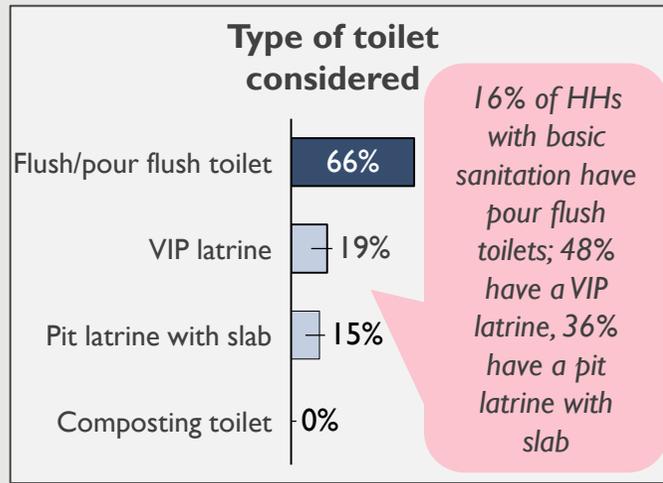


32% of HHs considered hiring 1 actors to construct their toilets, 26% considered 2 actors, and the remaining 42% considered 3-5 actors

Typically HHs considered hiring actors from within their local community

Segment Profiles | Segment K | Buying Process (4/6)

Most HH prefer to construct a pour flush toilet, with one compartment, a 6-12 feet deep offset pit lined with concrete blocks, a concrete/ cement cover...

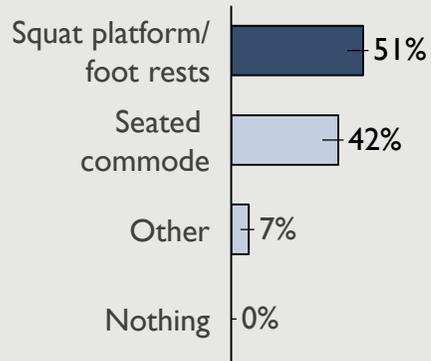


Segment Profiles | Segment K | Buying Process (5/6)

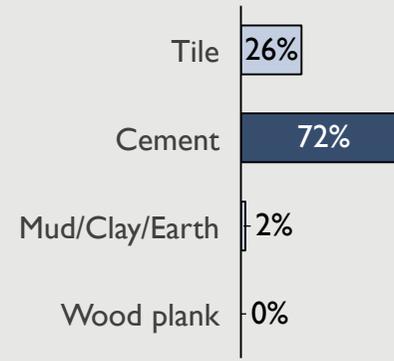
...a cement floor, with foot rests/squat platform, cement walls, a zinc sheet roof and a wooden door



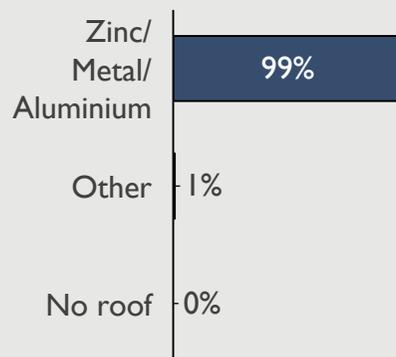
Add-ons considered for the toilet floor



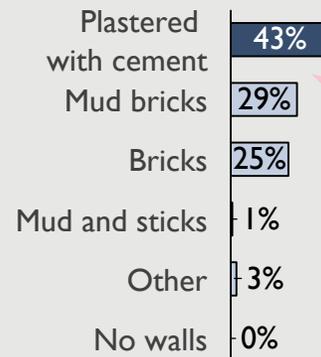
Main material considered for floor surface



Main material considered for roof

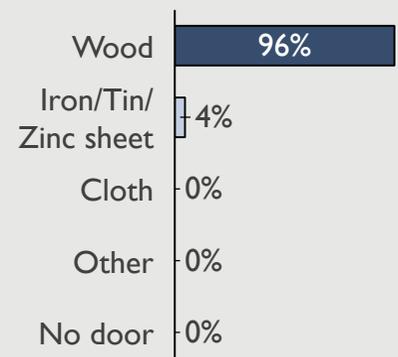


Main material considered for walls



60% of HHs with basic sanitation have mud brick walls, and 32% have mud and stick walls

Main material considered for door



Segment Profiles | Segment K | Buying Process (6/6)

29% of the segment are willing to pay less than the estimated cost for the preferred toilet; nearly two thirds of the segment are willing to consider taking a toilet construction loan, primarily from a savings/loans group

Origination

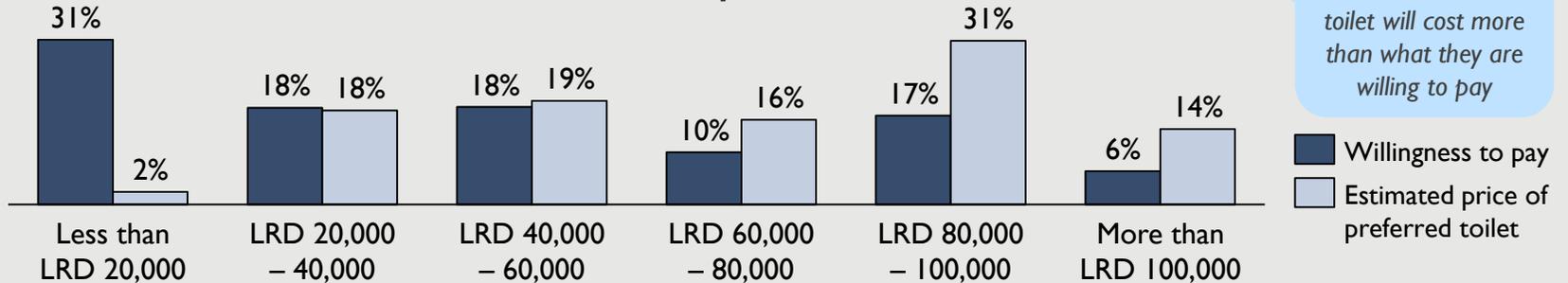
Information Gathering

Channel Selection

Product Selection

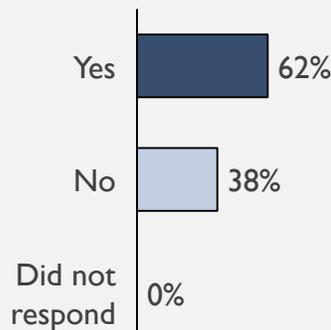
Product Purchase

Stated willingness to pay for an improved toilet that is not meant to be shared vs Stated cost estimate for preferred toilet¹

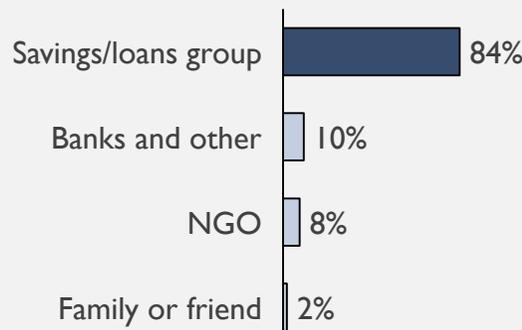


64% of households believe that the toilet will cost more than what they are willing to pay

