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in Water, Sanitation and Hygiene



## SCORE // TOPS

Human-Centered Research and Design for Latrines in Haor and Char Areas of Northern Bangladesh

*“Of course we ask them why they stay here. We say, you are suffering. They tell us, this is our land, this is our home, we must stay”*

-CARE Field Team Leader  
Sunamganj, Bangladesh

**iDE Bangladesh****March 2019****DISCLAIMER**

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And to the iDE Bangladesh team for their humor, patience, and guidance during this fieldwork and research process.



## The Design Challenge

How might we design a user-desirable, affordable, commercially viable, environmentally sustainable, and technically feasible home latrine solutions for the haor and char areas?

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# BACKGROUND

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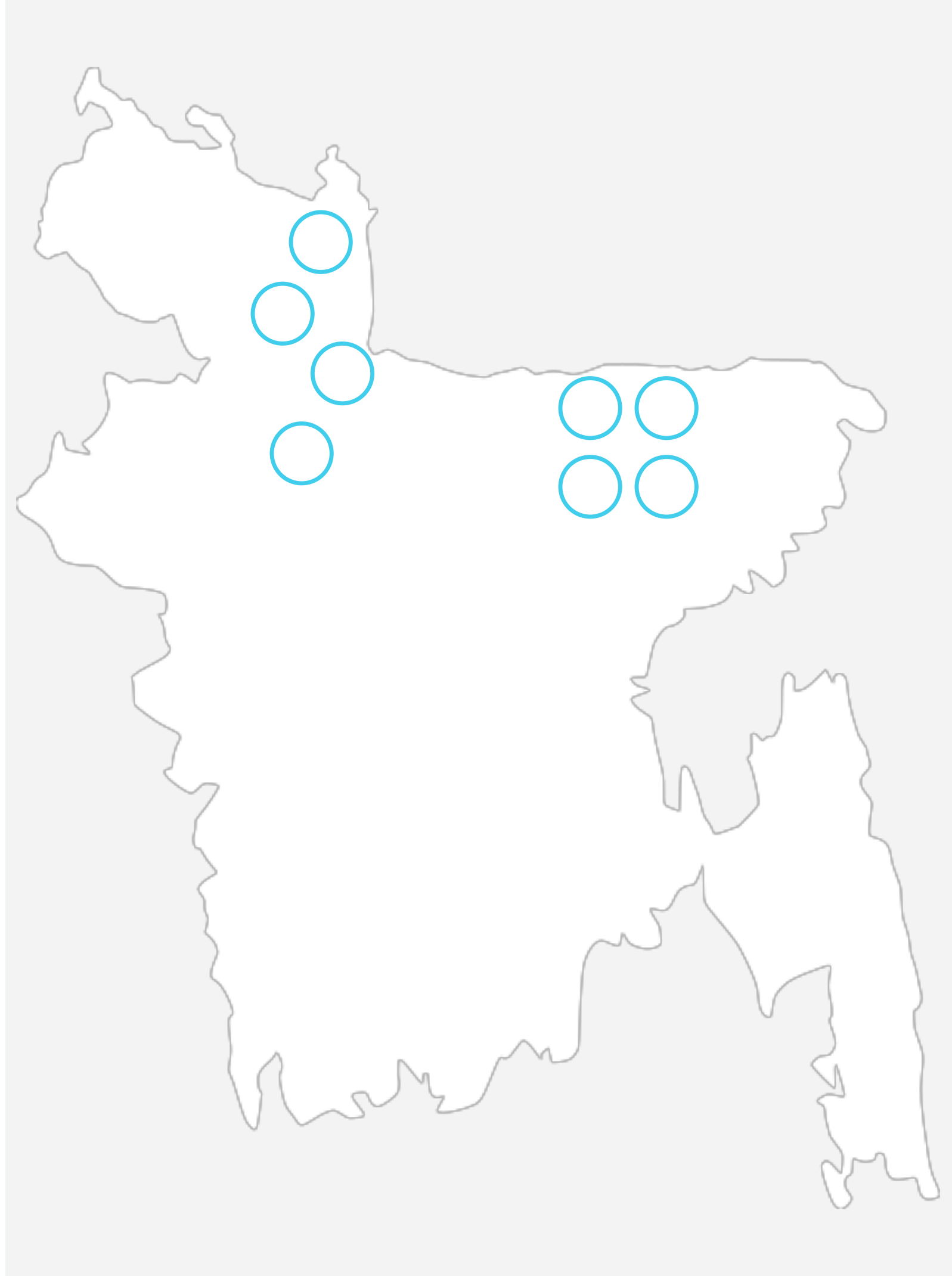


Strengthening Household Ability to Respond to Development Opportunities (SHOUHARDO) III is a Development Food Assistance Program funded by United States Agency for International Development (USAID) and the Government of Bangladesh (GoB). The program is designed to reduce poverty and vulnerability of the poor and extreme poor people in the Northern part of Bangladesh. SHOUHARDO III commenced in September 2015 and will continue until September 2020. Between 2004 and 2015 CARE Bangladesh implemented SHOUHARDO I and SHOUHARDO II in collaboration with the Local Government Division, Ministry of Local Government, Rural Development and Cooperatives and Technical Partners and National Partner NGOs.

The main goal of SHOUHARDO III program is to sustainably reduce food insecurity among the poor and extreme poor households. The program is applying an integrated model for reducing child malnutrition while contributing to the household livelihood security and women's empowerment.

The Program operates in the *Char*, and the *Haor* areas, reaching 8 districts (Sirajganj, Kurigram, Gaibandha, Jamalpur, Kishoreganj, Netrokona, Habiganj and Sunamganj), 23 upazilas, and 115 unions of Bangladesh. As in the past two phases a Program Advisory and Coordination Committee (PACC) comprising 12 ministries of GoB is providing co-ordination and advisory support at national and field level. The program is working with six national partner NGOs that charges with field level implementation while CARE provides technical, compliance and quality support.

Focused on the poor and extreme poor, irrespective of their relative geographic inaccessibility, SHOUHARDO III places empowerment of the poor and extreme poor at its foundation. Within its program areas of agriculture & livelihoods; health, hygiene, and nutrition; and disaster & and climate risk management, the project delivers an integrated set of services- a holistic framework with an emphasis on women's empowerment & gender issues and good governance.



# SCORE // TOPS

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In rural Bangladesh, access to sanitation has significantly improved over the last 20 years, and the practice of open defecation has drastically decreased. However, country-wide coverage with low-quality latrines has led to a situation where the achievement of the Sustainable Development Goal (SDG) 6, from a hygienic quality perspective, is unlikely. Thirty-one (31) percent of the population still do not have access to improved sanitation costing the economy of Bangladesh BDT 295 billion (US\$4.2 billion) per year in losses.

The sanitation market system is fragmented in haor and char areas with weak linkages between retailers and sanitation entrepreneurs. Innovative technologies and improved practices do not reach the last mile and are not shared between entrepreneurs. Additionally, entrepreneurs have limited incentives to produce quality products and deliver them to the last mile. The WASH situation is further exacerbated in the hard to reach (HtR) areas such as chars (riverine islands) and haors (wetlands) due to the geophysical, socio-cultural and economic situation. Out of 1,144 unions identified as HtR based on physiographic conditions and spatial distribution, more than 45% (517 unions) have haors or chars.

With limited infrastructure development, especially road networks, water and sanitation coverage in these areas still remains well below the Joint Monitoring Programme (JMP) 'basic' standard. In the last decade, the Government of Bangladesh has formulated a number of policies to improve the WASH condition in HtR areas (National Strategy on Water and Sanitation for Hard to Reach areas 2011, National Strategy for Water Supply and Sanitation 2014 and Seventh Five Year plan, 2015). Despite concerted efforts from government and the development sector, existing data suggests that quality is still an issue both for drinking water supply and improved sanitation in Bangladesh, especially for low-income poor communities in HtR areas. In addition, the geophysical context of chars and haors is diverse as each of these areas has distinct characteristics and livelihood patterns of the people requiring contextualized solutions. Various water-borne diseases and other health problems are quite frequent among the char households, due to use of ditch and tidal water for drinking and lack of safe latrines. Similarly, in haor regions there is poor access to improved sanitation facilities as compared with other parts of Bangladesh. Due to geography, erosion, and increasing population density, it is difficult to maintain sanitation infrastructure. Flooding during the monsoon season can cause pit latrine contents to overflow.

# SCORE // TOPS

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A number of organizations have undertaken studies and pilot projects to develop latrines and sanitation systems appropriate for the flood prone areas of Bangladesh. Some of these solutions include raised latrines, hanging latrines, and floating latrines. However, despite being technically feasible, these solutions have not yet reached scale due to a number of factors including lack of viable business models; engagement with supply chains and sanitation entrepreneurs; and mismatch between product features and consumer demand.

In iDE's experience, successful latrine uptake and sustained usage results from a full understanding of drivers and barriers to behavior change, including social, economic, health, and convenience factors, as well as challenges and opportunities in the broader market. Therefore, the project will use a market system development framework and approach rooted in the assumption that developing market systems is the best way to bring about sustainable and scalable change to benefit low income communities. The framework also seeks to make markets more inclusive of the poor, and to work sustainably to address weaknesses in the market system. By identifying the underlying causes of weak market performance and designing interventions to address them, the power of markets can be leveraged to bring about large scale and enduring change.

The outputs of the SCORE Project will include: 1) design of sanitation solutions, 2) operations and maintenance plan; and 3) implementation plan. iDE will use Human Centered Design (HCD), Market Systems Development (MSD) and Social Behavior Change (SBC) as theoretical frameworks for this work. HCD will lead the structure of the research and design, the solution will be rooted in MSD, and SBC will be embedded throughout the designed solutions and implementation plan. The designed solutions will include a latrine design, complementary business model, and project facilitation (implementation) strategy.

# Research Background

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## RESEARCH STRATEGY

1. Uncover insights related to the perceptions, motivations, and barriers for users to purchase, adopt, and maintain latrines.
2. Uncover insights related to the perceptions, motivations, and barriers to producers/suppliers to create, sell, and maintain latrines.
3. Understand the financial and social costs and challenges faced by households with latrine adoption/lack of adoption.
4. Understand consumer and actor insights related to a desirable, viable and feasible business model: 5 P's (Product, Price, Promotion, People, Place).

## RESEARCH QUESTIONS

- What are the current perceptions, beliefs, barriers, and opportunities from a user's point of view regarding sanitation and household latrines?
- What is the status of producers and what opportunities exist (capacity, technology, supply chain) currently for latrine producers?
- What is the current status of product distribution?
- What are the current installation practices and where is there room for innovation/improvement?
- How and when are products being transported and where are the bottlenecks/opportunities?

# Hard to Reach

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According to the World Bank, Hard to Reach Areas (HtRAs) are defined in Bangladesh in terms of both their remote geographical location as well as population residing out of the range of development activities. This leads to consideration of issues covered in a socioeconomic factorial analysis, that is, cultural diversity, religious norms, traditional practices, and social norms and values, which play a crucial role in water and sanitation coverage as well as behavioral change in Bangladesh. The community composition, ethnicity, geo-physical traits and environment are determinant factors in achieving success in water and sanitation coverage and behavioral change. Based on this broad notion, HtRAs are understood as:

*“Areas with poor water and sanitation coverage due to adverse geological formation and frequent occurrence of natural calamities which in turn results in higher rate of child mortality and accelerates the vicious cycle of poverty, are referred as hard-to-reach areas and the people of those areas called as hard-to-reach people due to their social exclusion from adequate WatSan services”. This understanding gives a definitive practical value but creates a challenge in the comprehension of the theoretical basis or logical foundation of this understanding.”*

Considering six indicators (groundwater table, drinking water coverage, sanitation coverage, hotspots, poverty and child mortality) and their respective criteria 1,114 unions<sup>1</sup> are hard-to-reach which spreads over 257 Upazilas and 50 districts in Bangladesh (or around 25% of geographical area). **Research shows that 28 million Bangladeshis (or approx 21% of total population)<sup>2</sup> are living in harsh conditions: more than half live in extremely Hard-to-Reach Areas (HtRAs), around 13 million in highly hard-to-reach conditions, and 700,000 in moderately hard-to-reach conditions. Chars were found to be the most hard-to-reach union (more than 30 percent unions are chars).**

People living in hard-to-reach areas suffer from high child mortality rates due to the lack of proper medical facilities. They are often vulnerable to natural calamities like flooding, bank erosion and siltation. They also lack safe water and proper hygiene. Hard-to-Reach areas have a high concentration of poverty and lack even basic communication systems.

