

# **Sanitation Market Assessment (SMA)**

## *Western Kenya and Marsabit*

**USAID/WASHPaLS**

*Key findings*  
*December 2021*

# Acronyms

<b>ASAL</b>	Arid and semi-arid lands
<b>CHV</b>	Community health volunteer
<b>DIY</b>	Do-it-yourself
<b>HH</b>	Household
<b>HW</b>	Hardware
<b>JMP</b>	Joint Monitoring Program
<b>K</b>	Thousand ('000)
<b>KES</b>	Kenyan shilling
<b>kg</b>	Kilogram
<b>km</b>	Kilometer
<b>MBS</b>	Market-based sanitation
<b>MFI</b>	Microfinance institution
<b>OD</b>	Open defecation
<b>SACCO</b>	Savings and credit cooperative organization
<b>SMA</b>	Sanitation market assessment
<b>UNICEF</b>	United Nations Children's Fund
<b>VC</b>	Value chain
<b>vs.</b>	Versus
<b>WASH</b>	Water, Sanitation, and Hygiene
<b>WASHPaLS</b>	Water, Sanitation, and Hygiene Partnerships and Learning for Sustainability
<b>WHO</b>	World Health Organisation

# Introduction

**Purpose:** This document shares the key findings of the sanitation market assessment (SMA) conducted by the Water, Sanitation, and Hygiene Partnerships and Learning for Sustainability (WASHPaLS) in western Kenya and Marsabit. It is the primary dissemination document for the SMA.

This document is supplemented by a compendium of findings, featuring the technical methodologies and detailed analyses that support the findings presented in this document. The compendium is available upon request from the WASHPaLS Project Director.

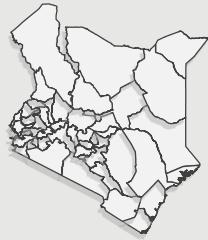
**Organization:** The document is organized as follows:

- **Overview** of the approach of the SMA
- **Key findings** of the SMA in rural western Kenya
- **Key findings** of the SMA in urban Marsabit

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- **Overview of the SMA**
- Key findings on western Kenya
- Key findings on Marsabit

# The objective of the SMA is to understand the potential for market-based sanitation (MBS) in different contexts in Kenya



## Sanitation context in Kenya

**25 low-OD<sup>1</sup> counties** where uptake of sanitation products through markets is low, despite favorable conditions

**12 high-OD<sup>1</sup> counties** which are predominantly in the **ASAL regions** with a high proportion of pastoralist communities



## USAID/KEA objectives

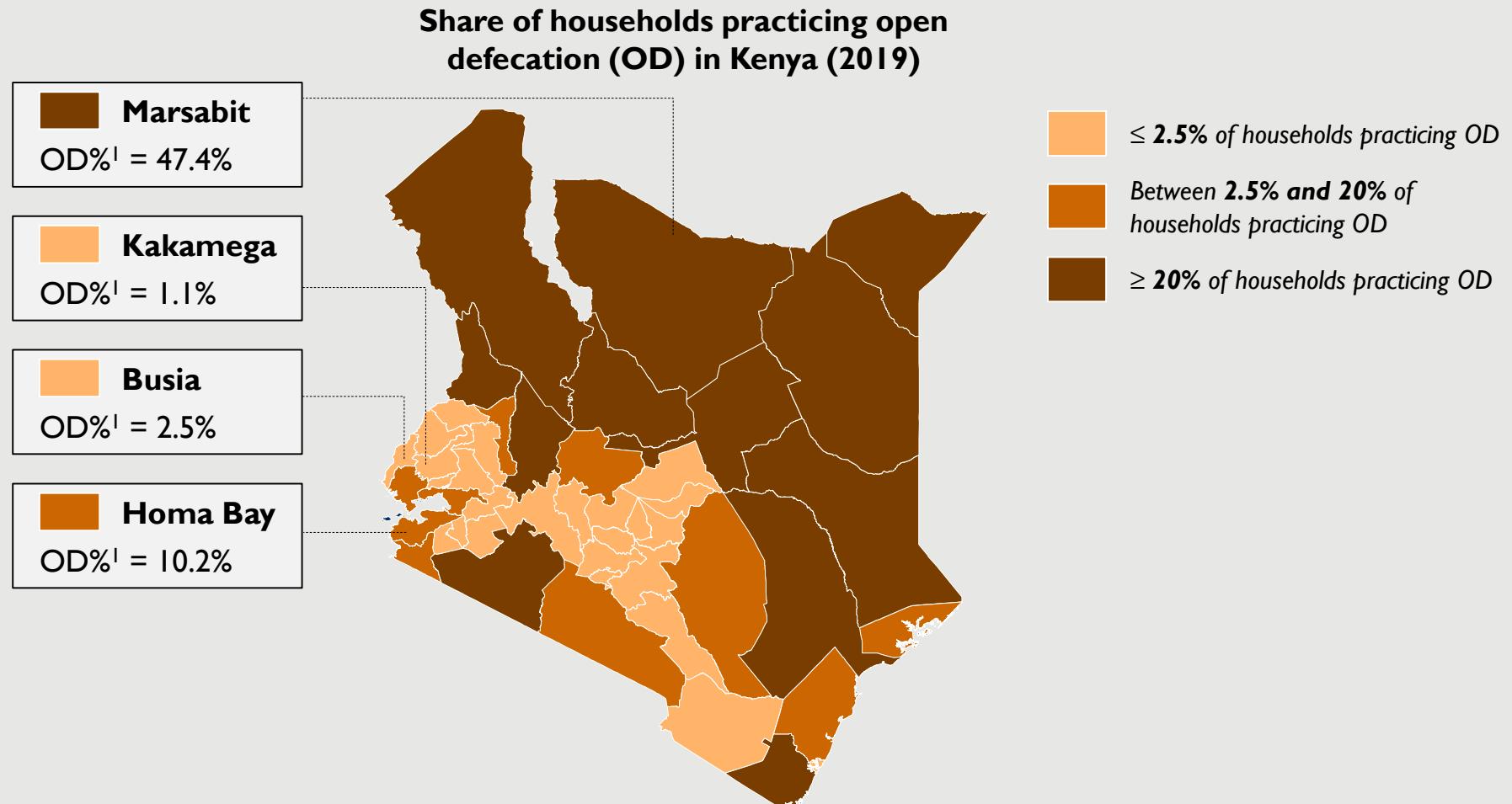
**Inform future investments** by understanding current state and **potential opportunities for MBS** in different regions

**Inform** the development of **context-specific rural sanitation guidance**

OD = open defecation; ASAL = arid and semi-arid lands

I. Low-OD refers to counties with ≤ 2.5% of households practicing OD and high-OD counties are those with ≥ 20% of households practicing OD; source: 2019 Kenya Population and Housing Census

We selected three low-OD counties in western Kenya and one ASAL county for research, based on differences in context and USAID's plans for sanitation investment



Based on inputs from experts and a review of county-level data, we selected Busia, Kakamega, and Homa Bay as broadly representative of rural western Kenya (comprising of 10 counties in the former Western and Nyanza provinces<sup>2</sup>)

OD = open defecation; ASAL = arid and semi-arid lands

1. OD% refers to the share of households that practice open defecation; source for data: 2019 Kenya Population and Housing Census

2. The 10 counties are Kisumu, Homa Bay, Migori, Kisii, Nyamira, Siaya, Vihiga, Busia, Bungoma, and Kakamega

MBS requires certain contextual conditions which are present in rural western Kenya but not in rural Marsabit

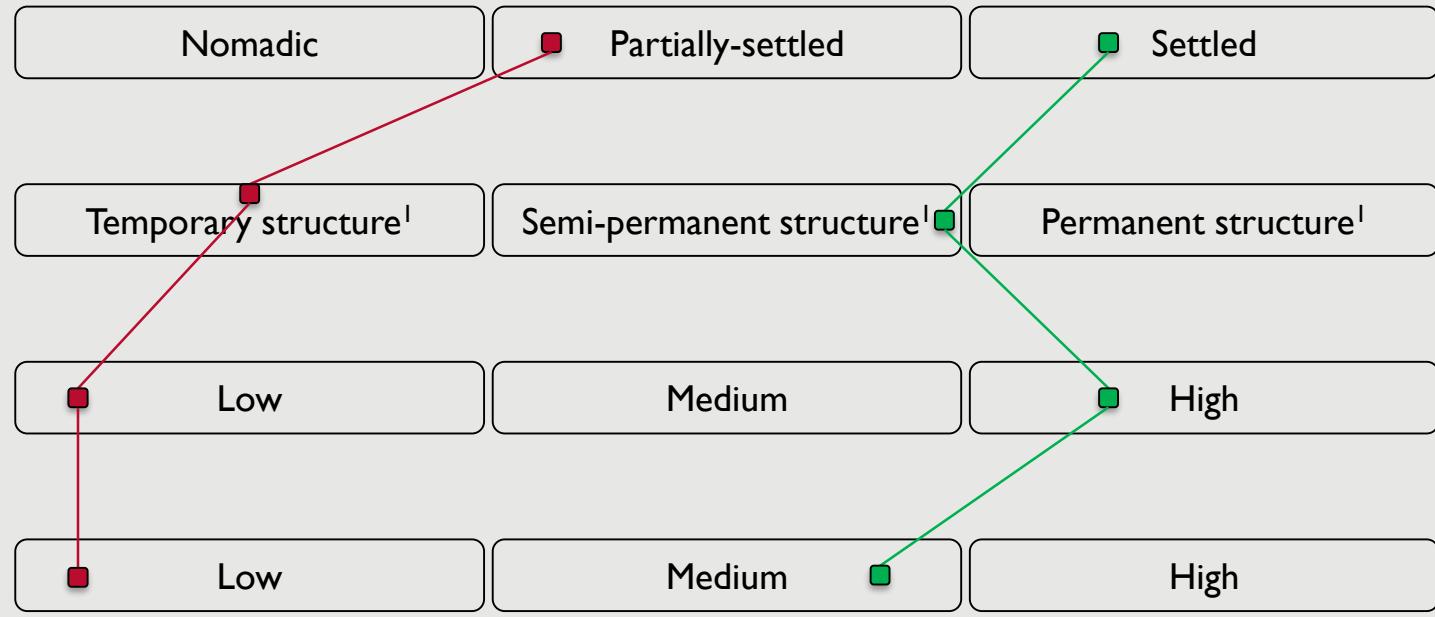
### Favorable conditions for MBS approaches

**Settled population** is more likely to construct toilets

**Improved housing** is a precursor to durable toilets and signifies supply chains

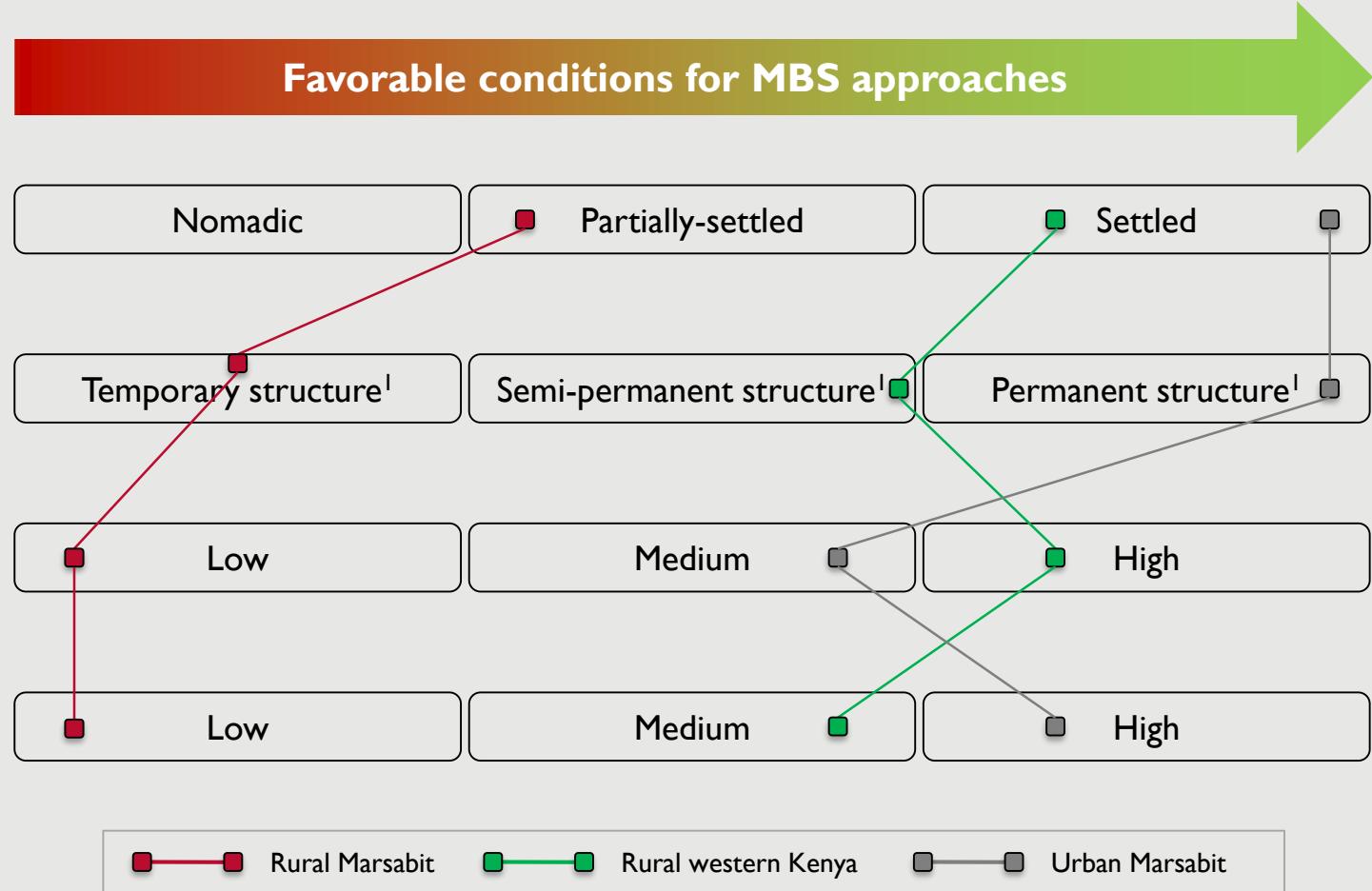
**Adequate population and density** leads to critical mass of customers

**Quality of road infrastructure** improves access to materials



Rural Marsabit      Rural western Kenya

Urban towns can serve as a starting point for MBS in Marsabit since conditions are more favourable and they will continue growing due to increasing sedentism



We refined our scope to include urban Marsabit since it has greater potential for MBS

**Note:** Two or more points inside a box convey that conditions are similar; distance between points inside a box are for representation only and are not relative to one another

I. Our categorization of housing structures is consistent with the Kenya Integrated Household Budget Survey 2015-16

We expanded the definition of an “improved toilet” used by the JMP to include durability as a criteria since collapsing of toilets is a key issue, particularly in western Kenya

Criteria	JMP definition <sup>1</sup>	WASHPaLS definition <sup>2</sup>	Requirements
<b>Hygienic separation of excreta from human contact</b>	✓	✓	At least a pan, slab, or a covering for separating excreta from human contact 
<b>Durability, i.e., avoid collapse for at least 10 years</b>	✗	✓	A concrete foundation reinforced with iron bars/wire mesh under the toilet floor  At least a partial pit lining beyond the foundation 

1. Definition used by the WHO/UNICEF Joint Monitoring Program (JMP), 2017

2. Developed based on consultations with technical experts on the requirements for toilets to be durable in the Kenyan context

We used the USAID MBS framework<sup>1</sup> to analyze drivers and barriers for adoption of durable, improved toilets in rural western Kenya and urban Marsabit



# We mapped drivers and barriers using a desk review and state-of-the-art primary research methodologies

Research tools and purpose	Desk review	Households research	Value chain research	Research coverage
<p><b>Key informant interviews (n=14)</b></p> <ul style="list-style-type: none"> <li>Understand the sanitation landscape</li> <li>Analyze the business environment and broader context</li> <li>Explore key drivers and barriers</li> </ul> <p><b>Literature review (n=51)</b></p> <ul style="list-style-type: none"> <li>Study existing sector reviews/evaluations</li> <li>Identify government policies and strategy for sanitation</li> <li>Understand the design and impact of past interventions</li> </ul>	<p><b>Quantitative listing interviews (n=1,140)</b></p> <ul style="list-style-type: none"> <li>Understand sanitation context and HH profiles</li> <li>Select HHs for detailed interviews, and size the resulting HH segments</li> </ul> <p><b>Quantitative detailed interviews<sup>1</sup> (n=316)</b></p> <ul style="list-style-type: none"> <li>Understand purchase process of HHs</li> <li>Segment HHs, and create detailed profiles</li> </ul> <p><b>Qualitative focus group discussions (n=65)</b></p> <ul style="list-style-type: none"> <li>Understand HH beliefs, attitudes, and rationale for purchase behavior</li> </ul>	<p><b>Value chain trace-backs<sup>2</sup> (11 toilets)</b></p> <ul style="list-style-type: none"> <li>Map the sanitation value chain through trace-backs</li> <li>Analyze the business environment and broader context</li> </ul> <p><b>Qualitative interviews with value chain players (n=58)</b></p> <ul style="list-style-type: none"> <li>Understand business models, unit economics, and drivers and barriers</li> </ul>	<p>The map shows the administrative divisions of Kenya. Four specific counties are highlighted with dashed red boxes and labeled: Busia in the top left, Marsabit in the top right, Kakamega in the bottom left, and Homa Bay in the bottom right. The rest of the country is shown in a light beige color.</p>	

HH = Household

1. Conducted with a subset of households from listing interviews; overall, 1,216 unique HHs, 58 unique value chain actors, and 14 unique key informants were interviewed

2. A trace-back starts with a qualitative interview with a household that constructed a toilet in the past few years, followed by qualitative interviews with all the value chain actors that had provided materials or services towards the construction of that toilet, including upstream actors such as the supplier to the hardware store

3. Our primary research for urban Marsabit included Marsabit town and three secondary urban areas – outskirts of Marsabit town, Merille, and Karare

## Research sample for primary research

	Quantitative listing interviews	Quantitative profile interviews	Qualitative focus group discussions	Value chain trace-backs <sup>1</sup>	Qualitative interviews with value chain players <sup>2</sup>
<b>Rural western Kenya</b>	<b>940</b>	<b>221</b>	<b>50</b>	<b>7</b>	<b>36</b>
Busia	313	77	0	2	10
Kakamega	325	71	25	2	10
Homa Bay	302	73	25	3	16
<b>Urban Marsabit</b>	<b>200</b>	<b>95</b>	<b>15</b>	<b>4</b>	<b>22</b>
Marsabit town	100	45	10	2	12
Marsabit town outskirts	28	7	0	0	0
Merille	41	22	5	1	6
Karare	31	21	0	1	4
<b>Total</b>	<b>1,140</b>	<b>316</b>	<b>65</b>	<b>11</b>	<b>58</b>

1. Sample for trace-backs is in terms of number of toilets (not respondents)

2. Value chain players included fundis, hardware stores, transporters, pit diggers, other material suppliers (e.g., sand/timber/aggregate), and community health volunteers (CHVs)

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# Summary of key findings



## Sanitation context in rural western Kenya

Western Kenya is characterized by very low open defecation rates and a moderate prevalence of improved, individual toilets but most improved toilets are not durable. The lack of durability, loose soils, and flooding results in frequent collapsing of toilets. Upgrades are less common and most households invest in new constructions post-collapse. Sharing is common due to cultural norms.