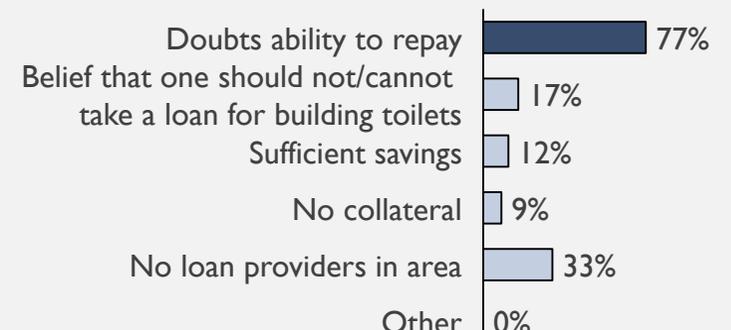
Loan Considered



Loan sources considered



Reasons for not considering a loan

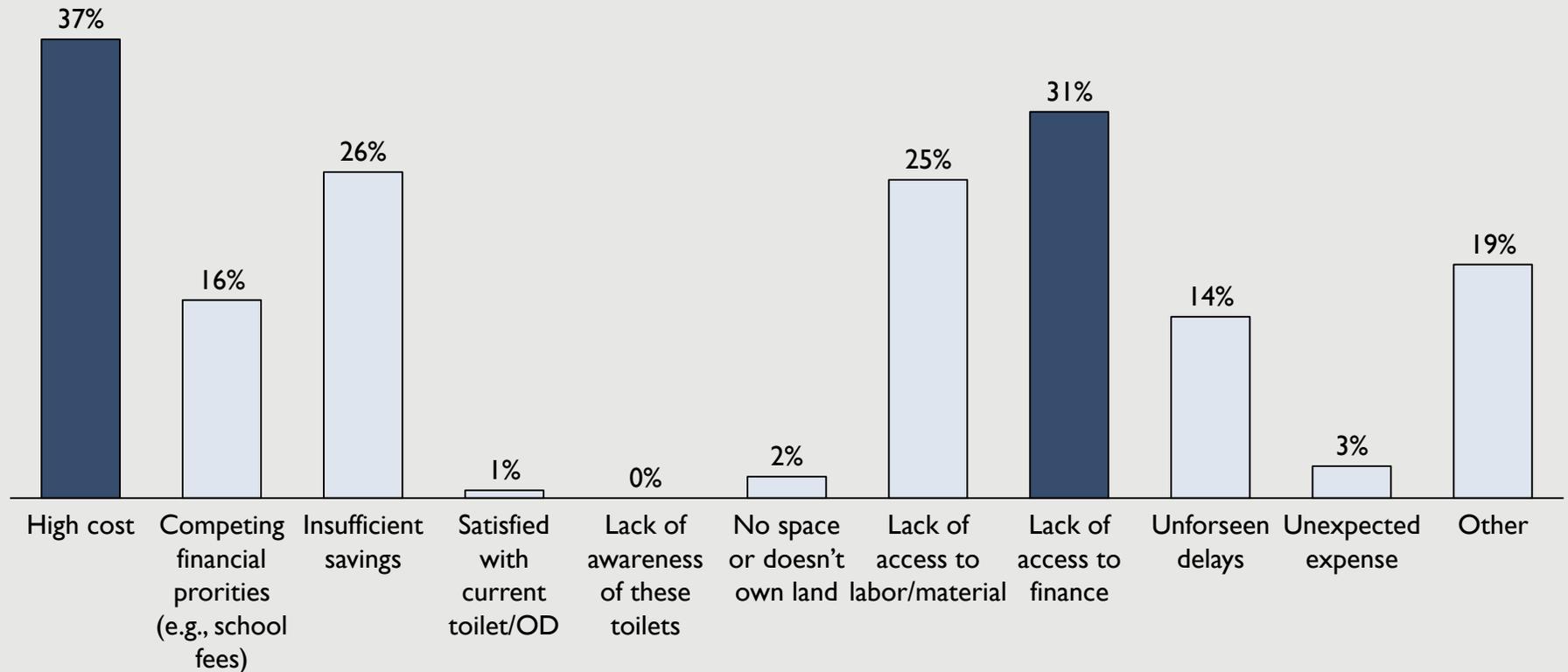


100% of HHs with basic sanitation did not take a loan as they feared an inability to repay

Segment Profiles | Segment K | Drop-offs from Buying Process

83% of this segment considered an investing in BSS but did not proceed with doing so; high costs and a lack of access to finance were the primary reasons for not investing in BSS

Reasons for not investing in basic sanitation service

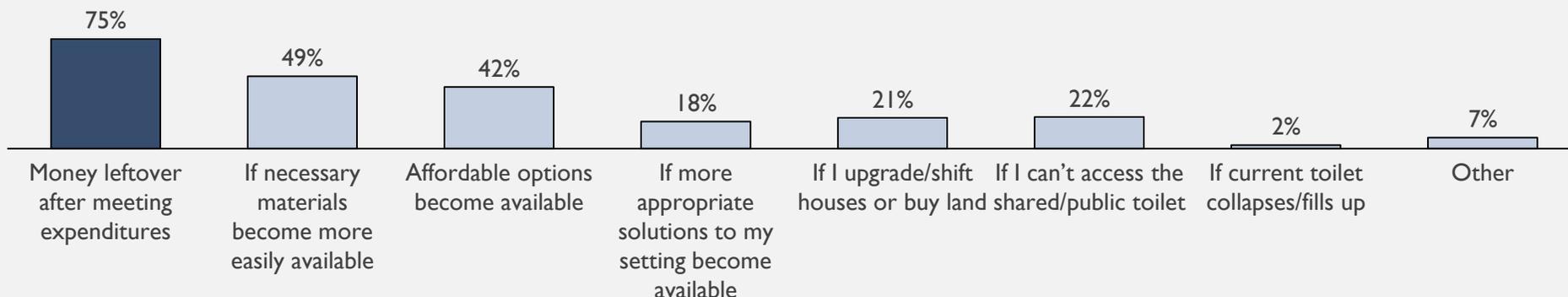


Segment Profiles | Segment K | Future Considerations

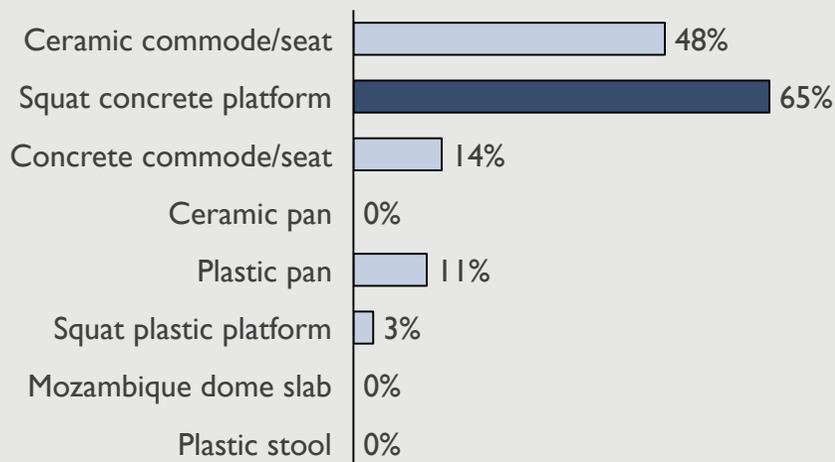


75% of the segment might reconsider investing in BSS if they can set aside enough savings after meeting their expenses; squat concrete platform is the preferred floor upgrade; most HHs will build a new toilet when their pit fills

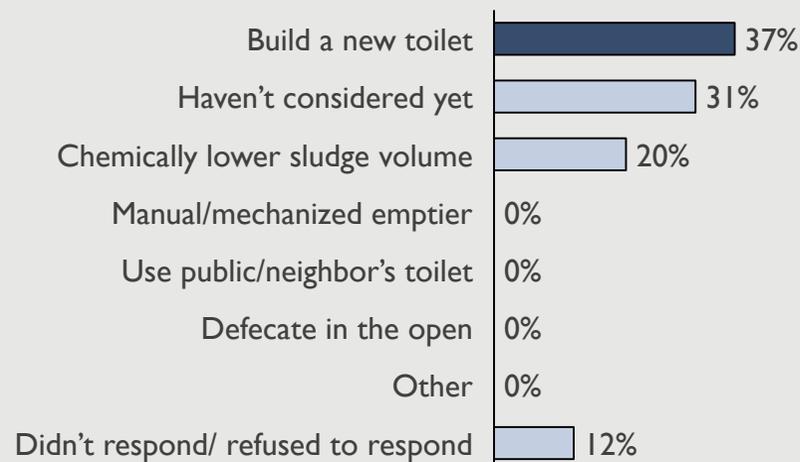
Factors that might increase consideration of a toilet in the future



Toilet floor add-ons considered by HHs without basic sanitation



Plan for when existing toilet pit fills up



Segment Profiles | Segment L

Despite knowing the benefits of basic sanitation service, and valuing community cleanliness, HHs in segment L largely practice OD...

