STS NIGERIA
SUSTAINABLE TOTAL SANITATION
DEEP DIVE REPORT
2014

WaterAid

THE SUSTAINABLE TOTAL SANITATION INITIATIVE

WaterAid Nigeria is currently implementing the STS initiative to improve the effectiveness, efficiency, inclusion and sustainability of total sanitation approaches in Nigeria. The program aims to:

- Increase sustainable sanitation access using a Total Sanitation approach
- Learn lessons that can lead to progressive improvements to the Total Sanitation approach
- Undertake formal research to provide additional evidence of impact
- Advocate for and influence policy and practice changes at a wider scale (nationally and regionally).

THE NATIONAL CONTEXT: COVERAGE DATA

Less than one-third of the Nigerian population has access to improved sanitation:

Percentage of the population by sanitation coverage, 2011

	Improved	Shared	Unimproved	Open Defecation
Rural	28	13	28	31
Urban	33	36	16	15
Total	31	24	22	23

Source: JMP 2013

THE NATIONAL CONTEXT: CLTS

Community Led Total Sanitation (CLTS) has proven to be a moderately successful approach in Nigeria for triggering an end to open defecation and changing community social norms…

…but when households are considering what type of toilet to build (or once they are on the ‘sanitation ladder’) they need access to affordable, desirable improved sanitation facilities that can sustain and strengthen good sanitation behavior.

THE COLLABORATION

WaterAid Nigeria (WANG) and UNICEF are supporting the Government of Nigeria and the private sector to catalyze and develop the local market for sanitation in order to encourage low-income households to invest in and use improved, durable toilets they want and can afford.

WHAT IS SANITATION MARKETING?

A market-based approach that addresses **demand and supply** together to increase **sustained** uptake and use of **improved** (durable, hygienic) latrines.

SanMark supports sustainable **businesses** to better reach and serve low-income households.

SANITATION MARKETING: LINKING DEMAND & SUPPLY

Households

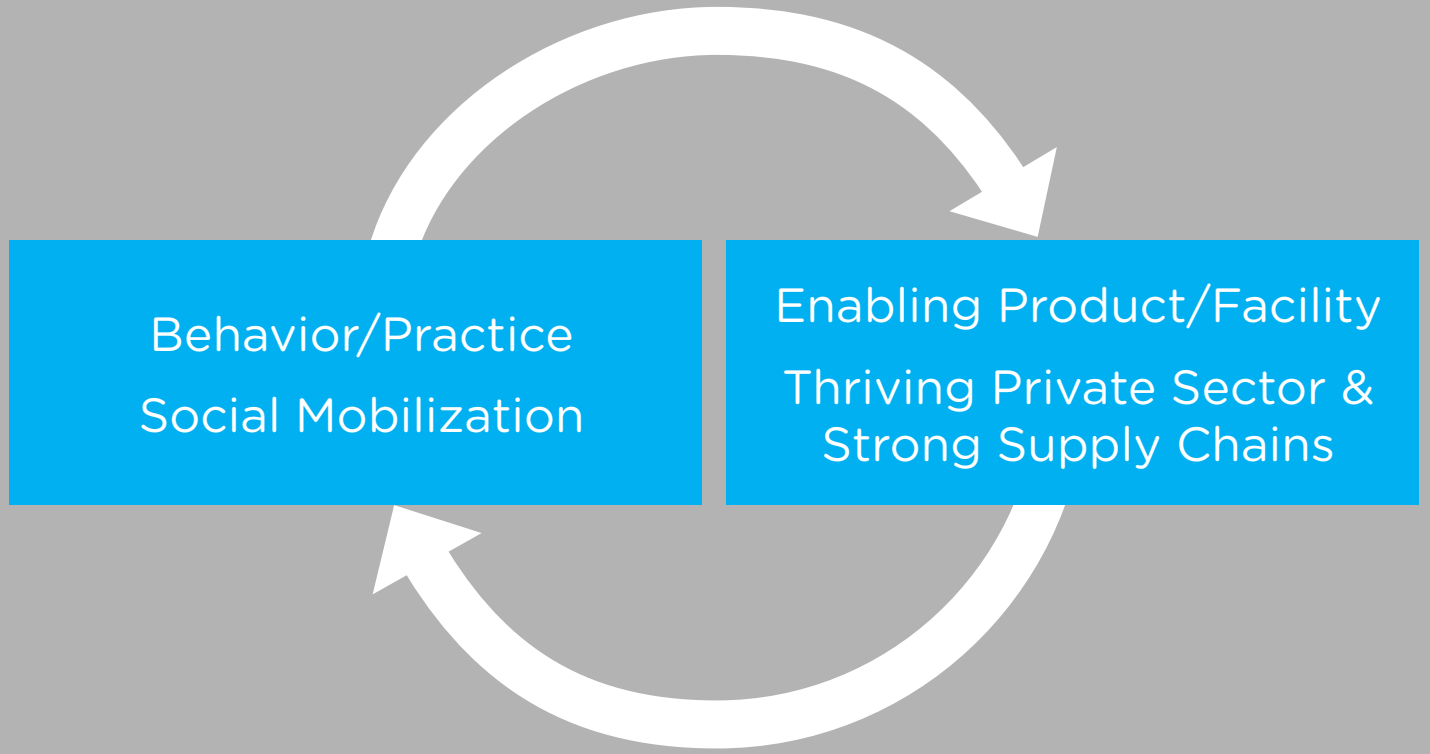
GOVERNMENT AND PARTNERS MARKET FACILITATION ROLES:

1. Generate new demand through promotions
2. Link business to households ready to purchase
3. Build skills and provide market intelligence so businesses can respond
4. Assure competition
5. Monitor product quality to protect consumers and public health

Businesses

HOW CAN SANITATION MARKETING AND CLTS WORK TOGETHER?

SanMark builds on and complements CLTS



It is not one or the other--we need both.
Local conditions will determine where/when/how to link.

HOW DO WE GET THE SANITATION MARKET WORKING?

THE 7-STEP SANITATION MARKETING PROCESS

Step 1. Assessment and Planning
Assess market and partnership conditions. Plan and budget program.

Step 2. Market Research (aka Deep Dive)
Understand poor household consumers and local businesses and supply chains.

Step 3. Product Design
Design affordable, desirable sanitation product & service options.

Step 4. Test Supply-side Strategy
Design and test supply chain interventions and business models.

Step 5. Test Demand Creation Strategy
Design and test promotional and marketing activities.

Step 6. SanMark Program Implementation
Pilot and roll-out of SanMark activities.

Step 7. Monitoring
Monitor for results and equity.

HOW DO WE GET THE SANITATION MARKET WORKING?

CHANGING MINDSETS...

From:	To:
Households as beneficiaries and community members	Households as savvy, discerning consumers
Businesses as input suppliers and contractors	Businesses as viable, independent partners ready to take risks and make investments
Training masons in toilet construction	Looking at their whole business and seeing where sanitation fits
Setting up new retail shops or local community schemes	Supporting existing supply chains, businesses and entrepreneurs
Project-based delivery & implementation	Market facilitation & catalyzing roles

SANITATION MARKETING WITHIN THE STS PROGRAM

2013

Formative Research
CLTS

2014

Product, Business Model and Communications Development
Sanitation Marketing Pilot and Launch
CLTS
Mapping and Baseline Survey for Quantitative Research

2015

Continued Sanitation Marketing
CLTS
Research Follow-up

2016

Continued Sanitation Marketing
CLTS
Research Mid-Line Survey

2017

Continued Sanitation Marketing
Research Endline Survey

TIMELINE: 2014

SANITATION MARKETING

- Kickoff Workshop
- Deep Dive
- Deep Dive Findings Workshop
- Iterative Product Design
- Develop Communications Plan & Tools
- Communications & Distribution: Field Trials & Pilot
- SanMark Launch

QUANTITATIVE RESEARCH

- Community & Business Mapping
- Baseline Survey

Dec 2013 — **June 2014** — **Dec 2014**

MARKET RESEARCH: PROCESS REVIEW

THE DEEP DIVE MARKET RESEARCH

To kick-start this work, the WaterAid Nigeria research team and local partners conducted three weeks of qualitative field research to understand consumer preferences and commercial supply chains for rural sanitation in the STS program states: Ekiti, Enugu, and Jigawa.

CORE MARKET RESEARCH QUESTIONS

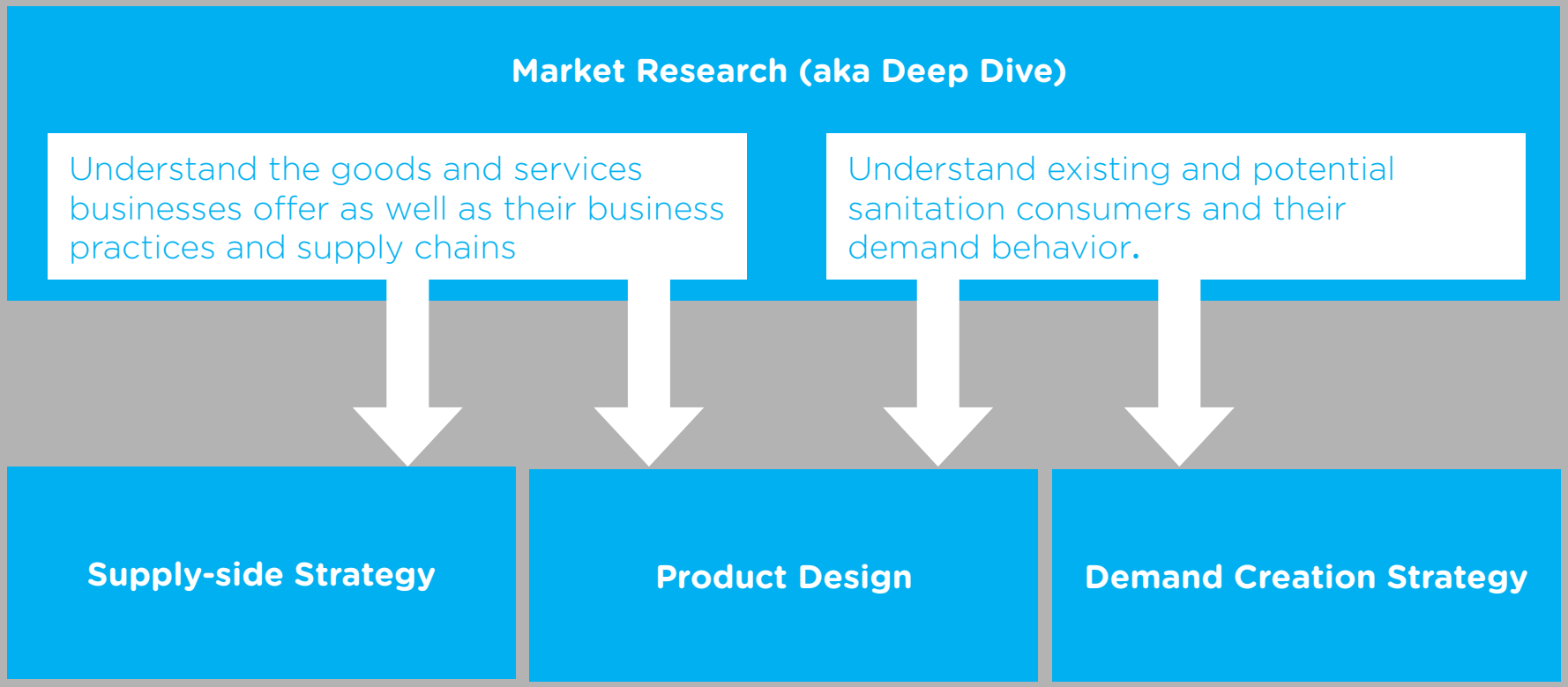
Our research tried to gain insights on four key questions:

- What is a ‘good latrine’ for our target market? What **features** should it have (and not have) and how much should it **cost**?
- What will our target market gain **personally** from investing in a ‘good’ latrine?
- How can we make the **process** of learning about, purchasing and installing a good latrine a lot **easier, quicker** and more **reliable**?
- How can **businesses** deliver sanitation products and services that offer **value for money** and are **profitable** for them to produce and sell **on their own**?