## Key drivers and barriers

The sanitation market in rural western Kenya has significant potential to increase prevalence of durable, improved toilets and benefits from several favorable demand- and supply-side conditions. But the market is impeded by poor information flows on product prices and lack of clarity around the roles of certain market players.

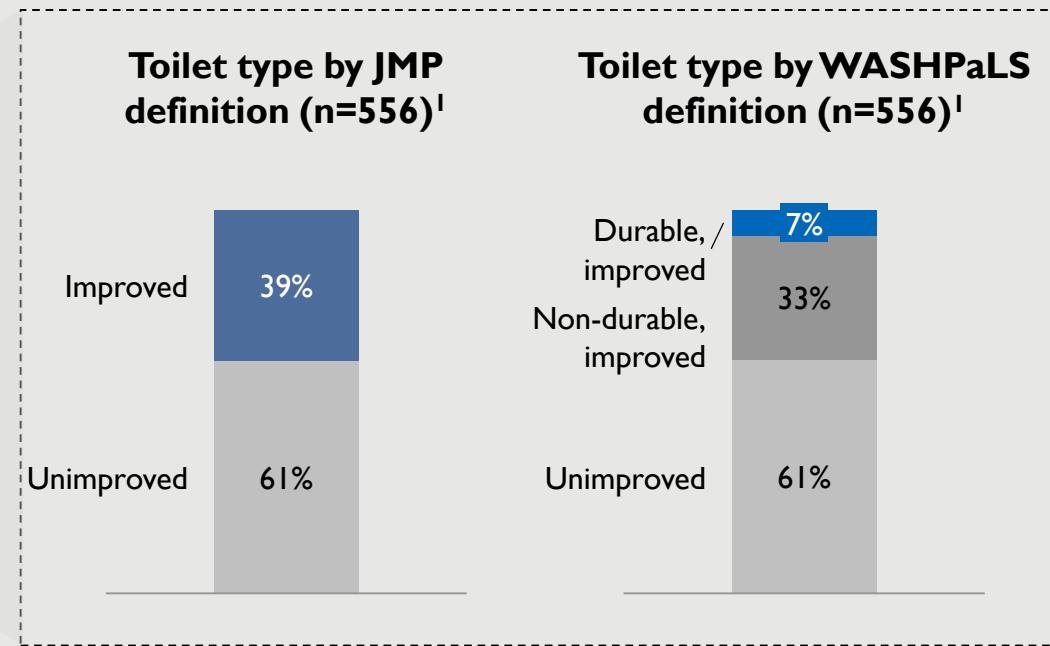
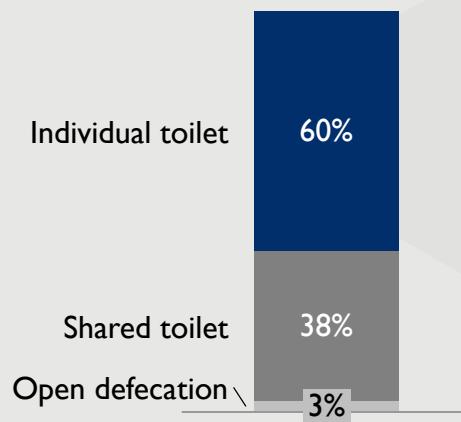
- Households understand the benefits of sanitation, are informed about durable toilet designs, and have a strong desire to improve the durability of their toilets
- A significant share of households have the ability to pay for durable, improved toilets; poorer households may need additional financial support but are unwilling to take loans
- The market benefits from a thriving presence of both full-time and part-time fundis (masons); full-time fundis derive the majority of their income from sanitation and are capable and willing to aggregate materials
- Households benefit from a range of available products and can construct toilets by engaging with three to four players who are easily accessible; however, households incorrectly perceive durable toilets to be expensive, which impedes investment
- Households do not trust fundis despite their active role in the market, whereas other players such as community health volunteers (CHVs) are trusted but play a negligible role in the market
- Introducing cost reductions may be challenging due to the current incentives and beliefs in the market
- The supply chains for construction materials are well-established, and households have a choice of suppliers

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Western Kenya is characterized by very low OD rates and a moderate prevalence of individual, improved toilets, but most individual, improved toilets are not durable

### Type of sanitation facility (n=931) (2021)<sup>1,2</sup>



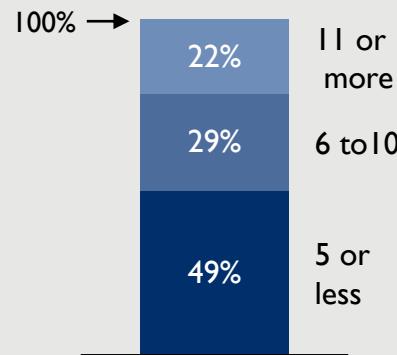
Acronyms: OD = Open defecation; JMP = WHO/UNICEF Joint Monitoring Program

1. FSG quantitative interviews in rural Busia, Kakamega, and Homa Bay; the percentages in the bars do not add up to exactly 100% due to rounding off; the sum of “durable, improved” + “non-durable, improved” does not add up to 39% due to rounding off
2. Our sample had a lower share of households practicing OD in Homa Bay, compared to the Kenya Population and Housing Census 2019; we attribute this to some households shifting to OD as a temporary measure when their toilet collapses

# The lack of durable toilets, loose soil conditions, and flooding leads to regular collapsing or “sinking” of toilets and frequent new constructions

Toilets often collapse within 5 years of construction...

**Number of years toilets last before collapsing as per households (n=192) (2021)<sup>1</sup>**

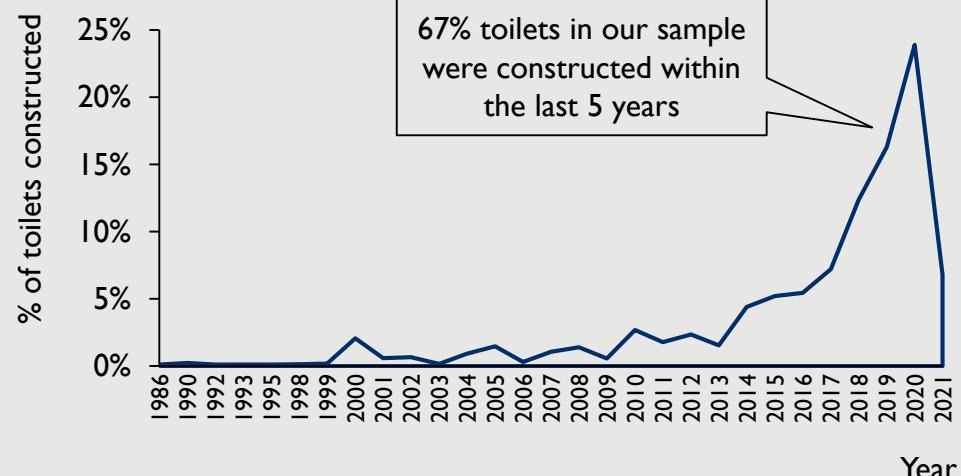


*“Back home in my rural area, the toilet collapsed but it was not a permanent toilet...we just woke up one day and found it had collapsed.”*

- Rural household, Kakamega

...forcing households to construct new toilets frequently

**Year of toilet construction (n=776) (2021)<sup>1</sup>**

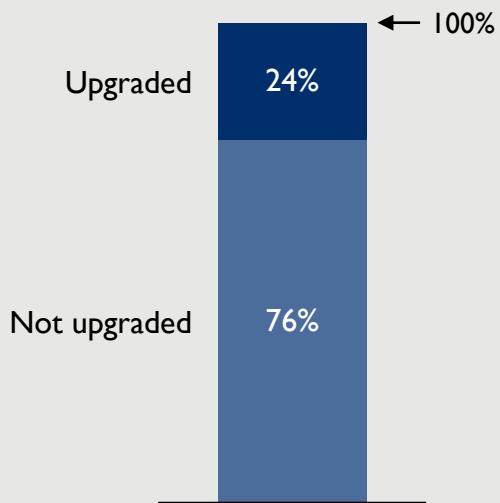


*“A neighbor constructed a toilet and it didn’t last a month before collapsing because of the soft soil...toilets get filled up with water during the rainy season and collapse.”*

- Rural household, Homa Bay

Upgrades are less common since toilets collapse before an upgrade can be scheduled and it is challenging to upgrade or repair a collapsed toilet

**Share of households who have upgraded or repaired their current toilet (n=781) (2021)<sup>1</sup>**



*"Upgrading requires emptying the pit which is costly...the exhausting process can also cause the existing pit to collapse."*

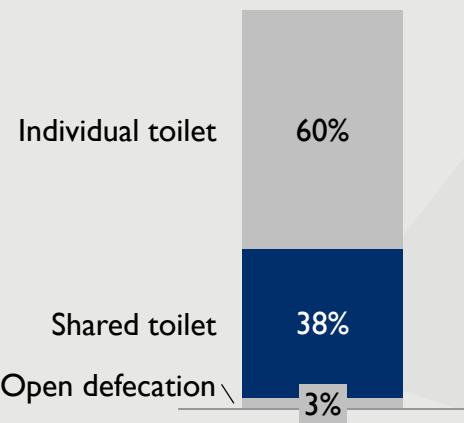
- Rural household, Kakamega

*"Sometimes the timber used for the floor is already eaten by termites, causing a collapse...it is easier to dismantle the walls and set up a new toilet over another pit."*

- Rural household, Kakamega

Sharing of toilets is common due to lack of affordability and cultural norms, and is often a temporary measure post-collapse till the household constructs a new toilet

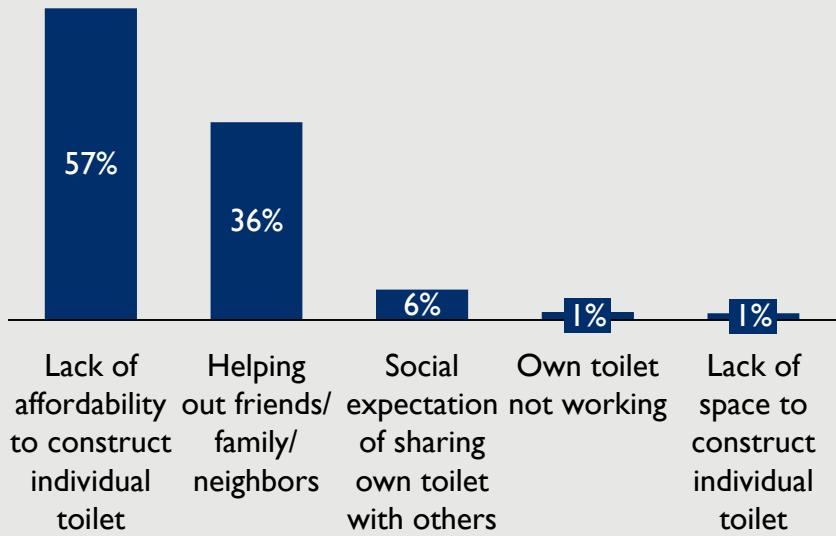
### Type of sanitation facility (n=931) (2021)<sup>1</sup>



*"There is a cultural expectation to share...people ask us if we are not locking our kitchen , why lock the toilet."*

- Rural household, Homa Bay

### Reasons for sharing stated by households who use shared toilets (n=51) (2021)<sup>1,2</sup>



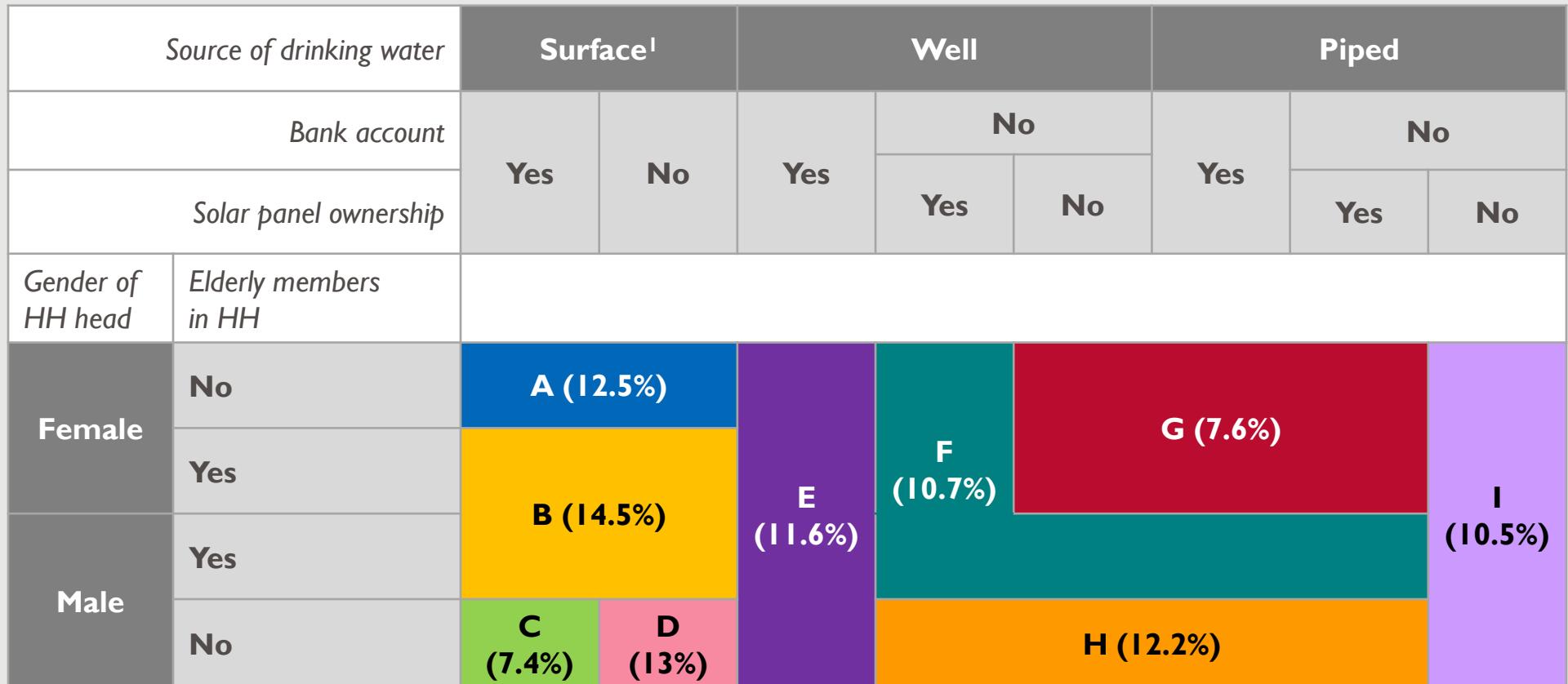
1. FSG quantitative interviews in rural Busia, Kakamega, and Homa Bay; the percentages on the bars don't add up to exactly 100% due to rounding off

