

Inhabitant Research Set-Up

Research Set-Up

A research study was conducted among the inhabitants of the Imvepi Refugee Settlement over a period of 3 weeks. The full research set-up can be found in Appendix A.

The objective of the research was to answer the following research questions and sub questions:

- What is the state of sanitation in the settlement currently?
 - What safety risks can be identified?
 - What hygiene risks can be identified?
- What is the public opinion and culture surrounding latrines?
 - What are common latrine practices?
 - What are seen as (un-)favourable qualities for a latrine?
 - What are seen as (un-)favourable attributes for a latrine?
 - What practices can be identified that could help or hinder the product intervention?
- What is the level of knowledge on safe & hygienic latrine use?
 - What knowledge based practices are currently being done?
 - What knowledge gaps can be identified?
 - What are the means of knowledge communications available to the community?

The nature of the research was explorative, therefore, qualitative data was collected by means of interviews. The questions in the research were set up in the following order:

- **Exploratory Questions**, seeking to understand without influencing the participants, with the objective to learn more about the customs & culture in the settlement.
- **Interpretive Questions**, which aim to understand people's behaviour in a natural setting. The objective is to understand how a group makes sense of shared experiences with regards to various phenomena.
- **Comparative questions**, which are helpful when studying groups with dependent variables where one variable is compared with another.

(Chew, n.d.)

- **Emancipatory questions**, aim to produce knowledge to benefit people who are sociologically disadvantaged in some manner (women) (during the research period, another group was identified and interviewed: disabled)

(Beck, 2023)

The contents of the questions were based on the requirements for latrines in emergency settings as defined by the Red Cross (*Final Report Three Sanitation Options 20-12-2012*, n.d.). The questions were used to gather more information on inhabitant values & practices.

The questions were supported by imagery where possible, to minimize miscommunication, especially in translation.

Step by Step Research Guide

Introduction as presented to participants on the consent form:

You are being invited to participate in a research study titled 'Designing and developing a toilet for the Imvepi Refugee Settlement'. This study is being done by Pijke Daalder from the TU Delft, in collaboration with Semilla Sanitation, CRC Consortium, HS Green Energy, Students 4 Sustainability & Rotary Bommelerwaard.

The purpose of this research study is to gain insight into the context and culture within the Imvepi Refugee Settlement surrounding sanitation, and will take you approximately 60 minutes to complete. The data will be used for publication and application. We will be asking you to provide us with information on your culture, your current sanitation and your thoughts on improving sanitation.

As with any online activity the risk of a breach is always possible. To the best of our ability your answers in this study will remain confidential. We will minimize any risks by collecting analog data (pen and paper) and digitizing your data anonymously.

Your participation in this study is entirely voluntary and you can withdraw at any time. You are free to omit any questions. If at any time during the interview you want to retract any information, you are free to do so and this information will not be digitized. After the interview is over, it will not be possible to retract any answers.

For correspondence with the responsible researcher (Pijke Daalder), please contact +31612222514 through Whatsapp.

Regular text: Description of activity or research content

Underlined text: The goal or 'why' behind the questions, what is it I want to find out or reach?

Cursive text: Action taken by researcher during the previously stated activity

Activities throughout research when the opportunity arises:

Visit bathrooms in public spaces.

Try to find all stakeholders involved and get meetings with them.

Introduction of me and my research —> humble and genuine attitude: Create a safe and trusted space.

Note:

- Gender
- Age
- Nationality

Can you show me your toilet / latrine? Walk me through how you would use it. Have them engage and explain in order to get a feeling for the current situation & loosen up conversation about toilets & break stigma.

How is your latrine built? Include the costs.

How do you clean your toilet?

How do you reduce odours in your toilet?

What do you use to clean yourself after you are done using the toilet?

Do you have a hand washing station? Where does the water come from?

Do you empty your toilet and how?

How much does emptying it cost?

Do people throw things in the toilet that are not supposed to go in there? By having people talk about other people they do not feel like they are responsible and will answer more honestly.