# METHODOLOGY

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1 Approach

3 Team

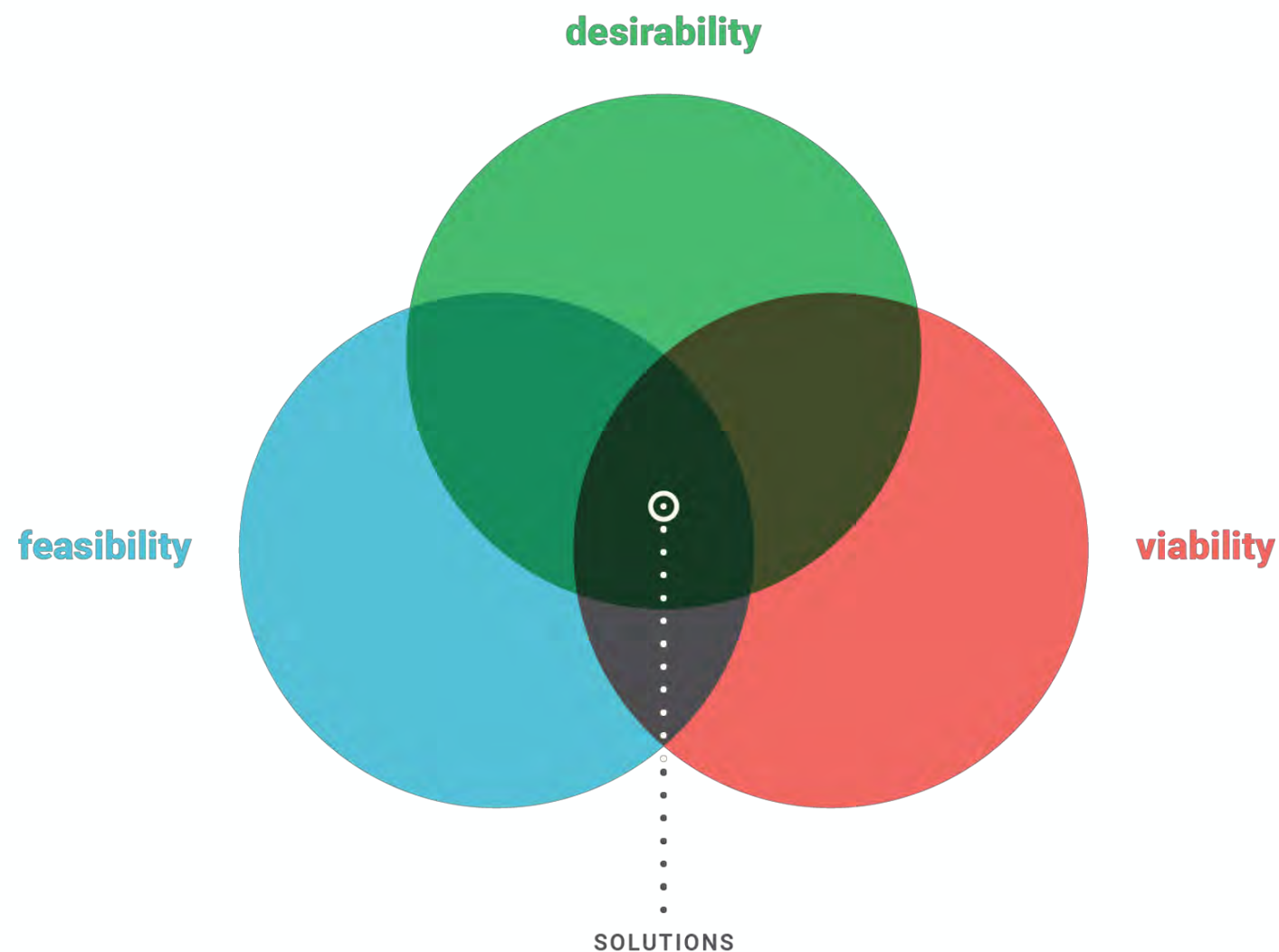
2 Plan

4 Tools and Frameworks



# Human Centered Design

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Human-Centered Design (HCD) is a leading qualitative innovation methodology that maximizes the likelihood of adoption, long-term sustainability, and scalability of a market-based solution. It is used to design and deliver holistic offerings – usually a combination of product(s), service(s), marketing, financing, and distribution.

HCD utilizes an ethnography-like approach to deeply understand latent user and stakeholder needs, and combines this with design methods and expertise from product design, industrial design, business design, service design, and marketing strategy. The result is a market-based solution that is desirable, accessible, usable, maintainable, and affordable to consumers, in addition to being technically feasible and economically viable for stakeholders in the market-system. HCD is a best practice amongst the world's largest (market-based) consumer goods and services firms, and has gained recent credence in the development sector as a means to improve the ROI (return on investment) as well as the probability of scale and sustainability of market-based initiatives.

The HCD process starts by developing a deep understanding of users' needs, aspirations, and constraints. In this case, “users” are women who participate in the sanitation value chain. On the sanitation value chain side, the deep dive will leverage Human-Centered Design (HCD) principles to collect qualitative data on women's value chain participation, and the barriers they face in the following components of the value chain.



# iDE's HCD Rules

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## **Limit constraints**

Remove as many constraints as possible and start from the user's perspective.

## **Market systems are likely to be different in every country, so trust the process**

When considering future markets, following the process is more important than the insights gathered in one market. Allow your team to go broad when looking for insights and discover what motivators will enable your solutions to be adopted quickly and broadly.

## **“BoP Markets” are also often fast growing and changing markets**

Don't design for today but where the market is going. Customers are increasingly demanding better customer service, products custom to their needs, reliable supply chains, and better value. This may not be apparent when looking at the market behavior of the masses currently, but adoption of innovations start in the fringes.

## **Test soon, quick, and often**

Ideas are easy to get. Validated ideas are hard. Empower design teams to iterate on the model and product to discover what the market reacts best to, including changes to the product and product line. The insights gathered in this process were possible by beginning to test the market from the first week.

## **Use HCD when you want to learn fast**

The human centered design process is a powerful tool for global organizations looking to enter unfamiliar markets. Through multi-method insight harvesting and quick, iterative prototyping/testing, an organization can get up to speed on user needs and validate solutions quicker than traditional market research and product launch methods. And compared to traditional “ship product and wait for feedback” methods, you know if the product will work in a matter of weeks vs months.

## **Innovation is team sport**

Results are best with empowered, supported multi-functional teams. As speaking with different users and stakeholders lead to more insights, so does working with a team from varying backgrounds. This process could have been aided (in both robustness and speed of testing) by a increased time commitment from internal teams. It also allows solutions to have more buy-in from stakeholders.

## **Build scaling pathways into the initial design**

A lot of innovation projects in the past have failed because they did not consider how adoption of the solution would spread in the market. A good design incorporates elements required for scale into the initial model.

## **Following HCD means you may not like the answer**

Instead of looking for a market for a product, HCD finds a solution to a customer need. This search may take you to a place you had not considered going originally (such as an after sales engagement service to ensure customer satisfaction, a reliable supply chain, and capture of lifetime value when you may have just wanted to offer a product only). Be prepared for “inconvenient truths” and know what your organization is willing to do.

# People and Place

## HAOR

HH (Latrine)	Islampur	Uttar Badaghat	Tahirpur
HH (No Latrine)	Islampur	Uttar Badaghat	Tahirpur
HH (No Latrine)	Islampur	Uttar Badaghat	Tahirpur
HH (Latrine)	Koukandi Dakshin	Dakshin Bardal	Tahirpur
HH (No Latrine)	Koukandi Dakshin	Dakshin Bardal	Tahirpur
HH (Latrine)	Koukandi Dakshin	Dakshin Bardal	Tahirpur
Inactive LP	Baghmara	Bishwamvarpur	Bishwamvarpur
LP	Badaghat bazar	Uttar Badaghat	Tahirpur
HH (Latrine)	Lamapara	Uttar Badaghat	Tahirpur

FGD	Islampur	Uttar Badaghat	Tahirpur
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Care Team Sunamganj: 2  
 Government: 2  
 iDE WASH Team Sunamganj: 5

## CHAR

HH Latrine	Namachar	Kaliganj	Nageshwari
HH No Latrine	Namachar	Kaliganj	Nageshwari
HH No Latrine	Namachar	Kaliganj	Nageshwari
HH Latrine	Namachar	Kaliganj	Nageshwari
Latrine Producer	Baparipara	Kaliganj	Nageshwari

HH Latrine	Kannaymoti	Narayanpur	Nageshwari
HH Latrine	Chouddaghari	Narayanpur	Nageshwari
HH No Latrine	Chouddaghari	Narayanpur	Nageshwari
FGD	Chouddaghari	Narayanpur	Nageshwari

Care Team Kurigram: 8



# Research Activities

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User Interviews

Active Observation

Co-Creation

The research approach was designed to blend various types of Human-Centered Design/Design Thinking methodologies in order to capture various perspectives from multiple user/actor groups cross genders.

The activities draw on best practices from human centered design as well as gender analysis and women's empowerment qualitative research practices.

1. Hunt, J. (2004). 'Introduction to gender analysis concepts and steps', Development Bulletin, no. 64, pp. 100-106.
2. Pavanello, Sara, Pozarny, Pamela and Paula de la O Campos, Ana. (2015). Qualitative research on women's economic empowerment and social protection A research guide - Food and Agriculture Organization of the United Nations (FAO)
3. IDEO. (2011). Human Centered Design Toolkit.



# Testing Assumptions

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## People:

- People cannot afford latrines
- Latrines are not considered a “need”
- Current family dynamics do not allow some household members to use toilets
- Lack of awareness regarding improved latrines link to good health
- Availability of space to install latrines
- Expect subsidized latrine
- Latrines are a luxurious product
- Toilets should not be near the house
- Awareness on O&M

## Service:

- Threshold demand: price: purchasing capacity
  - Quantity
  - Awareness about quality sanitation link to health
- Supply system (haor): long distance to travel to get to the product, because of this, users use a hanging latrine.
- Long distance for transport ---> higher price, hard to get repair service
- Home to shop distance is very far.
- Promotion: not many channels available
- The only option is radio broadcast
- Other NGOs are there with similar programs, they could help with awareness/demand creation
- Old technology is inferior.
- Govt. has some promotion → could integrate program at the local level.

## Product:

- Appropriate product is not available.
- Product transportation due to weight.
- Can't afford high quality due to price point.
- Unavailability of raw materials.
- Maintenance is tough (pit emptying) due to design.
- Unavailability of diversified products.
- Unavailability of disaster resilient products.
- Unavailability of substructure for haor and char area.
- Use of latrine by pregnant/elderly are not suitable.

# Ideal Toilet

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Ideal Toilet is a visualization activity to understand users and actors perceptions and beliefs on the dream/aspirational toilet:

- Where does it go?
- What is it made of?
- Where do you buy it?
- How much does it cost?
- Cleaning
- Maintenance

All stakeholders/ actors were led through this activity to see if there was variance and where common beliefs lie.



# Journey Mapping



A user journey map is a visual representation of the customer experience – and is a useful tool for everyone involved in the intervention to look at the product/service from the user’s point of view and can be a key part in the design and optimization.

The process of mapping their journey encourages and reminds you to consider the entire customer experience: their feelings, questions and needs while they interact with the product/service. It’s used for understanding and addressing customer needs and pain points. What is the user thinking about and what are they hoping to achieve?

This contextual information about the user allows one to view the entire customer experience as a path or journey that begins with having a need and ends with having that need met. It allows everyone to gain empathy for the customer beyond the specific tasks they confront.

Understanding the customer’s journey – their feelings, motivations and experiences – can help with a design which guides users towards meeting their need.



# Focus Groups

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A focus group is a gathering of deliberately selected people who participate in a planned discussion intended to elicit consumer perceptions about a particular topic or area of interest in an environment that is non threatening and receptive. Focus groups are a collective on purpose. Unlike interviews, which usually occurs with an individual, the focus groups allow members of a group to interact and influence each other during the discussion and consideration of ideas and perspectives.

# FINDINGS

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1 General

3 Char Areas

2 Haor Areas



1

General

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# Apples to Oranges. With a few things in common.

The Haor and Char areas are different in many ways and therefore, should be treated as such.

Differences that were observed/understood between the two areas:

- User/actor mindset
- User/actor motivations
- User/actor sanitation behaviors
- Supply chains
- Subsidy behavior
- Transportation
- Climate
- Disaster Resiliency
- Physical Environment



# Life is much easier in the wet season.

While the outside world thinks that during the rainy season, these areas both haor and char become isolated islands; targets for poor health/hygiene, lack of transportation, disaster zones, and overall inhospitable dangerous environments.

This is not what users think.

In fact, it's the opposite. During the wet season, households have more money due to recent harvest profits, are able to get around quite easily and cheaply by boats, and notice less disease/sickness than in the dry season.

Furthermore, for some residents, the rainy season provides additional and necessary opportunities for income generating activities like fishing or boat operation.