MARKET RESEARCH OBJECTIVES

Our research was formative (not evaluative). The goals were to

- Inspire product and business model designs
- Inspire communications and marketing plans

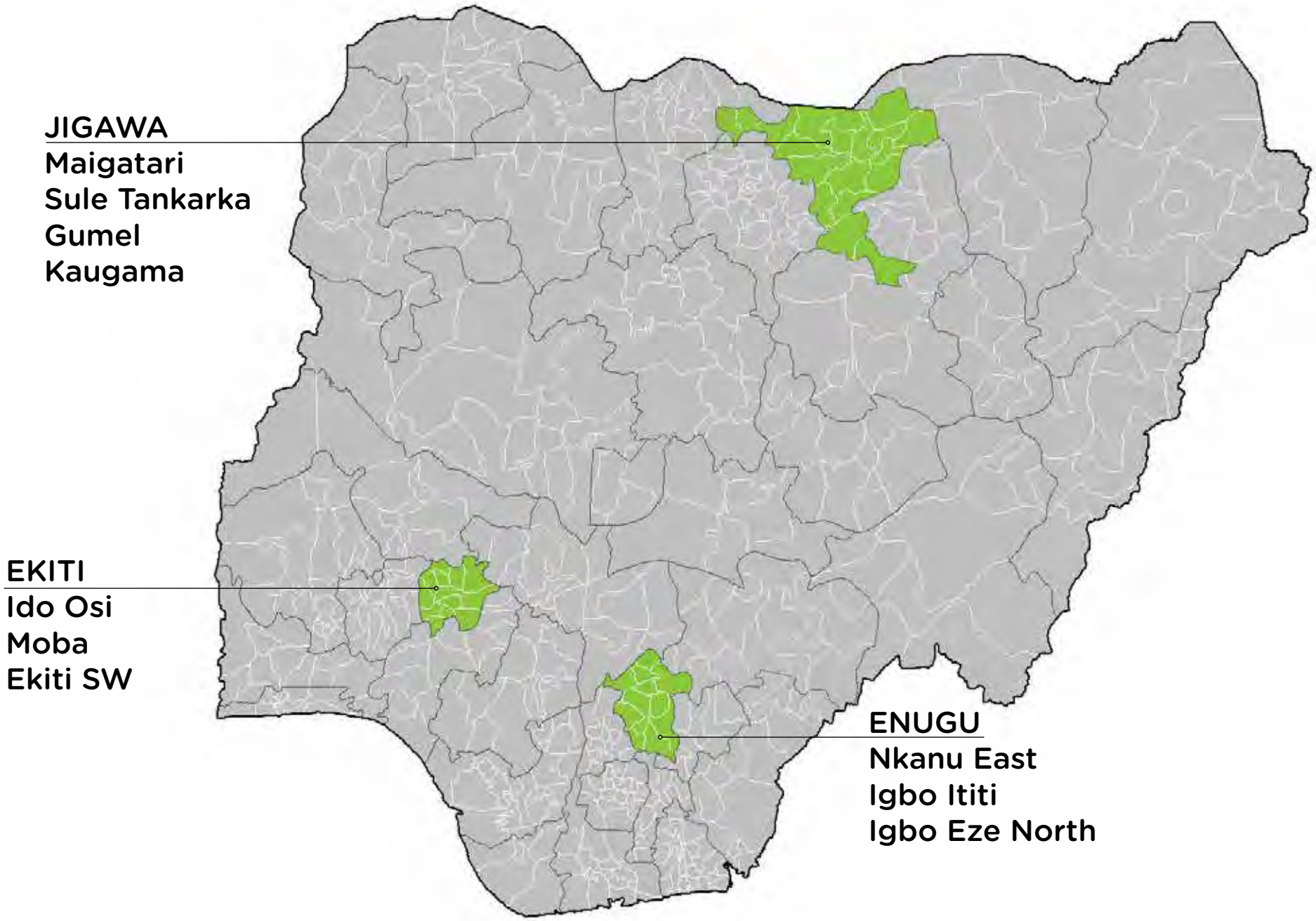


MARKET RESEARCH ACTIVITIES

In-Depth Individual Interviews, Focus Groups & Observations
With Households, Village Leaders & Supply Chain Actors

Key Informant Interviews
With LGAs, CSOs, EHOs, NGOs, UNICEF & WANG

STUDY AREAS


JIGAWA
Maigatari
Sule Tankarka
Gumel
Kaugama
EKITI
Ido Osi
Moba
Ekiti SW
ENUGU
Nkanu East
Igbo Ititi
Igbo Eze North

STUDY AREA: SANITATION COVERAGE

Percentage of households by sanitation coverage, 2009	Ekiti	Enugu	Jigawa
Improved	42.1	40	64.1
Flush to piped sewer system	11.2	7.8	3.9
Flush to septic tank	5.2	13	0.4
Flush to pit latrine	3.4	3.1	2.2
VIP latrine	0.1	0.1	5.5
Pit latrine with slab	22.1	15	50.6
Composting toilet	0.1	1	1.5
Unimproved	5.3	10	21.5
Flush to unknown place	0	0.5	1
Open pit latrine (no slab)	0.5	3.2	18
Bucket	0	0	0.2
Hanging toilet	4.4	5.3	1.5
Other	0.4	1	0.8
Open Defecation	52.5	50	14.5

Source: Harmonized Nigeria Living Standard Survey 2009-2010 Core Welfare Indicators

STUDY AREA: HOUSEHOLD CONDITIONS (% HHs)

		Ekiti	Enugu	Jigawa
Average HH size		4.7	5.1	6.8
House wall materials	Concrete/Brick	72	72	5
	Mud	27	26	87
House roof materials	Corrugate	97	89	24
	Mud	1	3	56
Access to Electricity		63	48	19
Access to Improved Water Source		61	63	79
Exposure to mass media - women	Listens to radio at least once a week	78	47	29
	Watches TV at least once a week	59	39	5
Exposure to mass media - men	Listens to radio at least once a week	87	94	76
	Watches TV at least once a week	62	71	20

Source: Harmonized Nigeria Living Standard Survey 2009-2010 Core Welfare Indicators; Nigeria Demographic & Health Survey 2008

MARKET RESEARCH METRICS

HOUSEHOLD INTERVIEWS

	Male	Female	TOTAL
Latrine Owner	17	10	**27**
Non-Owner	8	4	**12**
TOTAL	**25**	**14**	**39**

SUPPLY CHAIN INTERVIEWS

Block Producer	3
Retailer	6
Artisan	16
TOTAL	**25**

HOUSEHOLD PROFILES

Short descriptions of a few of the people interviewed.

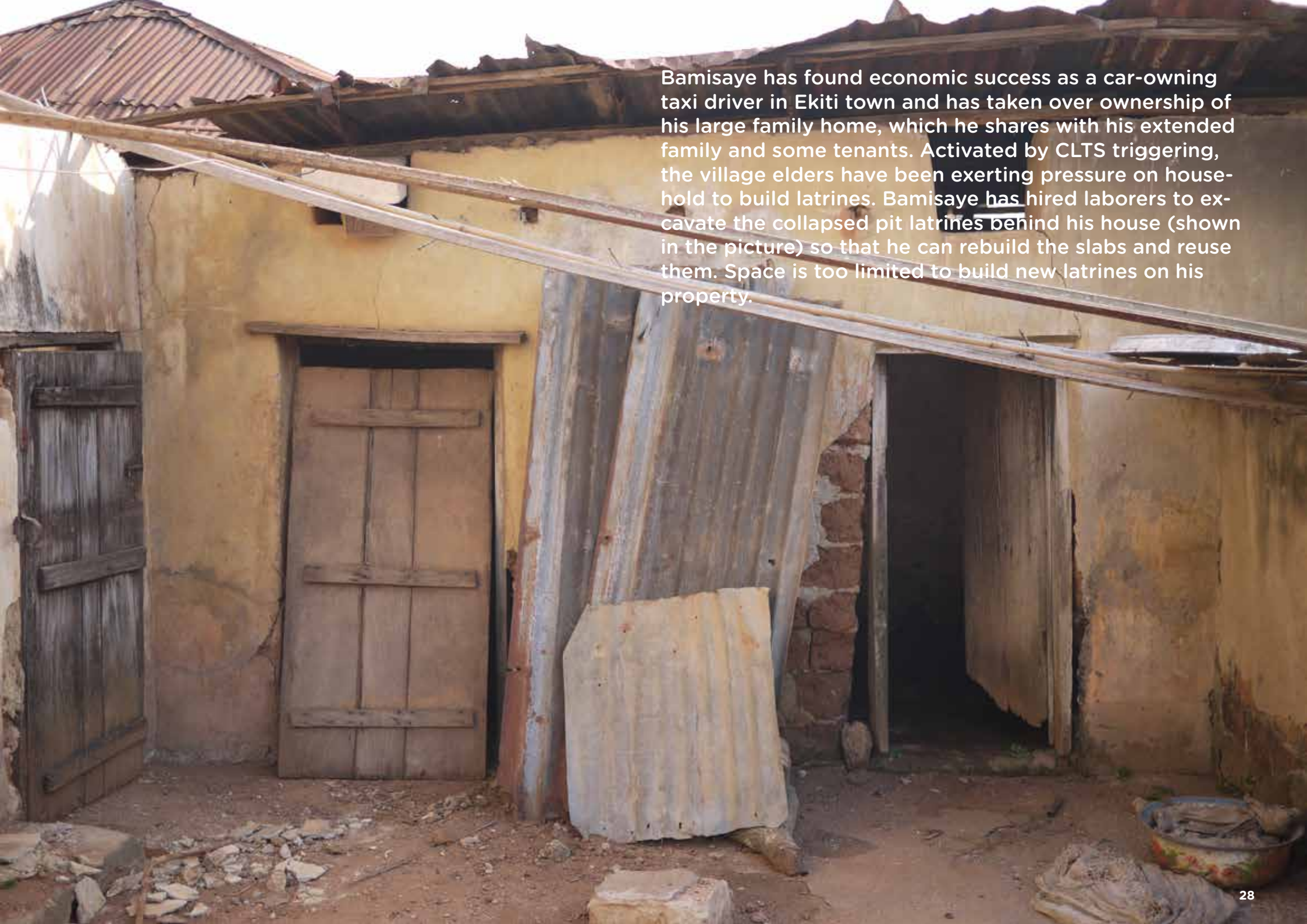
Aloysius,
Igbo Etiti, Enugu

Aloysius practices OD and has for a long while. CLTS triggering and community pressure have motivated him to build a latrine, but he does not want to build a traditional latrine--he wants something ‘good’. He’s been buying materials for a squat-syle pour-flush latrine over time and was now rushing to have his latrine built in-time for his Christmas guests

Felicia
Nkanu East, Enugu

Felicia's husband built this homemade latrine, with a concrete slab and a 90-degree PVC vent pipe that removes heat from the pit. Though their village was triggered through CLTS, Felicia is still too embarrassed to let visitors use this toilet. When they have to go, she tells them it's not finished and directs them to the bush.

Bamisaye
Moba, Ekiti



Bamisaye has found economic success as a car-owning taxi driver in Ekiti town and has taken over ownership of his large family home, which he shares with his extended family and some tenants. Activated by CLTS triggering, the village elders have been exerting pressure on household to build latrines. Bamisaye has hired laborers to excavate the collapsed pit latrines behind his house (shown in the picture) so that he can rebuild the slabs and reuse them. Space is too limited to build new latrines on his property.

Ibrahim
Maigatari, Jigawa

Ibrahim is a bricklayer and innovator working in Jigawa. Unlike his counterparts in Enugu and Ekiti, he only works with mud bricks and has never used concrete blocks. He boasts that he invented the clay pot latrine lining and has constructed all the clay pot latrines in his community. For this toilet work, he only charges a minimal amount--he feels it is his contribution to the community.

LATRINES WE SAW

Images and short descriptions of the different types of latrine shelters, slabs and pits we most often observed.

SHELTERS

Thatch
Nkanu East, Enugu

Minimal Thatch
Moba, Ekiti

Plastic Sheet
Igbo Etiti, Enugu

Corrugate
Igbo Eze North, Enugu

Concrete Block
Igbo Etiti

The most aspirational shelter. Often made from blocks cast on-site by an artisan. Extra rooms are typically set up for bathing but may instead have an extra latrine. Concrete block shelters are seen for both dry and wet toilet options. Pictured toilet has an offset pourflush squat pan in the near stall and a bathing area in the far stall.

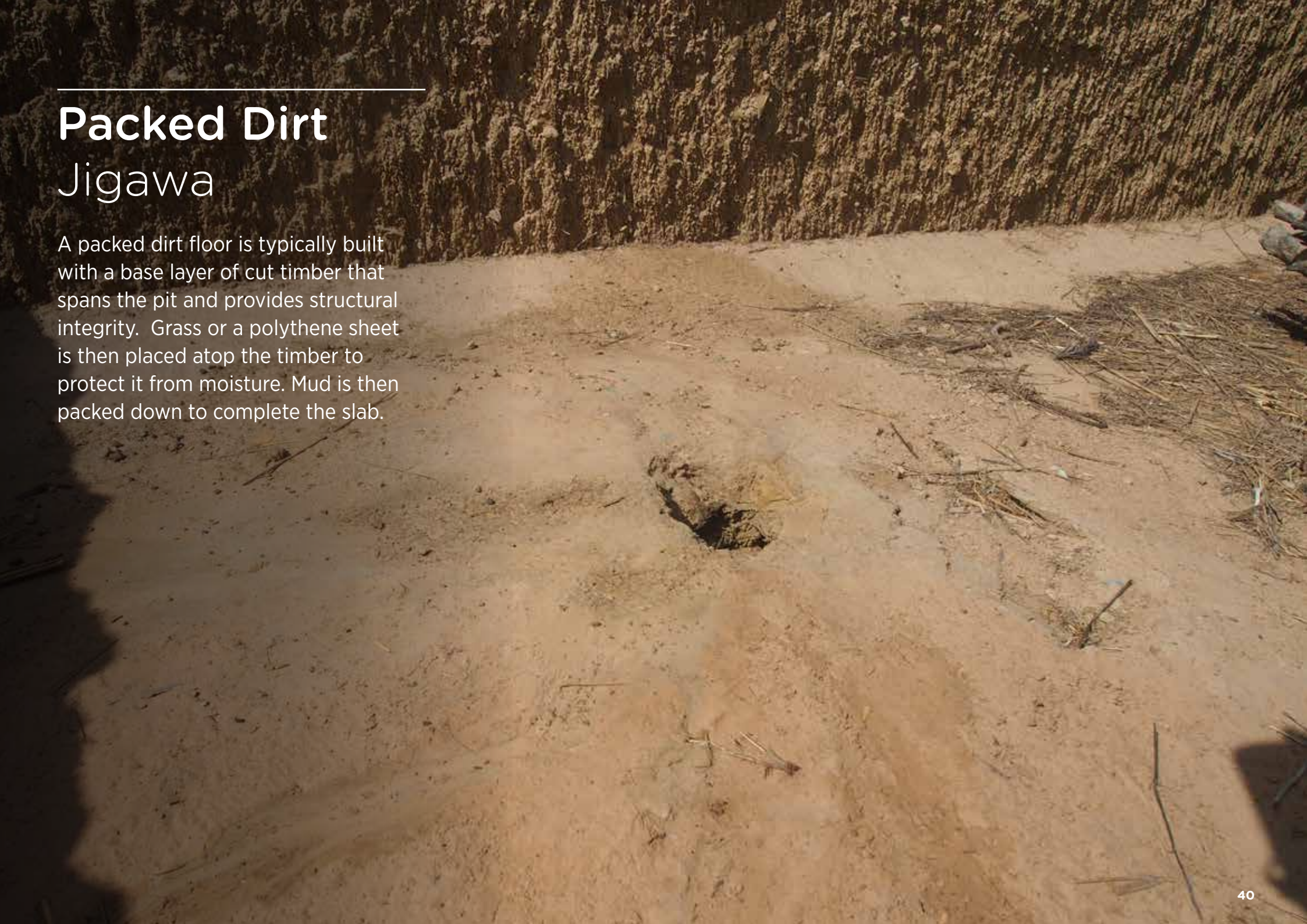
Open Compound
Jigawa

Within the household compound but without a distinct shelter for the latrine. Common in Jigawa state. Not seen in Enugu or Ekiti.