With who do you share this toilet? Get concrete data on people/toilet

Any elderly, children or disabled people? Get concrete data on the amount of people that could have accessibility issues with harder to use designs.

Are there any people that do not have access to the toilet? Get to know whether anyone is left out in the current situation and why.

What do you like? Find out what is good about the current situation.

If you could get a new, different toilet, what would you like to see different? Find out what could be improved about the current situation.

What was your situation in South Sudan like?

Keep asking to the WHY? HOW? with WHO? WHAT? behind the story. The first answer is hardly ever the true reason, by asking for reasons, you get closer to a truth.

What are the most important things for you in a toilet? —> Get them thinking about their values for a toilet without influencing them beforehand → Get a feeling for the values surrounding toilet use.

Write down their values on post its to use for the following steps

Have them rank their values and the most named values from research (safety, cleanliness, inclusivity, odor/smell etc.) in order of importance → Force them to pick priorities → clear indication of importance to the participant that I can later use to make informed design decisions.

Rank different values:

- Privacy when going
- Safety when going
- Cleanliness/easy to clean
- Inclusive for all
- Smell reduction
- Own values

Take pictures of the result (Examples at the end of the document)

The following segments all start with an open question first (noted at the top of each segment). Get them to think about what the value means to them in practical terms without already biasing them with interpretations.

Then I introduce cards with pictures of the product properties as stated underneath each question. To spark conversation on the different properties and gain insight into what they think of certain properties and open them up to new possibilities.

Write down all properties they mention on post-its

After we have discussed the different points, the participants are asked to rank all pre-defined and new (post-it) properties in order of importance for the topic. Force them to pick priorities and get a clear indication of importance to the participant that I can later use to make informed design decisions.

What do you see as safe & private?

- Lock
- Men / women separate
- Light outside
- What is the preferred location for a latrine or toilet? Have them put a dot on the map and explain why there. To get an idea of why toilets are placed in certain places and gain insight into dangers or opportunities for toilet placement.

Take pictures of the result

What do you consider to be clean?

- A lid over the latrine hole
- A latch underneath the latrine hole
- A traditional latrine hole with nothing separating the latrine stall and the fecal sludge

Take pictures of the result

What do you find easy to clean?

- A ceramic latrine floor
- A plastic latrine floor
- A stone latrine floor

Take pictures of the result

What kind of toilet/latrine/urinal or combination would have your preference?

- A toilet bowl
- A latrine
- Toilet bowl with a urinal
- A latrine with a urinal

Take pictures of the result

What makes a toilet inclusive for all users? What would not be inclusive for all users?

- Opgehoogde latrine
- Lage latrine
- Mannen vrouwen gescheiden of samen

Take pictures of the result

The following section only applies when interviewing women, since it is about their menstrual habits

Next, I would like to talk to you about your menstruation and the products you use for that, are you okay with that?

Firstly, where do you go once you know or notice the beginning of your period?

What products do you use for your menstruation?

Where do you go to change them?

Do you clean them? Or throw them out?

Where do you clean them?

If you are not close to home, what do you do when you need to clean / change your product?

Are there reasons why you would not use a toilet during this time?

have you ever felt or been unsafe when going to the toilet? Why?

Final question for everyone:

Could you please draw your ideal toilet? This can be as crazy as you want it to be. Have them use visual communication to show what they would like, after having had the chance to think about it during the interview.

Thank them for their time and give them a Dutch clog keychain as a thank you.

Data Collection

The participants of the study were required to live in the Imvepi Refugee Settlement (refugees & host community) at the time of the interview. The sample size was 15 and the average interview time was 90 minutes.

Since the participants belong to a potentially vulnerable group, measurements were taken to ensure their anonymity. Analog data collection in the form of pen and paper was used to collect data, which was later digitised in Excel for analysis. The only personal information collected was: age, gender and nationality.

