

LEARNING BY DOING: *Employing Human-Centered Design Techniques to WASH*

Summer 2019



USAID
FROM THE AMERICAN PEOPLE

 **PRO-WASH**
Practices, Research and Operations
in Water, Sanitation and Hygiene

iDE

WHO ARE WE TODAY?



Abby
iDE Design GURU
Facilitator



Jeremy
iDE Bangladesh GURU
Provocateur



Molly
iDE WASH GURU
Co-Facilitator

OUR TIME TOGETHER LOOKS LIKE...



8:30a: Introduction and KO

9:30a: HEAR

- Testing Assumptions
- Insights and Common Themes
- Empathy Map
- Stakeholder Map

12:30 Lunch and discussion (Julia -FHI360)

1:00p CREATE

- Persona Creation
- Rapid Probleming - Low, Medium, High
- Parallel Design
- Analysis Venn Diagram
- Storyboard

2:30p T&T Break

2:45p CREATE

- Rapid Prototyping

4:30 Report Out by Haor and Char groups

5:00 What did iDE do?

5:15 Close and Next Steps

6:00 Cocktail at Chophouse and Brewery

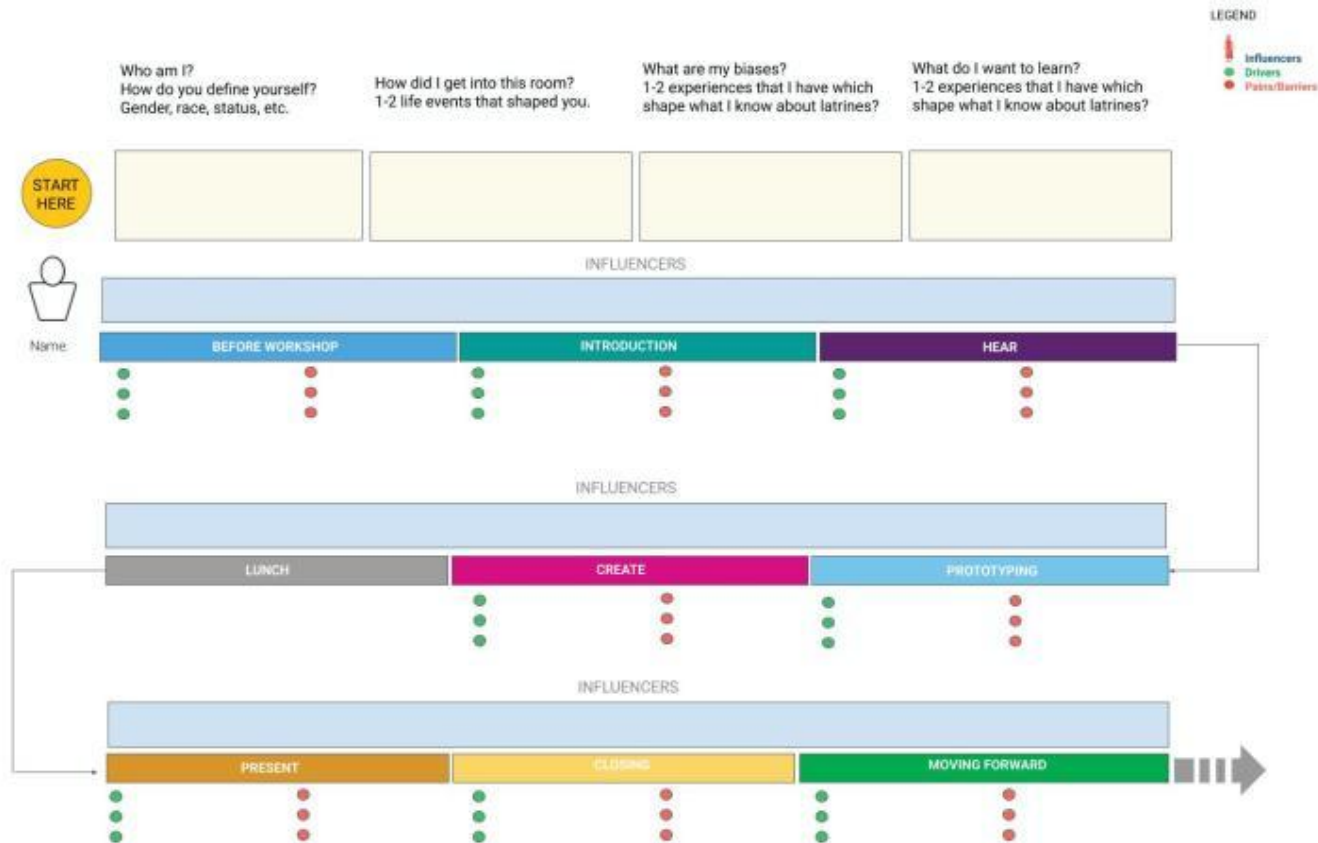
WHAT WE NEED FROM YOU...