What is an  
*“Improved Latrine”*?  
Depends on who  
you ask.

Across all stakeholder groups, in both areas, there is no consistent definition of what an improved latrine is. Some stakeholders think it is X while others think it is Y or somewhere between the two. The definition ranges drastically from a fixed point, open pit with simple enclosure all the way to brick superstructure with offset subsystem.

Due to this lack of a consistent definition, it is difficult to satisfy all stakeholder groups across the value-chain. What a consumer thinks is an improved latrine, is very different from what implementing NGOs think it is or even the government.



Everyone wants one,  
knows they need one,  
and knows where to  
buy a one.

All non-users express a desire to own an improved latrine and they know where to buy one. Even women.

People see the latrine parts being manufactured at Latrine Producer shops on roadsides or in the local bazar. For women who do not leave the household, they hear from neighbors or the head of household about point of purchase.

Even if a Latrine Producer is close to them, they will often go to multiple Producers in order to find the best quality of parts.

*“I see the rings on the roadside when I go to visit my sister.”*

*“I bought my rings from him and my slab from another one.  
Why? Because one does better rings and one does better slabs.”*





But food is more important and most households are food insecure.

Desire and knowledge of where to purchase is not enough for non-users who are food insecure. And most are.

Food is the number one priority and only until a household is able to secure “*three meals a day*” they will not likely to prioritize the expense of a latrine.

However, it is more than just prioritization. It is about self-perception. If non-users cannot manage to feed themselves and their families, they do not perceive themselves as latrine-ready because latrines are still very much an aspiration, for those who have very different circumstances than themselves.

“*What do I think of? Food? Or a latrine?*”

“*Living well doesn't mean having a toilet.*” .”



The health benefits  
of a latrine are purely  
emotional.

Because latrine users are living so closely to non-users who are actively open defecating or using poorly maintained fixed point options these users still are ill with bacteria borne infection and sickness.

There is little to no perceived difference in a positive change in health with latrine adoption. However, users have a *better* mental feeling as they are now free from shame, holding until darkness, and the dangers of open defecation.

*“I feel better now because I can go whenever I want and it is so close.”*



2





# Haor Areas

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People Product Service

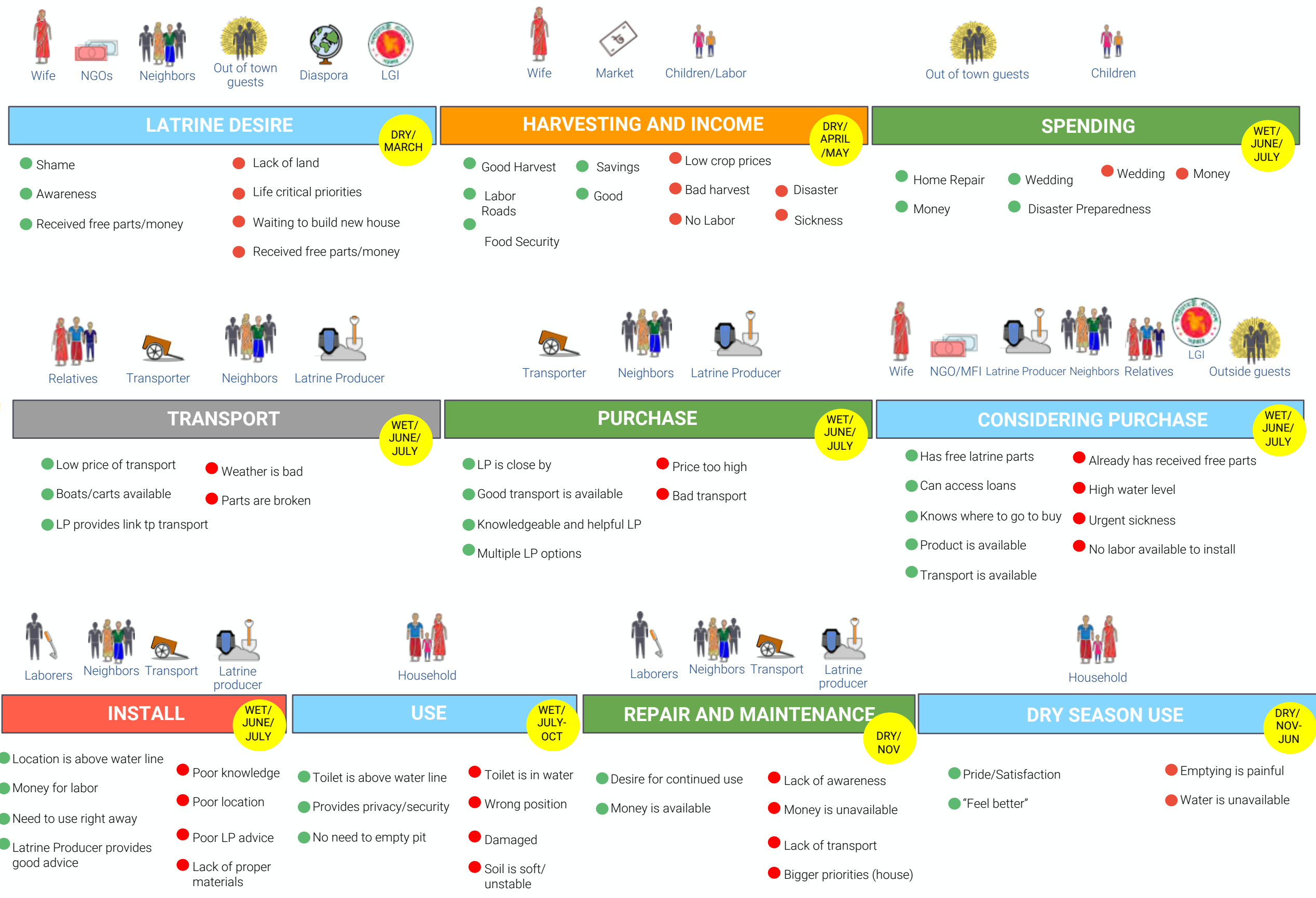
# Haor Latrine Journey

## LEGEND

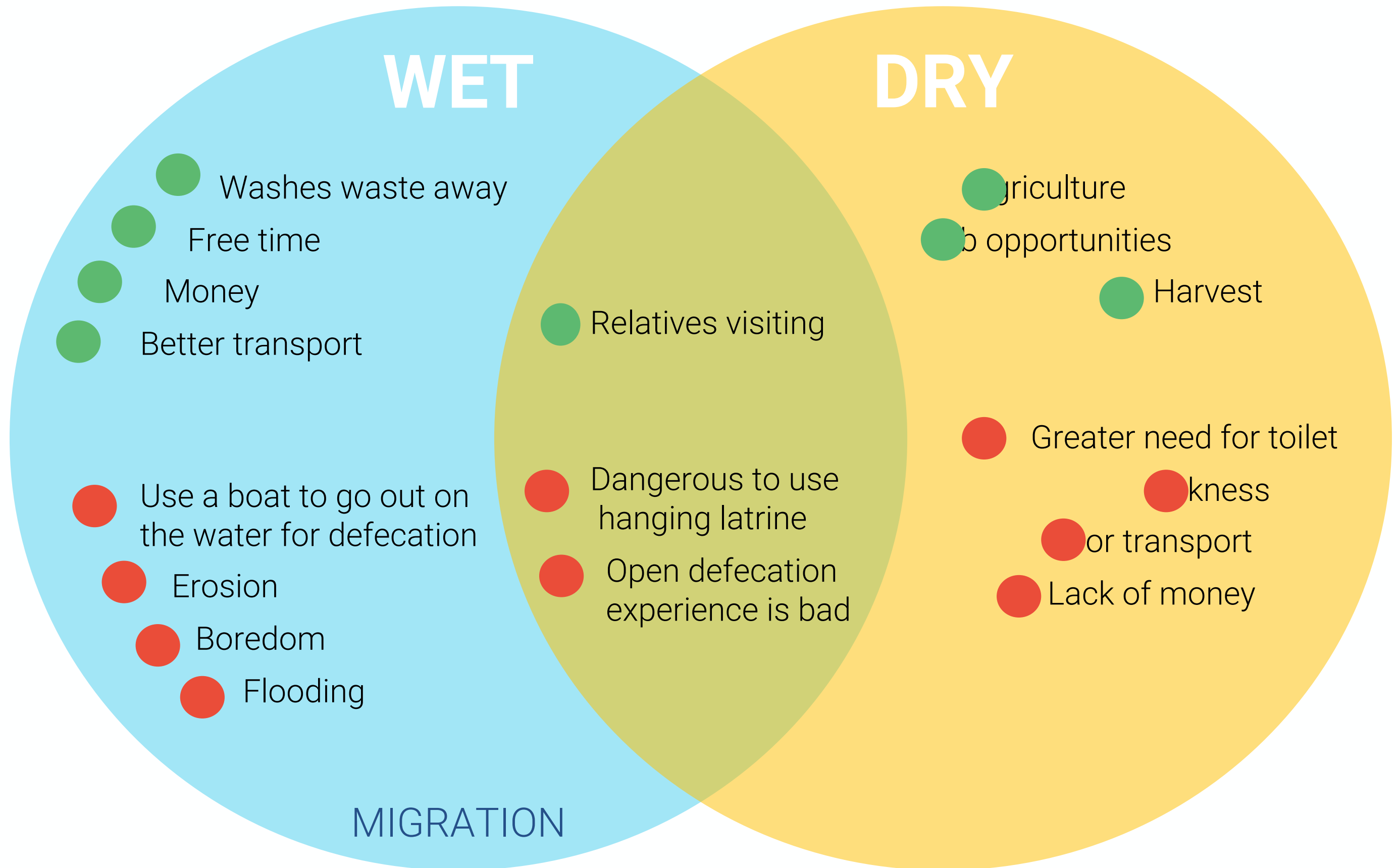
-  Influencers
-  Drivers
-  Pains/Barriers
-  Time



Karim, 32



# Haor: wet v. dry



# Life critical needs first.

In the haor, there are two categories of spending priorities: life and home. Life priorities are informed by food security first followed by: agricultural inputs, livestock and followed by things such as, medicine and children's education.

Only until the aforementioned have been satisfied households can one begin to think about the home and improvements that need to be made. Latrines are considered a home improvement but take second place to other essential items such as roofs, raising of mounds, home siding. Home improvement spending occurs at the end of the dry season in preparation for the wet season.

Only, and only until a household is “secure” financially and physically will they consider purchasing a latrine. People cannot live in a latrine.



Benefits must be  
seen.  
Literally.

Households do and will invest in extra, non crucial items but only if the benefits can be automatically experienced or seen by ALL household members like solar panels.



It is just a little  
water.

During the wet season, some households might flood a bit but it is considered more of an inconvenience than a disaster. If households do flood they will make sure to prioritize raising their mound but only just to the level of the last flood, nothing more, nothing less.





# A shitty situation.

Current non-latrine owners are doing one of two things: 1) open defecation or 2) using a fixed, point hanging or in-ground fixed point. Those using a fixed point hanging or in-ground fixed point are doing so because this is what they were told to do instead of open defecation. Those actively open defecating are doing so because their fixed point latrine has broken and they have no resources to fix it.

These latrines are used year-round and retrofitted and adjusted to flood water heights as needed.

Users think and call these apparatuses “latrines”. When the research team asked to see households latrines, we were shown fixed point hanging or fixed point ground.



CLTS worked.

But...

People think that if they are using a fixed-point solution they are not open defecating.

And it stopped with the wet season. Non-users believe that open defecation is the act of leaving one's house and walking to find a jungle to relieve oneself. Defecating in open, flood water from a hanging latrine or off of a boat IS *NOT* considered by users to be open defecation because it is different from their dry season practice.



# I need a lot of things first: land, money, rings.

## **Land:**

Non-users in the haor believe that they need “a lot of land” in order to purchase and install a latrine. This is due to the current practice of installing a latrine on the edge of a mound, far enough away from a household as they are considered “unholy” and have a bad smell. Furthermore, this perception is solidified by what non-users *see/observe* all over the haor areas: households placing latrines on mound edges.

## **Money:**

There is a very little price awareness amongst non-users, no one really seems to know what parts/pieces cost and more often than not, they think it to be far more expensive than it actually is.

## **Rings, rings, rings:**

In order to purchase and install a toilet, non-users believe that they need at minimum five rings because this is what they see in their communities so they believe it to be the necessary standard. They think that anything less than that will fill up too quickly.



# Wasted freebies are everywhere.

Many NGO's and even the government have flooded the haor markets with free latrine parts in the hope that households will install and use them. For the majority, this is not happening because non-users think they need a minimum of five rings to install and use. The freebies only consist of two/three rings and one slab. Non-user households will wait until they can afford to buy the *appropriate* number of rings.