SLABS

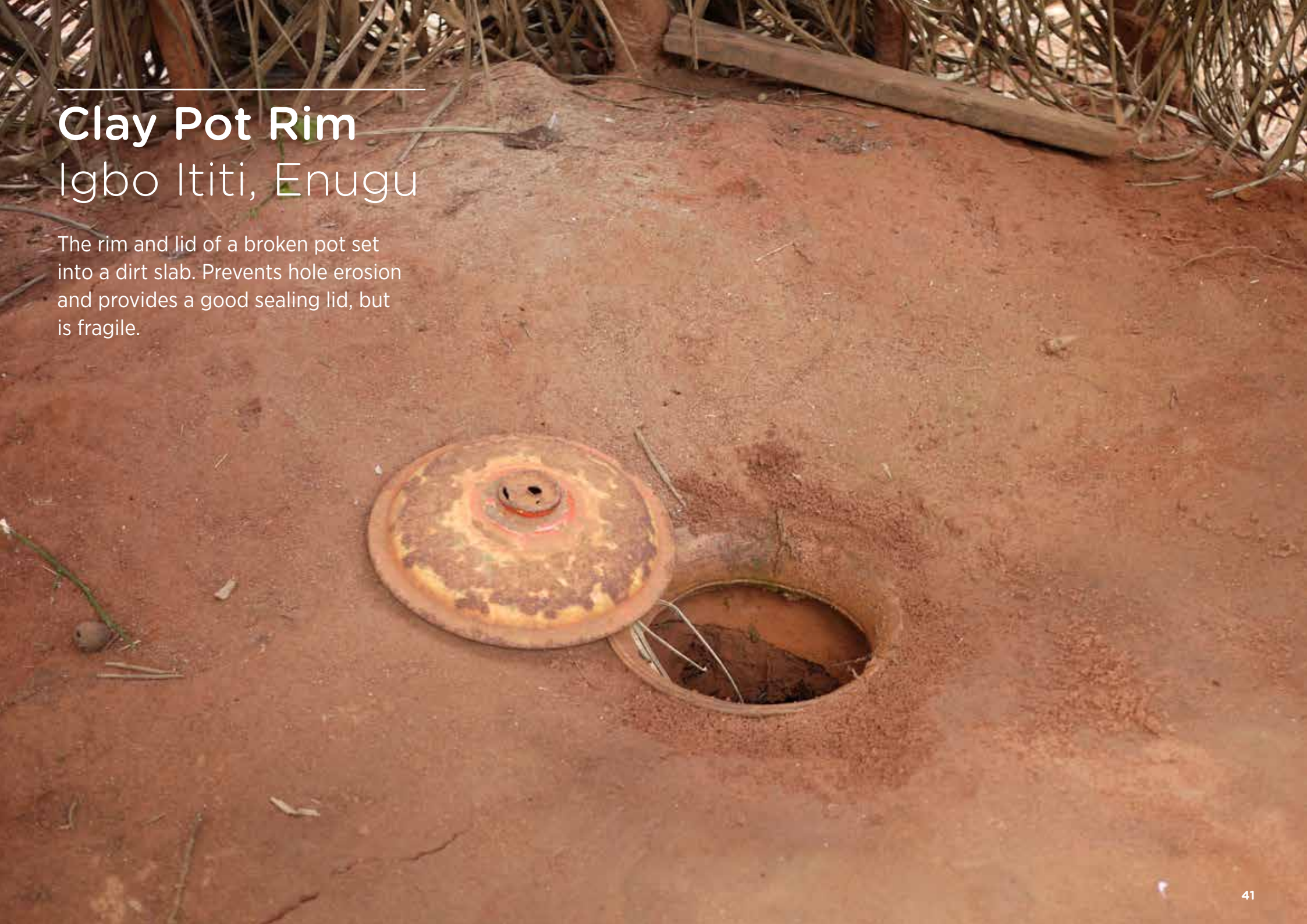
Packed Dirt
Jigawa

A packed dirt floor is typically built with a base layer of cut timber that spans the pit and provides structural integrity. Grass or a polythene sheet is then placed atop the timber to protect it from moisture. Mud is then packed down to complete the slab.



Clay Pot Rim
Igbo Ititi, Enugu

The rim and lid of a broken pot set into a dirt slab. Prevents hole erosion and provides a good sealing lid, but is fragile.



Timber
Ibgo Etiti, Enugu

In-Situ Cast Concrete

Igbo Eze North, Enugu

By far the most common type of concrete slab observed. Typically built in multiple steps starting with formwork--one or two layers of wood timber are placed to span the pit and covered with polythene. Steel reinforcement is placed on the timber and then concrete is poured on top of the formwork directly over top the pit.

Precast Concrete
Ekiti SW, Ekiti

Homegrown
Some households cast concrete in simple home-made wooden molds or in a shallow form excavated from the ground, and then place slab over the pit once it is cured. This building behavior may be inspired by past subsidy programs.

Subsidy
In Moba, a failed 'output-based aid' scheme had motivated people to install precast slabs, but the subsidy rebate was never paid.

Ceramic Pourflush
Igbo Etiti, Enugu

Most commonly installed as shown, with the pan raised above the surrounding floor.

Homemade Pourflush
Ido Osi, Ekiti

Hand-formed from concrete to direct waste to an offset pit. Usually without a water trap.

PITS

Rectangular Soil
Moba, Ekiti

Most typically about three feet by four feet and usually dug 8-10 feet deep.

Round
Jigawa

Block-Lined Soakaway
Ido Osi, Ekiti

The dream pit... very large, very expensive. Most often seen when the latrine was located inside the home.

Block-Lined Jigawa

A smaller version of the soakaway... also primarily seen when the latrine was built into the home.

Tires
Jigawa

Drum
Jigawa

Clay Pots
Jigawa

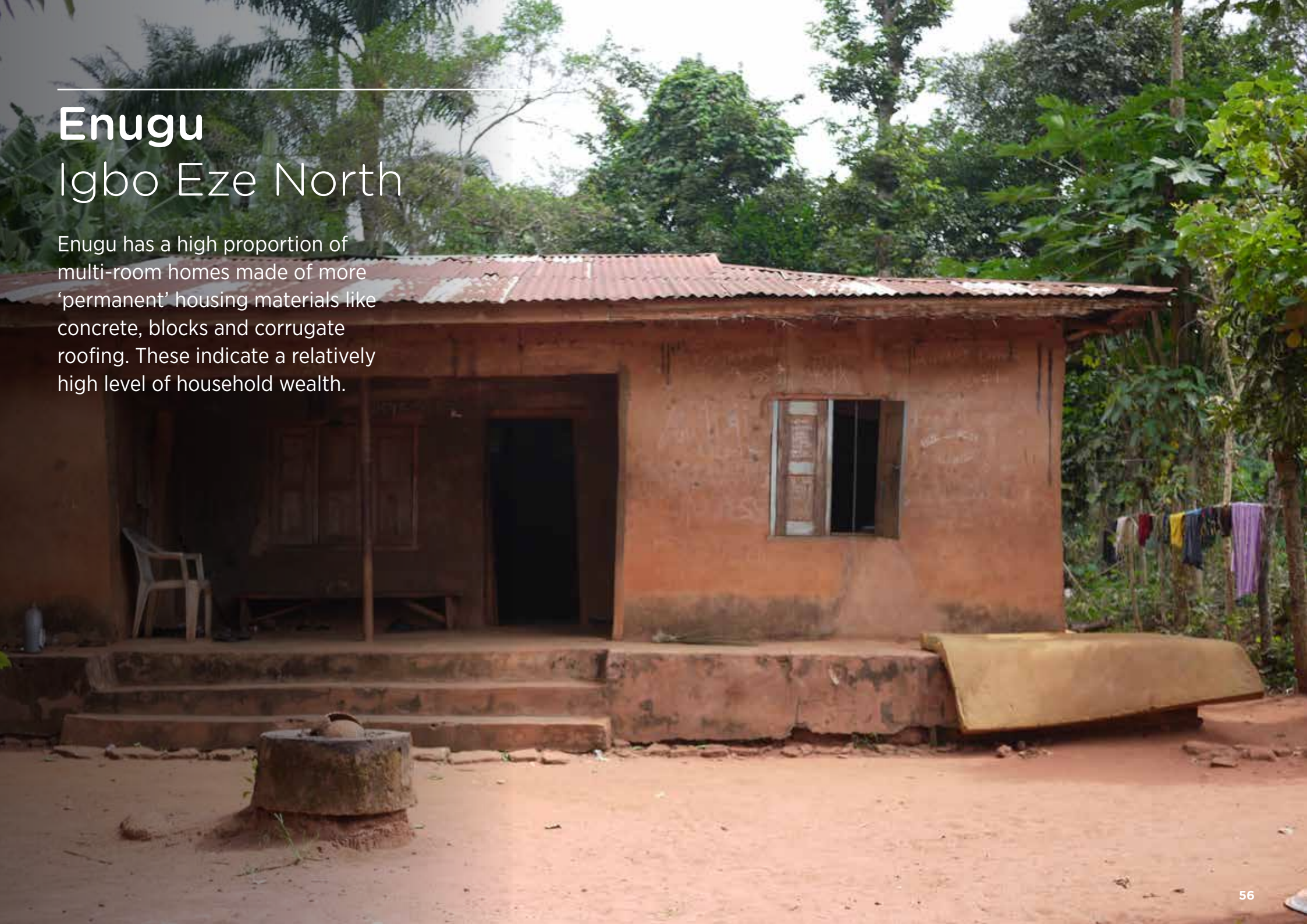
Multiple pots are stacked with holes punched through the bottoms to allow for the passage of waste. When full, households add kerosene to burn the pit contents in order to ‘refresh’ the toilet. The pots also act as structural support for the dirt ‘slab’.

STATE ENVIRONMENTS

Brief profiles highlighting the infrastructure of the three different states: Enugu, Ekiti and Jigawa.

Enugu
Igbo Eze North

Enugu has a high proportion of multi-room homes made of more ‘permanent’ housing materials like concrete, blocks and corrugate roofing. These indicate a relatively high level of household wealth.



Enugu
Igbo Ititi

Many villages had more ‘up-scale’ homes that were owned by someone living and working outside of the village. These homes often sit empty for much of the year, but their presence in the community changes perceptions about what makes a ‘good’ home.

Enugu
Nkanu East

The typical village infrastructure consists of a small network dirt roads servicing houses that are set back 10-20 meters from the road and spaced 20-50 meters apart. These dirt roads provide access to larger, paved roads that serve market towns. Even in more remote parts of Enugu, there tends to be reasonably good road access. This settlement pattern leaves easy access to the bush for households to practice open defecation.

Ekiti
Ido Osi

The majority of Ekiti has a more urban, town-like settlement pattern with closely-spaced houses and little bush. Residents that open defecate report walking to the edge of the ‘town’ to OD or defecating on paper or in bags near their house and then disposing of it at the edge of the town at a later time.

Ekiti
Moba

Ekiti has a good network of well-maintained roads, with many towns having paved roads servicing most houses.

Ekiti
Ido Osi

Ekiti has a very high proportion of homes built with permanent materials such as concrete block, cement stucco, glass windows and corrugate roofing. Two-story, multi-room homes that may house multiple parts of a family as well as rental tenants are common.

Ekiti

Ekiti SW

Even in more remote areas, houses still tend to cluster close together along the roadside. Though access to the bush is easier in these areas.

Jigawa

Jigawa homes are typically made of natural materials, such as mud and mud brick. Settlements are typically comprised of compounds with several homes, sometimes sharing latrine facilities.

Jigawa

Once off the main roads linking the larger towns, road access can be very problematic. There is a heavy reliance on motorcycles and non-motorized transport to move people and goods in and out of rural communities.

Jigawa

Transport of goods by camel is common, although there are some main roads that can accommodate trucks and other vehicles.

HOUSEHOLD INSIGHTS

Images and short descpriptions of the different types of latrine shelters, slabs and pits we most often observed.

Top-Level Thoughts

Sanitation marketing seems like a feasible approach in Ekiti, Enugu and Jigawa because ***rural market infrastructure exists***, households have reasonable ***access to cash incomes and modern building materials***, and households are ***exposed to 'modernity' and are upwardly mobile***.