- **Patience**
- **Trust (in the process)**
- **Engagement**
- **Curiosity**
- **Experimentation**
- **Openness to ideas**

Get what you give. Give 100%,
get 100%.

YOUR JOURNEY MAP



MORE IS MORE.

**I WANT TO
CHALLENGE...**

**I WANT MORE
INFORMATION...**

**I WANT TO
DISCUSS...**

HUMAN RAINBOW





LUCKY IRON FISH

SHOW OF HANDS (BE HONEST)..

Who here has thought the following during a project, a program, or an intervention?

- The research was good but we totally missed the mark on adoption. And didn't really have impact we were looking for?
- The project and implementation plan just never seemed technically feasible for this market.
- Cool ideas! But how in the world is a poor person going to afford that?

Don't worry, so have we!

SO HOW CAN HCD HELP YOU?



“I want to understand the market and consumer behaviors quickly so I can generate solutions that work..”



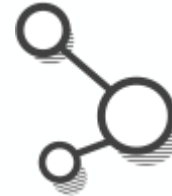
“I have an existing product / service / technology. I want to enter a new market with it.”



“I have bottlenecks in my system and don’t understand why and want to improve it.”



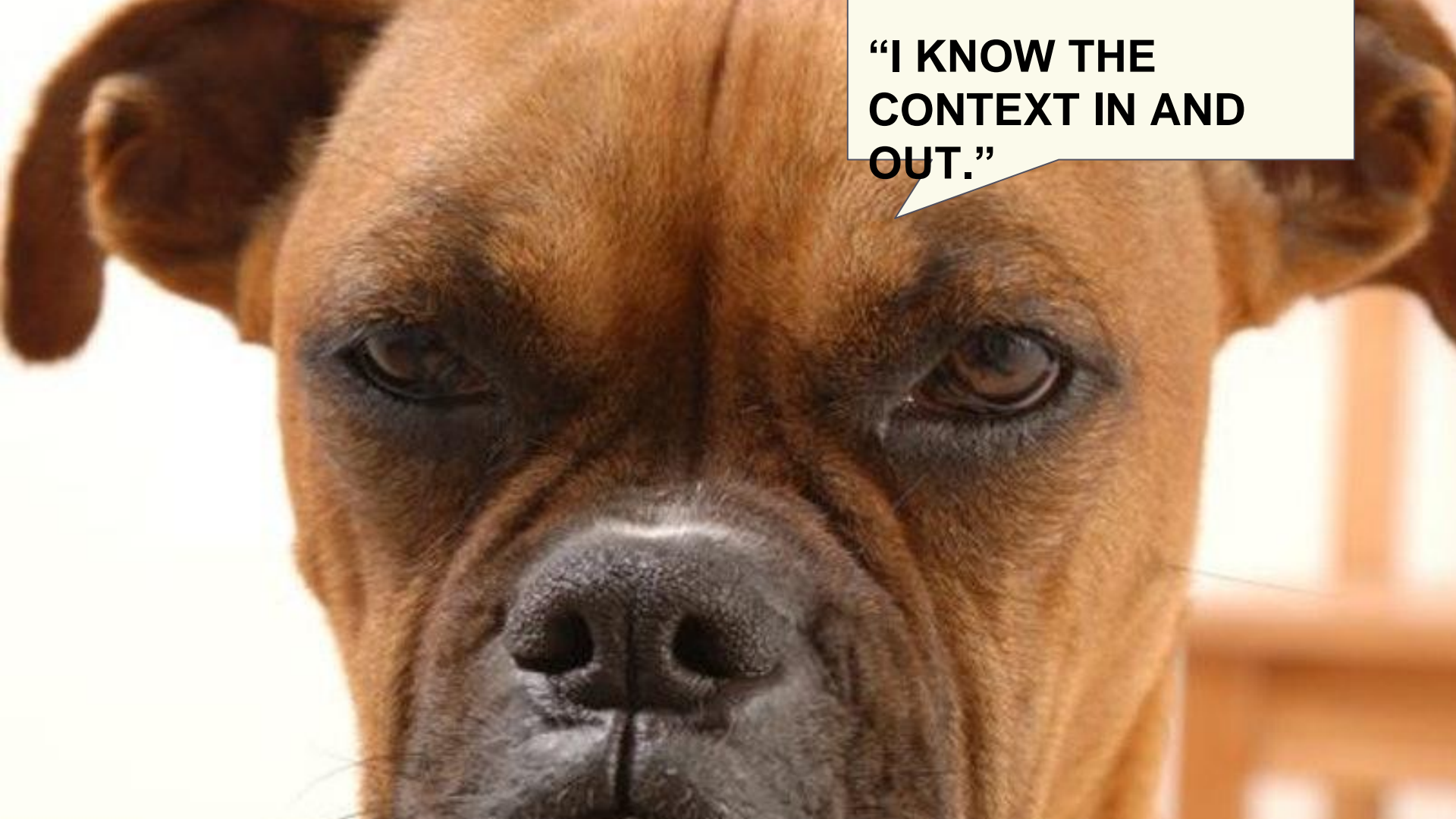
“I have an existing and loyal market. And I want to introduce a new product or service.”