*"I need to buy two more rings and then I will install it."* -  
Hanging latrine owner

In some rare instances in the haor, the freebies are a driver to installation and adoption but these households will *STILL* purchase additional rings before installation.



# No Man. No Latrine.

Male non-users in the Haor areas do not care where they poop. Women do. But it is ultimately the male head of a household's decision to purchase and install a toilet while the wife can suggest and encourage. Another challenge is that many extreme-poor households in the Haor have migrating male populations who are not home to use a latrine therefore, will not purchase one.

Women have zero agency or income.

Households remain latrine-less.



New house.

New Me.

Fresh start.

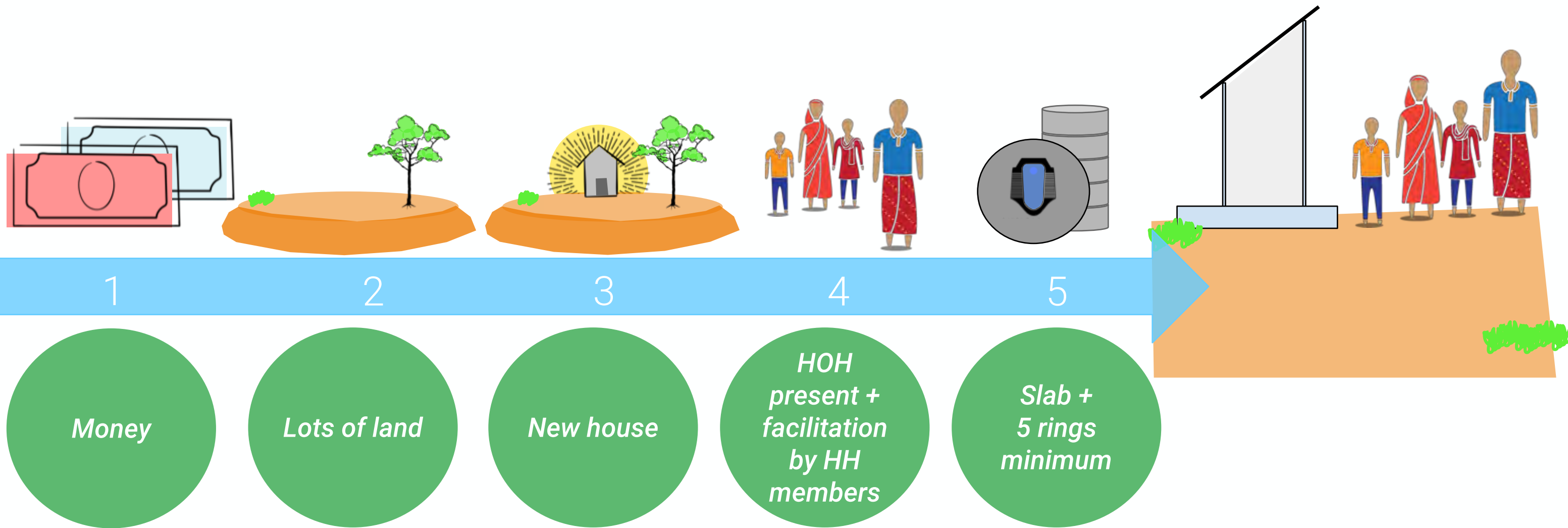
Newly purchased land is a driver to latrine purchase and adoption because users view this as an opportunity to do things right and start fresh. A new home build is a behavior-changing event and a user's self-perception changes from one of survival to one of increased affluence and social status. With this new social status, a latrine is considered necessary.

*"Having a latrine is a matter of honor and prestige."*



# Haor: New Toilet Perceptions

*So much harder than it actually is.*



# Life begins in the Wet Season. So do latrines.

After a household has made a communal decision that a latrine will be bought and installed, the male Head of Household will begin the purchase and installation journey.

This starts after harvest, at the beginning of the wet season, when households have the most money in their pockets when transportation is far easier (and far cheaper) with a boat, and importantly, when users have more time due to a lack of agriculture activities.

Additional accelerators to purchase are extra income from a good harvest, out of town guests, and marriages.





# Need a loan?

# No problem.

Informal and formal loans are ubiquitous in the haor area. Households are unafraid and have no problem with finding the appropriate loan option in order to complete their toilet purchase if they need it. The rate of repayment is very high and this behavior is deeply fixed in these communities due to the prevalence and work of BRAC, ASHA, and Grameen.



# “What do you want?”

Customers will go to their local latrine producer shop or to the bazar to purchase their latrine and they will tell the Latrine Producer what they want/need for their new latrine and this is based on what they think they need for a latrine: 5 rings and 1 slab.

The Latrine Producer will quote the price, bargaining will ensue and once a price is agreed upon the customer will leave with the merchandise and arrange their own transportation or if needed, the Latrine Producer will arrange for transportation paid for by the customer.

Depending on the Latrine Producer, a brief conversation will be had with the customer as to where to install/place the new latrine.

*“I ask them, where do you want to install?”*



I can do most of  
this myself.

Once the parts have reached the household, the head of the household will install the toilet with the help of his family/neighbors in order to avoid paying for sub- and mid-structure installation costs.

The exception: if a household has purchased an off-set pit latrine at which point installation by a mason is almost always demanded because an off-set latrine “*has a lot of parts*” and households do not have the confidence that they can properly install something so technical.

If a household has money enough for a tin superstructure they will purchase the materials and call a carpenter to install it because households view the superstructure as technical work that only a carpenter should do. If the superstructure can be seen from afar, households would like the superstructure to look nice/upscale as this new latrine is a sign of honor and prestige.



# Where do I install my latrine?

Direct pit or off-set pit, it doesn't matter. If space allows, all households will install their latrines on the very edge of their property below the flood water level because they want to use the flood water as a yearly pit-cleaner and this is the common, observed practice. As well as, the latrine is unclean/unholy, latrines smell and should be kept far from the house.



The existing technologies are just fine but the location IS NOT.

Once a latrine is installed on the edge of a mound it is only a matter of time before it fails because the rings are above ground and are not reinforced by anything and the earth erodes with flood water causing the mid-structure/pit/rings to collapse.

At the edge of the mound, latrines are subjected to large waves and currents which destroy superstructures instantly.



# Fecal Sludge Management?

Is managed by nature, the flood waters. Most current latrine owners are not properly managing their full pits in the dry season because they rely on the wet season to do this for them. It is easier, less expensive than hiring a sweeper and there is very little awareness that releasing raw sludge into the water is harmful. At the start of the wet season, latrine owners will actively open their pits so nature can do its job.

*“Why would I call a sweeper? I can just open the pit and it is cleaned by the water.”*

Furthermore, there is a belief that if they don't open their pits in the wet season, too much water will get in and destroy their latrine system.



Faeces in water is bad. But not how you might think..

Only if it is seen floating or if it smells or if there is backsplash from open water defecation. In the haor areas, there is an extreme lack of awareness surrounding fecal bacteria in flood water. For those who are aware, that is it wrong/bad, they see no other alternative because they just cannot afford a latrine.

*“Awareness will not solve the money problem.”* -NGO stakeholder



# Haor Practice & Perception Spectrum





# Rinse. Replace. Repeat.

Once a user has purchased and adopted a latrine they will continue to replace what is broken/damaged from season to season if their finances allow for it. They will return to the same Latrine Producer and purchase what is needed, bring it home, and install it in the same place and in the same manner as before. Latrine owners have experienced and seen the benefits of having a latrine in their homes and therefore will continue to have one at the household.



# Let's talk about the Latrine Producer.

## **They Like Profits.**

Latrine Producers are actively instructing households to place new latrines on the side of their mounds because 25% of their yearly revenue is comprised of replacement rings and slab parts.

Latrine Producers are not incentivized to educate customers on the benefits of a long-lasting, flood-proof latrine.

The one actor who can help in the misplacement is the Latrine Producer and he is not.

## **They Have a Lot of Competition**

Latrine supply is not a challenge in the haor areas. Latrine Producers/businesses are many and competition is prevalent. Purchasers have their choice of who to buy from/where to go and Latrine Producers have noticed a difference in where their customers are coming from -- years ago, customers would travel great distances but now most customers come from nearby.

*“People used to come from far away but not anymore.”*



Tough Competition.

Lowest Price.

Lowest Quality.

Due to the amount of competition, they must remain price-competitive in order to stay in business because customers only want to pay the lowest possible price. They begin to lower the quality of their product with incorrect material ratios or switch out more expensive materials to less expensive ones like brick chips/stone chips.



# Farmers First. Masons Second. Customer Service Last.

Latrine Producers still farm for personal consumption and some STOP their cement business altogether in the dry season to farm full-time for income because the profits of owning/operating a latrine business in the dry season are not enough.

All Latrine Producers in the haor were masons first and produced items for homes (pillars, livestock feeders) when a variety of different NGOs were brought in to establish the ODF and sanitation marketplace, many of these “masons” were given loans, training, and large orders for latrines several years ago and this has had one main effect on these masons but more so on the communities/customers they serve (the average education level of masons is 4th grade).



# Information Overload.

Too many NGOs, different trainings and, “right ways” of doing things has led to current Latrine Producers giving inaccurate and harmful information to customers.

*“I told him to put a hole in the ring so that things could flow out.”*

All Latrine Producers train their masons and can have anywhere from 1-5 masons employed at any given time. And the circle of misinformation, bad practice only perpetuates.

*“I have to train them, they can’t do anything without training.”*



Even though it is remote, the supply chain is working very well.

Latrine Producers expressed no challenges or discontent with either their suppliers or the availability of materials/supplies because these materials will always be available locally as they are used in all structures in the haor: cement, rebar, sand, stone chips. What is challenging for Latrine Producers at times are the latrine items which are not commonly used across all construction/manufacturing like Sato pans or pipes (off-set latrines only).

Wet or dry, Latrine Producers can always get what they need to produce latrines and they have their go-to suppliers for what they need.

*“It’s no problem, suppliers just send by boat.”*

*“The cement supplier is just down the road.”*



# Challenging environment, indeed.

A major stakeholder in the haor latrine market are the implementing NGOs and reaching scale and true success has been a challenge due to the inhospitable working environment of the haor areas. Field visits are remote, transportation is not easy/accessible in either wet or dry seasons, and staff retention is low due to the difficult nature of the job.



3

# Char Areas

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People   Product   Service



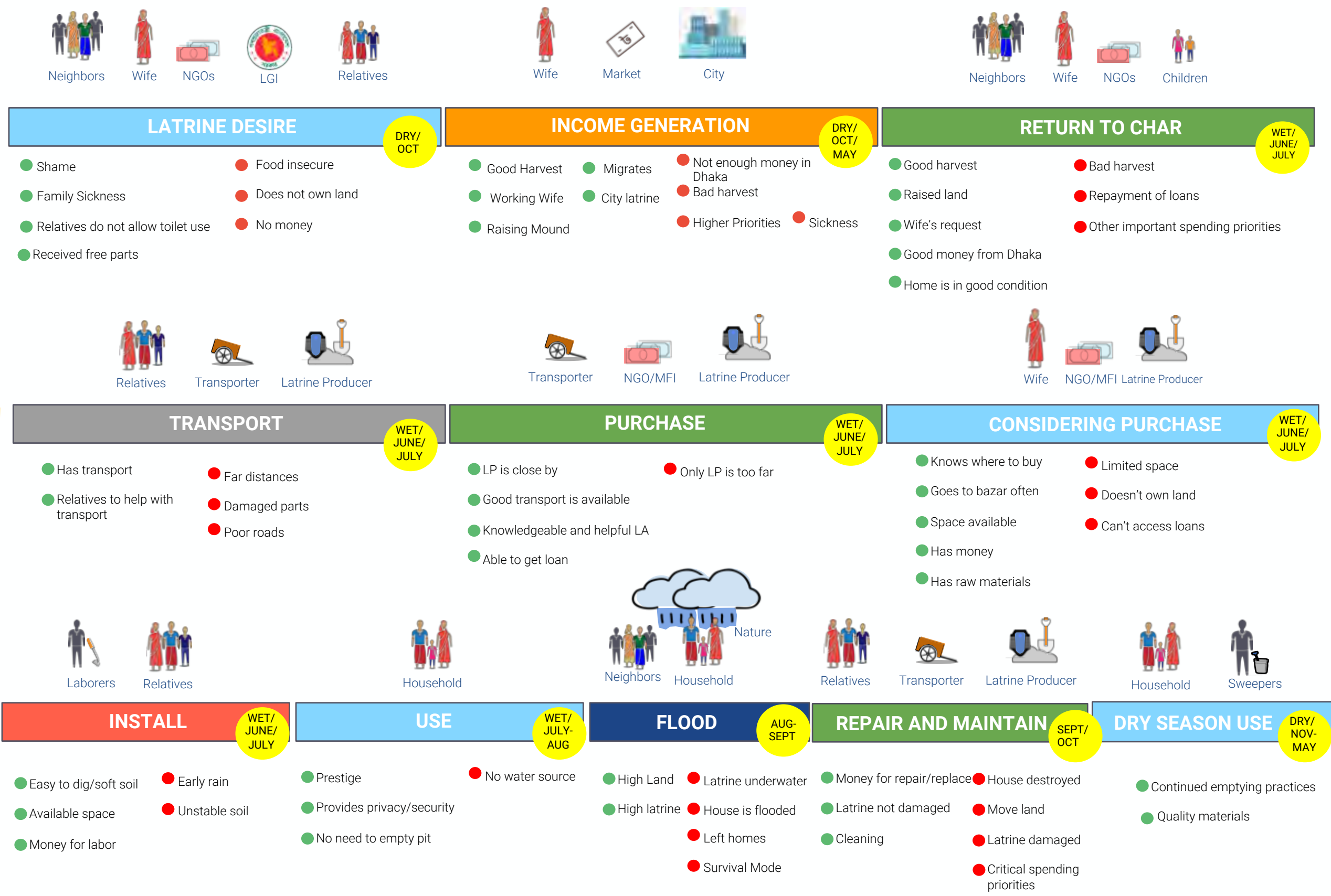
# Char Latrine Journey

**LEGEND**

- Influencers
- Drivers
- Pains/Barriers
- Time



Md. Korbanali, 30



My home.  
My land.