2. The percentages do not add up to 100% since respondents could select multiple responses; the number of respondents is lower than 38% of 931 (the chart on the left-hand side) because reasons for not sharing were only asked in the detailed interviews

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We classified rural households in western Kenya into 9 distinct segments based on their propensity to invest in individual, durable, improved toilets



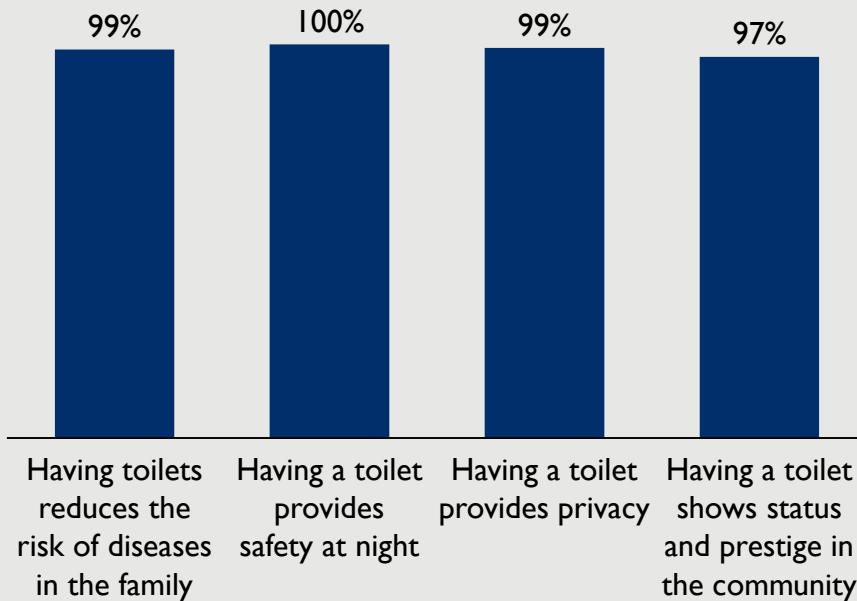
**Note:** The percentages in parentheses indicate the proportion of households in each segment out of the total population in rural western Kenya without individual, durable, improved toilets

Acronym: HH = household

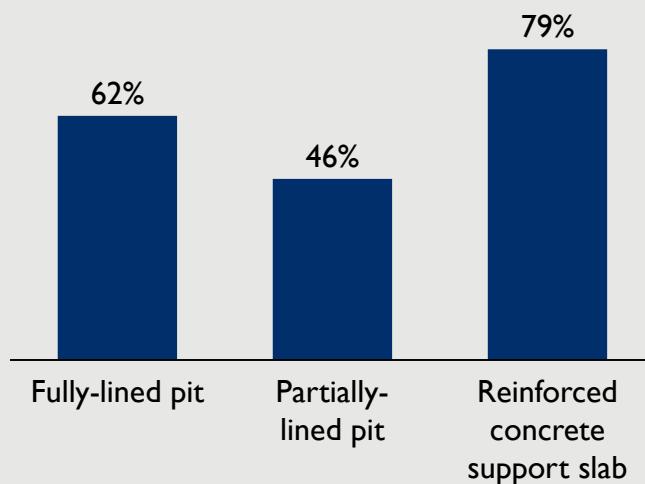
1. Surface water sources include ponds, springs, rainwater harvesting, etc.

# Households understand the benefits of sanitation, are aware of durable toilet options in the market, and strongly desire to improve the durability of their toilets

**Share of households that agree with the benefits of using toilets (n=221) (2021)<sup>1</sup>**



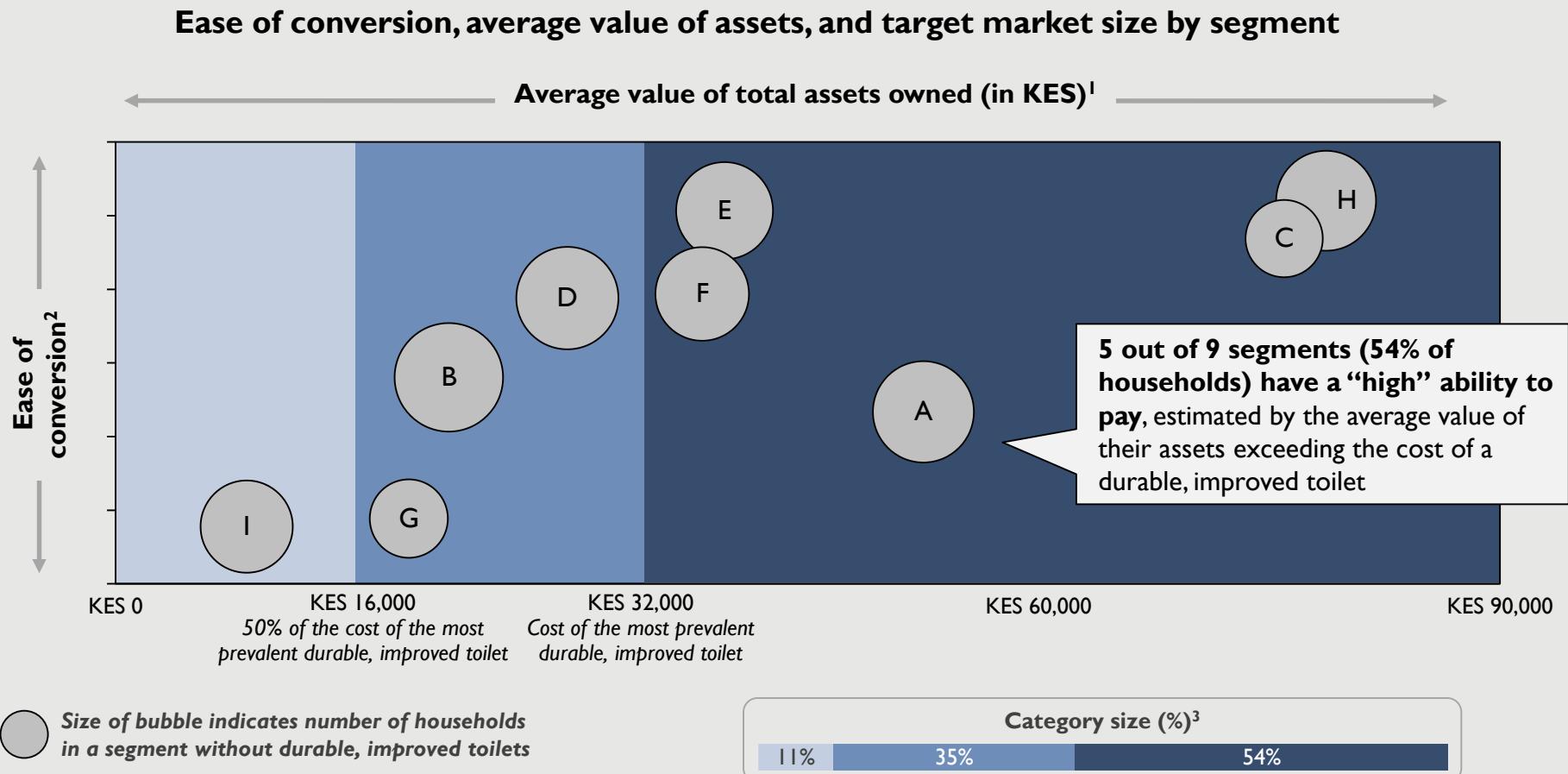
**Household's awareness of durable components (n=221) (2021)<sup>1</sup>**



*"Growing up, my parents constructed almost ten toilets before I was even an adult and they would sink before getting full and so I told myself that when I am old enough to construct my own toilet, then I would construct a permanent toilet"*

- Rural household, Kakamega

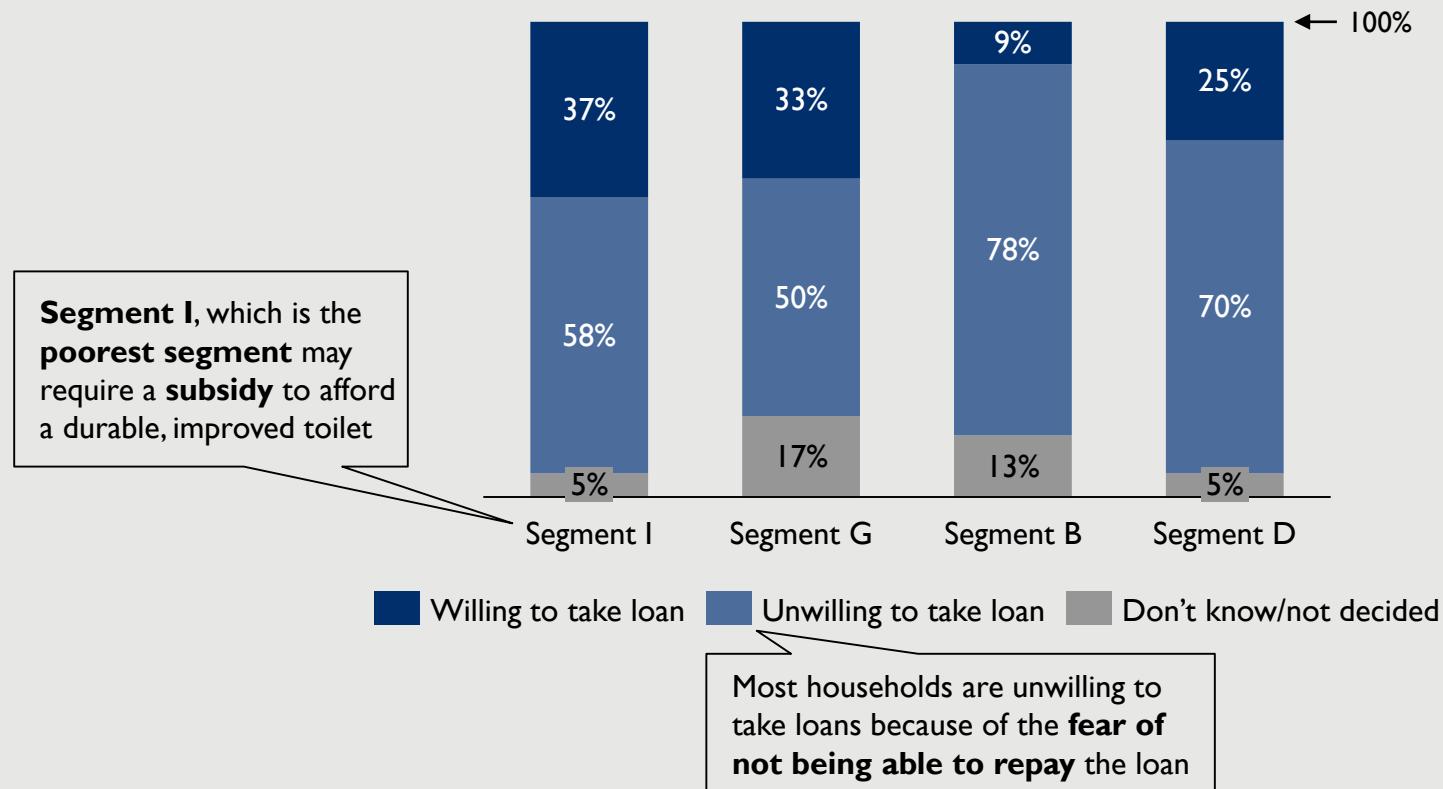
# A significant share of households have the ability to pay for durable, improved toilets



1. Average total asset value for households within the segment: includes farm animals (average of 2 animals), solar panel, motorbike, car/ truck, computer, mobile, bicycle, refrigerator, and television; KES 32,456 is the estimated cost of the most prevalent durable, improved toilet in rural western Kenya (partially-lined pit latrine with a concrete foundation and slab)
2. Ease of conversion is a composite score of awareness of durable toilets, involvement in sanitation category, and willingness-to-pay for sanitation
3. Category size is the proportion of households that are in each category, out of the total population of rural households without individual, durable, improved toilets

Less affluent households have lower ability to pay market prices but are unwilling to take loans for toilet construction because of the fear of not being able to repay it

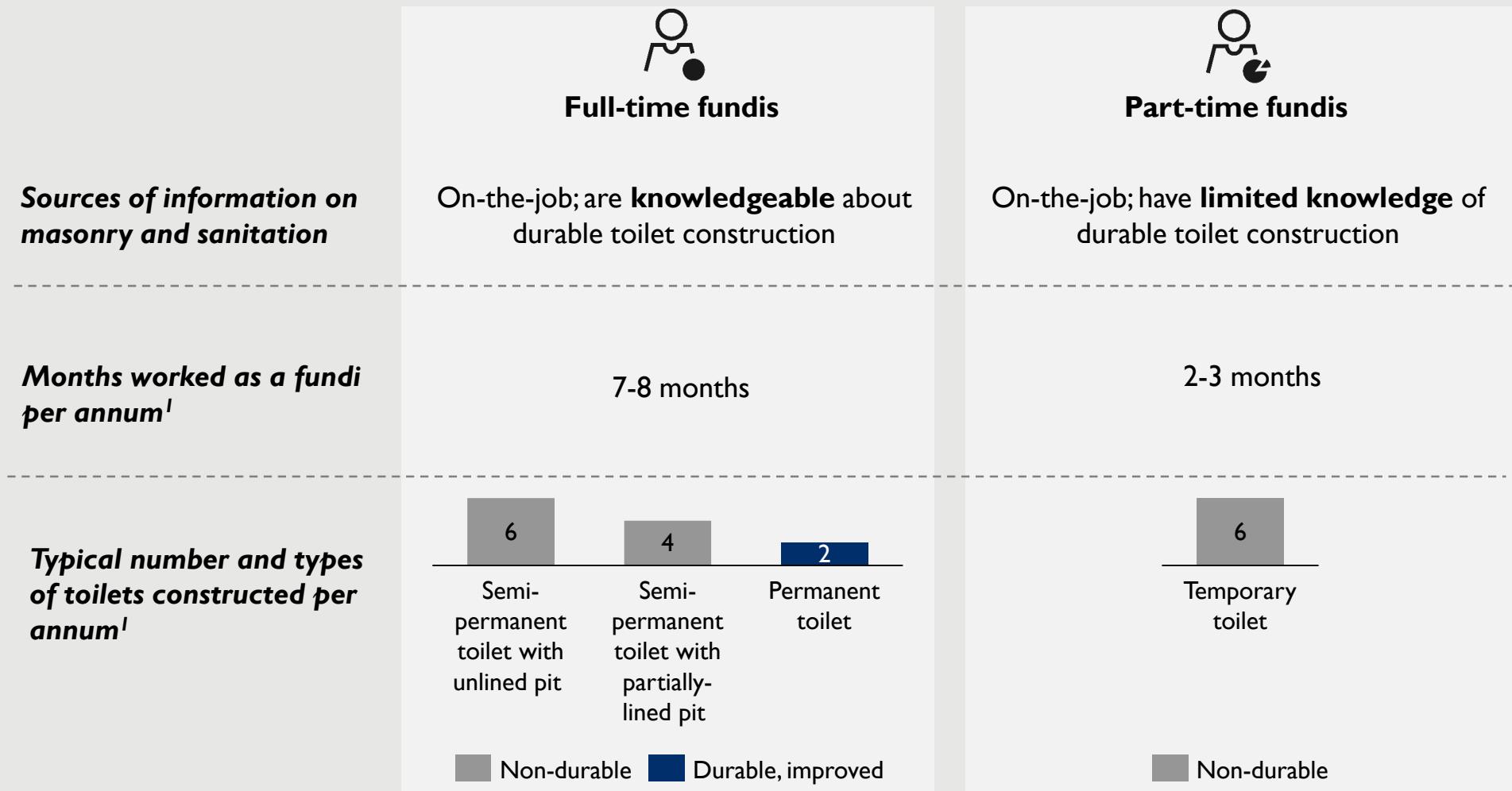
**Households' willingness to take a loan for future toilet construction or upgrade for segments with "low" or "medium"<sup>1</sup> ability to pay (n=68) (2021)<sup>1,2</sup>**



1. "Low" and "medium" ability to pay is estimated by the average value of households' assets being less than the estimated cost of the most prevalent durable, improved toilet in western Kenya