“I have an existing sales channel. I want to introduce a new offering.”



**“I ALREADY DO
RESEARCH.”**

A close-up photograph of a brown dog's face, likely a Boxer, looking directly at the camera with a serious expression. The dog's fur is a rich brown color, and its eyes are dark and focused. The background is blurred, showing hints of a wooden chair.

**“I KNOW THE
CONTEXT IN AND
OUT.”**



**BU T THIS IS
DIFFERENT.**

Where Human-Centered Design is working in WASH



Where Human-Centered Design is working in WASH



OUR EQUATION

Participatory Action Research (Probably what you're already doing)

"Action research is a democratic and participative orientation to knowledge creation. It brings together action and reflection, theory and practice, in the pursuit of practical solutions to issues of pressing concern. Action research is a pragmatic co-creation of knowing *with*, not on *about*, people." (Bradbury 2015, p.1)

PAR is a cornerstone of development research drawn from anthropology and sociology.

It is often....

problem-focused - formative - iterative - ethnographic - rapid - participatory research



OUR EQUATION

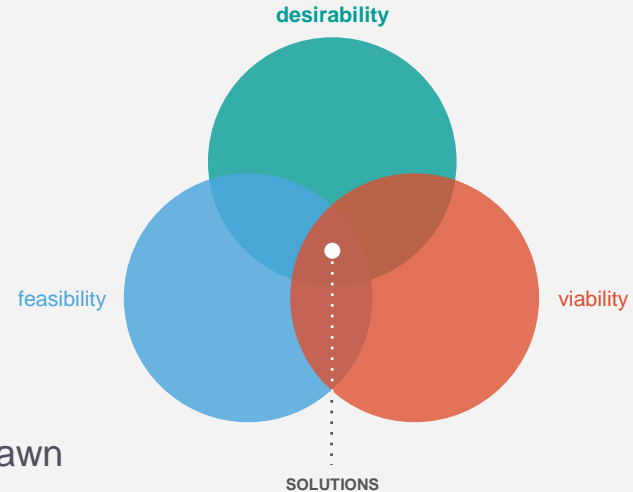
Participatory Action Research

+ **Design Thinking Lens**

DT is a way of designing solutions to problems drawn business entrepreneurship, marketing and design.