The research aim was to gather qualitative data in the form of insights, each interview was conducted using the same framework as presented in the Research Set-Up (Appendix A). Additionally, questions that arose during the course of the interview were asked, in order to gain more insight into the reasoning behind participant answers.

During the interviews, it became apparent that a significant number of participants (30%) had a person with a disability in their toilet-sharing circle. 2 additional persons with a disability were found and interviewed, in order to get insight into their specific needs.

Data Analysis

All of the data was digitised in Excel and categorized into different sections:

- Qualitative insights – these insights were taken from the interview answers. These insights were then ranked on importance (high, medium or low) and relevance for the project (high, medium or low)
- Quantitative insights – these insights grouped answers to specific questions to understand what percentage of respondents gave similar answers.
- Values (ranked) – this ranking quantified what values were seen as most important to inhabitants regarding their latrines.
- Attributes per value – these attributes gave insight into what attributes (physical aspects of a toilet) people associated per value.

Recurring themes and patterns were found through examining the data and their importance and relevance for the project was estimated

- Methods of analysis:
- How you processed and analysed the data
- Analysis based on language, images and interpretations
- How I went about categorising the data to find recurring themes and patterns

Evaluation

Areas of difficulty during research were identified both before and during the interviews. Obstacles and the precautions or actions taken to minimise their impact are as follows:

- Language barrier: around half of the participants did not speak English. A translator was always present to communicate between the interviewer and the participant. Imagery was used where possible, to prevent miscommunication through translation. Another action taken during the interview was to describe a certain situation and have the participant explain what they would see and do in that situation. E.g. 'You walk up to a toilet and it is very clean, what do you see that makes the toilet so clean?'. This was done to prevent misinterpretation, while getting participants to think visually.
- Culture differences: some cultural differences became apparent during the course of the research, people often did not want to complain and therefore did not communicate their problems. Also, participants would often not admit to not knowing the answer to a question and respond with an approximation of what they thought to be (close to) the truth. To ensure the quality of the data collected, repeating questions and asking for the 'why?'

behind answers often lead to a more nuanced answer. A consequence of these measures was that the duration of the interview was often longer than planned, therefore increasing quality, but decreasing quantity of data.

- **Stigma:** Participants often exhibited discomfort discussing their toilet habits, as this topic was generally considered taboo and associated with feelings of shame, particularly at the start of the interview. To address this, the interviewer began by reassuring participants, emphasizing the importance of honest and open responses, and encouraging them to share more rather than less. The first question asked participants to describe a visit to the toilet in detail, which served as an effective icebreaker, initiating the conversation about bodily functions early in the interview. This approach helped participants feel more at ease, facilitating a more open and fluid exchange for the remainder of the interview.

The aim of the research was to gather qualitative data, and the extended interviews proved to be an effective method for investigating deeper into participants' responses. The structure of the interview facilitated a gradual approach: initially focusing on gaining general insights without influencing the participants, followed by the collection of more specific data, and concluding with the identification of concrete attributes valued by product users.

However, several limitations of the research were also identified. One primary limitation was the challenge of quantifying new insights, as these were only considered when participants had already introduced them, which may have introduced bias. Nevertheless, the broad range of new insights generated through the research could be seen as more valuable in shaping design guidelines than their quantification.



Stable and
going to the
toilet

Structure
↑

Cleanliness /
Easy to clean

Water
supply

Toilets
↓

Handwritten notes on a piece of paper, partially obscured by a green sticky note.