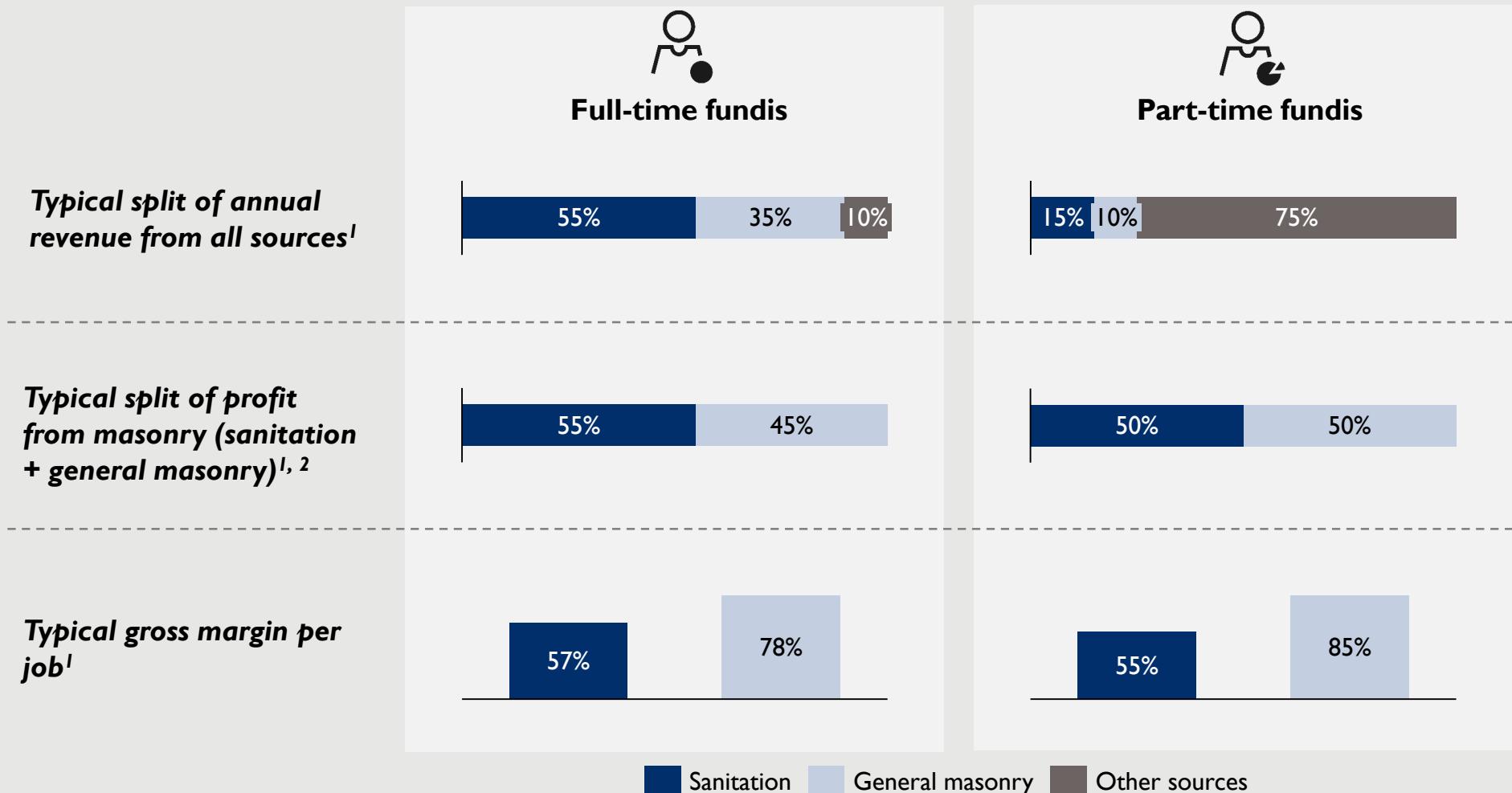
2. FSG quantitative interviews in rural Busia, Kakamega, and Homa Bay

The market has full-time fundis who typically construct durable toilets and part-time fundis who fulfill the demand for temporary toilets due to inadequate knowledge of durable toilets



I. FSG qualitative interviews with 3 “full-time” fundis and 3 “part-time” fundis in rural Busia, Kakamega and Homa Bay, 2021

Sanitation is a viable business for both types of fundis, with full-time fundis deriving a majority of their masonry income from sanitation

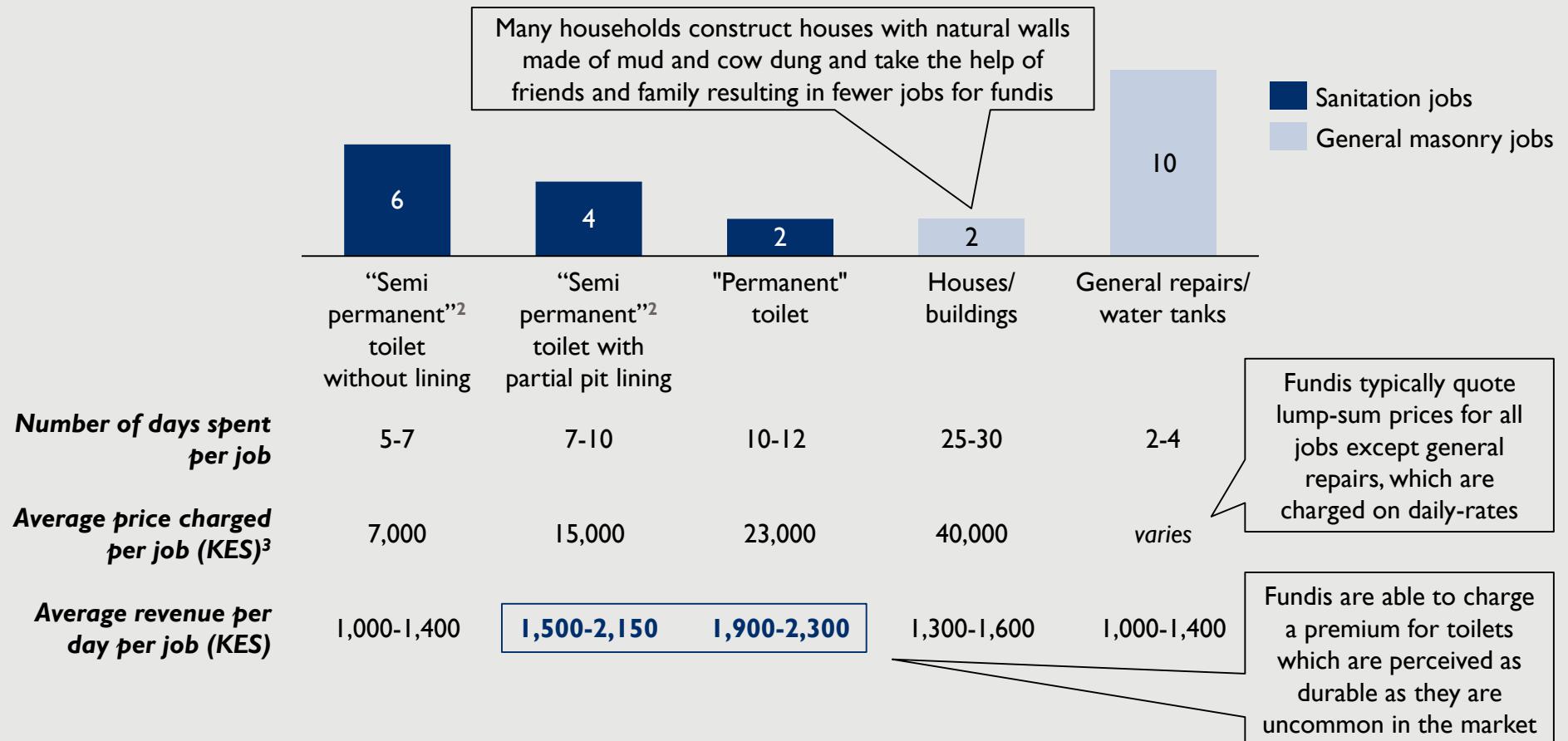


1. FSG qualitative interviews with 3 “full-time” fundis and 3 “part-time” fundis in rural Busia, Kakamega and Homa Bay, 2021

2. We were unable to estimate profit from “other sources” due to data limitations

The high share of income from sanitation is driven by a high demand for toilet jobs and a relatively lower demand for high-value general masonry jobs

**Typical number of masonry jobs per year for a “full-time” fundi, split by type (2021)<sup>1</sup>**

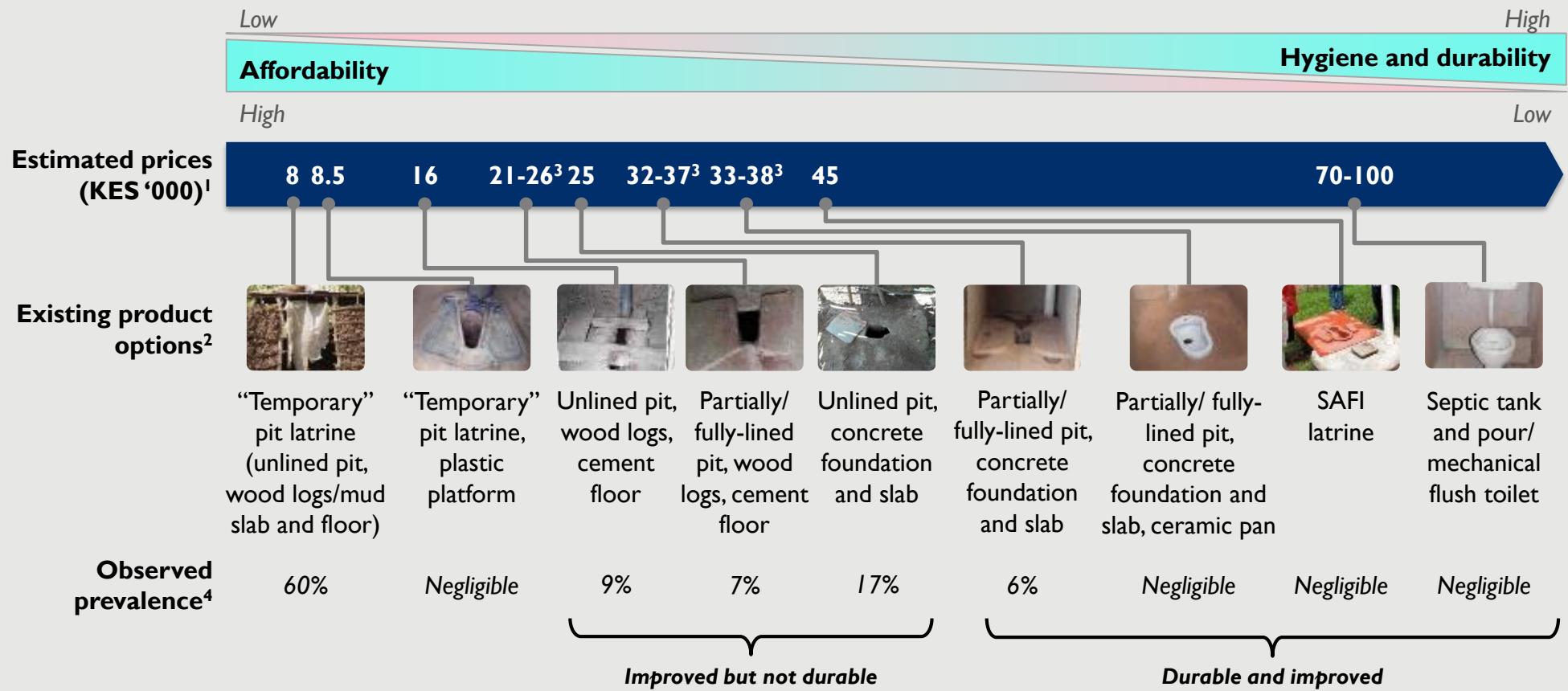


1. FSG qualitative interviews with 3 “full-time” fundis in rural Busia, Kakamega and Homa Bay

2. “Semi-permanent” is the common term used by fundis for a toilet with wood logs and cement floor, while “permanent” is used to indicate a toilet with a lined pit and concrete foundation and slab

3. The price per job given here is for the entire toilet construction including pit digging and construction of the substructure, interface, and shelter

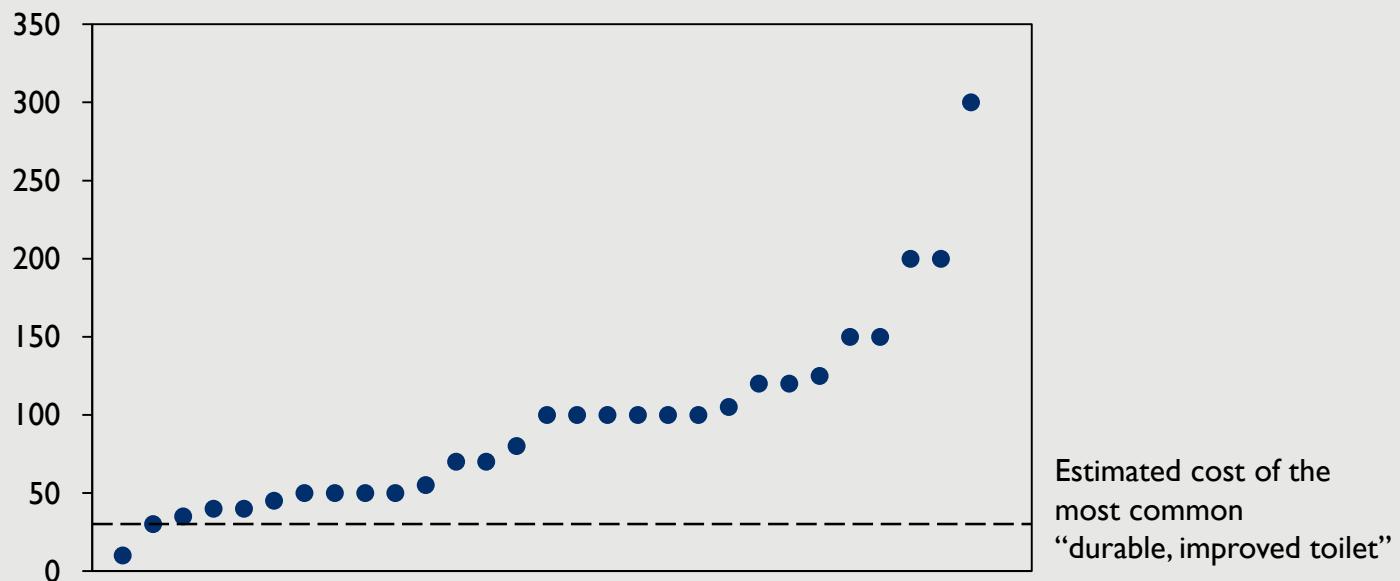
# The market has a wide range of products at different price points, including several options for durable, improved toilets



1. Estimated price represents the rounded-off consolidated price of substructure, interface, and shelter; estimated based on quantitative and qualitative interviews with households, value chain players, county government officials, and local program staff
2. Iron sheets are the most commonly used material for the toilet roof (87%) while the wall material varies by toilet type - mud/sticks walls are predominant for "temporary" toilets while others have iron sheet or brick and mortar walls; most toilets (87%) have rectangular pits
3. Price range represents the estimated price variation between partially- and fully-lined pit variants
4. Prevalence has been calculated based on a sample of 804 households (excludes 127 respondents who either practice open defecation or share toilets not constructed by them and 9 respondents with incomplete information on toilet components); source: FSG quantitative interviews in rural Busia, Kakamega and Homa Bay (n=940) (2021)

But households incorrectly perceive durable, improved toilets to be expensive which can impede investment

**Perceived cost of a “toilet that does not collapse” by respondent  
(KES ‘000) (n=29) (2021)<sup>1</sup>**



*“I spent KES 10,000 for my current toilet... I am not ready to pay KES 100,000 to make my toilet durable”*

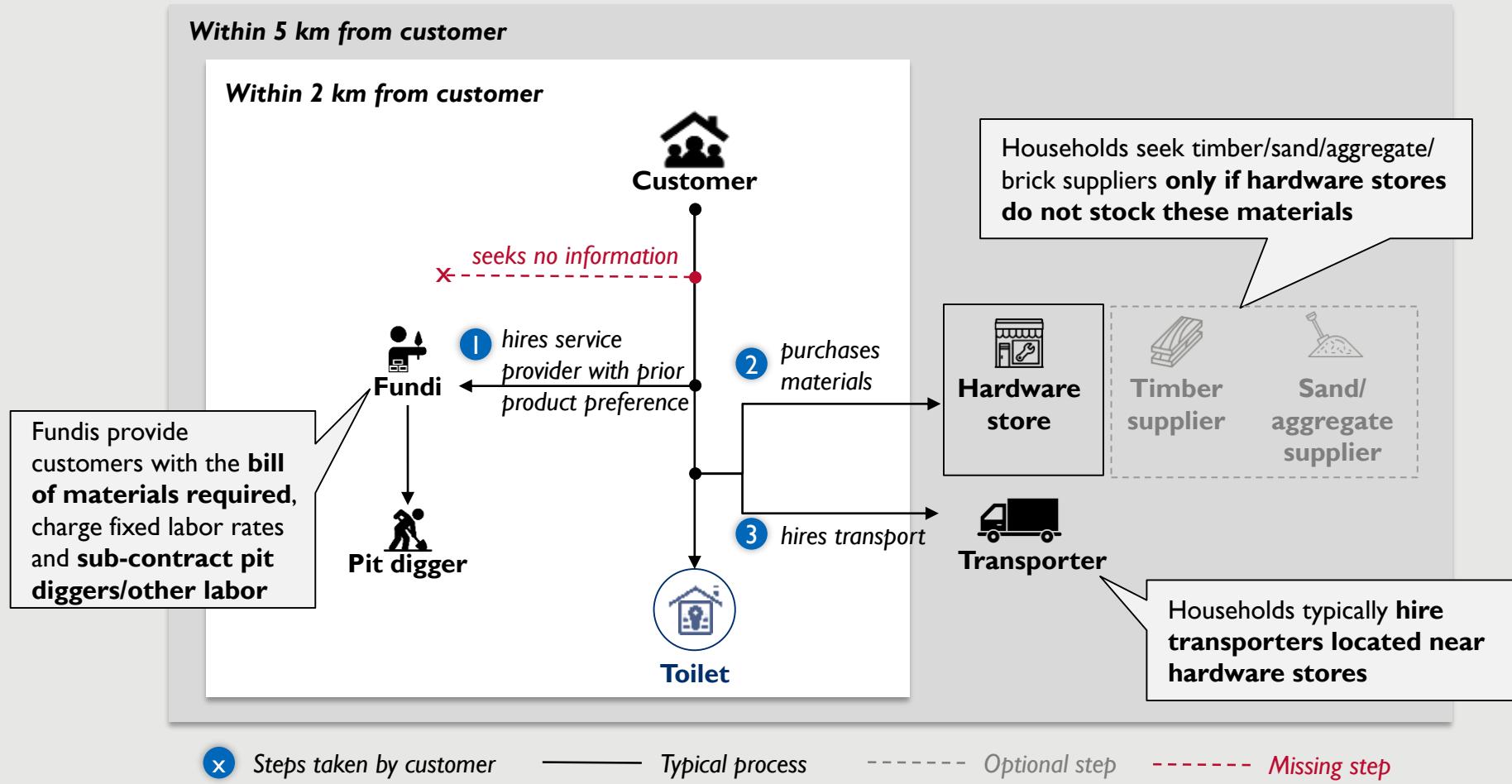
- Rural household, Kakamega

*“A toilet for KES 28,000 collapses in 2 years, so even a KES 56,000 toilet would give me only 4-5 years... KES 50,000 is impossible for a durable toilet”*