Despite this, there are still ***high rates of open defecation*** and households are ***dissatisfied with current sanitation facilities***, creating opportunities for a sanitation market.

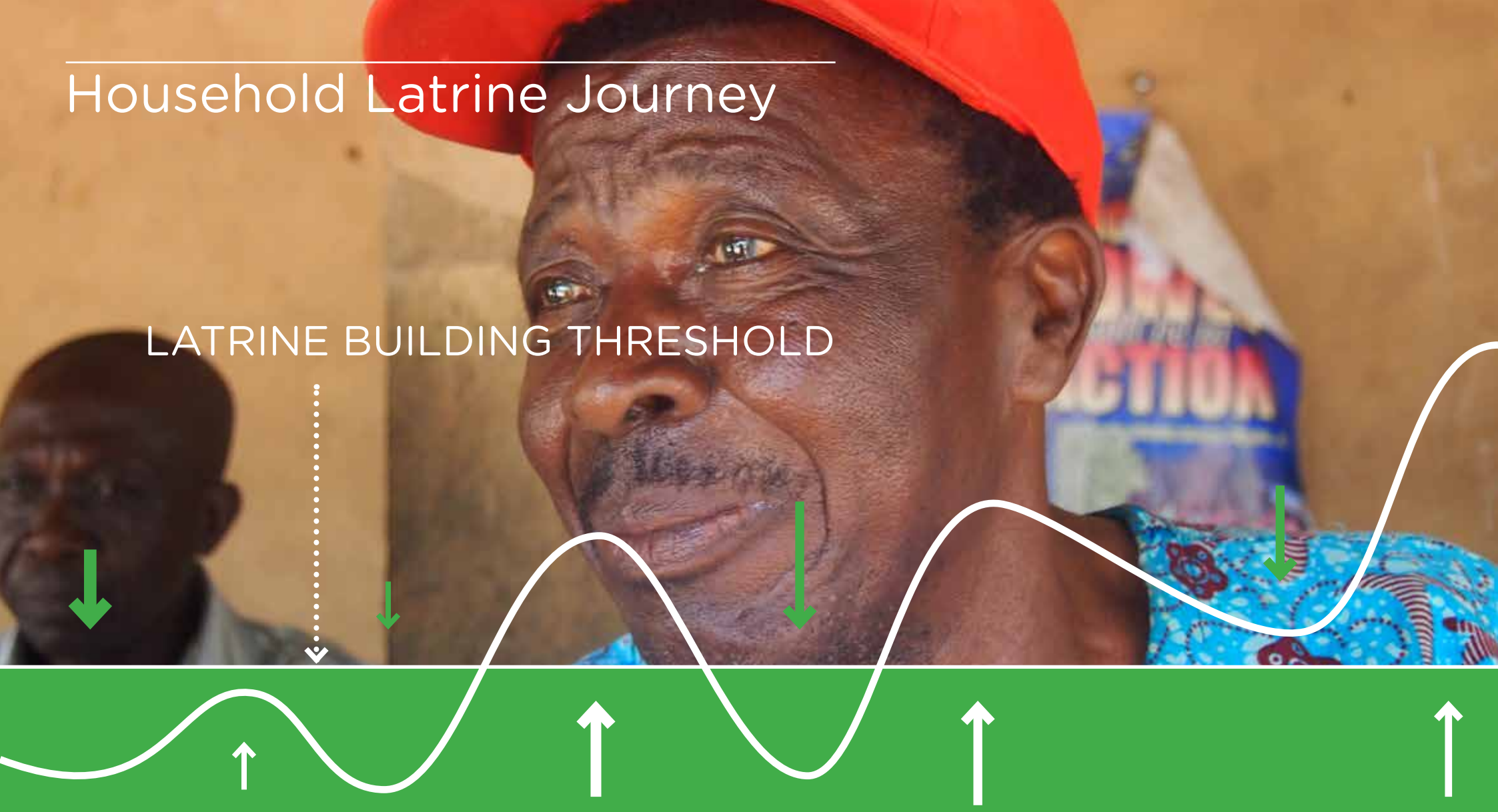
We believe it is worth proceeding to 'proof of concept' for a sanitation market development approach.

But... we see some ***fundamental differences between the three states*** that might impact how sanitation marketing is implemented,

-&-

We will need to overcome ***household satisfaction with open defecation***, the ***high costs of building*** an improved latrine, household ***desire for an 'ideal' latrine that is financially out-of-reach*** and the ***purchase hurdles*** required to get an improved latrine built.

Household Latrine Journey



We can frame the process of building an improved latrine as a journey over time. Life events, beliefs and emotions can either push a household across a threshold towards building a latrine or away from that threshold causing them not to build, to abandon an existing latrine or to not rebuild when a latrine collapses or fills up. We need to understand all of these pressures so we can design products, services and communications that push and keep a household above the threshold.

Preparation

What do people believe about open defecation?

Why would they want a toilet?

What do people know and want?

What do people think of when they imagine a ‘good’ toilet?

What features should it have (and not have)?

Action

What triggers people into building?

What inhibits action?

What will people gain personally from investing in a ‘good’ toilet?

How do people go about building?

Ownership & Use

What is the day-to-day of owning a toilet?

How are initial beliefs & expectations reinforced? Or not?

We can think about this journey in three phases: Preparation, Action and Ownership & Use. We need to understand each in order create and sustain toilet ownership.

Preparation

What do people believe about open defecation?

Why would they want a toilet?

What do people know and want?

What do people think of when they imagine a ‘good’ toilet?

What features should it have (and not have)?

What do people believe about open defecation?

Why would they want a toilet?

Open defecation is a negative experience...

Disgusting
Many people acknowledge that the smell and sight of feces is disgusting, in some cases even dangerous.. One household commented that "Even odor can send you to the hospital".

Not safe
Many households commented that OD exposed them to dangers from snakes, spiders, thorns and risks from assault.

Not convenient
Especially in Ekiti, open defecation requires a long walk to the edge of the village in order to find bush. Without a toilet, some households will defecate in bags or on paper. Plastic bags filled with feces are collected inside the home for a day or two, and then carried to a dumping area on the outskirts of the village.

A struggle for the sick/elderly
Households with older or sick residents commented that OD was particularly difficult, due to the walking distances and squatting required.

Inconsistent with religious beliefs
Muslims and other religious groups are concerned with bodily cleanliness, cleaning with water and preventing exposure of women to other men. All of these things are particularly difficult when practicing open defecation.

...but open defecation is acceptable.

There is little shame in it
Even in CLTS villages, there was little shame expressed in the practice of OD. It was perceived as normal practice and sometimes a social activity--in the Ogwe method multiple people might squat at the same time on the same log over the same pit.

OD better than a poor quality latrine
OD was often viewed as better than a poor quality latrine. It was viewed as less disgusting and less likely to lead to poor health (due to beliefs about pit heat).

Frequent reversion to OD
In many cases, past ownership of a toilet was not indicative of continued construction and use of toilets. Numerous households (even those with the financial resources) reverted to open defecation at some point in the past when their toilet either collapsed or filled up. Experience with a toilet does not always create a long-term shift in behavior and practice regarding open defecation.

Pit heat can be a big issue that inhibits pit latrine adoption.

Believed to cause 'infection'
Particularly in Enugu, the warm air that rises from pit latrines is believed to cause all manner of infections from urinary tract infections to STDs and even HIV.

Risk of infection varies
Women are believed to be at much greater risk from pit heat infection than men. Additionally, latrines with more users (especially non-family) are perceived to be at higher risk of transmitting infection. This limits household willingness to share latrines.

Belief widely disseminated
This strong belief in the connection between pit heat and infection is learned from neighbors, markets, traditional medicine healers, radio and even WASH workers.

Household have ways to mitigate risk
In order to reduce likelihood of transmission, household will install vent pipes to let the bad air out or they will not use a cover, again to let the bad air escape. In some cases, they have developed workarounds--in Enugu, one family defecated on pieces of paper next to the hole then slid them into the hole afterward. In Ekiti, one woman defecated into a plastic bucket, then dumped the bucket into the pit afterwards (pictured).

What do people know and want?

What do people think of when they imagine a ‘good’ toilet?

What features should it have (and not have)?

Strong preference for water-based...

Driven by functional reasons

Households are keenly aware of the functional benefits of owning and using a water-based toilet:

- **Don't see feces:** households will construct artisan-made 'pour-flush' pedestals (without a water trap to control flies or smell) in order to avoid seeing the feces.
- **Cleanability:** concrete and/or ceramic are easy to maintain.
- **No heat:** water-based toilets are believed to prevent exposure to pit heat and resultant infection, even in the case of the homemade solutions that still allow heat to escape up.
- **Offset:** Particularly in Enugu, households viewed water-based toilets as a mechanism for allowing them to not stand directly over the pit--perceived to be risky for health.

Driven by emotional reasons

Households are also drawn towards water-based latrines for the emotional and social benefits of owning one:

- **Modernity:** Water toilets are connected to modern, urban life: "Everyone knows what modern people should have"
- **Beauty:** "Good fo' da eye"
- **Status**: The "well-to-do" have it, They are for the 'rich man'. Households gain status through association.
- **Religious:** Muslim populations are drawn towards water-based solutions because they more easily enable water for cleansing and consistency with Koranic teachings around cleanliness.

...and the ultimate aspiration is a home-integrated WC with a soakaway...

Mobility has increased awareness and desire for integrated toilets.

The 'ideal' toilet has a is a western-style WC integrated into one's house, with an offset pit located outside of the household walls. The pit is a very large block-lined soakaway that is built to contain decades worth of waste. Due to high levels of mobility, many villagers have seen such building-integrated toilets in larger towns and cities. Increasingly, more of these types of toilets are being built in towns and villages by locals living abroad or in bigger cities.

...but there is little knowledge about water-based latrines...

Little knowledge of cost
There was a huge range of estimates of what a water system would cost--ranging from 40,000N to 600,000N installed. No one knew the breakdown of labor and material costs.

Little knowledge of what infrastructure is required
Few households knew what would be required to have a water system. Few knew all the components that they would have to buy, how many (e.g. bags of cement) or where they would even buy them, other than 'in town.' Some believed that piped water would be necessary, and that they couldn't have a water-based toilet without piped water into their home or compound.

… and little knowledge of alternatives to cistern WC.

Cistern believed necessary
Many households believed that a cistern storage system on a western style WC was required for them to have a water based latrine. Households knew these require a large amount of water, so were often not feasible for them.

Little knowledge of asian-style pans
Most households had never seen asian style squat pans--they didn't know where to get them or what they might cost. This limited household perspectives on what a water-based toilet might look like.

Will create affordable workarounds
Without the funds or adequate water to build a cistern-based WC toilet, households will create their own homemade pour flush solutions. Most often, an artisan will hand-craft a squatting, pour-flush basin with a PVC pipe leading to an offset pit. This enables water use and gets the feces out of site, but does not offer great fly and smell control.

There is stigma attached to a poor quality toilet.

Will not offer to guests

Some households with poor quality latrines indicated that they would not offer use of the toilet to guests. It would be less shameful to have the guest defecate in the bush than use the inferior toilet.

Prefer to wait for the ideal latrine

There is little interest in investing in a low quality latrine--even if free, households wouldn't want it. They would prefer to use the bush and wait for a WC, whenever that might come. Some open defecators said they would wait until their children brought home money or until they had piped water before investing in their ideal WC toilet.

Water access is (often) difficult and guides toilet choice.

Water access varies seasonally

In most of study areas, access is significantly more difficult in dry season. Water tables drop, making boreholes inoperable and drying open wells. Surface water is less accessible, and rainwater catchment systems run empty. In some cases, household who have ready access during wet season may need to walk up to three hours to fetch water during dry season. This requires rationing. Households that might otherwise opt for a water-based toilet recognize that they must restrict themselves to a dry toilet due to the water limitations. Note that this decision is partly informed by household belief in the large amount of water that they would need for a cistern-based WC.

Water access varies due to service interruptions

Even in areas with piped water (most notably the towns of Ekiti), frequent, unplanned service interruptions limit household ability to rely on easily accessible water.