Limited sanitation service:

6%

Unimproved toilet:

10%

No toilet:

85%

			Time taken to walk to nearest marketplace									
			≤ 30 min					> 30 minutes				
County			Montserrado	Grand Bassa	Bong	Nimba	Lofa	Montserrado	Grand Bassa	Bong	Nimba	Lofa
House Material	Loan taken	House ownership										
Permanent Material	Yes	Owned	A	E			J					L
		Not owned	B	F		G	K					
	Not owned	C		H			K					
	Owned		D	I			K					
Non-Permanent Material	Yes			H			K					
	No			I			K					

...primarily due to their low affluence, in addition to their inconsistent agricultural income, and other competing priorities like education

Segment Profiles | Segment L | Customer Story

James lives and works in Kiemai Town, Zorzor, Lofa with his wife, brother, and five children. He has no formal education, and is engaged in agriculture to support his family.

James and his family own a house made of non-durable materials. Their assets include a mobile phone, and some furniture. Their average monthly household expenditure is LRD 26,000. James often struggles to meet his monthly expenses due to his limited and irregular agricultural income; he and his family are not affluent. He has resorted to taking loans to pay his children's school fees, or to buy new farming tools. He has no access to electricity, and obtains water for bathing and cleaning from a nearby creek.

James believes community cleanliness is important, and that owning and using a toilet is not only prestigious but also beneficial for one's family. James and his family consider it embarrassing and irresponsible to be practicing OD, but do not have any viable alternative. James' family used to own an unimproved toilet, but it filled up a year ago, and now uses the creek. They have considered constructing another toilet, because of the lack of privacy, safety, and convenience experienced when practicing open defecation. However, his lack of savings and inconsistent income from his farming prevent him from being able to construct one.

James is willing to spend between LRD 20,000-60,000 on a new toilet, but only once his children complete their school and he no longer needs to pay school fees. He desires a toilet with a cement floor, and offset pit to reduce flies and heat emanating from the pit, and to ensure safety. He prefers a seated ceramic commode which he once saw while visiting a town market, but he does not know the cost and how he would transport it. He is concerned about the large distance he needs to travel to source the construction materials for his desired toilet. In case the commode is too expensive, he is willing to install a cement squat platform/foot rests instead. In order to finance this toilet, James hopes to get some support from an NGO/the government, and a loan from his savings/loans group.

Segment Profiles | Segment L | Key Demographic Statistics

Segment size		Demographics		Income & occupation	
% of potential market	8%	Family size (Avg.)	8	Nature of income	
# of households	41K	Gender of HH Head		• Regular	51%
		• Male	59%	• Seasonal	49%
		• Female	41%	Primary occupation²	
		HH Head education¹		• Agriculture	66%
		• No education	61%	• Unskilled Labor	16%
		• Up to Junior High	23%	• Petty Trading	4%
		• Senior High or above	16%	• Other	12%
Sanitation profile					
Limited sanitation service	6%				
Unimproved toilet	10%				
No toilet	85%				
Affluence indicators		Access indicators		Attitudes & beliefs ³	
Total monthly expenditure		Assets and other indicators		Distance to nearest market⁴	
High (>LRD 40K)	20%	Mobile phone	58%	<30 minutes	6%
Medium (LRD 20K-40K)	34%	Computer	1%	30 minutes to 1 hour	8%
Low (≤LRD 20K)	47%	Television	0%	Not walking distance	86%
Total asset value (avg.)	25k	Chair	50%	Access to electricity	10%
Total asset value (spread)		Agricultural land	94%	Non-drinking water source	
High (> LRD 120K)	6%	Any mode of transport	7%	Surface water	81%
Medium (LRD 75K-120K)	2%	Home improvement	26%	Other unprotected sources	9%
Low (LRD 35K-75K)	22%	Loan group member	47%	Hand pump, tube well or borehole	10%
Very low (< LRD 35K)	70%	Mobile money user	27%	Other protected sources	0%
				Believe that community cleanliness is important	
				85%	
				Believe it is embarrassing to be seen practicing OD	
				74%	
				Willing to pay for products that bring prestige	
				63%	
				Believe it is taboo to live near a toilet	
				16%	

1. Indicates highest level of education attended; 2. Top four occupations for each segment are shown; 3. Respondents were asked if they 'strongly disagreed', 'disagreed', 'agreed', or 'strongly agreed' to statements related to their attitudes and beliefs. Here the combined percentage of those who 'strongly agreed' or 'agreed' with a statement is reported, barring willingness to pay for prestige products, for which only 'strongly agreed' is shown; 4. Refers to a permanent market with stores;

Source: HH interviews (Profile n=403; Detailed n=68), FSG analysis

Segment Profiles | Segment L | Customer Persona

Setting

- **Location:** Remote areas of Lofa
- **Typical family size:** 8 people, with 3 children and 1 elderly¹
- **Type of house:** Live in their own house, made of permanent or temporary materials
- **Income and occupation:** the segment is evenly split between seasonal and regular income; agriculture is the most dominant occupation, followed by unskilled labor
- **Mobile phone and mobile money:** More than half the segment have mobile phones, and mobile money is used by a little more than a quarter of the HH in this segment
- **Total value of assets:** HHs are not affluent; the average total asset value per HH is LRD ~25,000
- **Loan groups:** Less than half are loan group members
- **Loans:** Half of the segment have taken loans in the past, primarily for agriculture or school loans; loans are typically taken from savings/loan groups

Mental Model

- **Strongly desire respect** from their community
- **Value products** that are **prestigious** and make life **convenient**
- **Conforming to the norm is not particularly important** to this group, as more than half suggest that one should do things 'differently' from their neighbors
- **Place high value on ownership of a toilet.** The majority strongly believe owning a toilet is a sign of **prestige**. Majority are well aware of the **health, safety, and privacy benefits** of owning a toilet, and equate owning a toilet to **being modern**
- **Care about community cleanliness, and witnessing be seen practicing OD is considered embarrassing**
 - More than a third of the segment disagree that it is **irresponsible to not have a toilet**
 - **Strongly prioritize school fees over building a toilet,** relative to other segments