- Rural household, Homa Bay

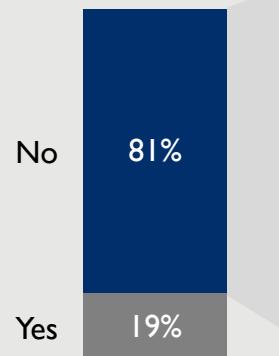
Households can construct a toilet by interacting with 3-4 players who do some aggregation and are easily available

### Illustrative diagram of the process to construct a toilet in rural western Kenya

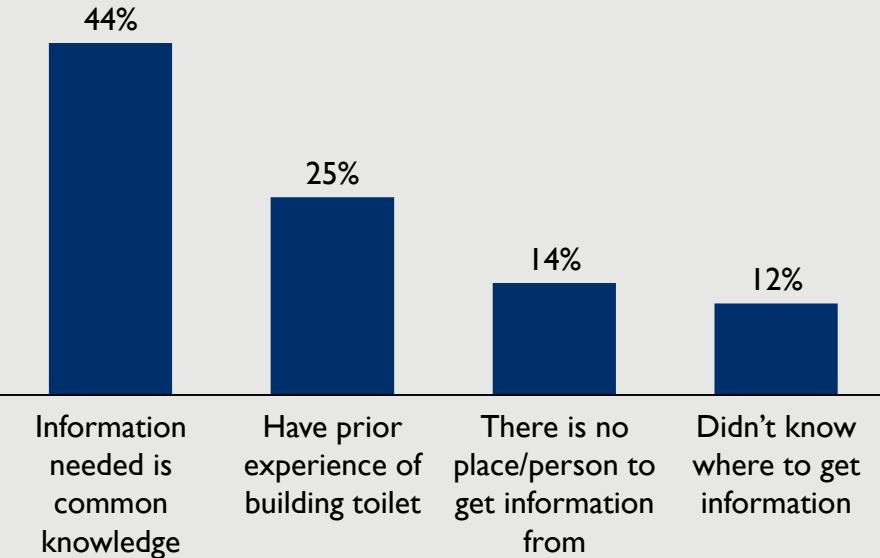


**Households do not actively look for information and often form product preferences before they approach a fundi, contributing to the lack of price awareness**

**% of households seeking information on toilets before reaching out to a fundi (n=99) (2021)<sup>1</sup>**



**% frequency of reasons for not seeking any information (n=80) (2021)<sup>1,2</sup>**



*"We know what toilet we want because we see it in the community and do our own research, we don't need the fundi's advice"*

- Rural household, Homa Bay

*"Most of the times the customer comes to me with a plan and decision of what s/he wants to build."*

- Fundi, Homa Bay

1. FSG quantitative interviews in rural Busia, Kakamega, and Homa Bay

2. The percentages on the bars don't add up to 100% since respondents could select multiple responses

## Despite their critical role, fundis are not trusted by households, which may limit the potential role of full-time fundis

*“Many fundis cannot be trusted because they may not turn up when the job starts...they ask for extra bags of cement and may carry some back for themselves”*

- Rural household, Kakamega

*“Most fundis are con-men and are not actually qualified... someone must watch them throughout the process”*

- Rural household, Kakamega

*“Nowadays so many people claim to be a fundi and you cannot completely trust them because not all are actually qualified”*

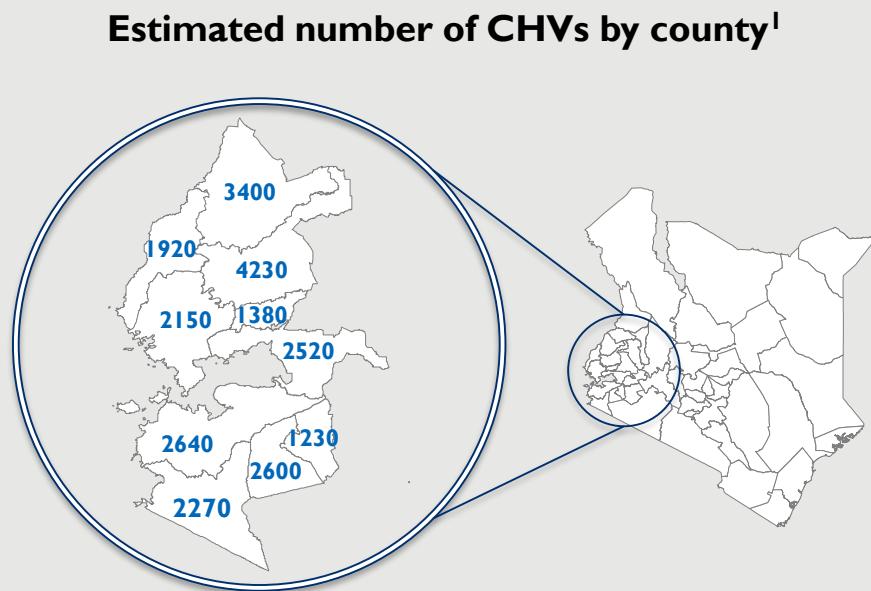
- Rural household, Homa Bay

*“There are some masons who just do shoddy work, which causes our toilets to sink as soon as it rains and water seeps in”*

- Rural household, Kakamega

**CHVs have the potential to play a demand activation role since they are ubiquitous and are trusted by households**

**A network of ~23,500 CHVs operates across western Kenya**



**Average number of HHs per CHV ~ 110**

**Rural households in western Kenya believe CHVs are dedicated to their work**

*“CHVs are active in our communities and regularly check the situation of our toilets; they ensure we discontinue use if there is a danger of collapse”*

- Rural household, Kakamega

*“The CHVs positively influence the community. Now we do not experience cholera outbreaks in our area.”*

- Rural household, Kakamega

*“The CHVs check usage of water to clean utensils and whether items are being dried properly on a rack.”*

- Rural household, Kakamega

I. Number of CHVs per county estimated using the formula: Number of functioning community health units (CHUs) by county (source: Ministry of Health, Government of Kenya ([Link](#))) multiplied by 10 CHVs per functional CHU (Source: [Link](#)); the number of allocated HHs for CHVs interviewed by FSG varied between 32 and 150

**...but they are currently playing a limited role in the market possibly because of limited bandwidth**

**Households do not consider CHVs to be a relevant source on sanitation products...**

*"The CHVs check if we have toilets and ask us to construct them if we don't have it but do not give any advice on what type of toilets to build or benefits of toilets"*

- Rural household, Homa Bay

*"Community health workers and volunteers provide preliminary information but some people do not use this information"*

- Rural household, Kakamega

*"Community health workers exist in our region but we get our information from neighbors or NGOs"*

- Rural household, Kakamega

**...potentially because sanitation is one of several topics covered by CHVs**

**List of topics to be covered per home visit by a CHV<sup>1,2</sup>**

1	Health check-ups	5	Personal hygiene promotion
2	Immunization activities	6	<b>Sanitation promotion</b>
3	Nutrition awareness	7	Water conservation
4	Child rights awareness	8	Environmental cleanliness

**Typical visits per quarter per household = 2<sup>1</sup>**

**Average duration per visit = 10 min<sup>1</sup>**

1. FSG qualitative interviews in rural Busia, Kakamega, and Homa Bay

2. This is a non-exhaustive list of responsibilities under a CHV's mandate

There is scope for reducing the cost of durable, improved toilets by re-engineering or by reducing the fundi's premium

## Current durable, improved toilets are over-engineered compared to standards

	Current specifications <sup>1</sup>	Standard specifications <sup>2</sup>	Net effect
<b>Dimensions (feet)</b>			
Pit (length x breadth x depth)	5x3x15	3.3x3.3x14	▼ Pit volume by 32%
Slab (length x breadth x thickness)	5x3x0.3	3.3x3.3x0.2	▼ Slab volume by 56%
<b>Material mix</b>			
Gravel : cement : sand (Ratio for slab)	2:2:3	3:1:2	<span style="color: red;">▲ Gravel by 75%</span> <span style="color: green;">▼ Cement by 42%</span> <span style="color: green;">▼ Sand by 33%</span>

## Fundi charge a premium for durable components compared to other jobs

Type of job <sup>3</sup>	Average per diem revenue (KES) <sup>4</sup>
“Semi-permanent” toilets without lining	1,200
“Semi-permanent” toilets with partial lining	1,825
“Permanent” toilet	2,100

1. FSG qualitative interviews with 7 fundis in rural Busia, Kakamega, and Homa Bay, 2021

2. Standard specifications of an onset pit latrine, with a partially-lined pit, and concrete foundation and slab, which can last a household of 6 for a minimum of 10 years; source: LifeWater Latrine Design & Construction Manual, April 2011

3. “Semi-permanent” is the common term used by fundis for a toilet with wood logs and cement floor, while “permanent” is used to indicate a lined pit and concrete foundation and slab

4. FSG analysis based on qualitative interviews with 3 “full-time” fundis across rural areas of Busia, Kakamega and Homa Bay

**Costs of the pit and slab can reduce by 36%, but value chain players may resist due to lower revenues and households may resist due to misconceptions about reduced quality**

**Reducing costs will also reduce per unit revenue of material and service providers...**

**...and may be unacceptable to households due to their misconceptions about reduced quality**

**Comparison of cost of a durable, improved toilet (only substructure and interface) (KES)<sup>1,2</sup>**

	Current specifications	Standard specifications	Standard specifications & standard labor rate
Material	23 8	19 6	15 6
Labor	15	13	8
Pit specification (feet) <sup>3</sup>	5 x 3 x 15	3.3 x 3.3 x 14	3.3 x 3.3 x 14
Slab specification (feet) <sup>3</sup>	5 x 3 x 0.3	3.3 x 3.3 x 0.2	3.3 x 3.3 x 0.2
Fundi daily rate (KES)	1,900	1,900	1,200

*"I can imagine a durable toilet costing KES 80,000 but nothing less than that; less than that means the materials are not durable"*

- Rural household, Homa Bay

*"Prices of materials has gone up, so a durable toilet at KES 50,000 can only have low quality material or low labor...I have seen toilets like that collapse"*

- Rural household, Homa Bay

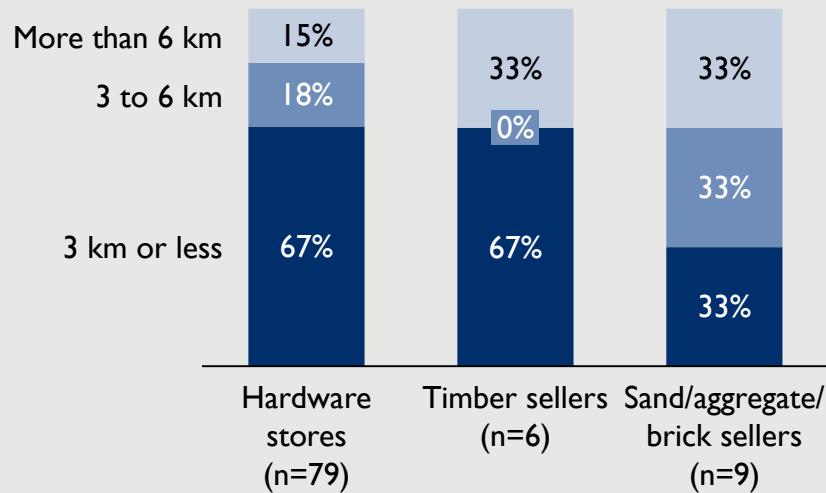
1. We have considered the cost of the most prevalent durable, improved toilet, i.e., partially-lined pit latrine with a concrete foundation and slab
2. Our assumption is that the number of labor days required for pit digging reduces because of the re-engineering, but the labor required for the slab remains unchanged since fundis will typically invest the same effort regardless of slab specifications
3. The dimensions for the pit are given as (length x breadth x depth) and the dimensions for the slab are given as (length x breadth x thickness)

**Material supply chains are well-established since households have easy access to and choice of retailers**

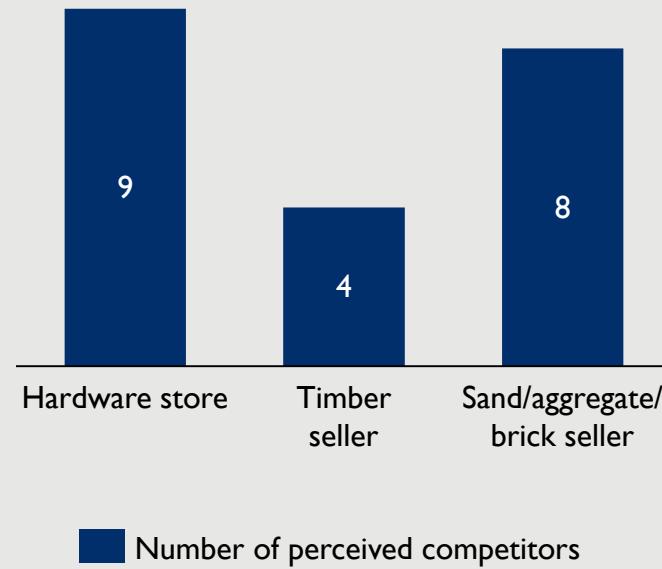
**Most households can purchase materials within a 6 km radius of their homes...**

**...and have the option of purchasing the same material from different suppliers**

**% split of rural households by distance traveled to reach respective material suppliers (2021)<sup>1</sup>**



**Average number of competitors perceived within a 5-km radius, by material supplier (n=4) (2021)<sup>2</sup>**



1. FSG quantitative interviews in rural Busia, Kakamega, and Homa Bay; the percentages on the bars don't add up to exactly 100% due to rounding off

2. FSG qualitative interviews with value chain players in rural Busia, Kakamega, and Homa Bay

...who themselves are able to easily procure their supplies and make healthy margins

			
Material inputs and source	Hardware store	Timber seller	Sand/aggregate seller
Typical time taken/ distance travelled to receive inputs	12 hours to 7 days	2 to 10 km	2 to 5 km
Average margin earned	6%-15% (fast-moving goods)	67%	52%
	20%-40% (slow-moving goods)		
	 Retailer	 Producer	

# Summary of drivers and barriers for MBS (rural western Kenya)

**BARRIERS**

**DRIVERS**



## Customers

- Poorer households with a low ability to pay market prices for durable toilets
- Reluctance to take loans for fear of inability to pay back

- High awareness of the benefits of sanitation and knowledge of durable toilet options
- Strong desire to improve the durability of toilets
- Significant proportion of households with a high ability to pay for durable toilets



## Entrepreneur

- Part-time fundis' limited skill in durable products
- Inaccessibility of formal loans and working capital challenges for fundis

- Availability of full-time and part-time fundis
- Sanitation as primary source of income for full-time fundis
- Full-time fundis' willingness to stock materials
- Viability of sanitation business line for all entrepreneurs
- Access to formal loans and positive cash flows for hardware stores



## Enterprise

- Poor information flows leading to incorrect perception of durable toilets being expensive
- Distrust of fundis by households
- Challenges in reducing costs or introducing new products
- Limited capacity of CHVs to do sales and marketing

- Wide range of products across price points
- Households' willingness to engage with 3-4 market players to construct toilets
- Presence of CHVs who are trusted and promote sanitation



## Business Environment

- Poor quality roads limit potential market for pre-fabricated products
- Lack of training of market players on durable products

- Well-established supply chains for construction materials
- Support from county government for MBS efforts

Acronyms: CHV = Community health volunteers; MBS = Market-based sanitation

This deck presents the key drivers and barriers for MBS in rural western Kenya. Please refer to the compendium of findings for details on the comprehensive list of drivers and barriers (mentioned above).