Residents living in the Char areas have lived there for generations because land is owned land that is passed down from father to son. Some households may move from time to time but will stay in the same vicinity and the only reason households will move is because their land/mound was washed away from the last flood.

The people of the Char are innovative, perseverant, and resilient and these behaviors are applied to all facets of daily life.



# Nothing can stop US.

Agriculture is the obvious income generating activity in the dry season and this includes high-value horticulture cultivation despite being hours from a nearby, large market. However, for many households, that income is not enough and so the head of household will migrate to larger cities for work but only for a short amount of time because they know they must return home to harvest and “prepare” for the wet season. Males and head of households always return to the char.

*“If I want to live I have to plan like this.”*

Upon return (May/June) with money in their pockets, households begin the yearly process of wet season/flood preparation which is nothing short of a science. These activities include mound raising, necessary house fixes (roof/siding), storage.

This preparation continues into the beginning of the wet season with the addition of new activities such as banana boat creation and raising/lofting all household items off of the ground.

*“I have been doing this since childhood.”*



# Survival first.

Once households basic needs are met: food, agriculture inputs, medicine, education and there is money leftover the first thing they will do is begin the task of raising their mound. Raising land is done in the dry season and depending the size of the mound households hire laborers to help or they ask family members for assistance.

Once land is raised, only then can households begin to think of extras like animals, latrines or more sturdy home materials.

*“Yeah latrine is good but house is important. I have three kids.”*

Extreme poor households are often unable to raise their land because of the costs/availability of soil and are at the mercy of nature, and neighbors.

*“With this money, we cannot eat three times. What will I do with the latrine?”*



# Flood?

# Or disaster?

External assumptions and beliefs about the flooding in the char are incorrect.

Male and female residents of the char appreciate and need the annual flood because they know that it is essential for their agricultural livelihoods.

*“Average flood is good for us. It helps to increase the fertility of the land.”*

*“It’s helpful, no flood is bad. It’s a loss.”*

In fact, households in the char even those with raised mounds expect a small amount of water to get into their house because this is how they have lived their entire lives.

It is when the flood water consumes a house (water up to neck level) when households begin to grow concerned. Yet, the entire family will stay together until impossible on beds lofted high within the home. This inundation only lasts on average 12-14 days between September-October and while it is considered dangerous and inconvenient, households manage.



# No household is ever an island.

If during these days the situation becomes too dire, the women and children will vacate their home and seek shelter on higher ground. If they have nearby relatives they will seek refuge there or they will go to neighbors homes on higher ground, some go to a government shelter.

And households will go together.

*“Everyone moves to higher ground together.”*

While this occurs, residents of the char rely heavily on one another and there is a sense of oneness, teamwork, and generosity of resources which slightly eases the pain of this very difficult time.

The head of the household does not leave during this time, he will stay with his house in order to do/save what he can.

*“I stay to protect the house.”*


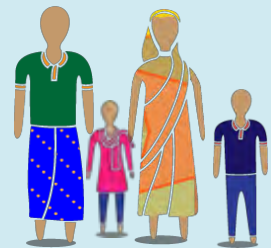
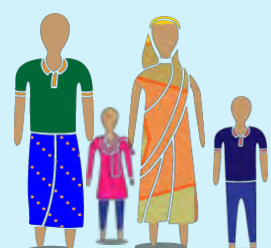
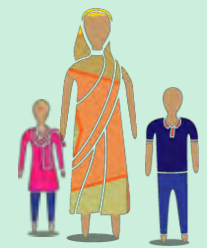
*“This is my land, this is my home.”*

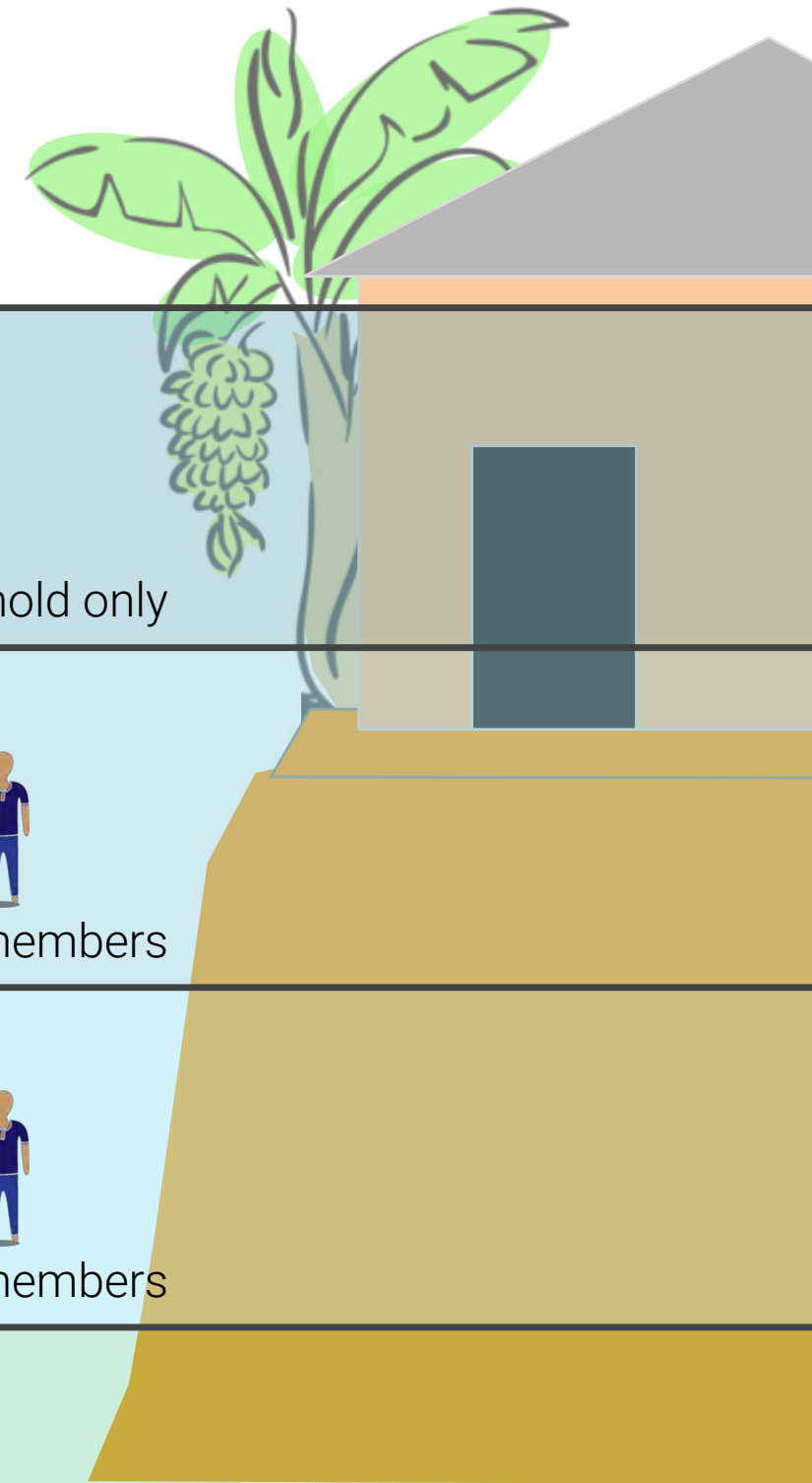
However, flooding like this doesn't happen every year and heads of households are constantly monitoring the weather during the wet season from their mounds, or at the bazar or shop television.

*“Last year there was no flood but two years ago there was.”*



# Dry. Wet. Flood. Disaster.

	Duration	Latrine Use?	Who's Home?	Activities
Disaster	Rarely occurs	No access; use banana boat or flood shelter	Group migration to higher ground Protection of home & valuables	 Head of household only
Flood	10-20 days/year	High latrine → access Others → lose access; use banana boats	Preparedness, household tasks (making banana boats, caring for children)	 All household members
Rainy season	2 months/year	Most have access Low latrine → lose access	Preparedness, household tasks Money is available	 All household members
Dry season	10 months/year	Access	Raising land, home improvements, migration (male hoh) Agriculture → harvest money	 Wife and children



# Replace and rebuild.

Once the water recedes households will survey the damage and begin replacing and repairing items based on what is critical first.

If households have lost everything: homes and their mounds have eroded they will look for a new place to live nearby and begin building their new home.





# Latrines for a lifetime. Basic. Effective.

Most households have a latrine. And some households in the char have been using a latrine for almost twenty years and some households have been using the *same* one for that long. Latrine subsystems last longer than homes in some cases.

Users in the char have very simple direct pit latrines with a concrete slab. Most households have one ring only but will complete the pit with handmade bamboo baskets to save on buying rings, the pain of transport, and because the bamboo is theirs.

This latrine lasted longer than the house...



# A subsidy success story.

Many users with latrines did not purchase all initial parts, they were given to households for free by the local government or NGO programs. However, users do purchase replacement parts as needed in order to maintain and use their latrines.

# But it's not all good.

Some households without toilets expressed discontent about the current subsidy system because they were looked over for freebies because they could not “*bribe*” the local officials.

Due to the extreme remote nature of the char areas, bad practices go unnoticed and good behavior does too, which does not help to incentivize actors.



# Everyone has their own agenda.

And it is rarely in favor of the extreme poor, or poor households.