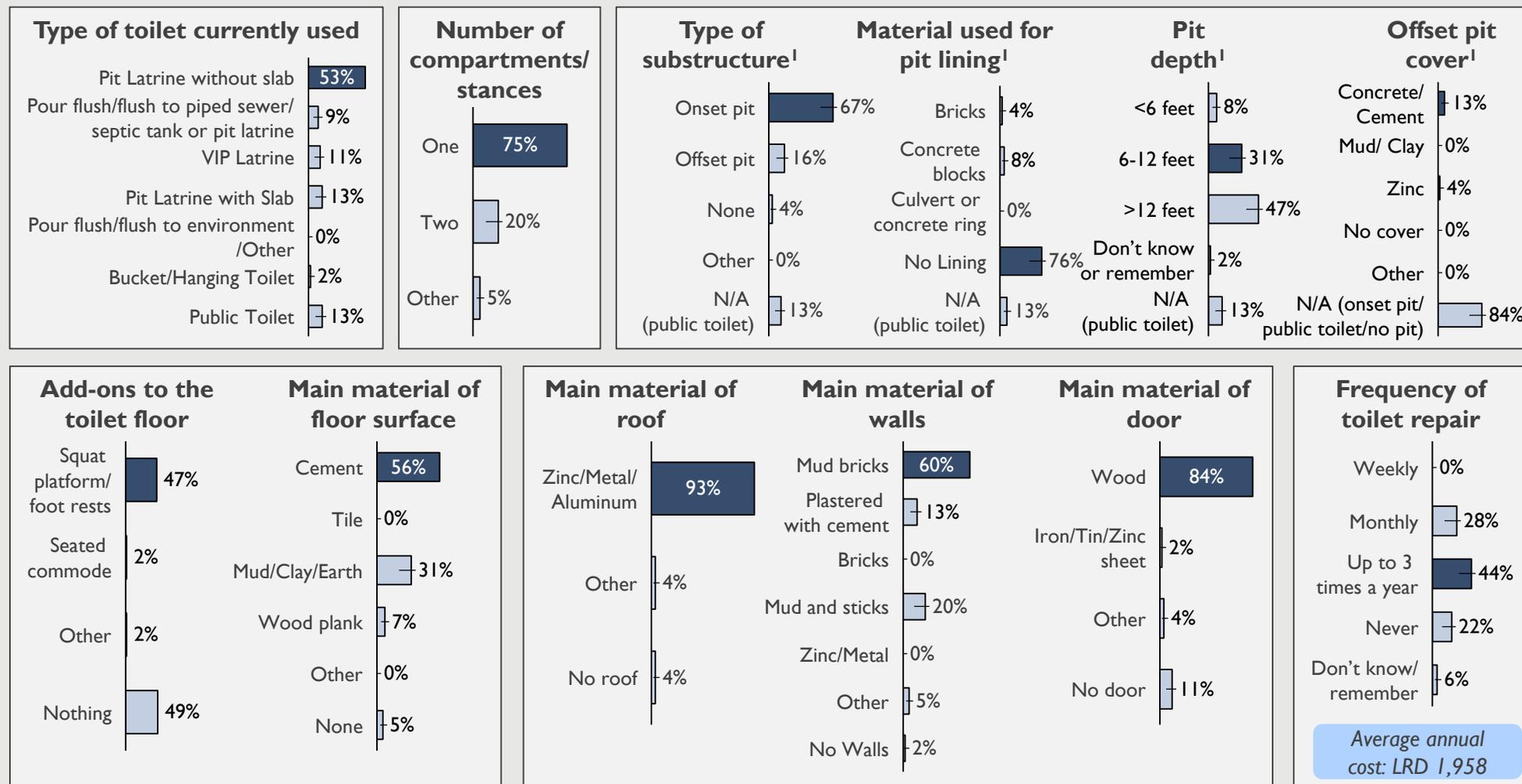
- **Current product and usage:** Most HHs practice OD; some HHs also use improved limited or unimproved toilets
- **Desired product:** A toilet that is easy to clean with water, is comfortable, is well ventilated, and has the following functionalities:
 - **Toilet type:** Flush/pour flush toilet to reduce odor and enhance cleanliness
 - **Substructure:** offset pit to reduce pit heat, flies, and the risk of collapse; pit depth of >6 ft, lined with concrete blocks

- **Interface:** Cement floor, with ceramic commode/foot rests
- **Superstructure:** Zinc sheet roof, cement/ brick walls, wooden door
- **Estimated cost and ability to pay:** Estimated cost of desired toilet - LRD 58,000; average ability to pay (out-of-pocket) - LRD 13,000
- **Financing:** more than half the segment would consider taking a loan, with most opting for savings/loan group; biggest reason for not taking a loan is a fear of the inability to pay back the loan

The Ask

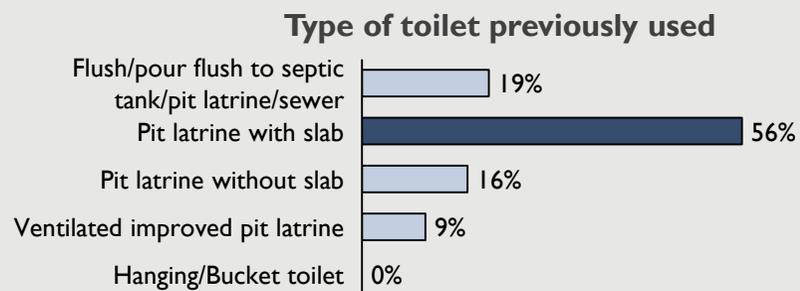
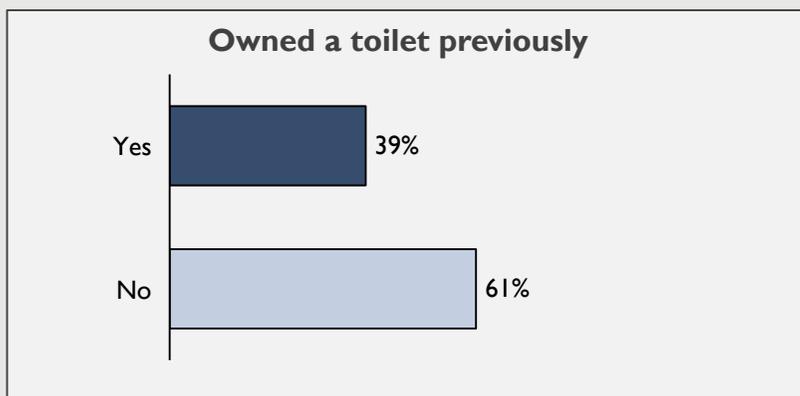
Segment Profiles | Segment L | Current Sanitation Profile for Toilet Users

Toilet users in this segment typically use a pit latrine, with a cement floor which has developed holes/ gaps, a cement squat platform/foot rests add-on, onset pit, and a superstructure built with permanent materials

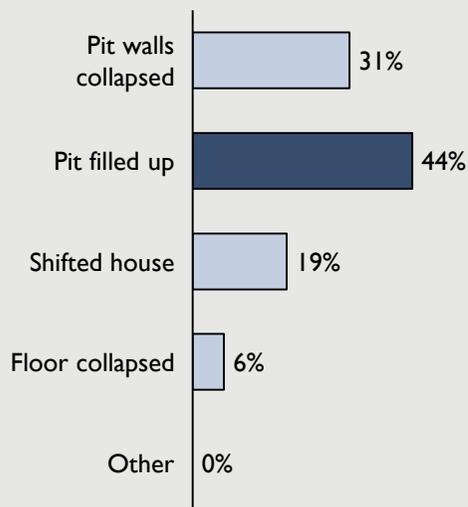


Segment Profiles | Segment L | Past Toilet Usage for HHs Practicing OD

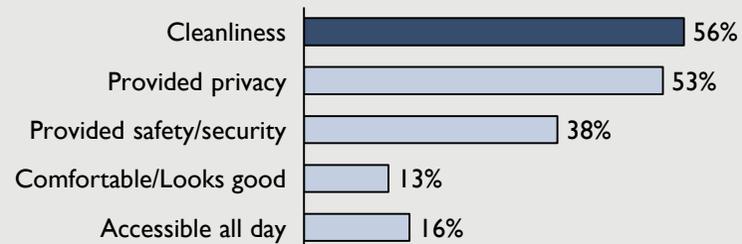
85% HH in this segment currently practice OD, and most of them did not own a toilet previously; those who did, used a pit latrine with slab, and liked the cleanliness and privacy provided to them