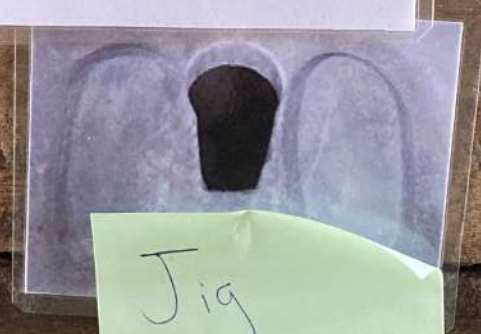
Privacy and
going to the
toilet

Locking
for all

Small Reduction

Delays
for
small



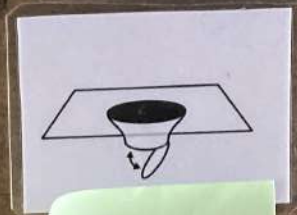
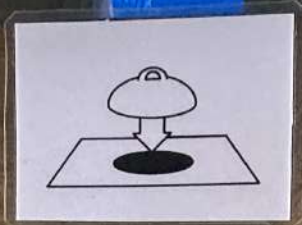


Jig

Broom

Clean
environment

Light inside



Jig

Water

Soap

Broom

Light

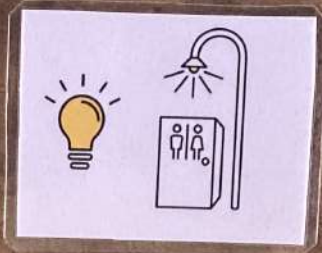
Lock, so
others cannot
come

Clean environment

Good
structure

Deep
pit -
no smell





Lock

Clean
for disease
avoidance

Structure

Door

Only with
family

Good
location

Cleanliness /
Easy to clean

Water

Soap

Jig

Broom

Safety when
going to the
toilet

Lock

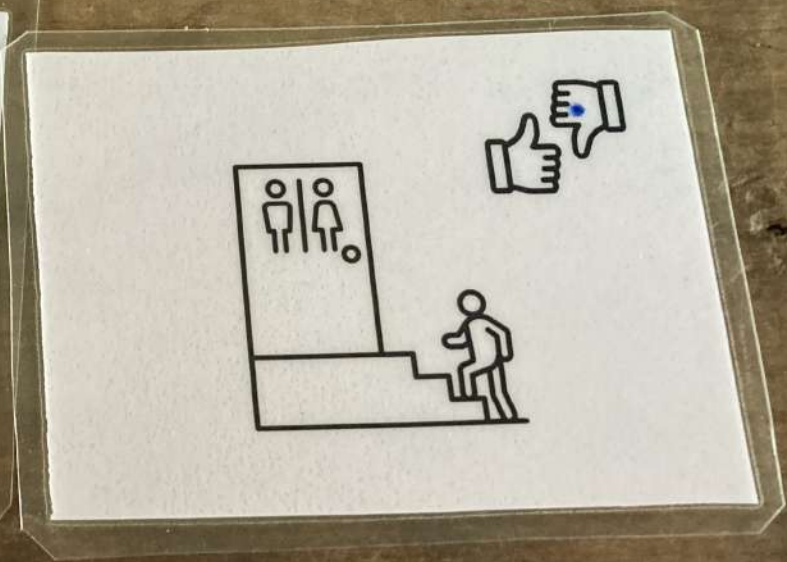
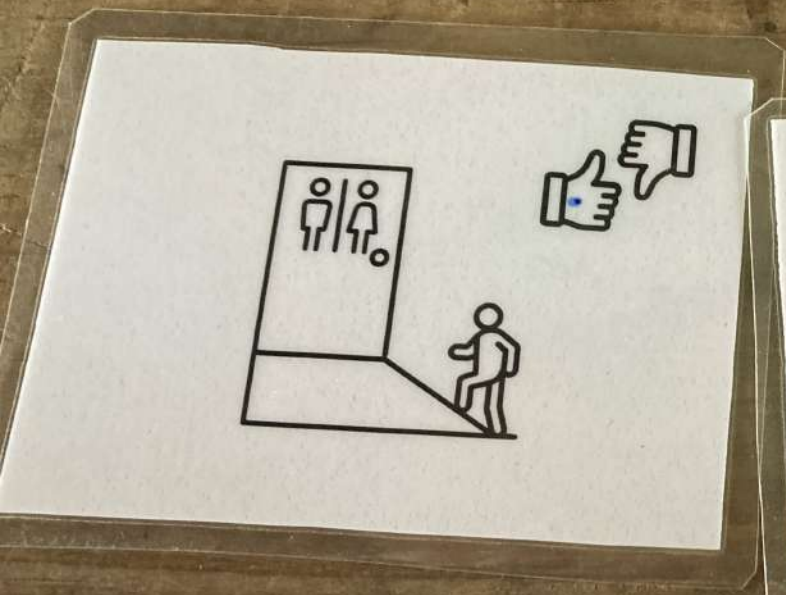
Privacy when
going to the
toilet