# Contents

- Overview of the SMA
- Key findings on western Kenya
- **Key findings on Marsabit**

# Summary of key findings



## Sanitation context in urban Marsabit

Urban Marsabit is characterized by high rates of sharing and improved toilets, but also a low prevalence of durable, improved toilets. Sharing of toilets is very common because many households cannot afford toilets. Upgrades are rare and collapsing of toilets is also a challenge, though not as severe as western Kenya.



## Key drivers and barriers

A nascent sanitation market already exists in urban Marsabit. However, there is significant scope to make durable, improved toilets more affordable and easier to construct.

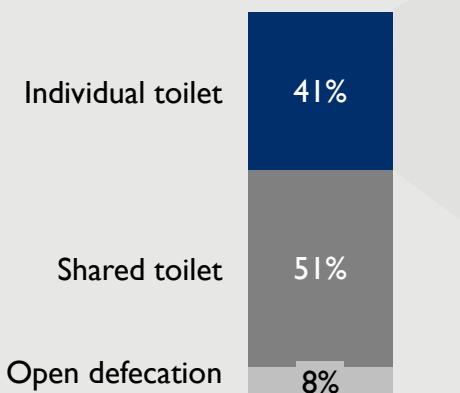
- Households value the benefits of having a toilet and are aware of durable toilet options, but most do not prioritize sanitation, have limited ability to pay, and do not want to take loans to bridge the gap
- Part-time and full-time fundis exist, who consider the sanitation business line to be viable, though not as a standalone business
- There is a trade-off between affordability and durability, with durable toilets being more expensive due to higher material and labor costs
- The toilet construction process can be improved since households have to interact with five to seven value chain players who are accessible but often located far away
- The supply chains for construction materials are dispersed, but households are well connected with, and have a choice of, material suppliers through a network of transporters

# Contents

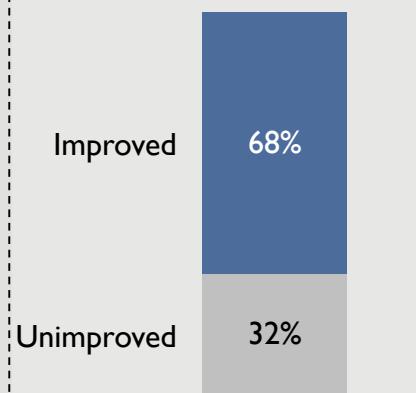
- Overview of the SMA
- Key findings on western Kenya
- Key findings on Marsabit
  - Sanitation context
  - Drivers and barriers for MBS

Urban Marsabit is characterized by high rates of toilet sharing and improved toilets, but a low prevalence of durable toilets

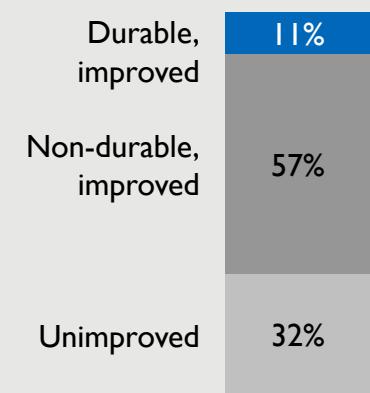
**Type of sanitation facility (n=200) (2021)<sup>1</sup>**



**Toilet type as per JMP definition (n=82)<sup>1</sup>**

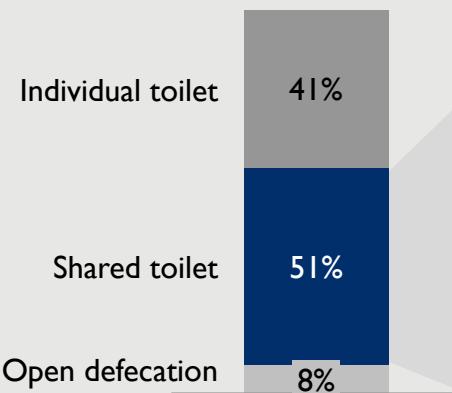


**Toilet type by WASHPaLS definition (n=82)<sup>1</sup>**

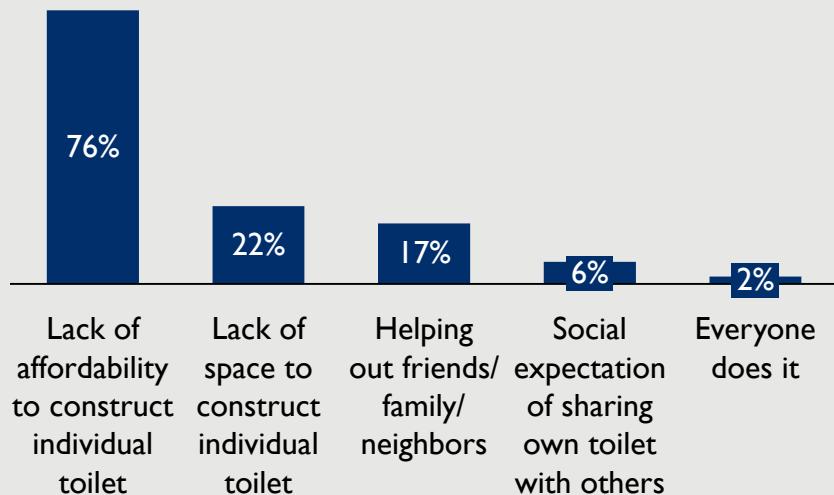


Sharing is very common because most households cannot afford constructing their own toilets

Type of sanitation facility (n=200) (2021)<sup>1</sup>



Reasons for sharing stated by households who use shared toilets (n=37) (2021)<sup>1,2</sup>



*"There are some toilets that were built by the community coming together so maybe one offered to dig the pit and another offered to put the slab."*

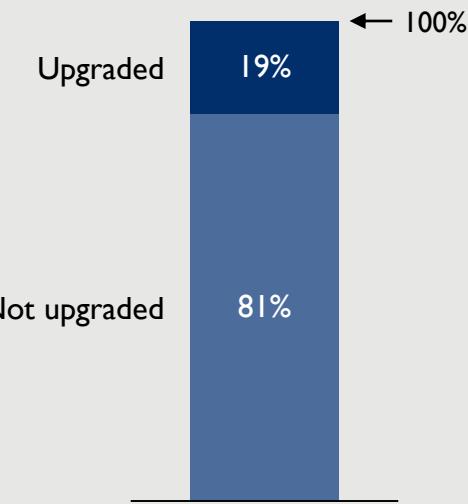
- Urban household, Merille

1. FSG quantitative interviews in urban Marsabit

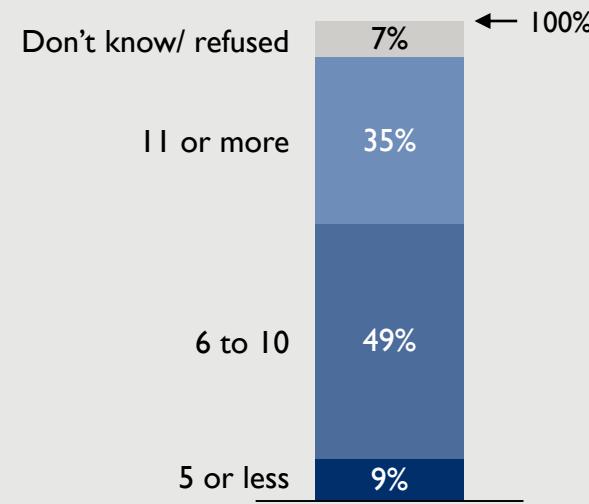
2. The percentages on the bars don't add up to 100% since respondents could select multiple responses; the number of respondents is lower than 51% of 200 (the chart on the left-hand side) because reasons for not sharing were only asked in the detailed interviews

Upgrades are rare and while collapsing is less common than western Kenya, it remains an issue due to low durability of toilets

**Share of households who have upgraded or repaired their current toilet (n=120) (2021)<sup>1</sup>**



**Number of years toilets last before collapsing as per households (n=95) (2021)<sup>1</sup>**



# Contents

- Overview of the SMA
- Key findings on western Kenya
- Key findings on Marsabit
  - Sanitation context
  - **Drivers and barriers for MBS**

# We identified three broad customer archetypes in urban Marsabit to develop a nuanced understanding of households and their sanitation behavior

## Customer archetype<sup>1</sup>

### Profile

### Sanitation behavior (n=200) (2021)<sup>2</sup>

**Secondary  
urban**

**Pastoralist** households settled in satellite towns located near livestock markets called “**shopping centres**” such as Merille and Karare



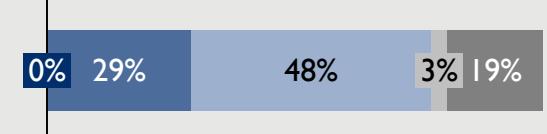
**Primary  
urban poor**

**Least affluent** households in **Marsabit town** who rely on purchasing **piped water** from kiosks for domestic requirements



**Primary  
urban rich**

Small section of **affluent** households in **Marsabit town** who have invested in **rainwater harvesting systems** for domestic requirements



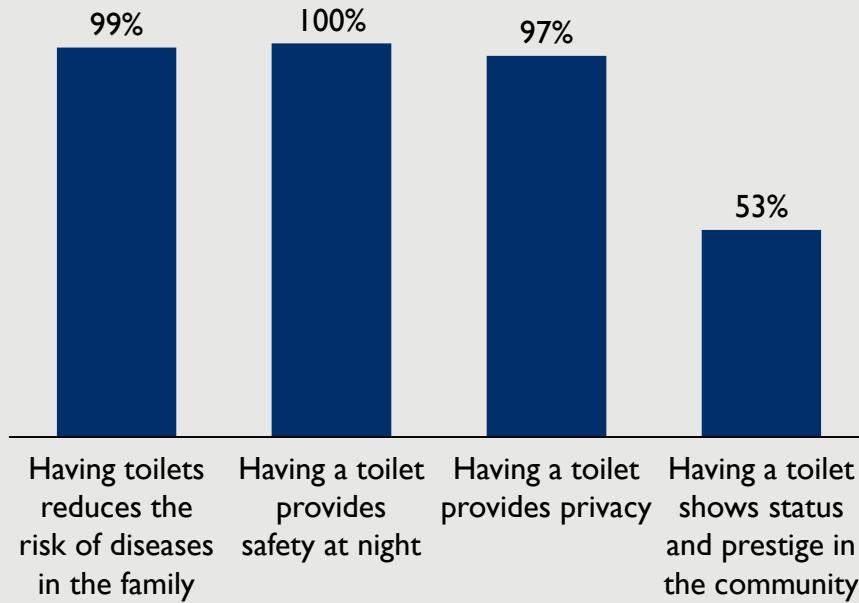
■ OD ■ Unimproved shared ■ Unimproved individual ■ Durable, improved shared ■ Durable, improved individual

1. We were unable to quantitatively size the population of these archetypes due to data limitations. However, based on our research, we postulate that “primary urban poor” and “secondary urban” households are more prevalent than the “primary urban rich”

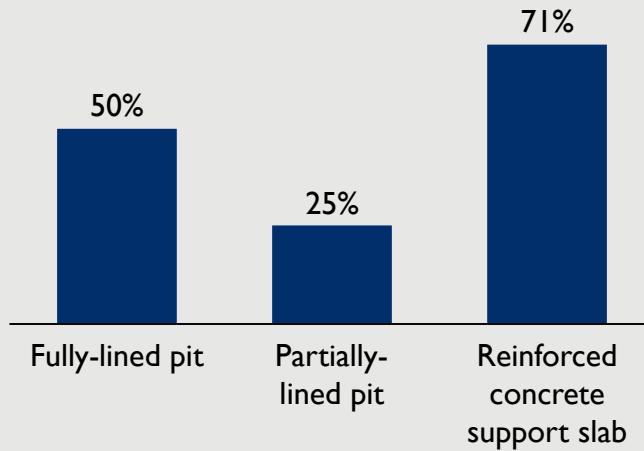
2. FSG quantitative interviews in urban Marsabit; the percentages on the bars don't add up to 100% due to rounding off

# Households value sanitation and appear to have some awareness of durable toilet options

**Share of households that agree with the benefits of using toilets (n=95) (2021)<sup>1</sup>**



**Household's awareness of durable components (n=95) (2021)<sup>1</sup>**



*"When we talk about durable toilets you must put concrete on the walls [of the pit] for it not to sink...if you just dig and put concrete on top, that is already a poor foundation."*

- Urban household, Marsabit town

# Households have a low willingness to invest in durable toilets and prioritize other expenditures such as children's education

**Households prefer to spend their limited funds on education over toilet construction...**

*"I would give priority to school fees...I can request a good neighbor to allow me to use their toilet while I organize my finances or maybe I'll go to the bush and then once am done with paying school fees, then I can build a toilet."*

- Urban household, Marsabit town

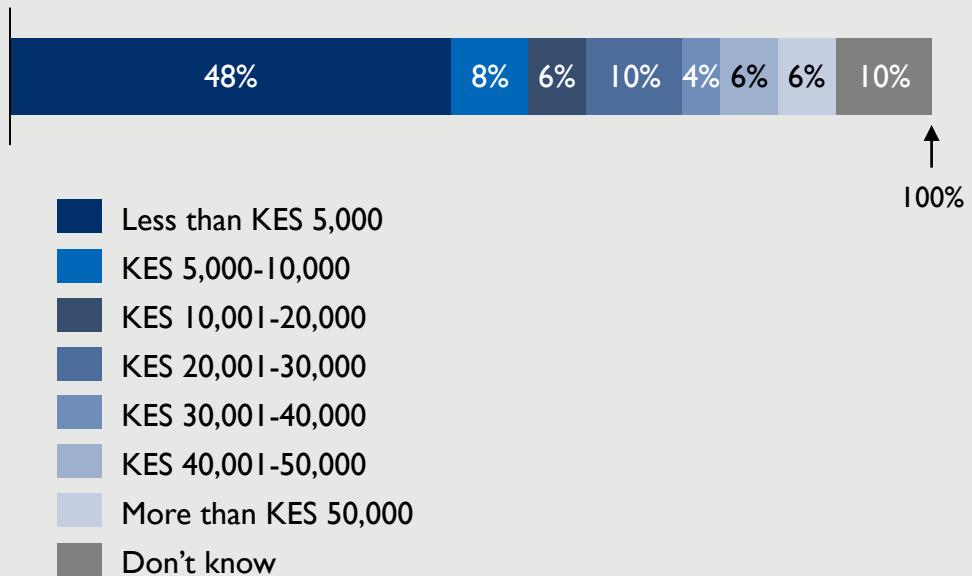
**...and prioritize affordability over durability while making their construction decision...**

*"You have to look at your finances and how much you can afford and that is how you decide which toilet to construct"*

- Urban household, Merille

**...which results in a low willingness-to-pay for sanitation**

**Households' willingness to pay for their desired future toilet in urban Marsabit (n=48) (2021)<sup>1</sup>**

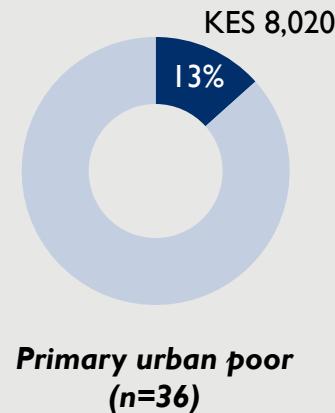
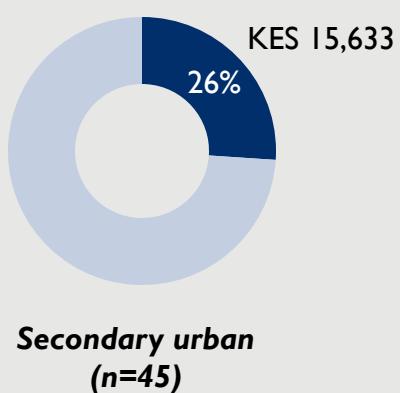


I. FSG quantitative interviews in urban Marsabit; the percentages on the bar don't add up to 100% due to rounding off

**Most households cannot afford durable, improved toilets or even an individual toilet...**

**The two most prevalent segments cannot afford durable toilets...**

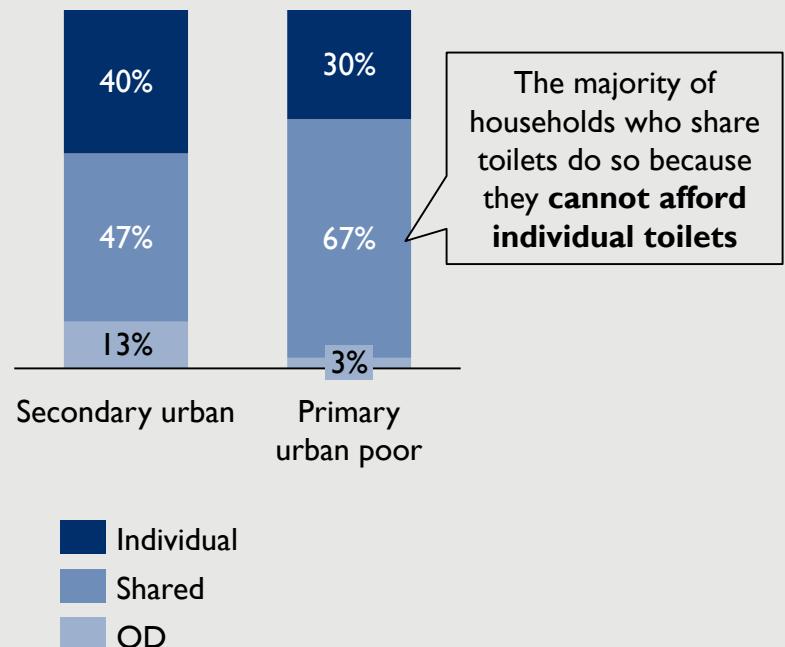
**Average value of assets owned as a % of the estimated cost of the cheapest durable, improved toilet (2021)<sup>1</sup>**