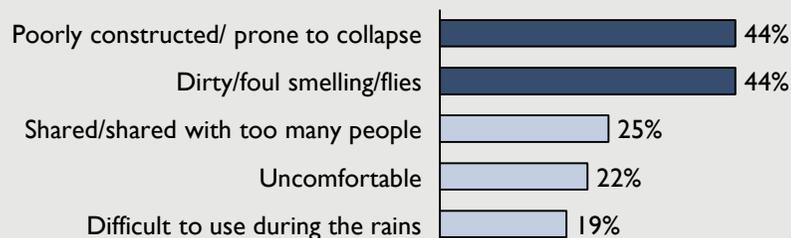
Reasons they stopped using toilet



Top five aspects liked by the segment



Top five aspects disliked by the segment

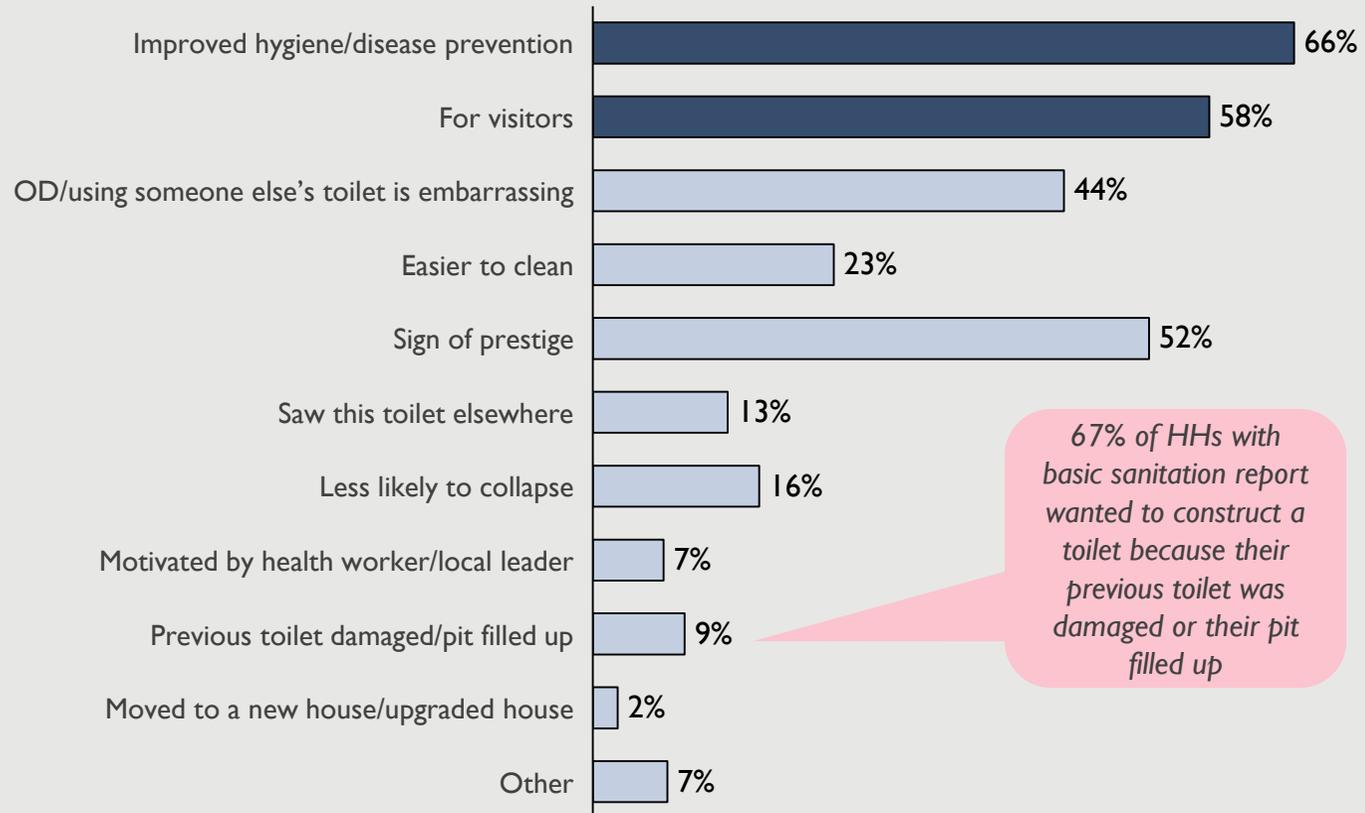


Segment Profiles | Segment L | Buying Process (1/6)

Most households wanted to construct a toilet to improve hygiene and prevent diseases, and because of visitors



Origination of need for toilet



67% of HHs with basic sanitation report wanted to construct a toilet because their previous toilet was damaged or their pit filled up

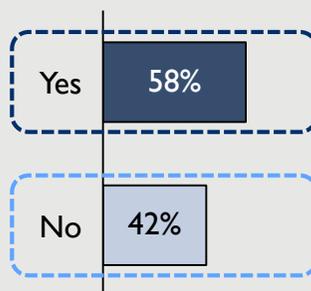
Callout boxes capture key differences exhibited by those with basic sanitation from this segment

Segment Profiles | Segment L | Buying Process (2/6)

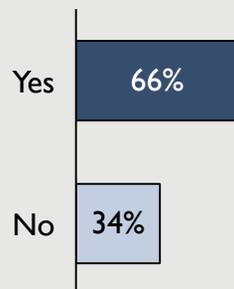
Most households sought information on how to build a toilet and even attended a CLTS event; NGO and community health workers were the most common sources of information, e.g., the toilet cost and how to build a toilet



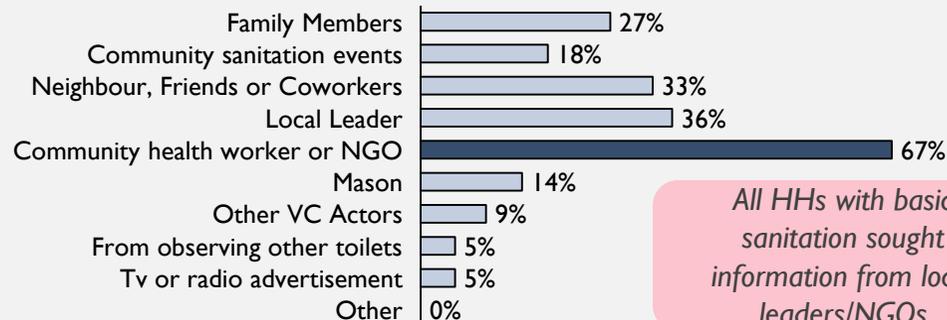
Sought information while considering building a toilet