Door

Structure

Inclusive
for all

Smell Reduction









Brush

Water

Soap

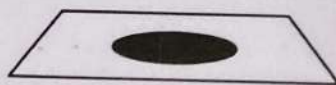
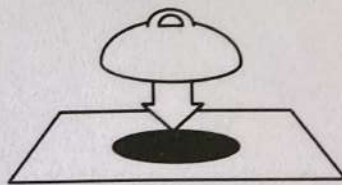




Washing
facility

Toilet
paper

Detergent
/Sij



Safety when
going to the
toilet

Structure



Cleanliness /
Easy to clean

Washing
facility

Toilet papers



Smell Reduction

Detergents
for
smell

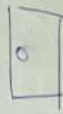
Privacy when
going to the
toilet

Inclusive
for all

Structure



Door



Washing
Facility

Soap or
Jig



Insight	Participant no.	Importance (if not taken into account, how severe are the consequences?)	Relevance (How much influence does it have on the toilet design)
People can currently not afford to empty their latrine, it costs 25.000 (6,25 euro) per barrel (~200 litres)	1	High	High
Often the latrine collapses before it can get full due to heavy rain and flooding of the latrine hole, requiring inhabitants to dig a new one	2, 4	High	High
If the latrine hole is too big, young children can fall in	3	High	High
Right now it is not possible to empty the latrine, since there is no hole outside for access	5	High	High
Likes that the toilet can be used for a long time (2-3 years; 13 people (2 more years; 5 people) / (more than 3 years now;10 people) / (more than 2 years now; 29 people)	6, 8, 10	High	High
Suggests to dig a hole himself where a container can be placed that can be emptied, suggesting there is willingness to help with the construction of the toilet	5	High	High
I keep my latrine clean for disease prevention'. Suggests there is knowledge that cleanliness is related to disease prevention	6	High	High
My toilet smells bad, attracts many flies and they contaminate my food	7	High	High
My neighbour has a leg impairment, when squatting on the latrine, he stretches the leg and holds on to the wall	8	High	High
Most people don't have a door for their latrines	12	High	High
Is willing to communicate when the container needs emptying	5	High	High
Diseases come in outbreaks	Biogas expert	High	Medium
The ground is rocky in the settlement, latrines can often only be dug up to 3 metres deep, sometimes the ground where a latrine is dug turns out to be so rocky, that the latrine can not be dug to 3 metres at all	2	High	Medium
Because of the soil, the latrine collapses after a few months	12	High	Medium
When a latrine suddenly collapses, people take to the bushes to do their business, participant's child was bitten by a snake there and rushed to a health facility	2	High	Medium
There is knowledge that toilets are better than open defecation to prevent illness spreading	2, 4, 11	High	Medium
It costs 10.000-20,000 UGX per meter to excavate the latrine hole (2,50-5,00 euro)	8	High	Medium
Elderly or disabled people are given a basin (bowl) to defecate in if they cannot use the latrine	6	High	Medium
Keeping the environment around the latrine clean helps (prevent snakebites)	4, 6, 13	High	Medium
After washing my hands in the toilet, the water & soap go into the latrine	10	High	Medium
The money for salaries in the settlement is passed down through multiple people without any regulation, leaving very little to the bottom of the chain.	Ambulance driver	High	Medium
If the toilet is not clean, it is not safe	11	High	Medium
Sometimes the latrine just smells and we don't do anything about it	12	High	Medium
I have a place for trash, personal landfill	11	High	Low
Latrine is dug, a slab is put on top, it is built with bricks or logs	1	Medium	High
In the current situation, the land that a latrine has been on cannot be used for several years, since a plot of land is given to refugees, they cannot expand beyond this, meaning the current situation is reducing their usable land	1, 8	Medium	High
When there are holes in the latrine floor, people fear it will attract rats and snakes that could form a danger	2	Medium	High