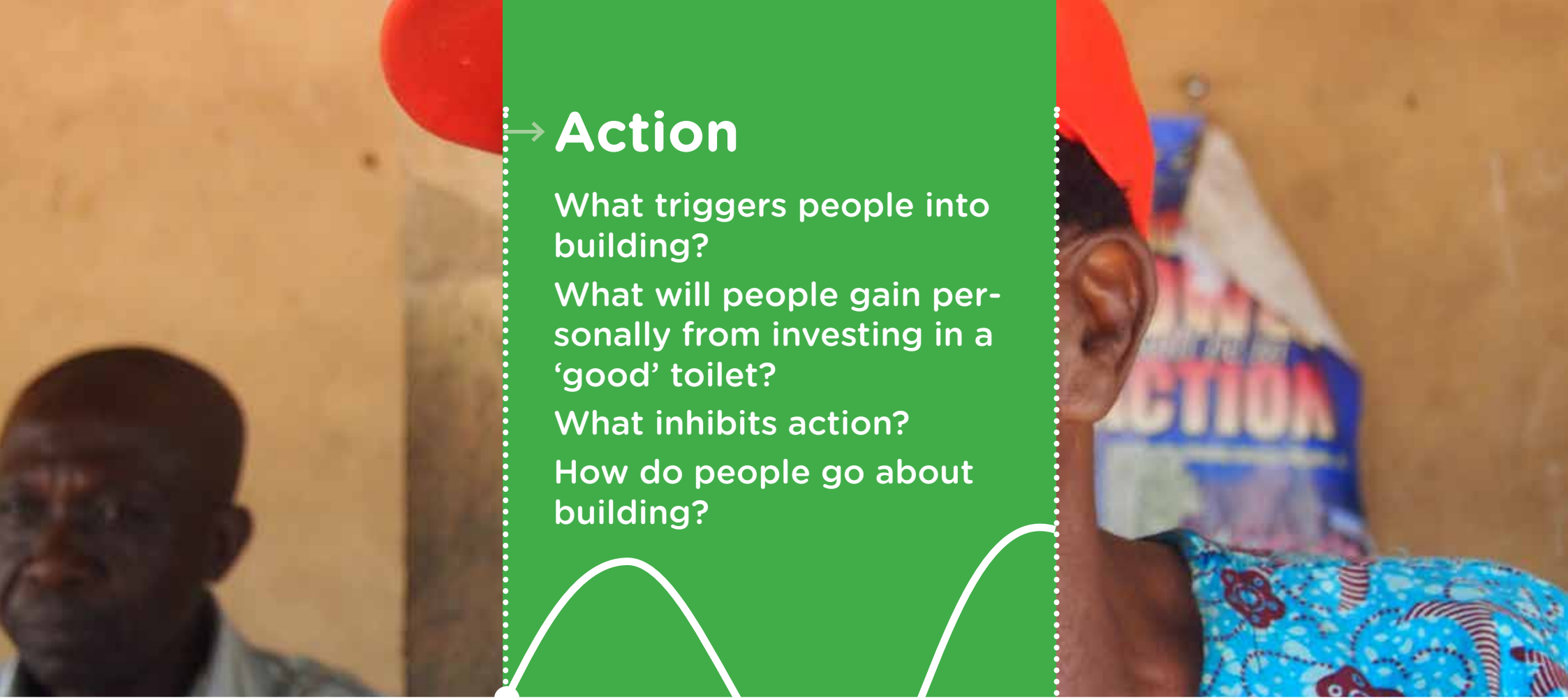
Concrete is widely in use and desired.

Concrete has many good attributes

- Durability: Concrete is perceived to be a very long-lasting material. Households expect concrete to last decades as a toilet slab, even if in practice the toilet lasts much less time due to pit collapse.
- Strength: Rebar-reinforced concrete is widely regarded as the strongest construction material. Strength is a big concern as many people express anxiety about falling into a latrine pit. The thicker the concrete and the more rebar the better. However, there is little knowledge about how to make good concrete--just that the more cement used, the better.
- Cleanability: In contrast to mud or timber flooring, concrete is known to be much easier to clean and less likely to absorb feces and/or urine.
- Aesthetic: Concrete is a modern building material, and provides a clean, high quality feel to a toilet.

Any concrete is good

Even if a household cannot afford a true concrete slab, they will add a thin layer of cement to a timber or wood slab just to get some of the benefit. Due to poor installation technique, this layer of cement is often rough, cracks and crumbles quickly and has a short lifespan. Household are thus paying for a temporary cement veneer that requires on-going investment, without it really delivering on many of the benefits.



Action

What triggers people into building?

What will people gain personally from investing in a ‘good’ toilet?

What inhibits action?

How do people go about building?

What triggers people into building?

What will people gain personally from investing in a ‘good’ toilet?

Strong external pressure motivates action.

Village leaders drive toilet construction

External pressure and enforcement from village leaders seems to be the most effective tool for motivating toilet construction. Fines, asset seizure and/or social exclusion were cited as commonly-used tools for pressuring villagers. In many CLTS villages, this type of top-down pressure was credited with motivating latrine construction. It was less clear whether top-down tactics result in sustainable adoption of good sanitation practices (or, indeed, what the impacts of social exclusion were on equity and human rights).

End of year is building time.

Returning family prompts home improvement projects

Households seem to place great importance on demonstrating their year's success by hosting family and friends at Christmas (for Christians but also across other holidays). They want to be good hosts but also show off a little bit. Many households had small-scale projects underway in preparation for the holidays, including a few households we met that intended to finish their latrines by Christmas.

Households have money at the end of the year

Numerous factors combine for households to have their greatest income at the end of the calendar year:

- Most savings groups pay out just before the holidays.
- Harvest season has begun and is starting to generate income.
- Returning family will often gift money.

End of wet season is a good time to build

Towards the end of wet season, the soil is still soft from the rains but not yet too hard to dig. Additionally, the rains are tempered enough to avoid pit collapse or the ruining of building materials. A lot of building and excavation starts during this bridge season.

A good toilet is a sign of ‘modernity’ and upward mobility.

Face & Status
Households are concerned with face and status. Visible signs of wealth such as televisions, motorcycles, furniture, cars and mobile phones are important and valued. A good toilet is likewise something to show off.

Exposure to urban life is common
Reasonable market integration means there is good exposure to life outside of the village. Good roads enable villagers to access larger, more modern towns. Many villagers also report working in these larger towns, either at present or at an earlier time in life. Many middle-aged and older villagers have children who are working in these towns and cities. Many villages also have reasonable (and constantly increasing) access to telecommunications and media--further exposing them to modern life and amenities.

Villagers are often surrounded by modern homes and toilets
It is quite common for people living and working outside of the village to send money back to build very large ‘upscale’ homes. These homes nearly always have building-integrated WCs. The presence of these large (empty) homes in the village raise the perception of what a good toilet should be. They create a sense of ‘I want what he has’.

Owning a good toilet is something to be proud of.

Strong emotional drivers link the ownership of a good toilet with one's identity:

Place for visitors

Being a good host to visitors seems to be highly important in the Nigerian context, and many households remarked that having a good toilet to offer guests was a significant factor in their decision to build a toilet.

Pride of ownership

Many households with concrete pit toilets, water-based toilets or toilets with attached baths were proud to show off their facilities. Many kept their toilets locked so that only they could use them. One household even built a third 'reading' room next to their toilet/bath as a place to relax.

Owning a toilet makes life easier.

Convenience
Having a toilet eliminates the difficulties and hassles of open defecation, such as walking long distances, going out at night alone, not having immediate access to facilities if have diarrhea and stepping on human waste.

Comfort
Villagers commented that using a toilet was more comfortable than OD--they don't have to walk thru mud to get to a toilet and they are protected from rain while using it.

Safety
Villagers are fearful of snakes, insects, thorns and attacks by other people when they go to the bush, especially at night. Having a toilet near to their house eliminates these risks.

Privacy
Though there was some social aspects of OD reported (Ogwe method in Enugu), in most cases people report privacy as a main benefit of owning a toilet. Due to the settlement patterns in Ekiti, finding a nearby place to OD can be difficult. In Jigawa (and presumably other Muslim areas), OD is not very acceptable, particularly because of the risk of exposure for women.

What inhibits action?

Most households claim that cost is a big barrier...

Cement and concrete components are expensive and often overbuilt

Both on-site and pre-cast concrete components are overbuilt and expensive. In-situ slabs are often excessively thick with very high rebar content. Pre-cast components are likewise overbuilt with high cement ratios. When combined with the high cost of cement, concrete components become very expensive.

Transport cost are high

Transport of cement, iron bar and blocks is expensive for villagers, adding up to 25% on the cost of a product purchased in town.

Artisan labor is expensive (and some may be overcharging)

Artisan day rates are relatively high, and due to specialization (discussed later), they often charge full-day rates for just a few hours of work. Additionally, household are subject to manipulation--artisans can over-charge less savvy customers or cut corners to lower their costs. They can also simply give bad advice if their skill or experience is limited. Since artisans benefit from larger, more costly jobs, they have an incentive to over-estimate the amount of materials and time it will take to construct a latrine, leading to over-engineered (but not necessarily 'better') toilet construction.

...but households (and artisans) do not know what a toilet costs...

Complex purchasing process makes it difficult for artisans to estimate costs

When asked, no artisan could easily provide a cost estimate to build a toilet of a given type. Because there are usually 3-5 different artisans involved in latrine construction, households engage in separate labor negotiations with each artisan and households typically purchase the construction material on their own, no single artisan knows all the fees involved.

Complex purchasing process makes it difficult for households to gain good price awareness

Households (even those with very new toilets) could not relay the total costs either. Households get separate shopping lists from each artisan and will often make multiple trips to town to purchase required construction materials. Because these trips most often take place over time as the households saves up money, it can be difficult for the households to fully understand what building a latrine may eventually cost. Lack of price transparency puts households at a disadvantage when it comes to negotiating costs.

...and many households have money but spend on other priorities.

Informal, but structured savings groups enable savings

Nearly everyone we talked to (both men and women) were part of structured savings groups. There were a few different models (from merry-go-round to savings and loans) and contributions varied from a few dollars a month to ten dollars a week. Many villagers participated in multiple different groups. In some villages, all residents were required to participate through social coercion.

Multi-room concrete houses without toilets

In the study areas, large proportions of households have 'permanent' homes that would have been expensive to build. Particularly in Enugu and Ekiti, we saw many multi-room concrete block houses that did not have a toilet. In some cases, we observed large houses under construction that also did not have provision for a toilet. Even for households with the means to construct a toilet, doing so is not a priority for many.

Spending on non-subsistence goods

There was evidence of households spending money on non-essentials (e.g. a television, a satellite dish, nice wooden furniture), but not investing in a toilet. In one case, a home had two cars but no toilet. In these cases, money is not the issue.

There’s no such thing as a free latrine.

Because households will not construct a latrine by themselves, even the most basic latrine costs something. The basic latrine pictured has a pit of only 4 ft deep and 2.5ft in diameter with a timber and mud slab and a very minimal structure. Yet it required the hiring of a pit digger and a carpenter and cost 2000N, a significant sum for a very low quality latrine.

How do people build?

Households rely heavily on specialized artisans.

Reluctance to 'do it yourself.'

We didn't meet a single household in Ekiti or Enugu who built their own latrine. Even the simplest toilets involved hiring of a pit digger and a carpenter. Households rely on artisans for design advice, material recommendations and construction. Note there was some self-construction in Jigawa, particularly around pit digging.

Multiple artisans are required to build a latrine

Artisans seem to offer a very narrow set of skills when it comes to construction. For a household to construct a simple direct pit toilet with a concrete slab and lined pit, they would have to hire the following people:

- Pit digger (directly or through bricklayer)
- Bricklayer to line pit
- Carpenter to lay wood
- Ironbender to form reinforcement
- Bricklayer to pour slab and walls
- Carpenter to build door and roof

The artisans do not claim to have the skills (nor the tools) to do each other's jobs.

Working with multiple artisans creates toilet purchase hurdles, even if not acknowledged.

Need to coordinate labor

In order to get a latrine built, households have to coordinate labor amongst three to five artisans (pit digger, carpenter, iron-bender, bricklayer, plumber), depending on the type of toilet built. Households negotiate fees for each laborer separately. Household say they prefer this because it allows them to negotiate a good deal--the better negotiator they are, the more money they can save.

Purchasing is done separately

Households obtain separate shopping lists from each artisan. Because the process of building a latrine may be stretched out over months (or years), this often requires separate trip to market towns and separate transport of goods back to the village. This all leads to increased costs, confusion and complexity for the household.

Little evidence of staged construction or upgrading over time.

Households buy or collect everything they need and construct all at once.
Households tend to purchase the materials they need over time, accumulating them on their property. Many houses have piles of concrete blocks on their property--effectively converting their money into assets that cannot be spent or lent out. Once they have all the materials and can save money for labor, construction will begin.

Households will dig toilet pits prematurely.
A small number of households, seemingly under pressure from village leaders, had invested in digging pits before they had the materials and money to finish the toilet. This is risky, because in some cases we saw and/or heard of pits left uncovered collapsing during rains.

Households repair, but rarely 'upgrade'.
Since many latrines are made of natural materials, routine repair work is common. For most households this will involve seasonal re-plastering of mud walls and floors, replacement of mud bricks, and less frequent repairs of rotting timber. While households will work to maintain what they have, we saw little evidence of incremental improvements to existing facilities. For most households, 'upgrading' to a better facility – e.g. from timber and mud to concrete - means digging a new pit and constructing an entirely new toilet, even if this means abandoning a pit they paid to dig.

Ownership & Use

What is the day-to-day life of owning a toilet?

How are initial beliefs & expectations reinforced? Or not?

Toilet usage is inconsistent.

For children, open defecation is still a common practice.

In areas where the adults practice open defecation in the bush, children are allowed to open defecate near the home. In households that own a toilet, children continue to defecate in the open – usually not very far from the home and sometimes just outside the toilet. Children typically begin using a toilet at around five years old. Before that, parents often don't let them use the toilet because they may use it improperly and soil it.

Villagers will continue to practice OD in farming homes.

In some areas of Ekiti, households maintain two homes--one in the town and one closer to their farms. But the two homes may not have equal toilet options, even though the head of household and other family members may spend a few days per week at the farm house. In one case, a family with a water-based toilet in the town practiced open defecation at the farm. The farm house was viewed as a traditional home, not a modern home, and OD was viewed as a good, traditional way of defecating when at the farm.

Concrete does not guarantee hygiene.

Concrete slabs are not necessarily cleaner than mud or timber slabs

Although there is a strong perception that concrete slabs are easier to clean, the concrete slabs we saw were not necessarily cleaner. There is a high degree of variability in quality of concrete construction. Many poured concrete slabs have rough surface areas and sharp edges where feces and dirt can collect. Households that clean tend to use water and a broom for cleaning concrete slabs, but may not scrub the surface to remove feces and dirt. Many households don't seem to clean at all. In many cases, it was difficult to tell if a slab was packed mud or concrete because of the amount of soil on top of the concrete. In one case, we met a household that put dirt over a concrete slab because he preferred to have his urine soaked up by the dirt rather than puddle on the concrete--to him, this was more hygienic.