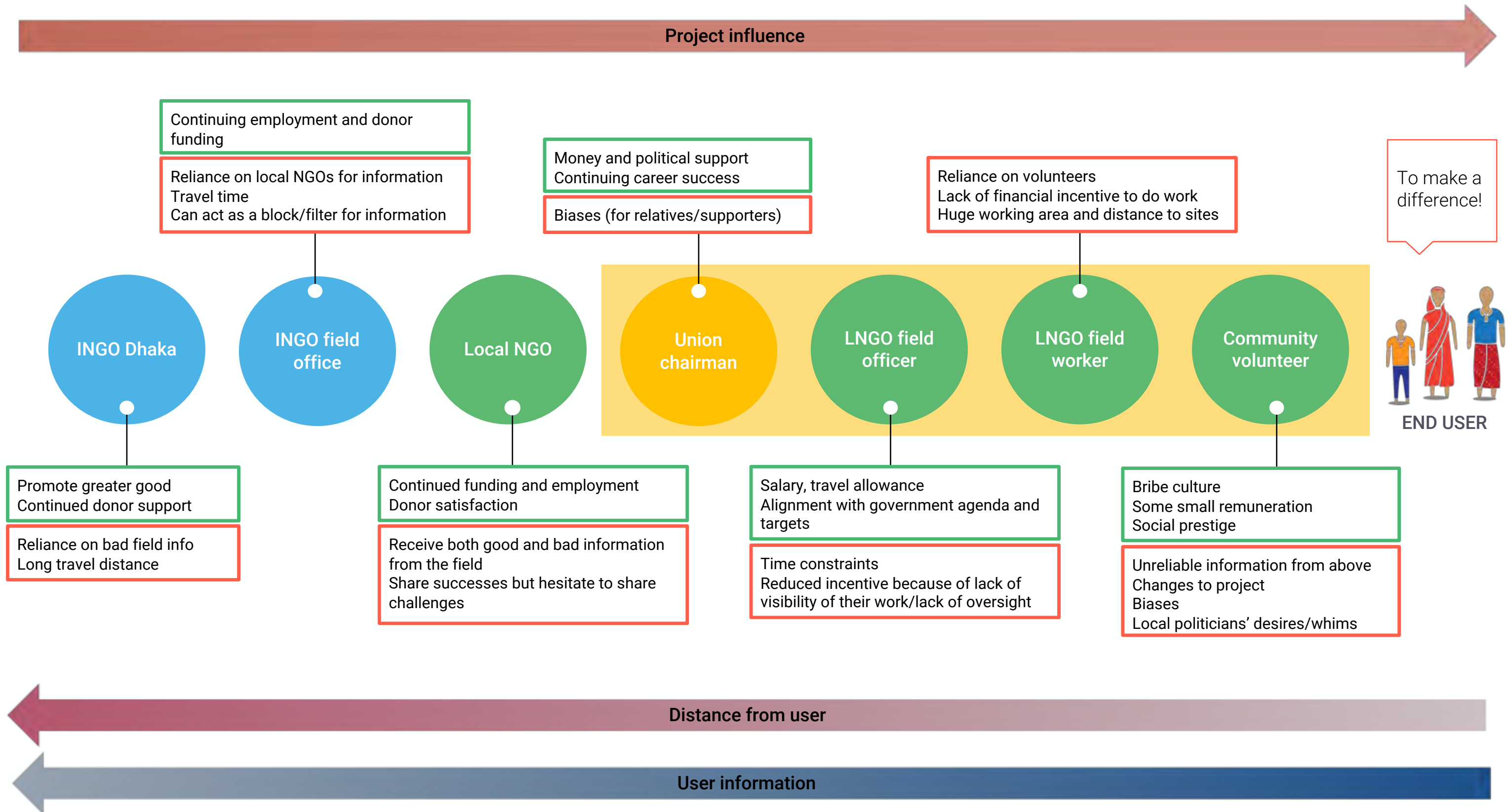
The char areas are extremely hard to get to in terms of time and physicality. International NGOs rely on local NGO's and governments to provide them with accurate information about ongoing interventions, impact, and beneficiaries because it is difficult for program officials to actively visit and observe these areas at all times. This leads to bad and incorrect information.

Each stakeholder and actor has different and sometimes conflicting motivations and desires and the loser in this system who is also the furthest from the money and influence is the beneficiary.



# Current Development Ecosystem in the Char

- INGO
- Local NGO
- Government
- Drivers
- Pains/barriers



# Where are the latrines?

Most latrines are below flood level on a mound because users have prioritized building up their homes first. Users cannot use their latrines during high flooding times. But they will try to use their latrines until it is physically underwater. During this time, residents use banana boats which they go off the side of. Everyone does this and has been doing it years.

*“I take the banana boat out, we all take the banana boats.”*

Users are aware of the unsanitary nature of this practice and understand the connection between bacteria in water and sickness. Sickness is greater in the wet season but they have no other choice and during this time, they have competing life-critical priorities.

All current latrine owners desire to have a latrine that is above flood-level and when asked what they would do differently with their latrine they say they would raise it to the height of their mound. But the mound must be raised first.

*“If I raise my land, then I must raise my latrine, too.”*



# Fix the house and the latrine.

All current latrine owners regularly maintain their latrines before and after the flood season just as they do with their homes.

Before the flood season, households hire sweepers to clean their pits or do it themselves following the recommended practice of removal and placing in dug holes around their agriculture lands.

Users do not open their pits during the flood season. They keep them closed because they know that if too much water enters the system, it will be ruined/fail completely.

Once the water has receded, it is the woman's task to clean the household latrine while the head of household surveys the damage and begins to replace what is needed.

Immediately, they travel to the closest bazar and purchase what they need which is usually one ring and a slab and hire their own transport to get it back to their household.

Distance and difficult roads/terrain do not stop the households from purchase or continued latrine use because all char residents are accustomed to these conditions: everything is brought to the household this way.



# Time to upgrade?

If current latrine users and non-users want to buy an improved solution they are ill-prepared to do so because they have incorrect pricing perceptions ranging from 1200 - 7000 Taka. Despite these misconceptions, users know where to go to buy a latrine, they are aware of transport costs, and are comfortable with installation.

Women are a key driver to an upgraded solution in the char areas.

*“I told my husband I needed a good latrine and told me he would go to the bazar and buy one.”*

The current substructure technology is perceived as working well by users: ring/slab configuration with direct pit. The aspiration is in the height and superstructure to make a new latrine “flood-proof”. Users know that in order for an entire latrine to last through flood seasons it needs to have concrete supports and tin structure.



# One player in town. And he's established.

Latrine Producers in the char have little to zero competition because the sanitation market is still quite immature and due to a lack of NGO presence. Neither customers nor Latrine Producers see this as a problem. Customers need latrine parts and Latrine Producers can supply them. It is purely transactional. Without price competition, Latrine Producers are not pressured to lower their quality which is very helpful for these areas.

However, char customers are quality-conscious as they desire their latrine parts to outlast the environment. If a Latrine Producer does not have the necessary quality on a certain part, customers will travel even greater distances purchase quality.

*“This guy has better rings but that guy has better slabs.”*





Nothing fancy  
here.

Latrine Producers in the char offer one latrine solution because there is no demand for others: rings and slab for a direct pit.

While Latrine Producers also produce other concrete household items, they are uninterested in diversifying their product portfolios because it would just add complication to their work and supply.

Because there is no demand and they flood too.



# Double the challenges.

Just like households in the char, Latrine Producers face the same challenges but two fold: at home and with their shops. At the beginning of the wet season, Latrine Producers bring all of their current product to higher ground with the hope of selling. They are only able to produce in the dry season because of this behavior, they do not have the space to produce as it is flooded.

Any additional product that they cannot before the wet season sell is a burden.



# Dry Season Supply Chain.

Once the char dries out enough, Latrine Producers can get back to work and prepare for the influx of households coming for replacement parts. Materials are procured from the closest possible location (even India) and the Producer begins to bring things piece by piece to his shop where his masons are waiting and ready to begin the production.



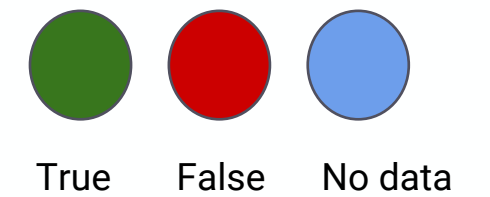
# 4 DESIGN PRINCIPLES RECOMMENDATIONS

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1 Design Principles

3 Next Steps

2 Ideas



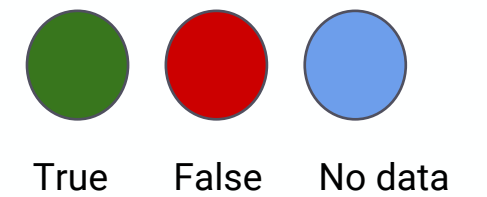
# Assumption Checkpoint. How well did we do?

## People:

- People cannot afford latrines ●
- Latrines are not considered a “need” ●
- Current family dynamics do not allow some household members to use toilets ●
- Lack of awareness regarding improved latrines link to good health ●
- Availability of space to install latrines ●
- Expect subsidized latrine ●
- Latrines are a luxurious product ●
- Toilets should not be near the house ●













## Product:

- Appropriate product is not available. ●
- Product transportation due to weight. ●
- Can't afford high quality due to price point. ● ●
- Unavailability of raw materials. ●
- Maintenance is tough (pit emptying) due to design. ●
- Unavailability of diversified products. ●
- Unavailability of disaster resilient products. ●
- Unavailability of substructure for haor and char area. ●
- Use of latrine by pregnant/elderly are not suitable. ●



# Assumption Checkpoint. How well did we do?

## Service:

- Threshold demand: price: purchasing capacity
  - Quantity
  - Awareness about quality sanitation link to health  
- Supply system (haor): long distance to travel to get to the product, because of this, users use a hanging latrine. 
- Long distance for transport ---> higher price, hard to get repair service 
- Home to shop distance is very far.  
- Promotion: not many channels available  
- The only option is radio broadcast 
- Other NGOs are there with similar programs, they could help with awareness/demand creation  
- Old technology is inferior. 

The following ideas were co-created during the fieldwork and rapidly validated & iterated during interviews/interactions with users, actors, and stakeholders.

These ideas will need to be tested during the next stage: Create.

# Design Principles: How Might We...

---

## The Haor

### People

....ensure that households in the haor are aware that the current latrine practices are incorrect and must be addressed.

### Product

....design a product solution that can be used in the wet and dry season.

....design a product that does not add additional cost.

....design a product that will stand the test of time throughout the seasons/years.

### Service

...educate and guide households on the proper placement of a latrine.

....encourage and incentivize Latrine Producers to produce high quality parts and to grow their business..

...relieve the pain of cleaning.

...work with what is already there.

...leave nothing to chance.

## The Char

### People

....reinforce good latrine practice as being a year-round activity.

### Product

....design a product solution that can be used in the wet/flood and dry season

....design a product that is a natural upgrade.

....design a product that will stand the test of time throughout the seasons/years.

### Service

...target the right customers, at the right time.

....provide latrines and customers with easier access/transport.

...bridge the gap between the customers and the implementing partner to ensure full transparency.



# General

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You can't sell a toilet to someone who is hungry.

There is a great opportunity to build off of existing Shouhardo III programming and impact data as a sequential intervention. With current data, WASH implementation and field operations can accurately target communities that may now be food secure, or have seen a positive difference in income, built up their mounds/homes.

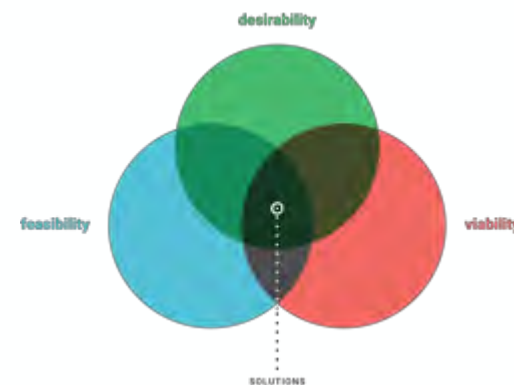


# General

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Seasonality is everything. And so is sensitivity.

Some communities may be better off than others. Focus first on those which are better off for latrine intervention as some communities, depending on the time of year are merely trying to survive.

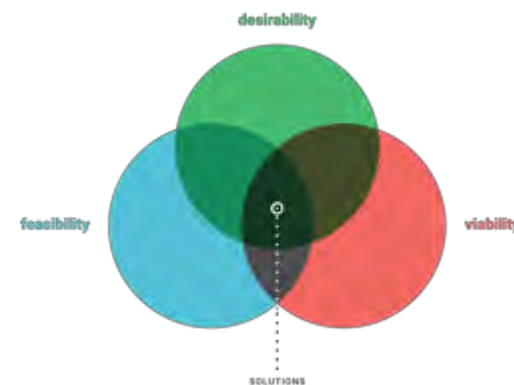


# General

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Awareness and Messaging:  
Open Defecation is year-round.

Non-users must be made aware that their current wet season practices of defecating in water are unacceptable and still considered to be open defecation.



# General

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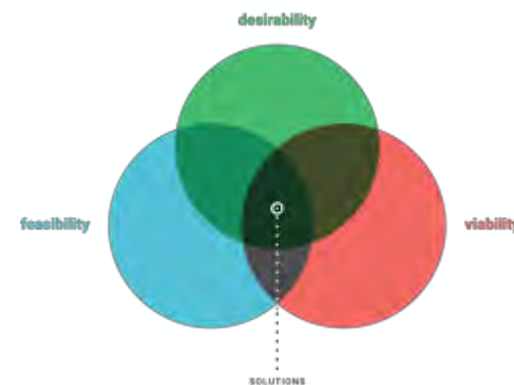
It can't be business as usual in these areas.

Bad behaviors and practices have gone on way too long in these areas and if we want to be successful in getting people toilets in the char and haors, we must be there. Often.

We must operate differently than the mainland because these geographies and users/actors face different and extreme challenges.

The implementing partner must be directly involved at a field-level and provide consistent and accurate qualitative and quantitative data to all stakeholders so that representation has a clear understanding of what is happening.

Pivot, iterate, if needed.

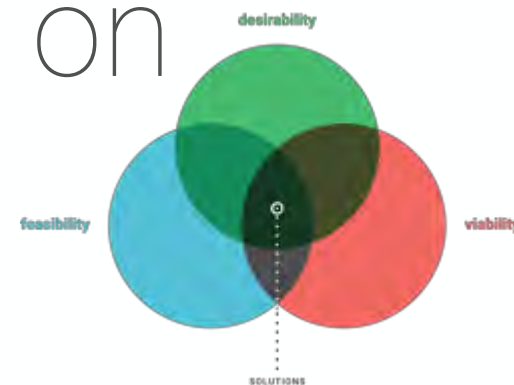


# General

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People just want toilets they can use year-round. There is no user need or desire for a magical product innovation in these areas. Nor can it be sustained.