Estimated cost of the cheapest durable, improved toilet in urban Marsabit = ~KES 60,000

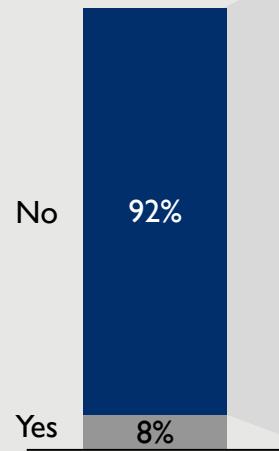
**...and most are unable to afford even individual toilets**

**Type of toilet facility by customer archetype (n=81) (2021)<sup>1</sup>**

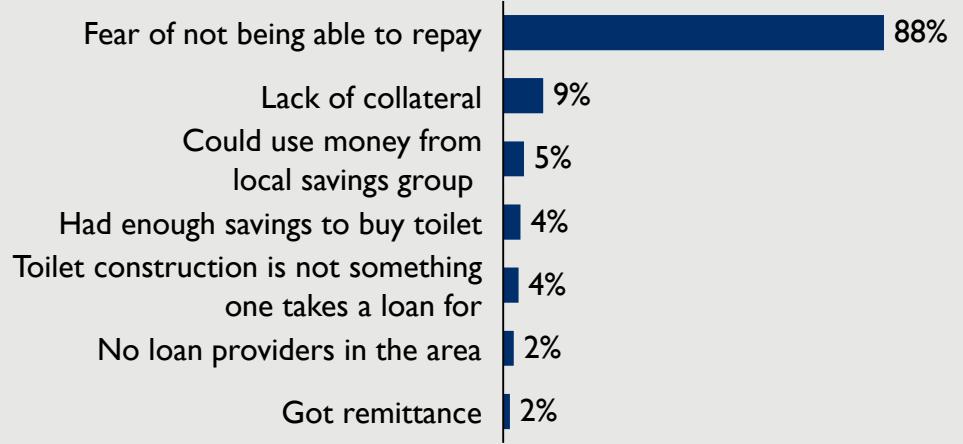


...and are unwilling to take loans for sanitation to bridge the gap because they do not believe they will be able to pay it back

**Share of households who are willing to take a loan for future toilet construction (n=54) (2021)<sup>1</sup>**



**Reason or not taking loan (n=50) (2021)<sup>1,2</sup>**



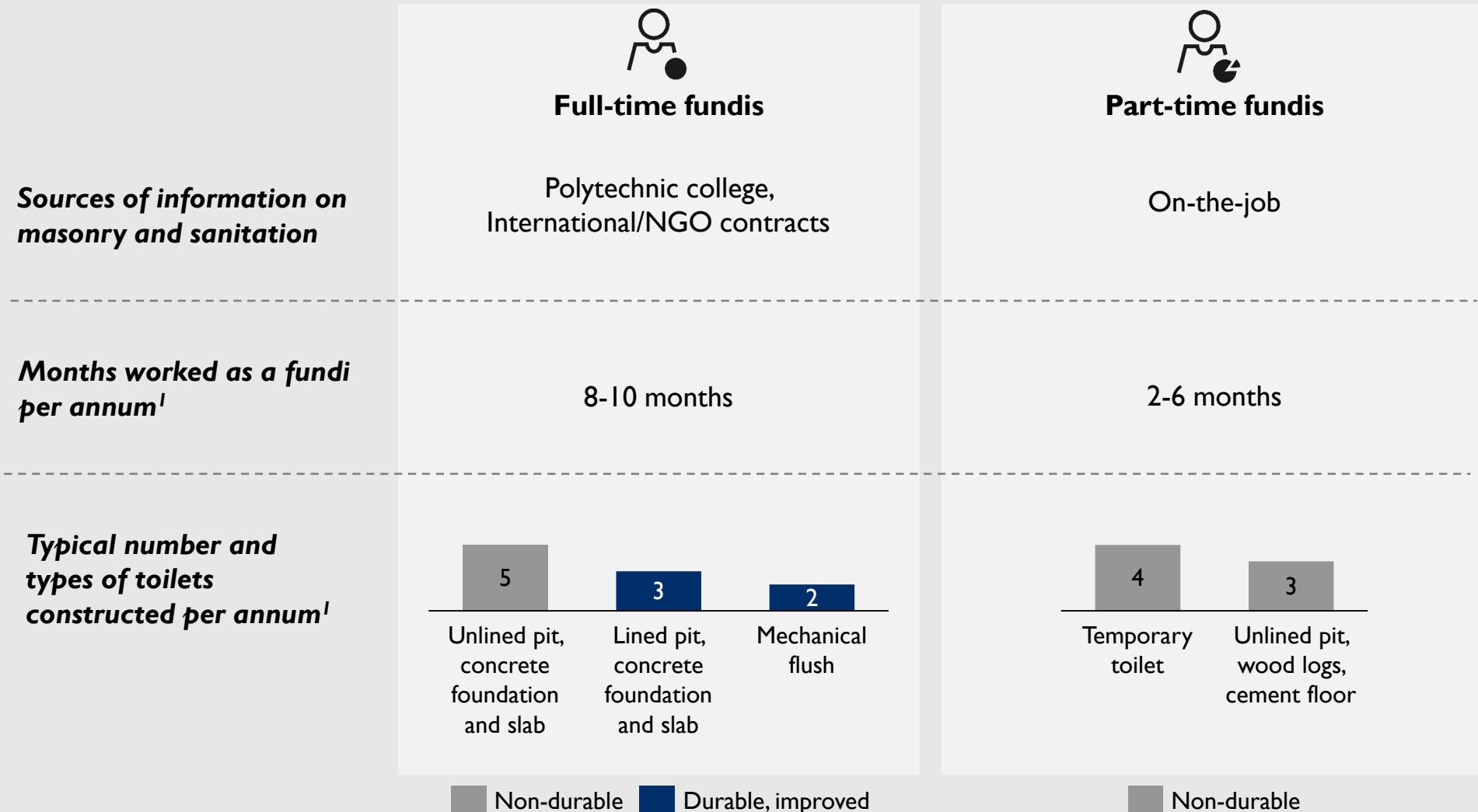
*“Instead of taking a loan to build a toilet, I would use that money to start a business and then use that income to build a toilet. But if I use it to build a toilet, I might not have a place to get the income to repay the loan.”*

- Urban household, Marsabit town

1. FSG quantitative interviews in urban Marsabit

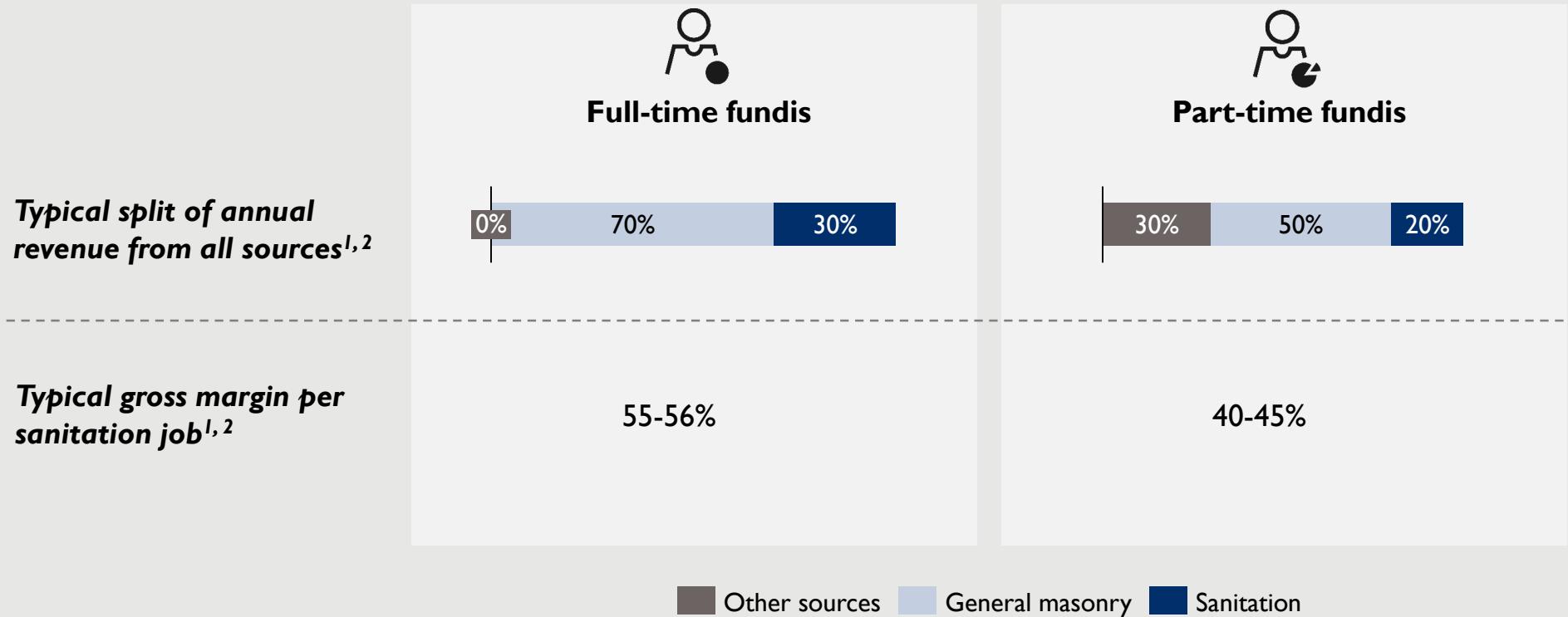
2. The percentages on the bars don't add up to 100% since respondents could select multiple responses

The market has formally trained, full-time fundis who typically construct durable toilets and part-time fundis who can only construct temporary toilets



I. FSG qualitative interviews with 2 “full-time” fundis and 2 “part-time” fundis in urban Marsabit, 2021

## Sanitation is viable for both types of fundis, but not as a standalone business

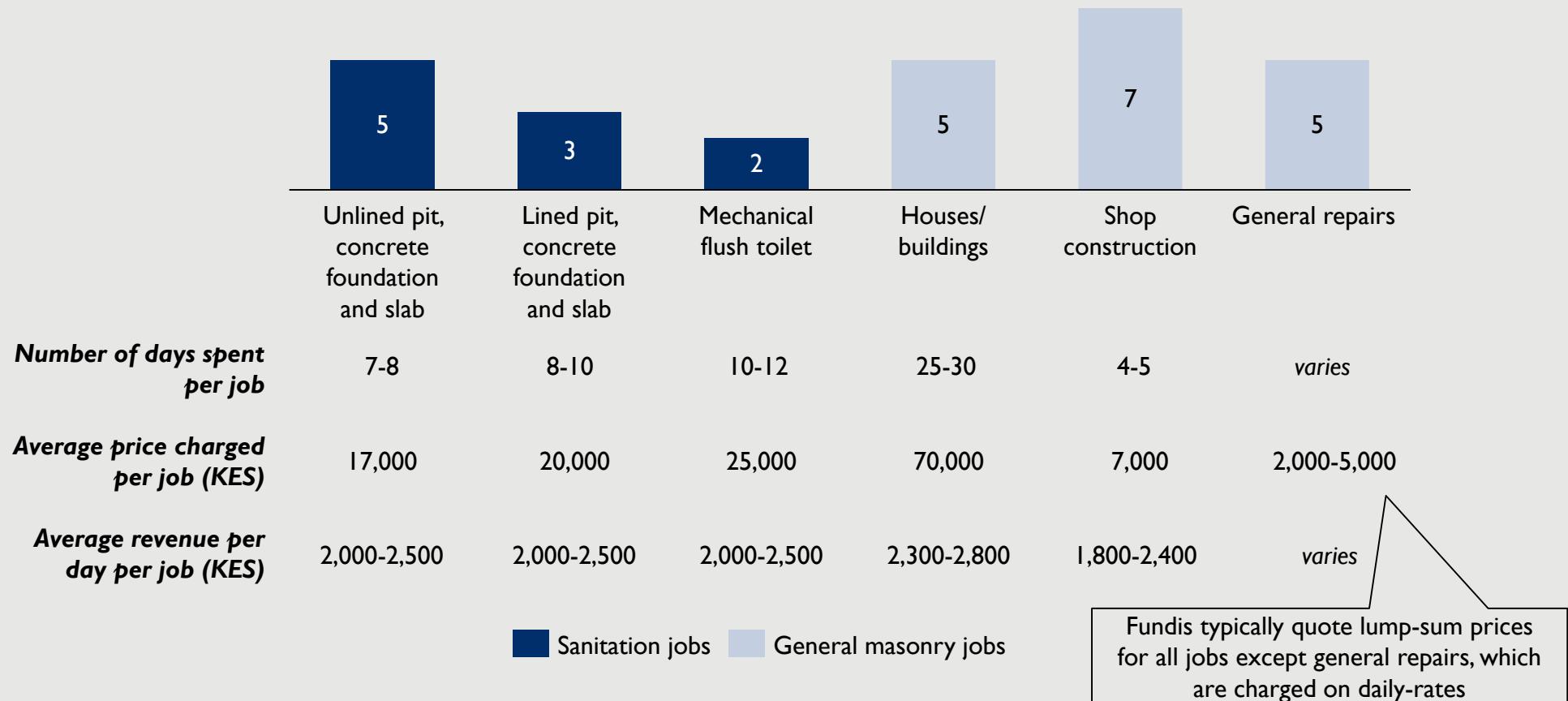


1. FSG qualitative interviews with 2 “full-time” fundis and 2 “part-time” fundis in urban Marsabit, 2021

2. We have been unable to estimate income split between sanitation and general masonry, and the typical gross margin per general masonry job due to data limitations

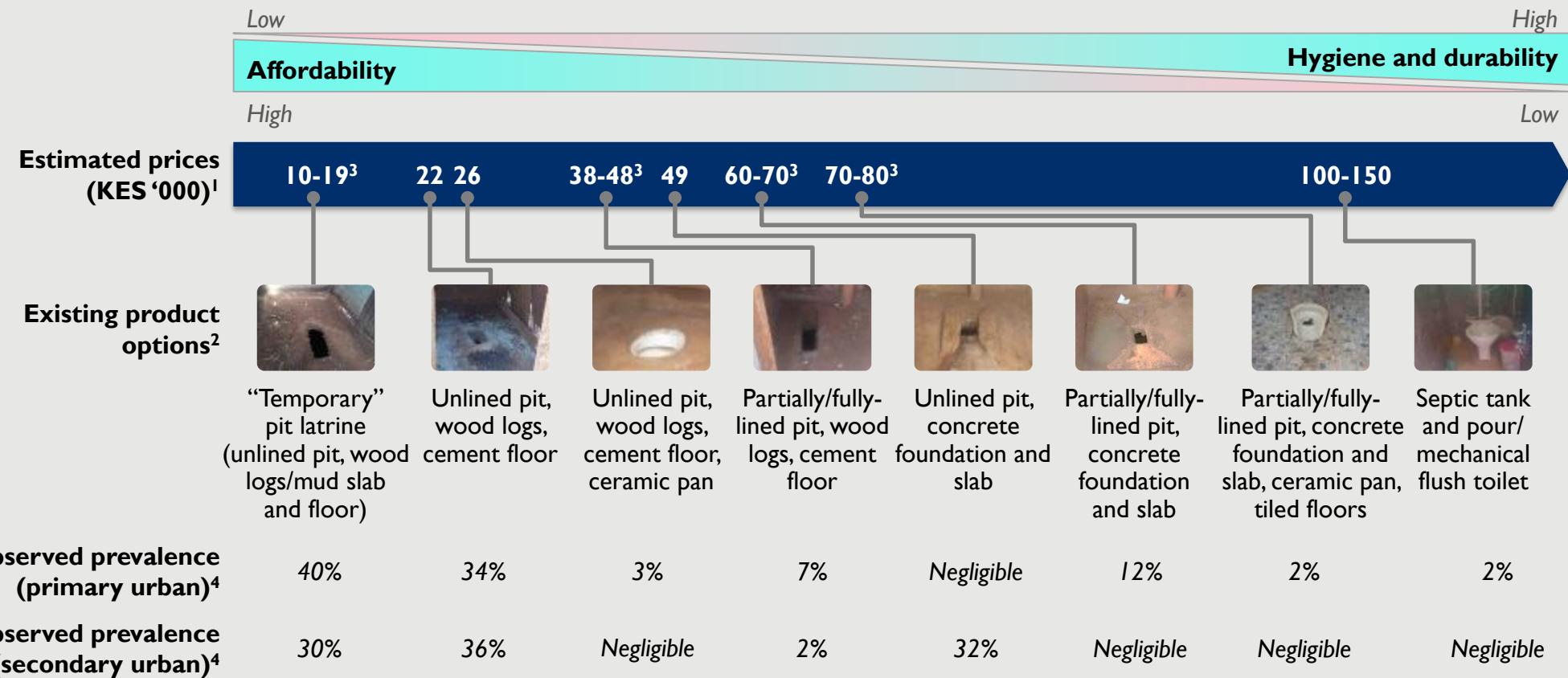
Full-time fundis only earn a supplemental income from sanitation because most jobs are general masonry jobs, including high-value house construction jobs