It is often also....

problem-focused - formative - iterative - ethnographic - rapid - participatory research



DESIGN DOING

Participatory Action Research

+ Design Thinking Lens

+ **Actual Action**

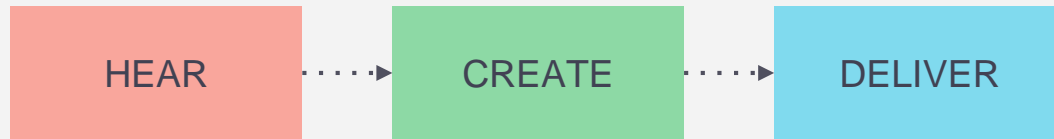
Design Doing

DD is **iDE's** way of bringing these two schools of thought together through actual action. Much of design thinking remains unimplemented, iDE has experience in bringing solutions through to action - from our treadle pump days to the easy latrine.

HUMAN-CENTERED DESIGN

Human-centered design a type of design thinking that helps us put people at the center of our work

- originates from the private sector
- adapted by BMGF, iDE and IDEO for international development
- not just about designing products/services - focused on holistic solutions



hcd project cycle

DIFFERENCE ABOUT HUMAN-CENTERED DESIGN

Leading with people, not problems

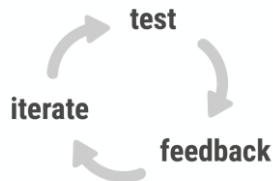
Listening, observing, developing ideas, getting feedback, and engaging stakeholders throughout - people are always at the center of the process. Taking a creative approach to problem solving, talking to users and testing ideas early means creating solutions from insights that have come from real people and refining solutions along the way.

Co-creation and idea generation

After digging deep, learnings and insights are used to generate informed ideas. *Co-creation* is a process where people with different expertise are invited into a session (designers, researchers, and engineers etc.) to co-design solutions on a specific topic. The process of working with different minds and experience helps to provoke innovation.

Rapid prototyping and early testing

Ideas are made tangible via *rapid prototypes* (quick samples) that are developed from the outputs of a co-creation or ideation session. These are low fidelity conceptual solutions (products, services, systems, campaigns...) which are then put in front of relevant audiences in order to get real feedback.



HUMAN-CENTERED DESIGN

Embracing the squiggle

The HCD process can be chaotic and messy in the beginning (like the squiggle). It is based around as much unbiased learnings as early as possible, with ideas going through rigorous testing in the *Create* stage before implementation. Trusting the process and embracing the unknown allows for many ideas to emerge and the best ones to be continually developed.



HEAR

Research

CREATE

Generating ideas
Prototyping + testing
Concept development

DELIVER

Implementation

HOW IS HCD TRULY DIFFERENT FROM OTHER METHODS?

- It is not about Quantity it's about Quality of information.
- Our respondent sample size depends largely on scope, time, budget but can range anywhere between 35-300, mixed respondent groups.
- We could into the “WHY” behind what people say and do in order to understand behaviors/choices and uncover latent needs/desires.
- The goal of HCD Research is not the information itself, but what to do with the information. The Human Centered Design Research goal is an enabler. It enables the transformation of information into ideas. The goal of HCD research is to inspire new ideas (new products, communication proposals, etc).
- Since the goal is to "enable new ideas", the focus is not only on identifying major common behavioral patterns, but also on looking for "unique" individuals who are doing "unique" activities, and can be a source of inspiration. The approach is both analytical and creative.