Focus on what is possible to improve, build on what is working well.



# General

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A single, agreed upon definition of what an improved latrine is for the haor and char areas. Include behaviors so that it can be communicated to households.

Idea: Slab/pan with water seal. Sealed, buried pits (3 or more) with no smell or flies. Contents never released into water. Regular cleaning with sweeper or following best practice. 30 ft from tube well.



# Haor #1

---

Awareness must come first.

*Why?*

In order to create a demand for sustainable and hygienic latrines users and non-users alike must understand that certain current behaviors are unacceptable.

This includes messaging and training for the Latrine Producer which should be measured.

Key awareness/Behavior Change Concepts:

- Faeces in water is dangerous/unacceptable.
- No latrine: You don't need 5 rings or a lot of land to install. Let's use what you have. A LATRINE IS BETTER THAN NO LATRINE.
- A latrine won't smell if properly cleaned and installed.
- Latrine Users: You cannot release your sludge into the water, you must have it cleaned properly.
- Latrine Producers: Here is the right place to suggest install and here is the right insall plan.



Corresponding Design Principles:

...ensure that households in the haor are aware that the current latrine practices are incorrect and must be addressed.

...educate and guide households on the proper placement of a latrine.

...work with what is already there.



# Haor # 2

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## Honest Broker.

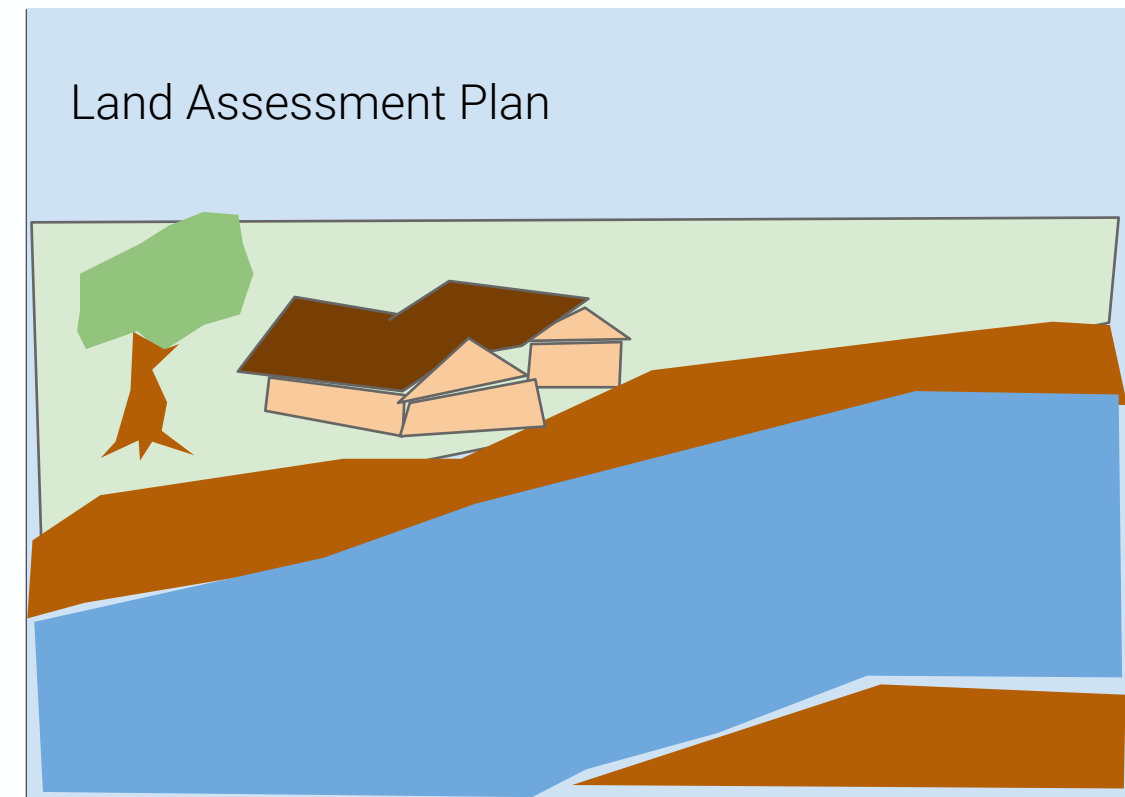
### *Why?*

Users and Latrine Producers cannot be trusted. The implementing project ought to consider a facilitator role that works as a intermediary between the household and the Latrine Producer.

This facilitator will have a few different tasks to ensure quality and control over latrine purchases and installations:

### Community Outreach/Land Assessment Plan

- Visits each community and holds latrine presentations. Interested households will then run through a Land Assessment Plan with the Facilitator. This plan will include ideal placement and number of rings based on the survey/water level, etc. Furthermore, this Facilitator can target households that have UNINSTALLED parts and take the necessary steps to ensure that those household are not misinstalling before it happens.
- The household takes this Plan to a project-recommended LP for purchase of what is needed and recommended for their mound.
- The facilitator returns to assess and sign-off on properly installed latrines.



### Corresponding Design Principles:

- ....ensure that households in the haor are aware that the current latrine practices are incorrect and must be addressed.
- ...educate and guide households on the proper placement of a latrine.
- ...work with what is already there.
- ...leave nothing to chance.





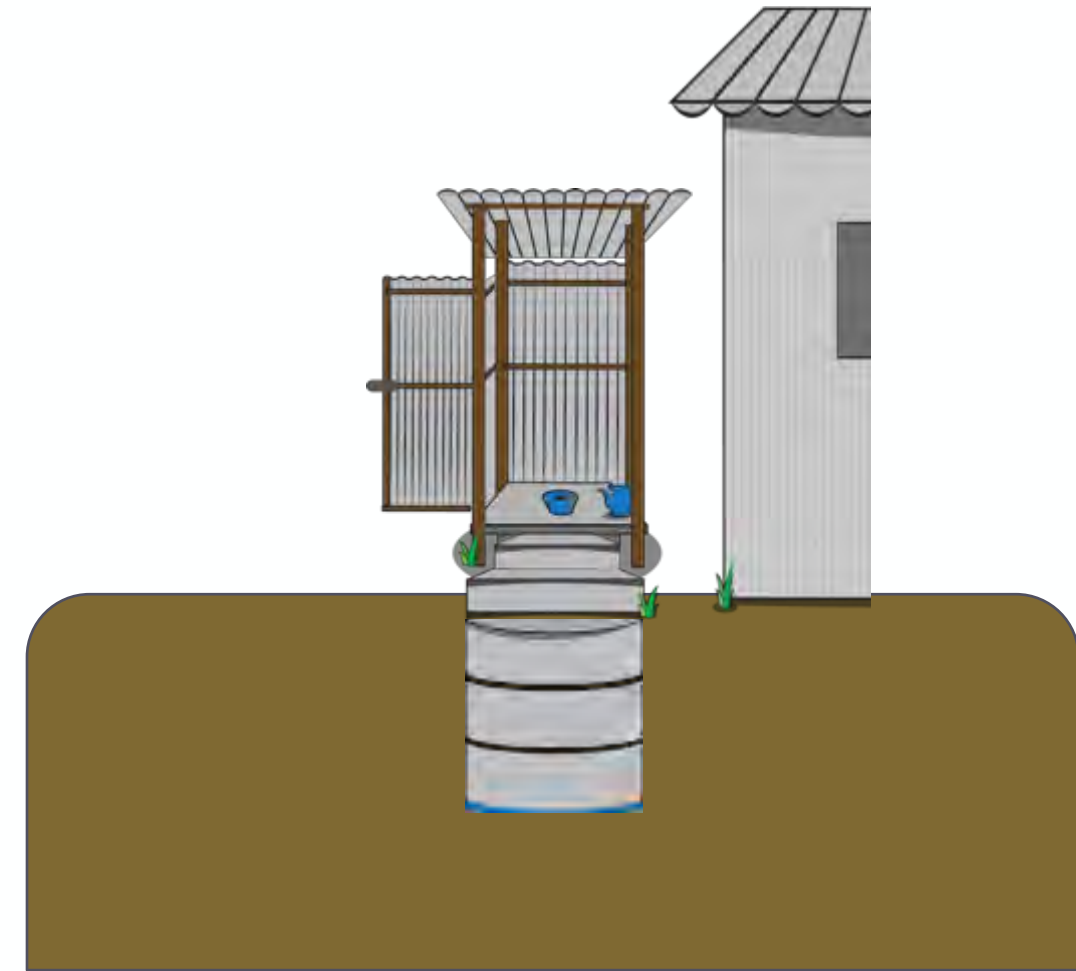
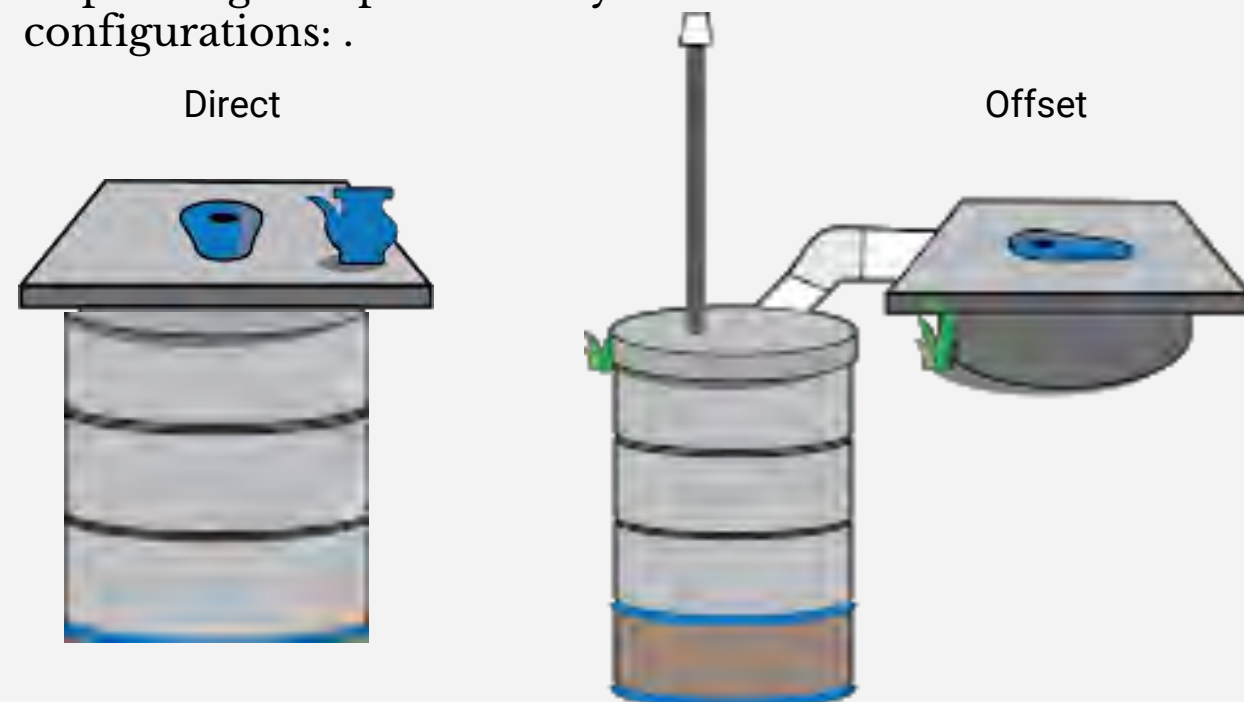
# Haor # 3

Away from the edge. In ground.

*Why?*

The current product won't fail if is installed correctly and away from the edge of mound and built up to home height. ALL rings must be in-ground.

Depending the space/money available: we can use one or two configurations: .



Corresponding Design Principles:

....design a product solution that can be used in the wet and dry season

....design a product that does not add additional cost.

....design a product that will stand the test of time throughout the seasons/years.