Typical number of masonry jobs per year for a “full-time” fundi, split by type (2021)<sup>1</sup>



I. FSG qualitative interviews with 2 “full-time” fundis in urban Marsabit

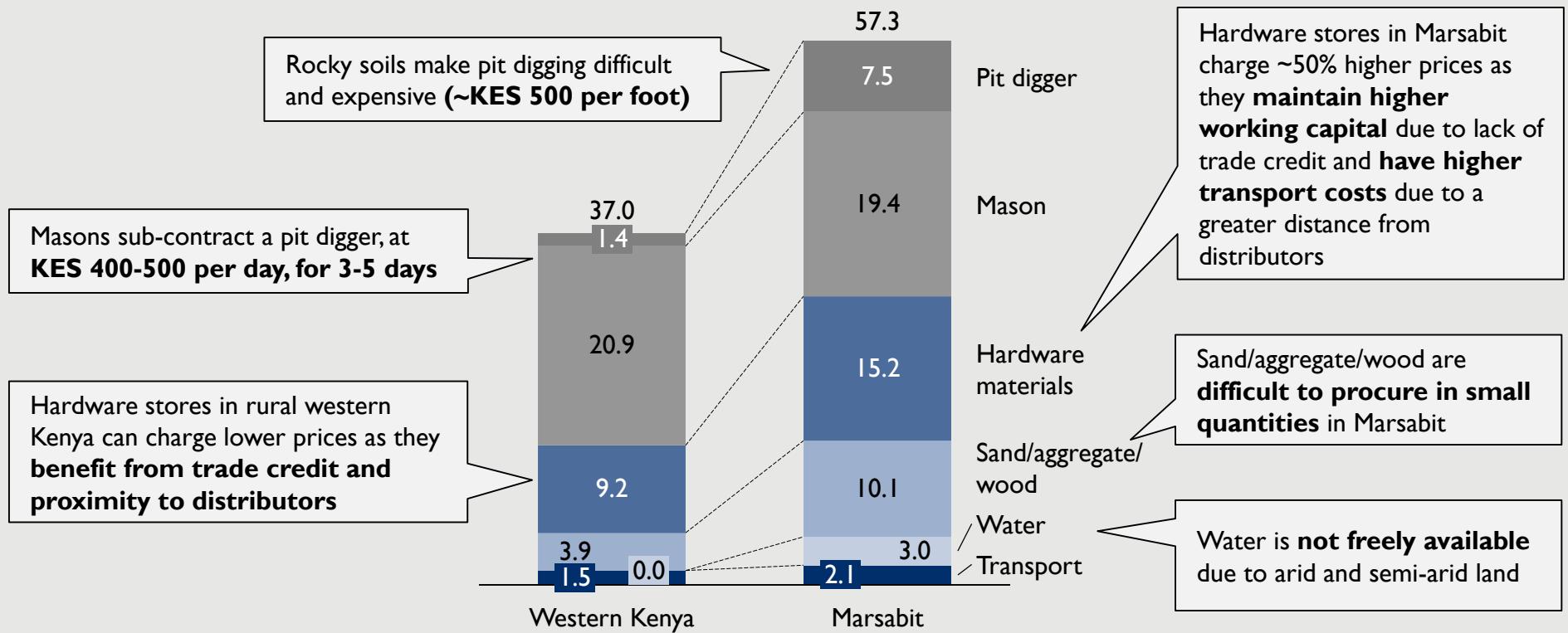
# The market has a range of product options, but there is a trade-off between durability and affordability



1. Estimated price represents the rounded-off consolidated price of substructure, interface, and shelter; estimated based on quantitative and qualitative interviews with households, value chain players, county government officials, and local program staff
2. Iron sheets are the most commonly used material for the toilet shelter (93% have iron sheet walls and 96% have iron sheet roof), across toilet options; most toilets (93%) have rectangular pits
3. Price range for a temporary toilet denotes the difference between a mud shelter and iron sheet walls/roof; price ranges for lined pits denote the difference between partially- and fully-lined pits
4. Prevalence has been calculated based on an observation of 67 households in Marsabit town and 53 households in secondary urban Marsabit (excludes 80 respondents who either practice open defecation or share toilets not constructed by them); source: FSG quantitative listing survey with households in urban Marsabit, 2021 (n=200)

# The high prices of durable, improved toilets are driven by higher labor costs and materials costs in Marsabit

**Comparison of total estimated cost of a comparable durable, improved toilet in rural western Kenya and urban Marsabit (KES '000) (2021)<sup>1,2</sup>**

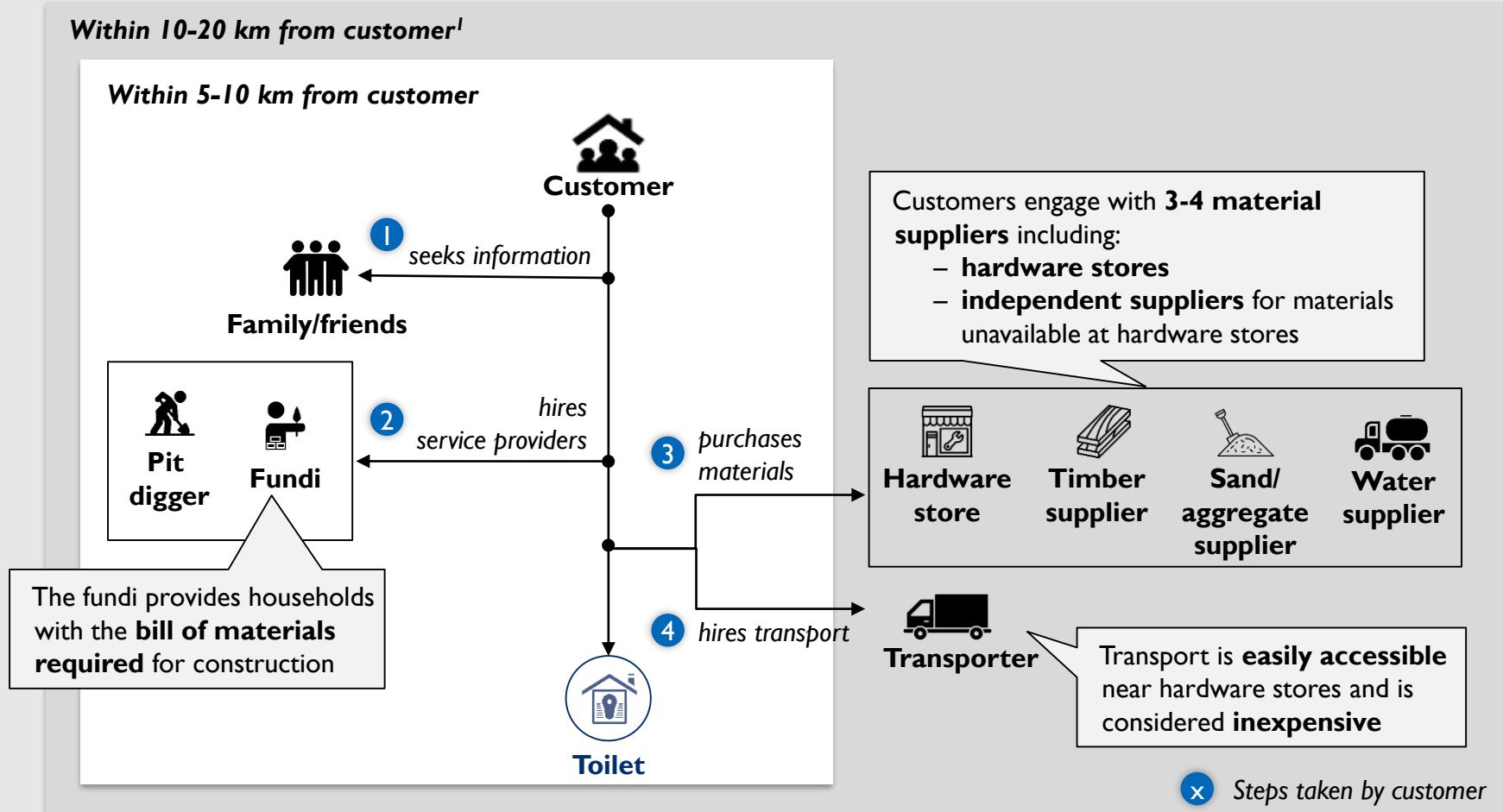


1. Toilet specifications for western Kenya: 15-feet deep, fully-lined onset pit with a concrete foundation and 5x3 feet slab of 4 inch thickness, iron sheet walls and roof

2. Toilet specifications for Marsabit: 15-feet deep, fully-lined onset pit with a concrete foundation and 5x3 feet slab with 5 inch thickness, iron sheet walls and roof; we excluded the cost of vent pipe (KES 1,300) to make it comparable to rural western Kenya where vent pipes are not as common in durable toilets

The current construction process can be improved since households have to interact with 5-7 players who are accessible but often located far away...

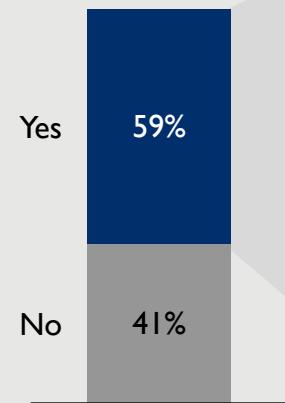
### Illustrative diagram of the process to construct a toilet in urban Marsabit



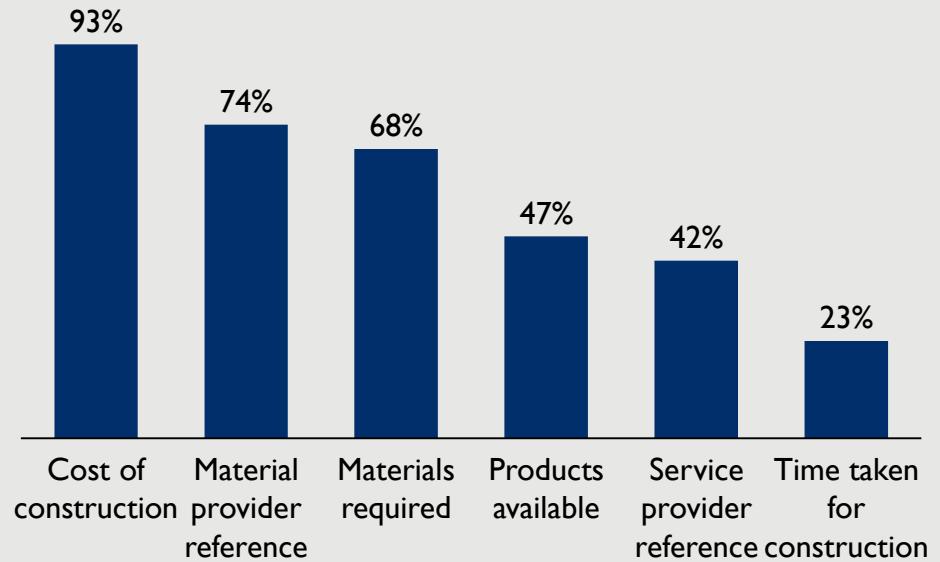
I. Distance to material suppliers is greater for households in secondary urban towns (~20 km) as compared to households in primary urban towns (~10 km)

...but they proactively seek information on toilet options and costs, which improves information flows on prices

**Share of households who sought information before reaching out to a fundi for toilet construction/ upgrade (n=22) (2021)<sup>1</sup>**



**Nature of information sought (n=13) (2021)<sup>1,2</sup>**



1. FSG quantitative interviews in urban Marsabit

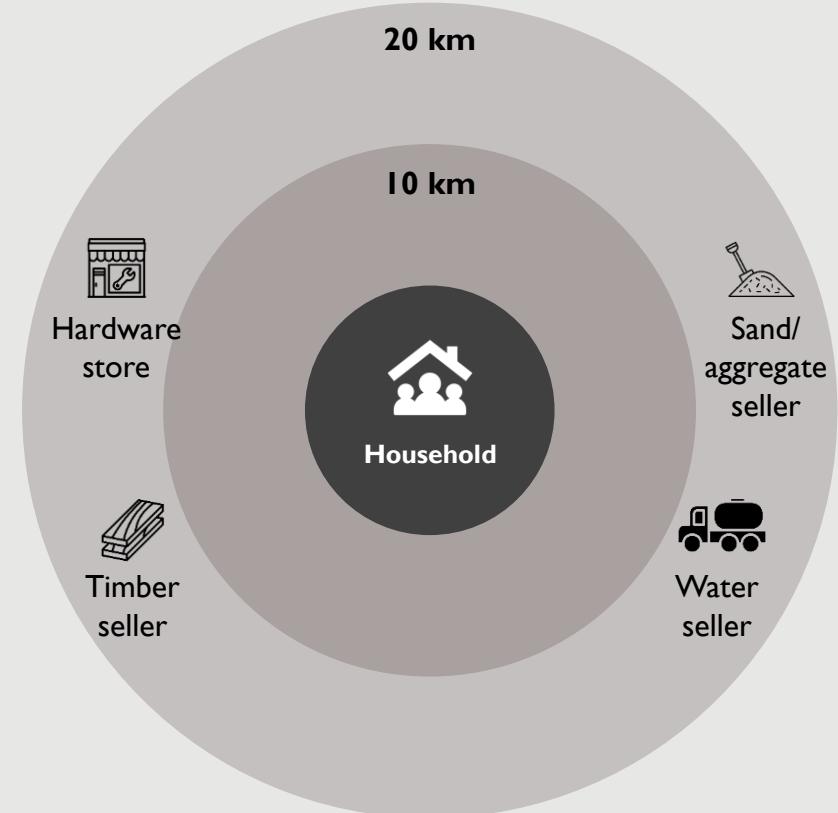
2. The percentages on the bars don't add up to 100% since respondents could select multiple responses

Households have to engage with 3-4 material suppliers for their toilets, often located up to 20 kilometers away

Primary urban towns (e.g., Marasbit town)



Secondary urban towns (e.g. Merille, Karare)



However, the Isiolo-Marsabit-Moyale road has enabled a competitive transporter landscape, making transport accessible and affordable for households

Map of Marsabit county



Source: Google Maps

— Isiolo-Marsabit-Moyale road

Several ‘matatus’ (buses) ply daily, carrying both passengers and goods

Matatu



Source: UN Environment

"We transport passengers daily on this highway...transporting material on regular basis also adds to our profit."

– Matatu transporter, Merille

Smaller ‘tuk-tuks’ are easily available near hardware stores, and considered affordable

"I found a tuk-tuk outside the hardware store. He charged me very reasonably and quickly bought materials to my place in two trips."

– Urban household, Marsabit town

Transportation by matatu costs KES 1,000-1,500<sup>1</sup>, even for a ~150 kilometer trip, which amounts to only 10%-15% of the total cost of the cheapest and most prevalent toilet

**Additionally, households have a choice of suppliers, indicating a thriving market for construction materials**

**Hardware stores believe they have multiple competitors in their area of operation**

**Typical number of competitors perceived by hardware stores in Merille and Marsabit town (n=5) (2021)<sup>1</sup>**



**Households state they have a choice of suppliers for materials**

*“There are about 50 hardware stores in Marsabit town. I go to different hardware stores to compare material prices before making my decision”*

– Urban household, Marsabit town

*“There are many options for getting sand. You can get it at the river yourself, or a hardware store or there are people who sell sand”*

– Urban household, Merille

# Summary of drivers and barriers for MBS (urban Marsabit)

**BARRIERS**

**DRIVERS**



## Customers

- Low willingness to invest in durable toilets
- Significant proportion of households with a low ability to pay market prices for durable toilets
- Reluctance to take loans for fear of inability to pay back



## Entrepreneur

- Part-time fundis' limited skill in durable products
- Limited viability of sanitation as a stand-alone business
- Working capital challenges
- Reluctance to take loans
- Reluctance of full-time fundis to stock materials



## Enterprise

- Households engaging with 5-7 players to construct toilets
- Low affordability of durable toilets
- High costs for constructing durable toilets
- Challenges in introducing new products
- Near-absence of sales and marketing by market players



## Business Environment

- Dispersed supply chains for construction materials
- High costs of construction materials

- Awareness of the benefits of sanitation and knowledge of durable toilet options

- Availability of full-time and part-time fundis
- Viability of sanitation business line for all entrepreneurs

- Information-seeking behavior by households

- Well-established network of transporters improving accessibility to construction materials
- Adequate choice of suppliers for households

Acronyms: MBS = Market-based sanitation

This deck presents the key drivers and barriers for MBS in urban Marsabit. Please refer to the compendium of findings for details on the comprehensive list of drivers and barriers (mentioned above).