iDE's HCD MINDSET



Iteration

Empathy

Optimism

Learning
from failure

Creative
Confidence

Making

Embracing
Ambiguity

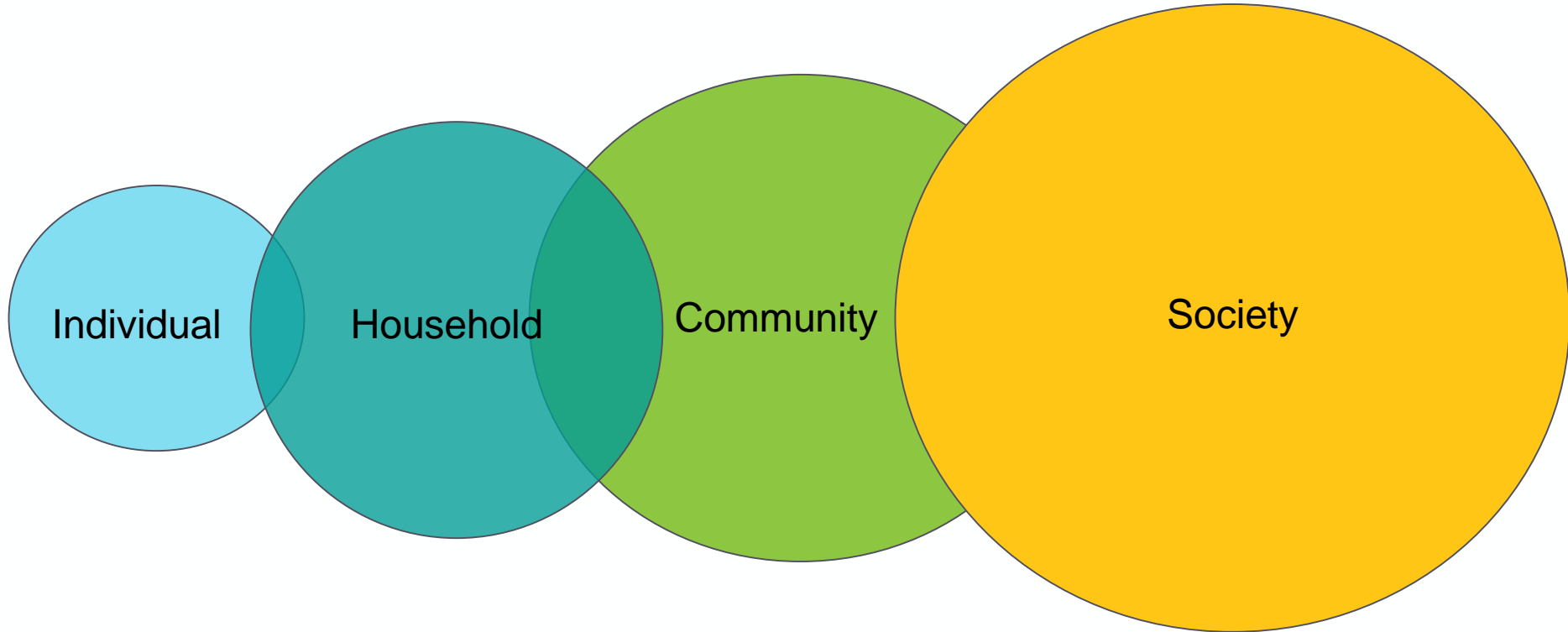
OUR ETHOS AS DESIGNERS TODAY

We celebrate the ethos of talking to the people who have the problem and listening to what they have to say. We believe that people are more likely to invest their money in a solution that comes from their own ideas, and from their true aspirations. That solution is more likely to be sustainable and cost-effective, too.

A photograph of a rural landscape. In the background, a village with several small houses and trees sits on a hill. In the middle ground, there is a large, flat, green field, likely a rice paddy. In the foreground, there is a body of water, possibly a pond or a river. The text "What system are we designing for?" is overlaid in large, bold, green letters across the center of the image.

**What system are we
designing for?**

OUR DESIGN SYSTEM - WE'VE GOT A FEW CLIENTS



OUR PRIMARY CLIENT - USAID/CARE BANGLADESH

Strengthening Household Ability to Respond to Development Opportunities (SHOUHARDO) III is a Development Food Assistance Program funded by 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.



About our Design Challenge

ABOUT OUR CHALLENGE

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.

ABOUT OUR CHALLENGE

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.

ABOUT OUR CHALLENGE

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.

SO, AS DESIGNERS WHAT IS OUR CHALLENGE TODAY?



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

HEAR

ABOUT THE HEAR

For the purposes of this workshop, we will be sharing our HEAR research with you and you will be using this research as your foundation for CREATION as you work your way through the activities of the day.

Remember, we only have 8 hours together! The key idea here is to learn and enjoy the HCD creative process, and try your hand at a new set of tools you can apply to your work moving forward!