Households feel need to actively manage pit contents.

Additives used to control volume, smell, insects and infection

Both natural and synthetic additives are used to manage the pit. There is little concern for how they may impact the groundwater. Additives regularly used include:

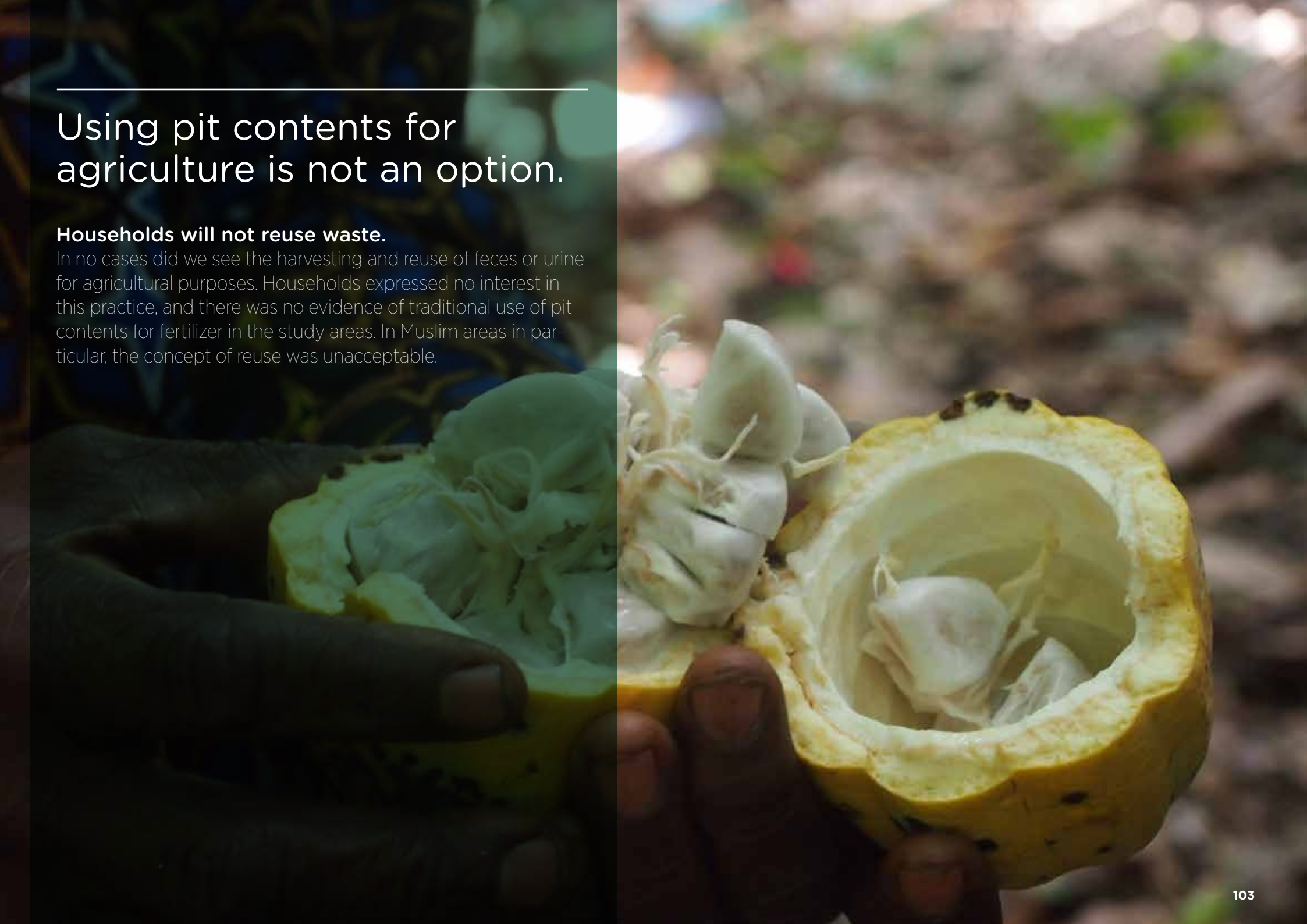
- Kerosene
- Fermented Cassava water
- Insecticide
- Sulfuric acid
- Locust bean
- Ash
- Salt
- Burning

Heat managed through additives, adaptive behaviors and toilet modifications

Households manage pit hit by adding a vent pipe, adding ash to the pit, removing lid and waiting before use and/or perforating the lid.

Using pit contents for agriculture is not an option.

Households will not reuse waste.
In no cases did we see the harvesting and reuse of feces or urine for agricultural purposes. Households expressed no interest in this practice, and there was no evidence of traditional use of pit contents for fertilizer in the study areas. In Muslim areas in particular, the concept of reuse was unacceptable.



Owning a toilet does not necessarily signify a long-term commitment.

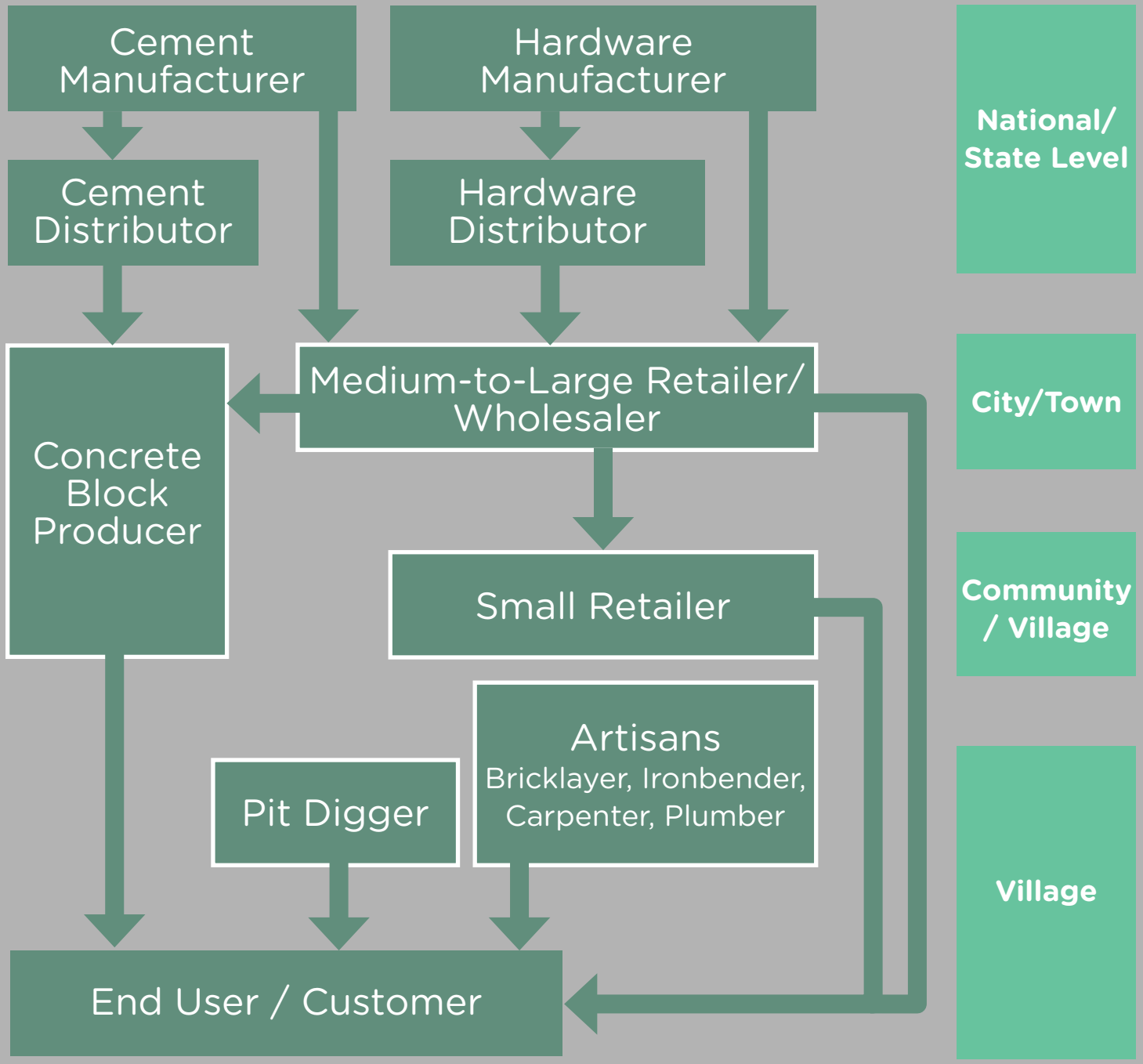
Repair but rarely upgrade
Households repair but rarely 'upgrade' an existing facility. When they want something new, they will dig a new pit and construct a whole new facility.

Pit collapse leads to reversion
In many cases, we saw villagers who formerly owned toilets but reverted to open defecation once the toilet collapsed (or filled up, though collapse seemed more common). In many cases, the original toilet had been built 10-20 years previously, sometimes by an elder family member. In other cases, households had built the toilet upon returning to village life after living in larger cities. Now adjusted to village life and traditional ways, they expressed comfort with returning to OD after the toilet collapse. This was particularly the case for households who previously owned dry pit latrines, who expressed dissatisfaction with this latrine type.

SUPPLY CHAIN INSIGHTS

Map of Supply Chain

These are the existing supply chains for cement and concrete products and for hardware products such as ceramic pans, PVC and iron rebar. We ignored national/state level actors for now and focused our research on supply chain actors who interact directly with households. If we end up needing any mass-produced products, we will engage national/state level businesses.



Local Artisan

- Owner-operated
- No employees, but may engage day laborers
- Daily fee-for-service
- Credit rarely given/taken
- Work within home village

Artisans are always used in toilet construction.

Key actor in getting toilets built...
All villagers we talked to in Ekiti and Enugu employ artisans to dig pits and build slabs and shelters. Villagers usually do not have the tools, training, or interest in building toilets. In Jigawa, there was some self-construction, but many households still employ artisans for some element of toilet construction.

... but toilets are not central to an artisan's business.
The bulk of an artisan's business is in home construction and government-related construction (schools, health clinics, roads, etc.). Toilets are built so infrequently within the geographic range of a specific artisan that they will never be a major business line. Most artisans report building 5-10 toilets per year.

Toilets are not a one-person job.

Highly differentiated labor

Artisans report having very specific roles in the construction of a latrine. Carpenters lay the formwork for pouring concrete and later return to help in the fabrication of wood and corrugate components of a shelter. Bricklayers line pits with block, pour concrete slabs and build block shelters. Ironbenders lay out the steel rebar needed to reinforce the concrete. Plumbers work with piping and pans/WCs on water-based toilets. The artisans claim to not overlap in their responsibilities.

Households coordinate the effort

Households are responsible for contracting with each artisan separately and coordinating the purchasing of the different materials that each artisan requires.

Pit diggers are not considered artisans.

Separate, unskilled workers

In nearly all cases in Ekiti and Enugu, pits are dug by laborers from outside the village who are in the area on other construction jobs. It is a risky, unskilled and difficult job, and most regular artisans and households will not do it themselves, even though self-digging would save money. In Jigawa, people may dig their own pits.

Expensive to dig

Pit digging fees are very dependent on the type of pit dug, ranging from 1000N for a very shallow round pit in Gaa Erinmope to 25000N for a large soakaway pit in Ikosu (both in Ekiti). In all cases, the cost of digging a pit is a significant portion of the total latrine cost, ranging from 25%-75% of the total household expenditure for their latrine.

Pit diggers will empty pits

We did hear some evidence of pit emptying services being provided by laborers in Ekiti (the same population that digs pits). The service providers were located 40km away and charged 15,000-20,000 to empty a large pit, so the expense is significant.

Artisans build slabs elaborately and to excess.

In situ casting is an art form

Most concrete slabs are cast in-situ over the pit rather than being cast to the side and being placed once cured. For larger slabs, this requires the building of elaborate formwork involving vertical posts and horizontal planks to support the poured concrete. The vertical formwork is often later reclaimed from inside the pit (through an access hole) so it can be used in a subsequent job. The timber formwork can take two people multiple days to construct. Even with smaller pits, the formwork takes a dedicated carpenter a day to construct.

Overbuilt slabs cost a lot of money

For the most part, artisans build incredibly thick concrete slabs. Slabs are typically 4-8" thick with closely-spaced large diameter (10-12mm) steel rebar reinforcement and very high cement content. All of these factors drive material and labor costs up, leading to very expensive slabs that can inhibit latrine adoption.

Pre-cast slabs exist and are familiar.

NGO and government solutions
We saw a handful of slabs that came out of development programs. We observed both round and rectangular slabs, some in active use, some abandoned and seemingly never installed.

Local solutions
We also saw evidence of local pre-casting activities, usually involving the digging of a form into the soil and casting of concrete into the excavated void or the use of home-made formwork to create a rectangular shape.

SaniCentres give insight into what can and cannot work.

Product must be right.

We visited one program-driven 'SaniCentre', where a rural production center was established with donor funds to sell partially subsidized domed slabs to villagers. Like many such SaniCentres in Nigeria, this one was no longer operational, and many of the domed slabs that were constructed at the site could not be sold and were left abondoned in a field. The former lead mason at the SaniCentre showed us a pre-cast round slab he had developed for himself (pictured on previous page), which used rebar and had a flat surface. He explained that most people preferred a flat surface, or one that sloped slightly towards the pit to enable drainage into the pit. People also insisted that the slab have rebar--without it, they wouldn't trust its strength. The subsidized dome slab (pictured this page) did not have rebar and did not sell well.