Attended a CLTS event

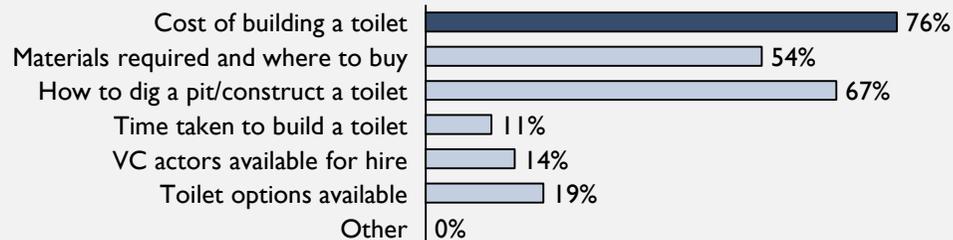


Sources of information about toilets



All HHs with basic sanitation sought information from local leaders/NGOs

Nature of information captured



Reasons for not seeking information

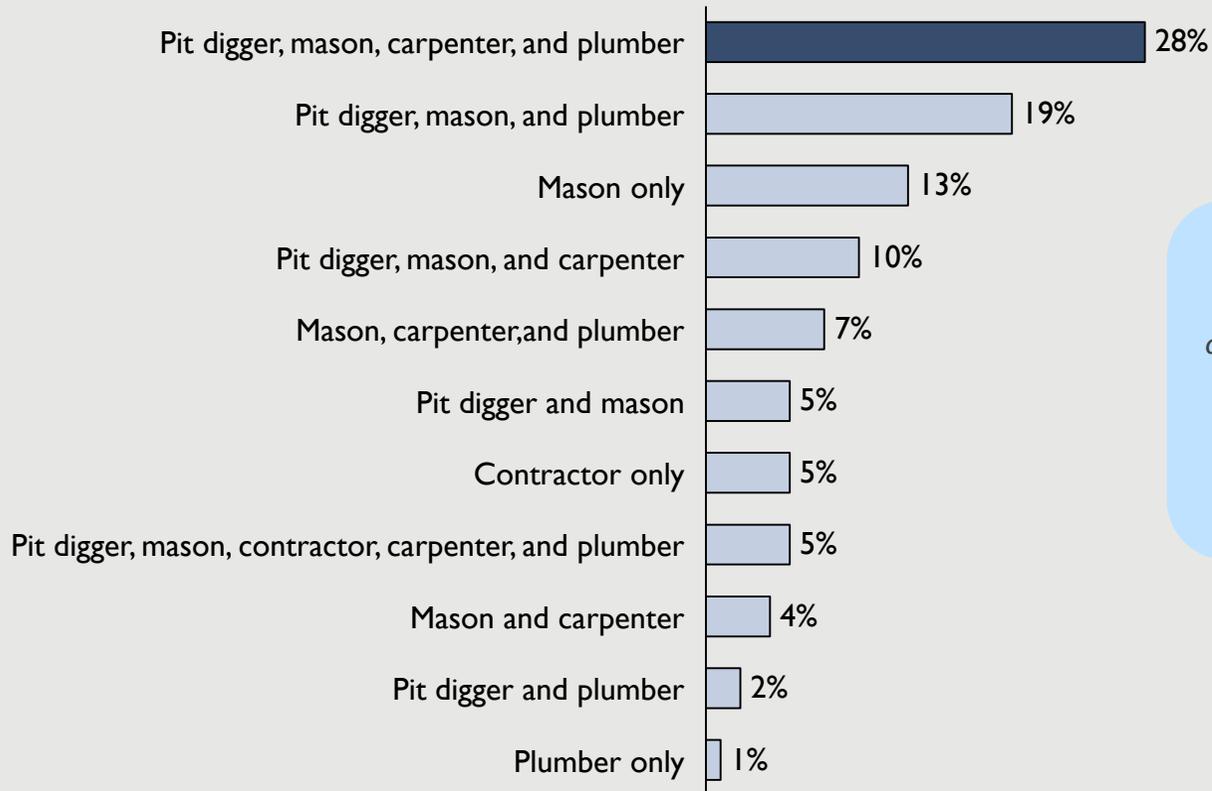


Segment Profiles | Segment L | Buying Process (3/6)

HHs most commonly considered hiring a combination of actors (i.e., pit digger, mason, carpenter and plumber) to construct their toilets



Channels considered for toilet construction

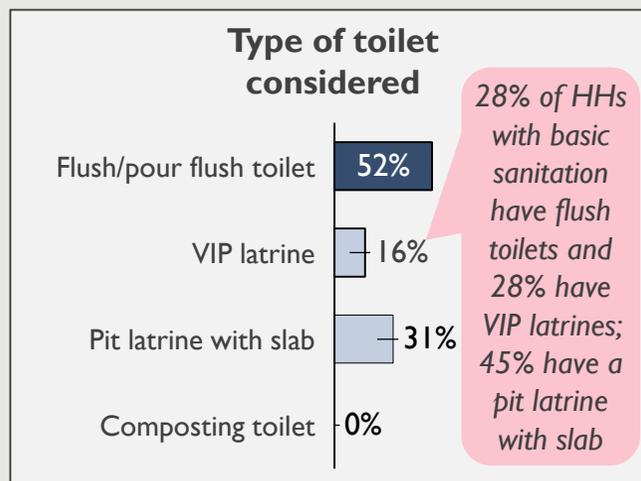


19% of HHs considered hiring 1 actors to construct their toilets, 12% considered 2 actors, and the remaining 69% considered 3-5 actors

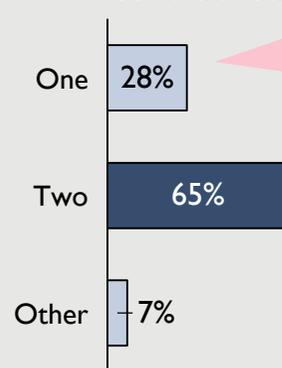
Typically HHs considered hiring actors from within their local community

Segment Profiles | Segment L | Buying Process (4/6)

Most HH prefer to construct a pour flush toilet, with two compartments, an >12 feet deep offset pit lined with concrete blocks, a concrete/ cement cover...



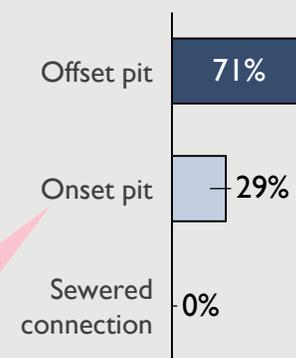
Number of compartments/stances considered



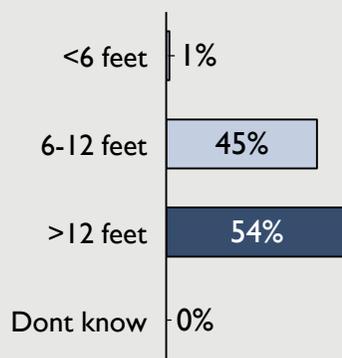
73% of HHs with basic sanitation have one compartment

45% of HHs with basic sanitation have an onset pit

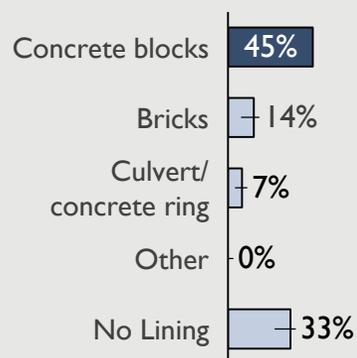
Type of substructure considered



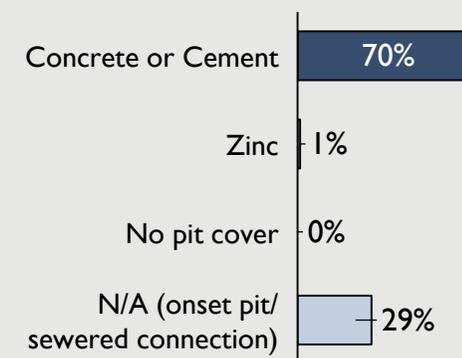
Pit depth considered



Types of pit lining considered



Offset pit cover considered

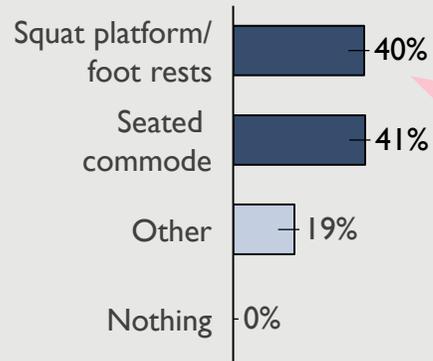


Segment Profiles | Segment L | Buying Process (5/6)