ABOUT THE HEAR

In March 2019, the iDE and CARE Teams undertook a 3-week long deep dive in the Char and Haor regions for the HEAR stage.

We could only spent 3 weeks in order to accommodate the Create and Deliver -- for a total time of 3 months.

OUR RESEARCH DATA INCLUDES”

Haor Region: 51 respondents (mixed M/F)

30 with improved toilets

21 Open defecating or without improved

5 Latrine Producers and Market Actors (transportation/cement supply)

CARE TEAM Sunamganj

Char Region: 47 respondent (mixed M/F)

28 with improved toilets

19 Open defecating or without improved

2 Latrine Producers and Market Actors (transport/cement supply)

CARE Team Kurigram

Poor and Extreme Poor Households: less than \$1.90/day

Methods:

1:1 Interviews

**Active Observations
(homestays)**

Co-Creation Tools

Ideation Tools

Variety of different geographies within the Haor and Char were visited during fieldwork in order to understand a difference in practice/private sector.

ASSUMPTIONS FROM CARE TEAM DHAKA

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

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.

ASSUMPTIONS FROM CARE TEAM DHAKA

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.

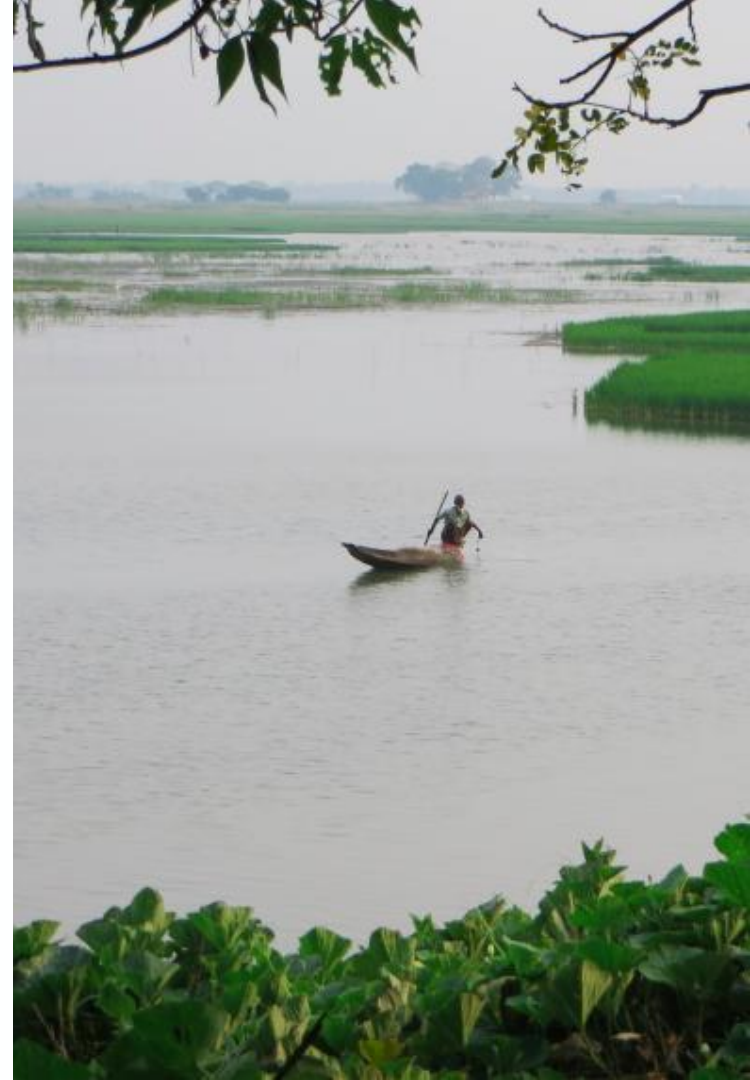
Apples to Oranges.

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."



MULTIDISCIPLINARY

HCD uses multi-disciplinary teams in order to have a varying set of backgrounds, point of views, and strengths. We all can't be good at everything and in order to have a truly viable, feasible, and desirable solution you need this.

We've created teams -- which should be pretty varied and multi-disciplinary.