Service and business model must also be right.

The mason also explicitly detailed other reasons he believed the program failed:

- The revolving loan did not 'revolve' - everyone knew it was a donor program so would not pay him for the slabs--they expected them to be free.
- People could not carry the slabs home, and the cost of transport was as high as if they paid full cost for a cast-on-site.
- The program had raised little awareness. He claimed that lack of money was not an issue with villagers, but a lack of awareness that the business and product existed.

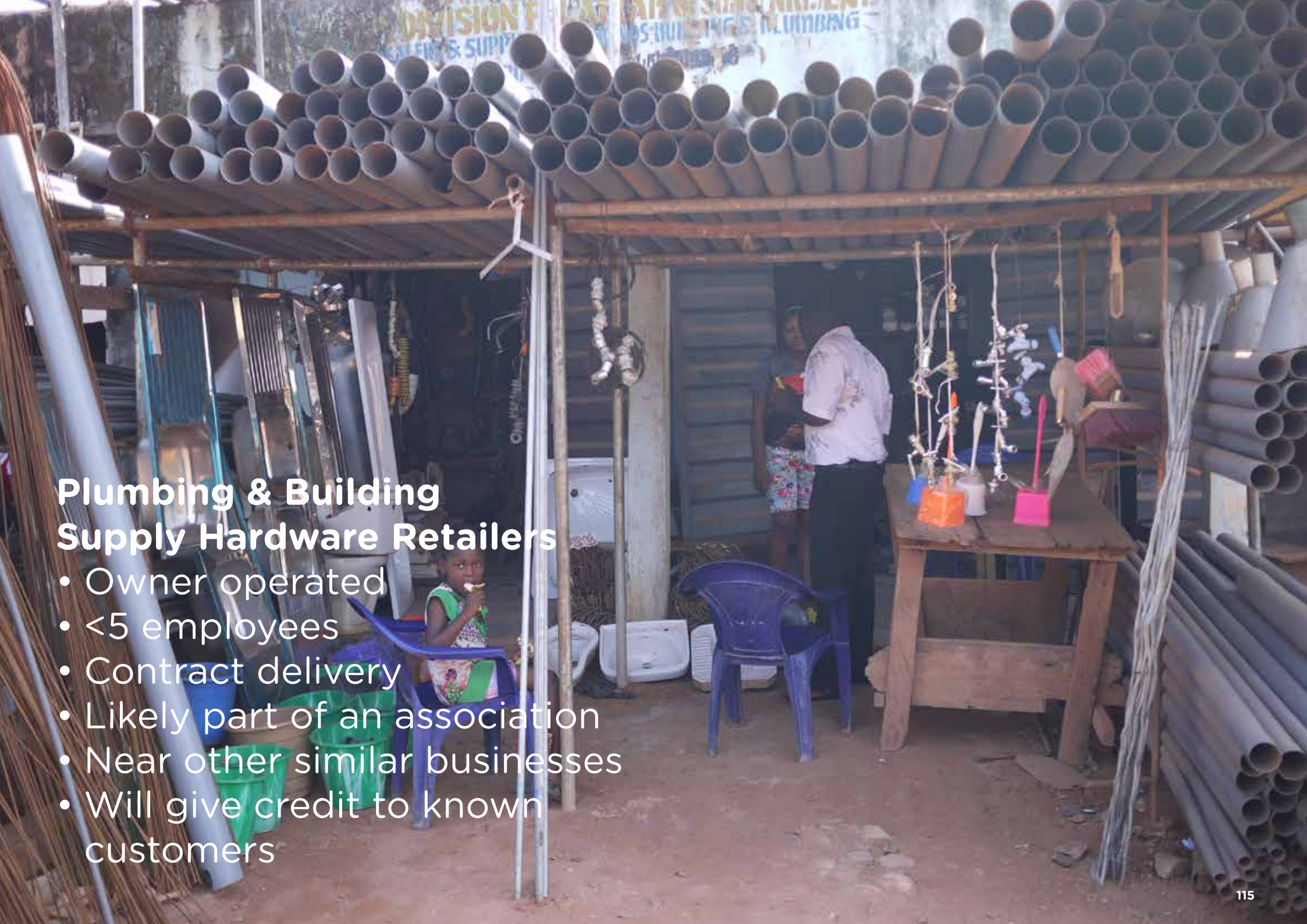
Artisans make blocks for households.

Less expensive

When a typical village household needs blocks for construction, they will nearly always hire an artisan to fabricate the blocks on-site rather than source them from a block producer. The blocks are nearly always 6" solid blocks. When fabricating on site, households pay for the cement plus ~700N/bag for labor. This works out to roughly 70-90N per 6" solid block, as opposed to 120-150N from a block producer.

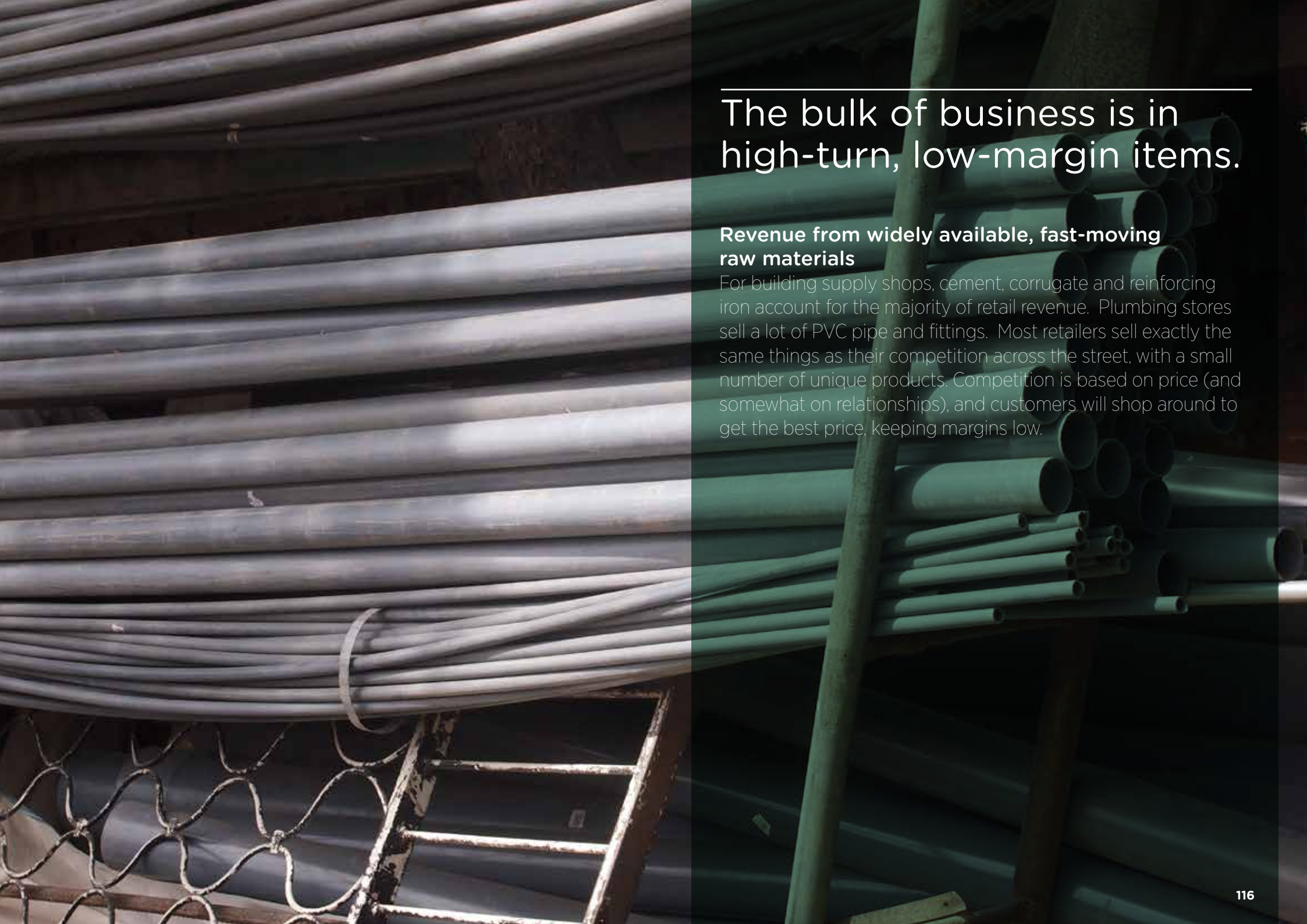
More oversight

Households also get to observe the fabrication process, which gives them some peace of mind that the artisan is building to a certain quality. They do have anxiety about concrete products made off-site, especially items such as slabs that require rebar--households want to see it being installed with their own eyes.



Plumbing & Building Supply Hardware Retailers

- Owner operated
- <5 employees
- Contract delivery
- Likely part of an association
- Near other similar businesses
- Will give credit to known customers



The bulk of business is in high-turn, low-margin items.

Revenue from widely available, fast-moving raw materials

For building supply shops, cement, corrugate and reinforcing iron account for the majority of retail revenue. Plumbing stores sell a lot of PVC pipe and fittings. Most retailers sell exactly the same things as their competition across the street, with a small number of unique products. Competition is based on price (and somewhat on relationships), and customers will shop around to get the best price, keeping margins low.

Little active selling or marketing, but brands matter.

.Little active selling or marketing

Retailers typically do not invest resources in active selling. Likewise, they use minimal signage and generally do not advertise. They do, however, put large amounts of some products on display outside the shops, including PVC pipe and iron rebar. They will also display samples of small items such as ceramic toilet pans. However, most small items are kept inside the shop. Retailers are willing to put marketing material on display if provided by manufacturers.

Brand recognition

For some products, brands are recognizable and preferred by consumers. For example, GEEPEE water tanks were repeatedly referenced as the best quality water tank--both by villagers and by retailers. Niger pipe is preferred over MC Pipe by plumbers in Nsukka (even though one couldn't tell the difference between the two). And Tiger Green is known for making the best overall quality PVC, but it's expensive.

Sell pans and WCs, but not to rural villagers.

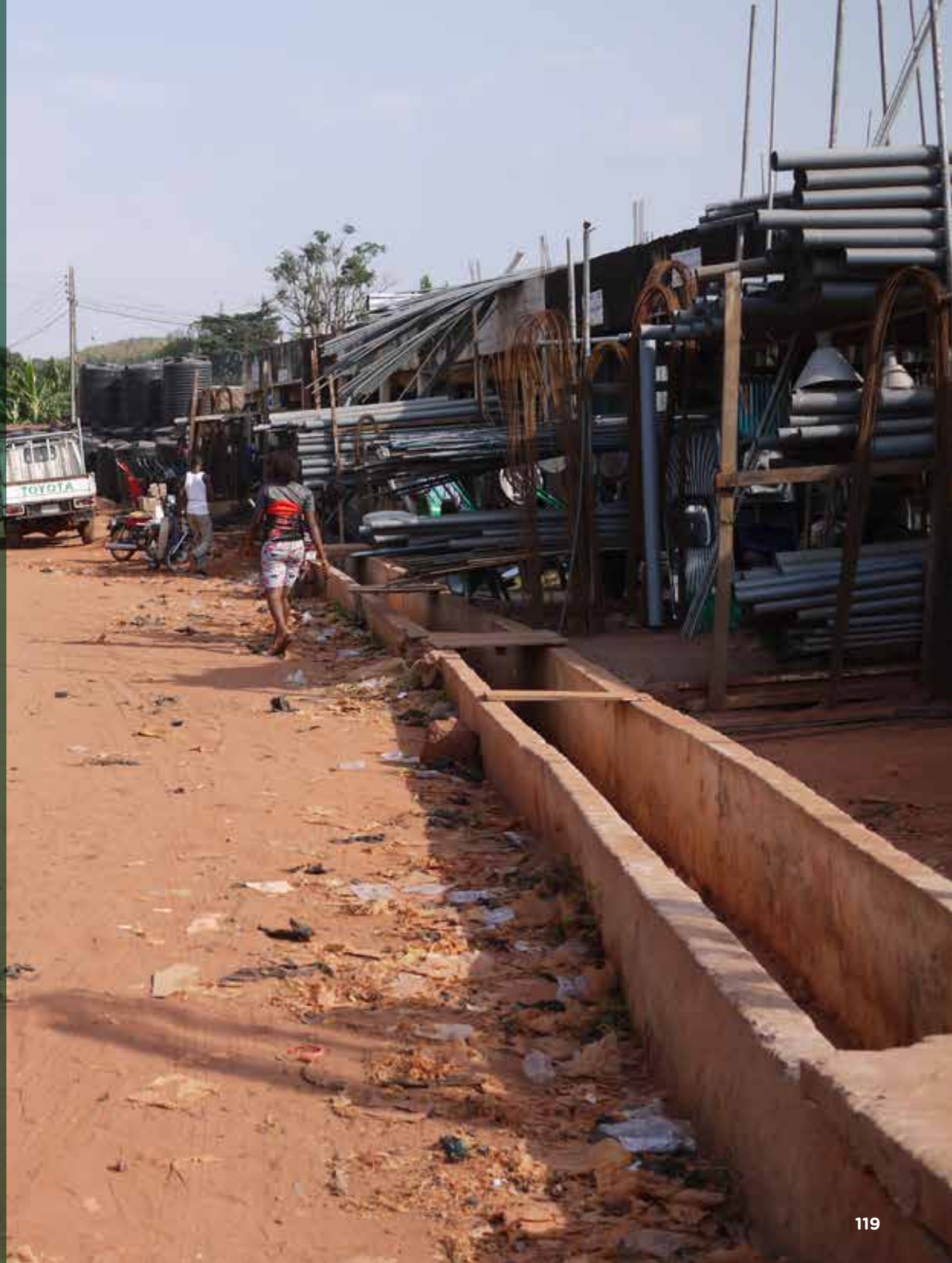
Retailers do sell a reasonable variety of ceramic squat pans and sitting WCs. Prices range from 3,000 for a squat pan to 10,000 for a low-end cistern WC to 20,000 for a high-end cistern WC. Their customers for these products are typically plumbers working for wealthy villagers or on public projects. Most did not mention selling such products directly to rural villagers, which is indicative of the fact that few villagers are currently buying these pans.