...a cement floor, with a seated commode or foot rests/ squat platform, mud brick walls, a zinc sheet roof and a wooden door

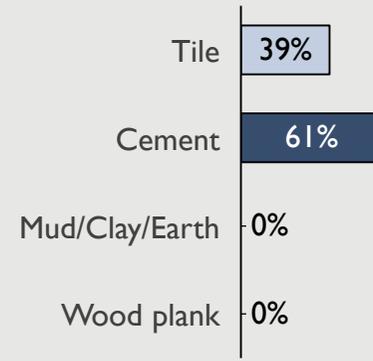


Add-ons considered for the toilet floor

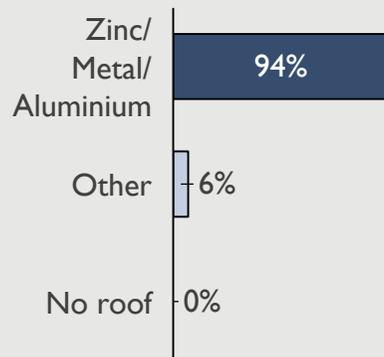


Only 3% of HHs with basic sanitation have a seated ceramic commode; 55% have foot rests/cement squat platform, and 28% have nothing

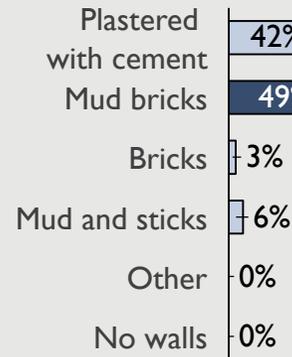
Main material considered for floor surface



Main material considered for roof

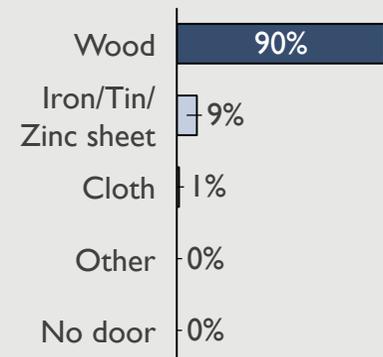


Main material considered for walls



78% of HHs with basic sanitation have mud brick walls, and 13% have mud and sticks walls

Main material considered for door

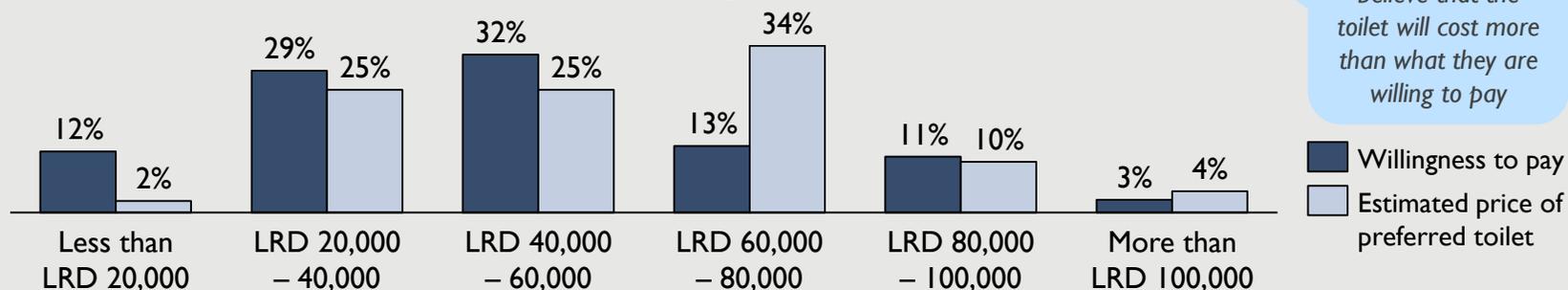


Segment Profiles | Segment L | Buying Process (6/6)

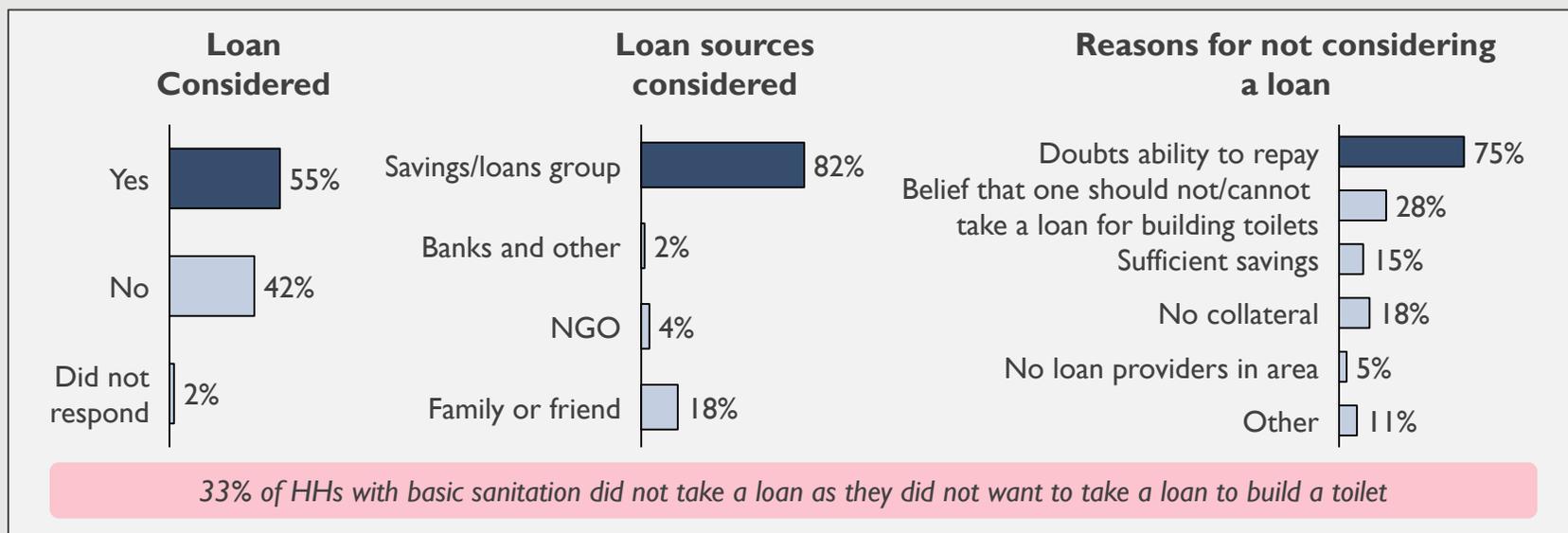
29% of the segment are willing to pay less than the estimated cost for the preferred toilet; more than half of the segment are willing to consider taking a toilet construction loan, primarily from a savings/loans group



Stated willingness to pay for an improved toilet that is not meant to be shared vs Stated cost estimate for preferred toilet¹