When it is dark there is fear of snakes being in the latrine	4	Medium	High
There is a desire for a toilet that can be emptied, since it would save space	2	Medium	High
The door is in there for privacy, but also so no animals fall in the hole	5	Medium	High
In the culture, you do not want to look at your faeces after you have done your business	5, Henry (HS)	Medium	High
There is a lock on the outside of the latrine that is closed after I am done	6	Medium	High
I want my latrine to look beautiful, by painting it: inside brown bottom & white top, outside rough bottom & white top	13	Medium	High
When the latrine collapses, there is usually noone inside, but she knew of a pregnant woman falling into a collapsing latrine	4	Medium	Medium
The toilet used to be cleaned, but then it partly sunk and became crooked, since then she does not clean it.	2	Medium	Medium
After her jerrycan broke, she did not get a new hand washing facility	2	Medium	Medium
Too many other people are using my latrine (without asking me) and now nobody takes the responsibility to clean it	2	Medium	Medium
We always plug holes in the latrine to avoid rats and snakes from getting in	5	Medium	Medium
Sometimes, the walls in the latrine get smeared with mud as a form of cleaning	5	Medium	Medium
If there is no water in the hand washing facility, she will use a leaf to clean her hands. It feels dirty, but she will go about her business anyway	4	Medium	Medium
The language and culture spreads across the borders of Uganda, Congo & (South) Sudan	Victor (translator)	Medium	Medium
I only want to share the latrine with my family, for safety	6	Medium	Medium
My latrine is used by passers by on the road I live on	7	Medium	Medium
If the latrine is not smelly, you cannot get sick	9	Medium	Medium
We clean the latrine every morning	10	Medium	Medium
"When you arrive in the settlement, you should build a latrine even before you build your house"	10	Medium	Medium
Most people are very religious, they trust on god to provide for them	Local contacts, 2	Medium	Low
Some people construct a hand washing station where you can step on a stick with you foot to tilt a jerrycan and wash your hands	2	Medium	Low
There is talk that sometimes even an abortion will be thrown into the latrine	2	Medium	Low
We have a rule for always washing hands after using the latrine in our home	8	Medium	Low
Flies are recognised as disease spreaders	9	Medium	Low
I like that my latrine is clean and the people in my family use it carefully	15	Medium	Low
The door is made from cloth, but has holes that people can see through and this disturbs the privacy	3	Low	High
It would be best if a lid on the hole does not need to be touched	3	Low	High
A sitting toilet is more comfortable	9	Low	High
People often say that if someone would bring them a new toilet they would be very thankful, before they tell me the features they want it to have	12	Low	High
When there is a lack of toilet paper or water, sometimes people scrub themselves on the wall to clean, this happens most often in schools	1, 2, 4	Low	Medium
Right now, some latrine floor cannot be washed, since they are made of mud and would fall apart	1	Low	Medium
The toilet has partly sunk and has become crooked due to rains	2, 3	Low	Medium
Has made a small latrine for kids to counter open defecation	6	Low	Medium
People have stolen my handwashing basin outside my latrine	7	Low	Medium
Goats, cows and pigs eat soap, so you need to store it in a (high) place where they cannot reach it	13	Low	Medium
I would like a bucket to catch the water from the hand washing facility, so it does not go everywhere	14	Low	Medium
Often the husband and wife have their own house, the kids, depending on their age, either share or have their own house as well	1	Low	Low
To deter vermin in the toilet, a bundle of grass is tightly packed and lit to smoke them out, this also helps deter smell	3	Low	Low