OUR DESIGN TEAMS FOR TODAY - WEDNESDAY

HAOR (8) Abby

Jay Dumpert
Anna Cucurullo
Lynne Cogswell
Julia Rosenbaum
Stephanie Maurissen
Robyn Fischer
Emmanuel Opong
Sarah Goddard
Lizz Ellis

CHAR (9) Molly

Jason Lopez
Mara Russell
Astha Thapa
Jason Brooks
Oliver Subasinghe
Amit Smotrich
Camille Tacastacas
Rachel Lobe-Costonis
Sydney Sapper

OUR DESIGN SOLUTIONS







iDE's DESIGN SOLUTIONS



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 install plan.

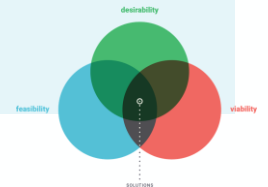


Corresponding Design Principles:

....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

Honest Broker.

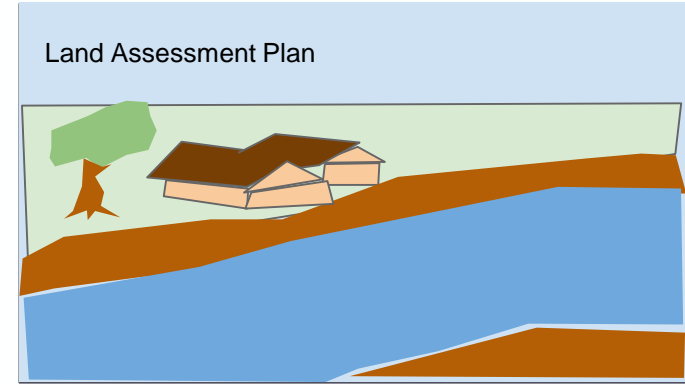
Why?

Users and Latrine Producers are placing their latrines in the wrong place.. 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.



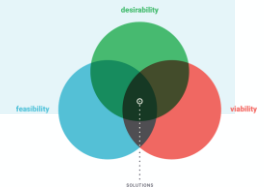
Corresponding Design Principles:

....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.



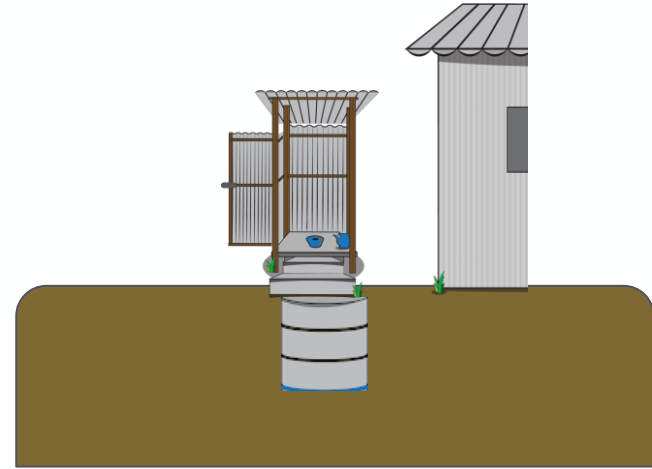
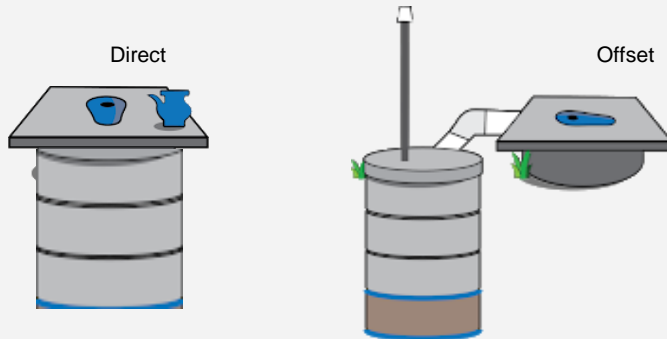
Haor # 3

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: .