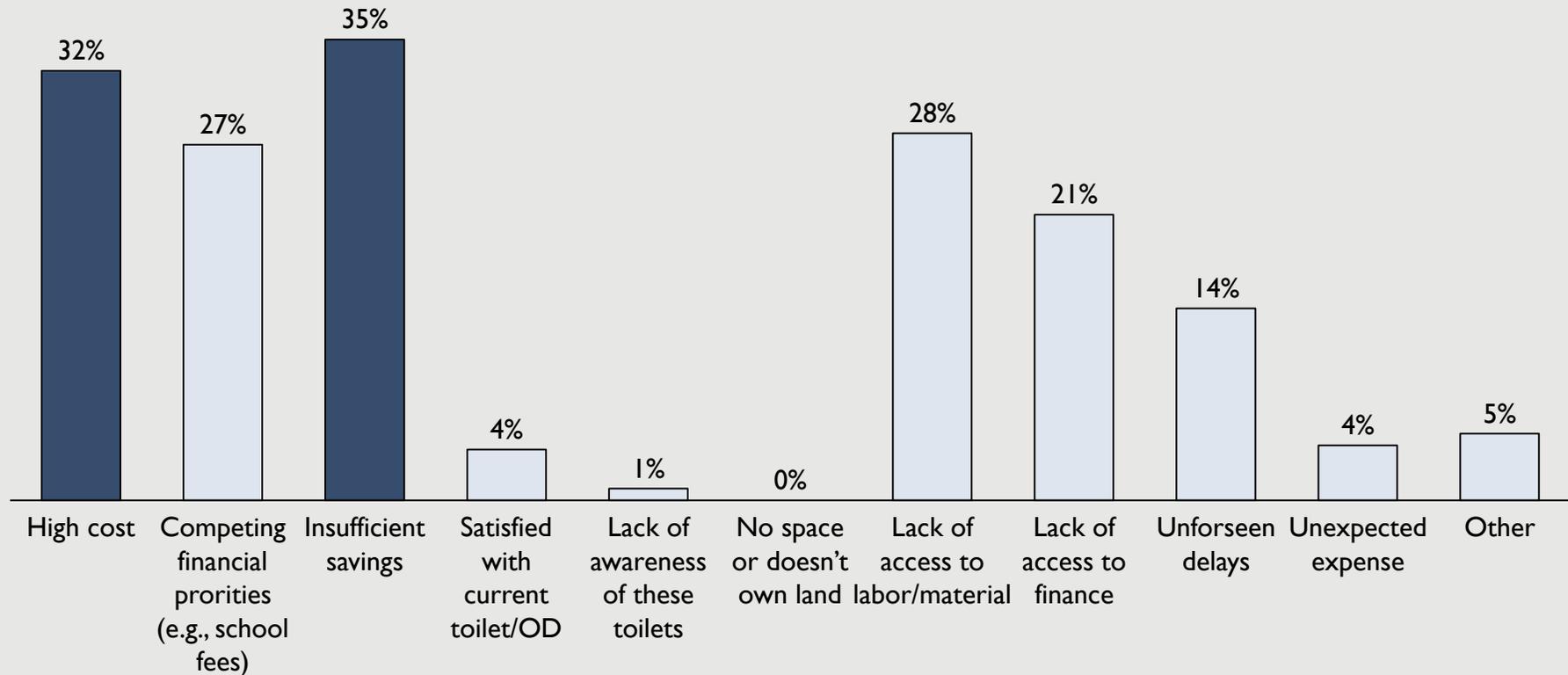
29% of households believe that the toilet will cost more than what they are willing to pay



Segment Profiles | Segment L | Drop-offs from Buying Process

83% of this segment considered investing in BSS but did not proceed with doing so; high costs and insufficient savings were the primary reasons for not purchasing investing in BSS

Reasons for not investing in basic sanitation service



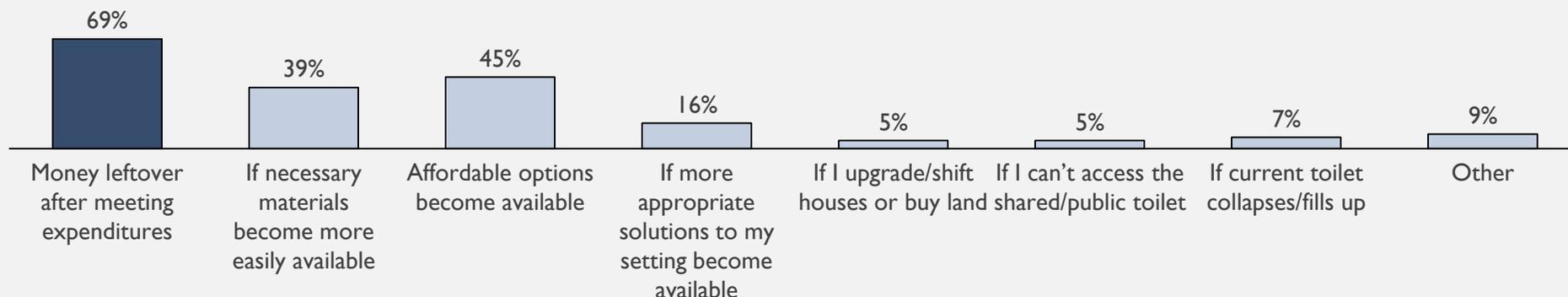
Segment Profiles | Segment L | Future Considerations



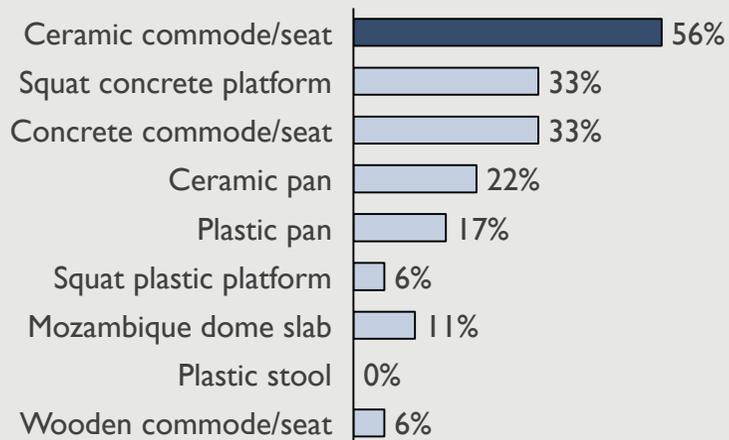
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69% of the segment might reconsider investing in BSS if they can set aside enough savings after meeting their expenses; ceramic commode is the most preferred floor upgrade; most HHs will build a new toilet when their pit fills

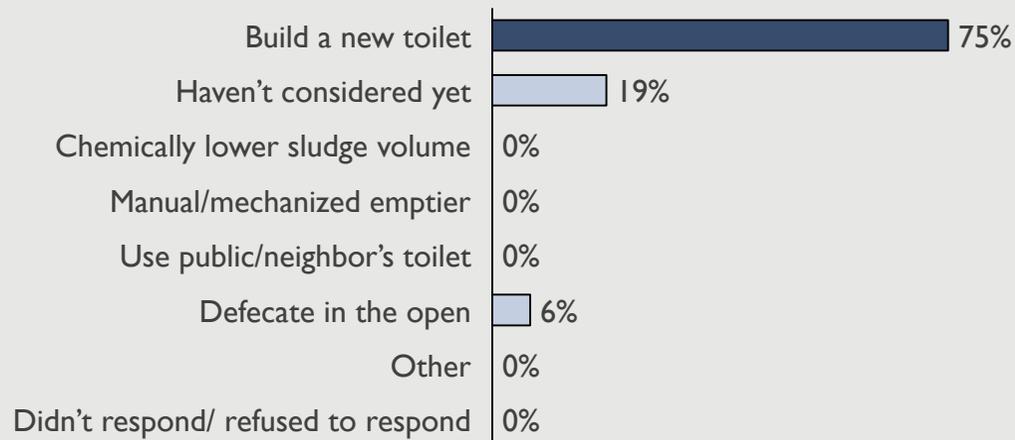
Factors that might increase consideration of a toilet in the future



Toilet floor add-ons considered by HHs without basic sanitation



Plan for when existing toilet pit fills up



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