# Haor # 4

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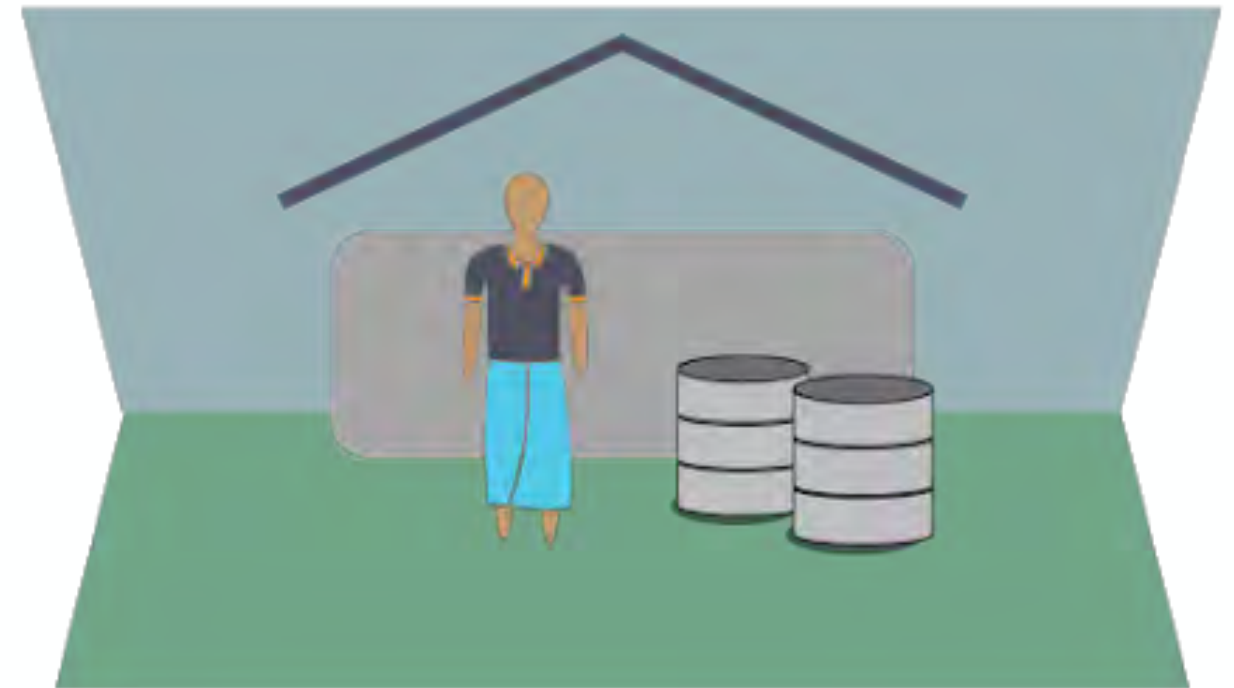
## Upgrade Latrine Producers.

### *Why?*

Because once latrines are done properly, Latrine Producers will notice the difference in their pockets/profit from not selling so many replacement parts (-25%).

The intervention must allow key Latrine Producers will the opportunity to grow and diversify their product/service offerings:

- On payroll/staff year-round Sweeping services
- On payroll/staff year-round Carpenter services
  - Materials
  - Installation
- Lighting for latrines
- Auto-install built into pricing



### Corresponding Design Principles:

....encourage and incentivize Latrine Producers to produce high quality parts and to grow their business..

...relieve the pain of cleaning.

...work with what is already there.

...leave nothing to chance.



# Char #1

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Raised latrines, to house level (at least).

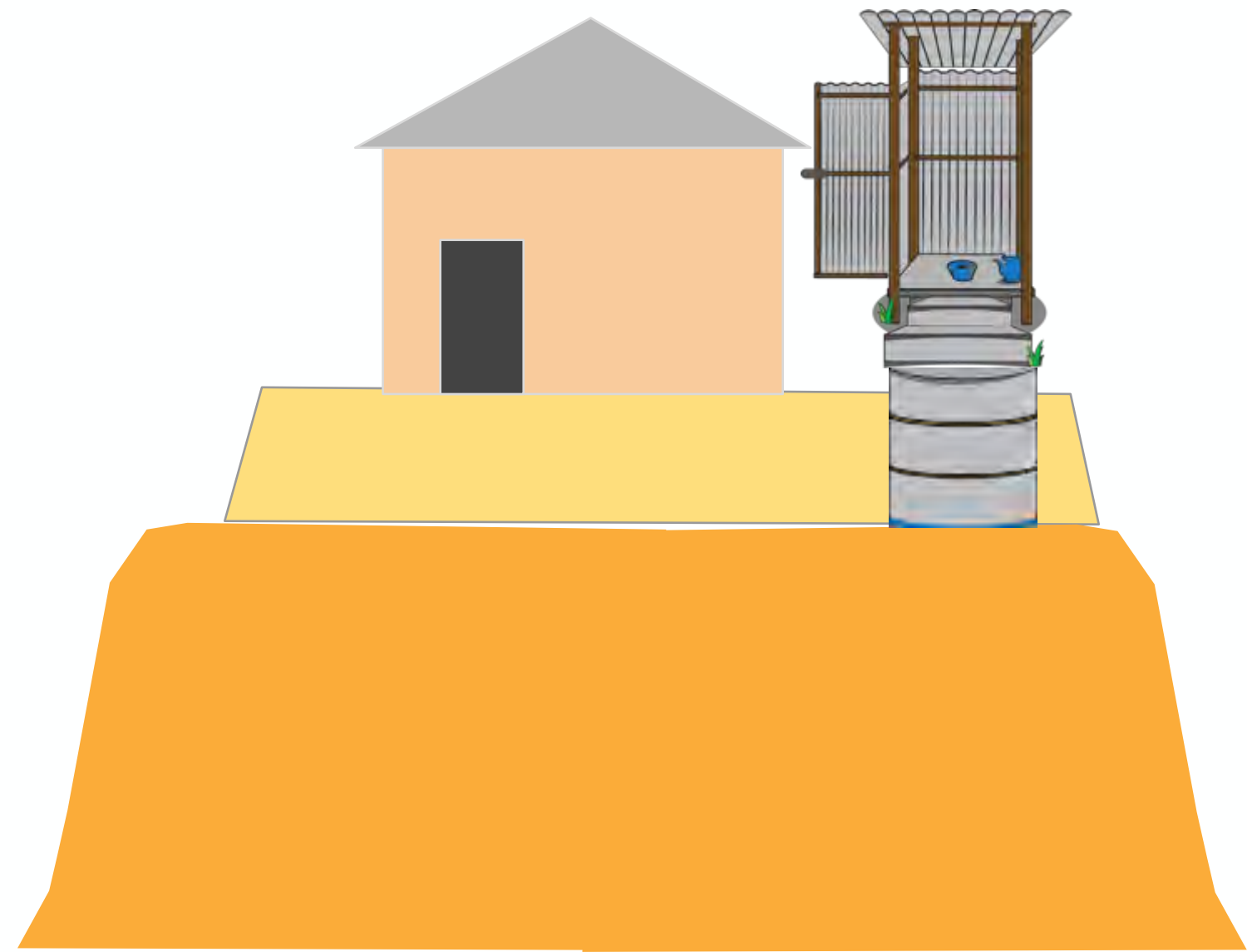
## *Why?*

For those households with raised homes/mounds it is clear progression to raise a new latrine to this level.

Households raise their land above normal flood level and desire their latrines to be this high, too in order to use it year-round.

Pits should be direct, in-ground with a substantial substructure similar to the house.

The target for this solution are households with raised mounds and who have latrines. This is an upgraded solution.



## Corresponding Design Principles:

....design a product solution that can be used in the wet/flood and dry season

....design a product that is a natural upgrade.

....design a product that will stand the test of time throughout the seasons/years.

...target the right customers, at the right time.



# Char #2

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## End of Wet Season Sales Showcases.

### *Why?*

Maximize the existing end-of-wet season behaviors by bringing Latrine Producers and product directly to customers (closer than the bazar). Advertise in advance and have credit/loan representatives there.

Instead of purchasing replacement parts, households can upgrade to a “flood-proof latrine”.

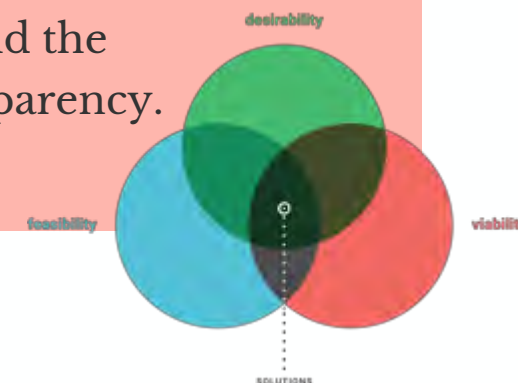


### Corresponding Design Principles:

...target the right customers, at the right time.

...provide latrines and customers with easier access/transport.

...bridge the gap between the customers and the implementing partner to ensure full transparency.

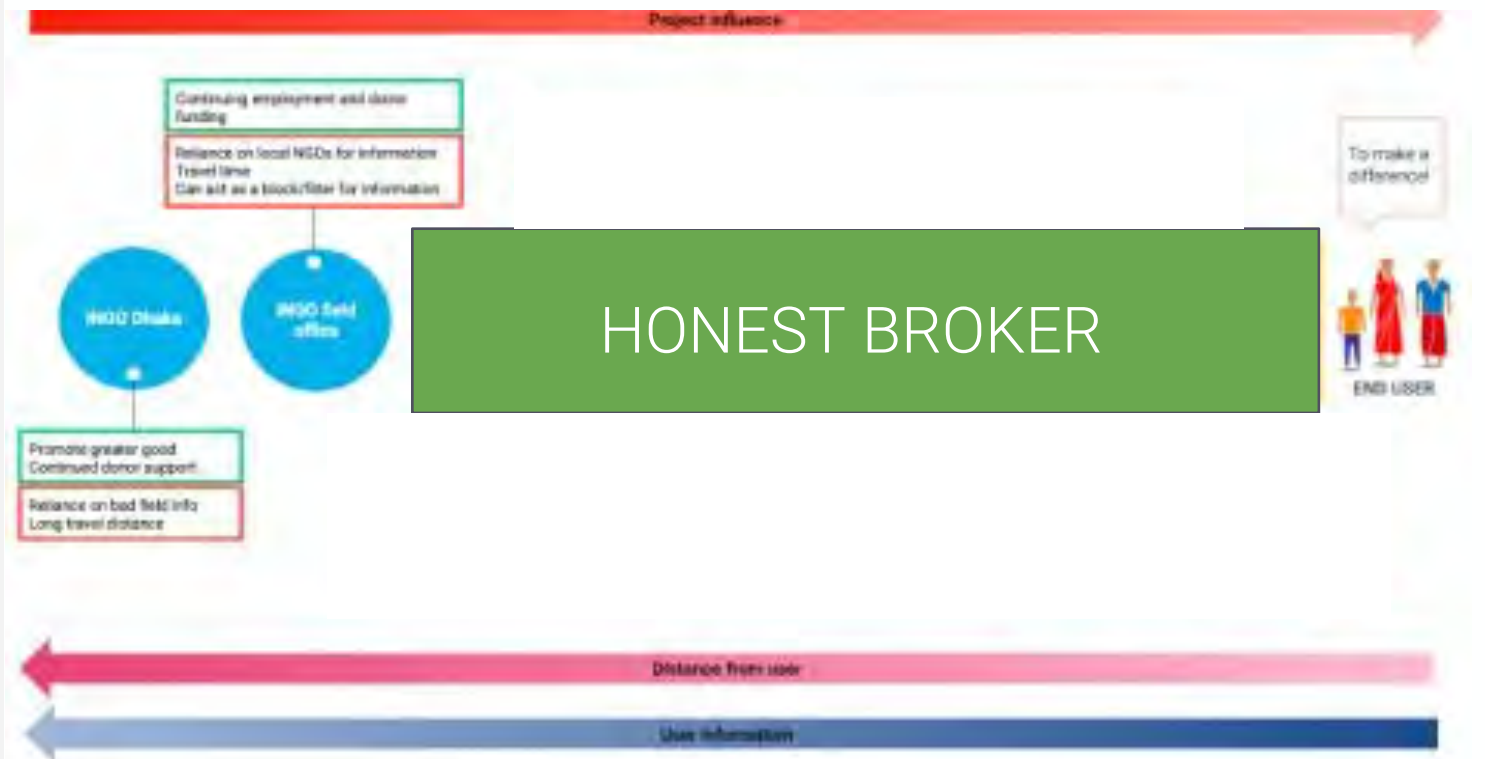


# Char #3

## Honest Broker.

### Why?

Local NGOs and government officials cannot always be trusted in the char areas. There needs to be a Community Facilitator in the char areas who is able to visit often and oversee/monitor what is happening with the current environment, users, Latrine Producers, and continue to build up the capacity of households and instill good latrine practice.



### Corresponding Design Principles:

...bridge the gap between the customers and the implementing partner to ensure full transparency.

....reinforce good latrine practice as being a year-round activity.



# Q&A

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# NEXT STEPS

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## End of HEAR Phase

- iDE to share deep dive report for feedback from PROWASH & SHOUHARDO III team
- Submit final report incorporating feedback

## Start CREATE Phase

- Develop activity plan for CREATE phase based on agreed deep dive recommendations
- Share field mobilization plan and activity plan with SHOUHARDO III for coordination



THANK YOU.

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