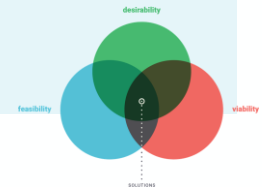


Corresponding Design Principles:

....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

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



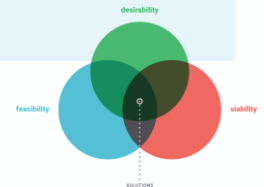
Corresponding Design Principles:

....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

Raised latrines, to house level (at least).

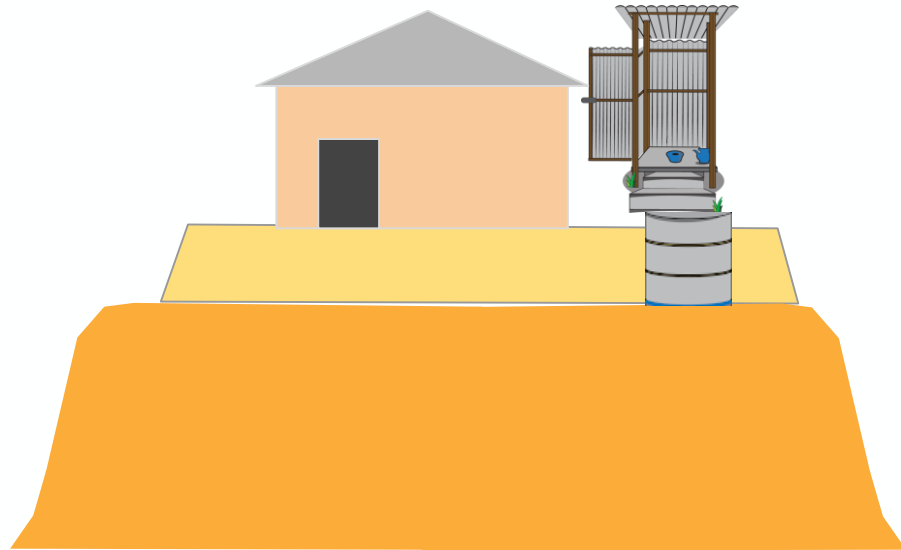
Why?

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.



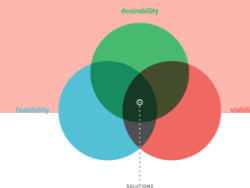
Corresponding Design Principles:

....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

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.

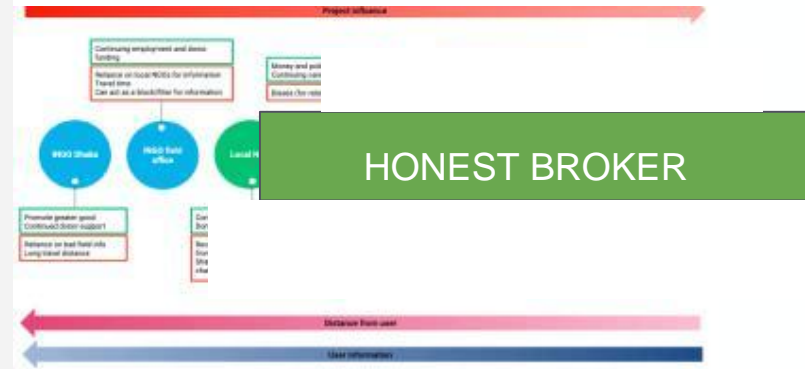


Char #3

Honest Broker.

Why?

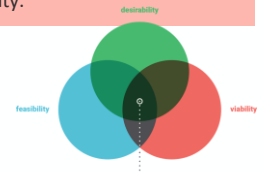
Local NGOs and government officials cannot always be trusted in the char areas. There needs to be a Community Facilitator in the char areas who is able to visit often and oversee/monitor what is happening with the current environment, users, Latrine Producers, and continue to build up the capacity of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

NEXT STEPS -- PUTTING THIS METHOD TO WORK



DIGITAL SALON SESSIONS TO DISCUSS:
HOW MIGHT WE INCLUDE MORE HCD IN OUR INTERVENTIONS?
DETAILS: TBC





**THANK
YOU!**



This event is made possible by the generous support of the American people through the United States Agency for International Development (USAID). The contents are the responsibility of the PRO-WASH Award and do not necessarily reflect the views of USAID or the United States Government.