Associations empower retailers.

Enable bulk purchase & credit
Retailer associations will negotiate bulk purchases of materials such as concrete and iron bar so that full truck loads can be shipped to an association area and delivered to individual retailers. This enables retailers to get lower costs. And because of the history and security of the association, it is often able to buy on credit from suppliers, improving the cash position of the stores.

Increase bargaining power
Because they are a large and regular purchaser, the retail association is able to bargain more effectively for lower prices.

A target for new products
Manufacturing and wholesale businesses will approach the retailer association pitching new products in order to access all the member retailers. These associations could represent important entry points for the introduction of new toilet technologies and components.



New products requested by out-of-town artisans.

Retailers will search for and supply most products that customers request. Often new products are requested by artisans from other regions who are working locally and want some supply that they're used to having back home. Creating pull from artisans, who will likely be exposed to village level messaging about new toilet components, will be important for making sure retailers carry any new products the program develops.

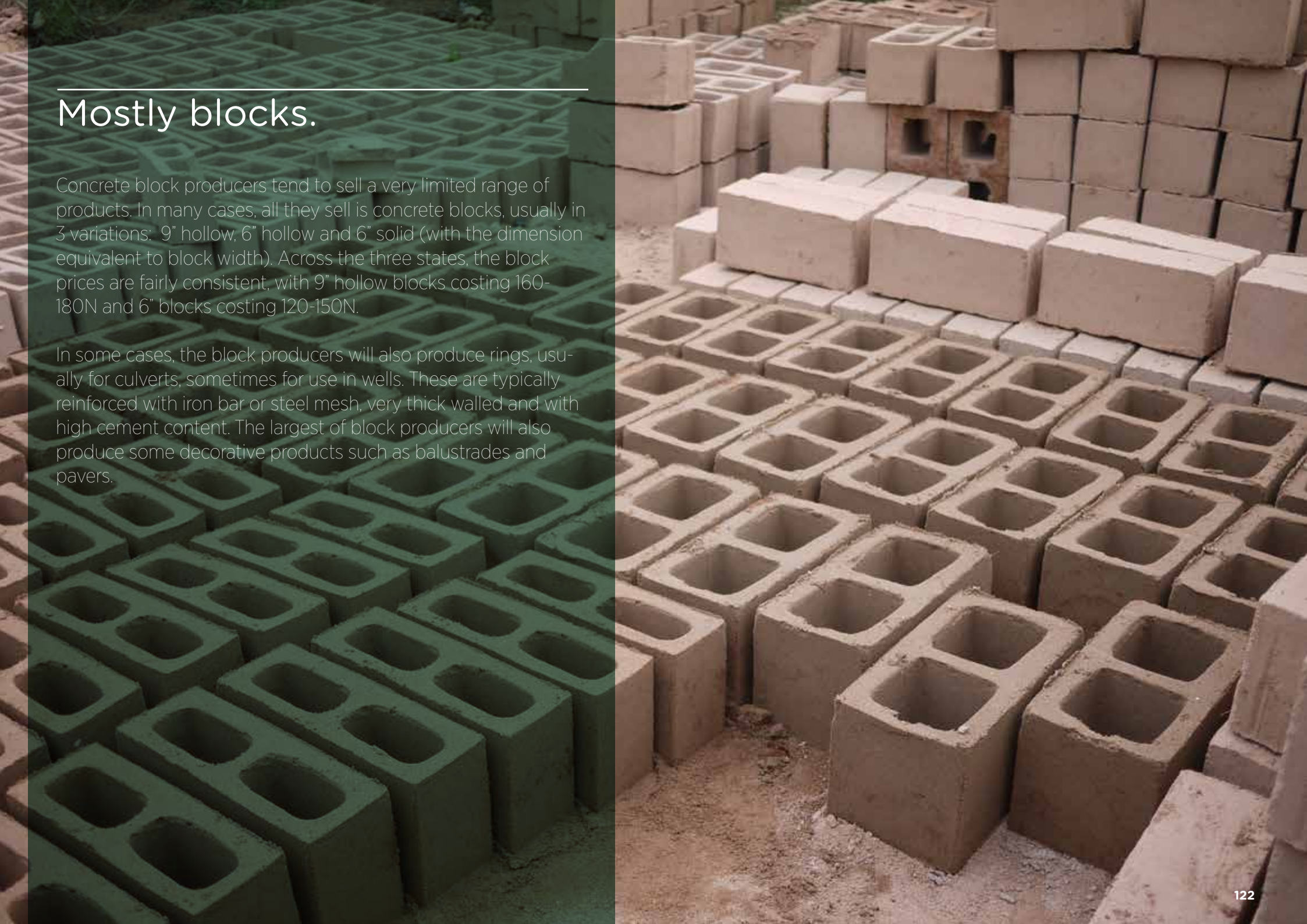
Concrete Block Producer

- Owner-operated
- 3-50 employees
- Has own delivery vehicles
- Somewhat isolated from similar businesses
- No credit given
- Short credit taken

Mostly blocks.

Concrete block producers tend to sell a very limited range of products. In many cases, all they sell is concrete blocks, usually in 3 variations: 9" hollow, 6" hollow and 6" solid (with the dimension equivalent to block width). Across the three states, the block prices are fairly consistent, with 9" hollow blocks costing 160-180N and 6" blocks costing 120-150N.

In some cases, the block producers will also produce rings, usually for culverts, sometimes for use in wells. These are typically reinforced with iron bar or steel mesh, very thick walled and with high cement content. The largest of block producers will also produce some decorative products such as balustrades and pavers.



Customers are mostly upper class residents & government projects.

Blocks for projects
The majority of sales are for government projects (schools, health clinics, etc.) and to wealthy villagers building larger homes (often these villagers will live in cities or abroad). Typical villagers tend to hire artisans to fabricate blocks on site at their home, as this is less expensive than buying from a block producer.

Direct to Villagers
When block producers do sell blocks to rural villages, they sell directly to households rather than to artisans. As such, block producers do not tend to have relationships with artisans.

Sell into a specific geographic area.

Block producers tend to be located along arterial roads leaving market towns and seem to only sell to customers that can be accessed by their road. This limits their geographic reach. In one case, a block producer only provided product to customers in one direction down the road--away from town. He did not serve any customers in the direction towards the town. We do not know if there are agreements (cordial or otherwise) between block producers that limit competition and their market coverage.

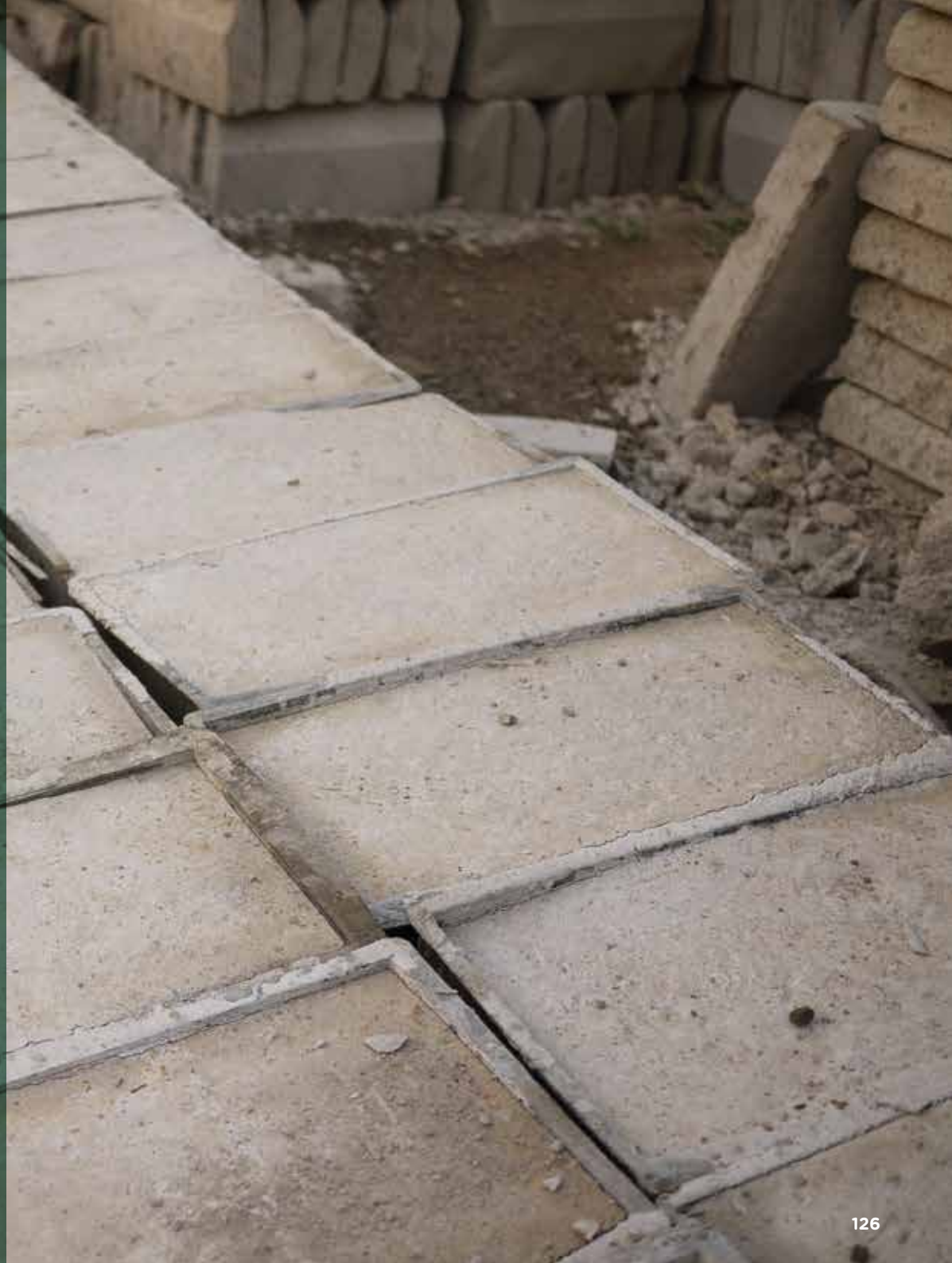
Offer delivery (sometimes for a fee).

All block producers have trucks for delivery. They will typically include delivery in the price of the product if within a certain geography. For further distances, extra fees are added. For example, in Ekiti SW, a ring delivered in town would cost 4000N. Out of town, 4500N-5000N depending on the distance traveled. This is a significant cost addition to a pre-cast product, so having nearby producers would be critical to keeping costs down if this is the optimal production and business model chosen for the SanMark program.

Will add new products to test demand.

Invest in molds...
The larger concrete block producers will invest in molds to build new products that they think might sell. They typically get ideas from mold producers or other block producers. Mold costs range from 100N for a plastic mold for a curb stone (pictured) to 3000N for a lid mold for a well to 40,000N for a 3ft x 3ft ring mold.

...but no real marketing or sales.
The only marketing that concrete block producers will do is to display products in their construction yards. They depend on customers coming to them for other purchases (likely blocks) and seeing the new products.



Sell rings for toilets.

Some block producers do report selling rings for use in toilets. This is mirrored by some villagers reporting the use of rings in toilet construction (though we never actually saw any in use). Rings are perceived to be stronger in a pit than concrete blocks because:

- the concrete is stronger (higher cement content)
- rings are circular (rather than rectangular) which is better to resist soil collapse
- there is less risk of error in construction

Yet, the use of rings for toilets seems to be very limited as of yet, possibly because of low awareness and high costs.

NEXT STEPS

Next Steps

WaterAid Nigeria and UNICEF are working to further analyze qualitative and quantitative market research findings from eight states.

This data, coupled with the learnings captured in this report, will inform the design of new sanitation products, business models and communication messages that can work on a national level.

WaterAid Nigeria and IFS will conduct supply chain mapping and baseline surveys before the program launch (for Enugu and Ekiti).

WaterAid Nigeria will launch pilot Sanitation Marketing activities within the STS program areas of Ekiti, Enugu and Jigawa by October 2014.

Timeline until launch

SANITATION MARKETING

QUANTITATIVE RESEARCH

Dec 2013 | June 2014 | Dec 2014

Key Opportunities to Explore

The near-term work will focus on developing, testing and iterating upon the following product, service and business models. Later reports will document the learnings.

Product & Service

Wet & Dry Options

- Dry without heat
- Low water-use Wet
- Low-cost Wet
- Dry/Wet combinations

Upgrade pathways

Pit maintenance

Business Models

Centralized fabrication & distribution (concrete & plastics)

On-site fabrication (concrete)

Coordinated/Team fabrication

Staged construction process

END

// Jude Emisen, WANG
// Mimi Ishan, WANG
// Ziyok Ishaku, WANG
// Kole Adegbite, JDPI
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