One broom is used to clean both the premise and the toilet	3	Low	Low
A small roll of toilet paper is 1000, a big one is 2000 UGX	7	Low	Low
Stairs are fashionable	7	Low	Low
Likes the strength of the slab	8	Low	Low
Excavation			
Imvepi has a high water table, causing groundwater to fill the latrine hole	11, 12	High	High
The hole gets excavated with a hoe and a pickaxe	5	Medium	Low
The latrine hole in South Sudan could be 8-10 metres deep, since the soil was not as rocky as in Imvepi	6	Medium	Low
The rockiness of the bottom prevented me from digging a deeper latrine	14	Medium	Low
Water			
Throughout the camp, there are taps with filtered water that people can drink from	2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 14, 15	High	Medium
When there is heavy rainfall, sometimes there is no water from the tap, since they run on solar power	11	High	Low
Special needs			
A gentle (max. 15 degrees according to online sources) ramp is needed for wheelchair users, too steep is discouraging	Special needs Officer	High	High
The most common problem is that people cannot bend enough to squat	Special needs Officer	High	High
People with disabilities currently use the walls of the latrine for support, but could benefit from handles	2	High	High
Special needs cannot sit down because the hole is not clean	5	High	High
A ramp is easier for people with a disability	5, 10	High	High
A sitting toilet is better for people who have difficulty squatting	10	High	High
The latrine is built by humanitarian aid, for a disabled person, yet is not usable (without the poo chair) (at all)	11, fam. X	High	High
I could fall if I have to use stairs	11	High	High
He has never used a sitting toilet, but we assume he would be able to use it	fam. X	High	High
A new toilet should be easy to reach, with the wheelchair reaching up to the sitting bowl	fam. X	High	High
The latrine floor should be washable and have a hand washing facility inside	fam. X	High	High
If the latrine is almost full, there are magots & it might not be hygienic	13	High	High
I kneel before the entry of the latrine in order to enter	14	High	High
I roll myself out of the latrine, the same as getting in	14	High	High
I have difficulty squatting, so I sit on my knees to ease myself	14	High	High
It would be better if I have something to hold onto when squatting	14	High	High
People who cannot bend to squat use a chair with a hole to sit	Special needs Officer	High	Medium
Kids under 3 need to go on a potty and the insides are thrown in the latrine	5, 6, 13	High	Medium
If a latrine has a cracked wall, I think it may be weak	13	High	Medium
Chronic malaria causes physical and mental disability, affecting the spine	fam. X	High	Low
Has deformation in the feet and legs, walks with a crutch, it looks like the effects of polio (not confirmed)	14	High	Low
Wheelchair users need a broad door (1 meter) to enter & the room needs to be big enough to turn around, they need to get off of the wheelchair to use the toilet	Special needs Officer	Medium	High
A ramp is easier for kids	5, 9, 10	Medium	High
If the disabled person goes away from home, he eats and drinks nothing beforehand to avoid having to go to the bathroom	fam. X	Medium	High
Us old people don't have the legs for stairs	15	Medium	High
Steps are easier for children	6, 12	Medium	Medium
A ramp in combination with rain means people might fall	8, 12	Medium	Medium
She does not go away from the house, instead for to the healthcare centre, to use the latrine there, she lays her crutches over the hole and defecates through the hole in the crutches	11	Medium	Medium
Disabled person has to defecate on the ground by leaning to one side, mother later throws it into the latrine	fam. X	Medium	Medium
Disabled person is stuck in one position with very limited mobility	fam. X	Medium	Medium
The disabled person has been away from home twice, to meet humanitarian workers	fam. X	Medium	Medium
I have to sit on the floor to bathe and clothe myself, I want to be able to stand	14	Medium	Medium
Kids defecate openly, it is then collected by the grown ups & discarded in the latrine	15	Medium	Medium
I have a special chair at my home latrine to defecate, I got it from humanitarian aid	11	Medium	Low
Anytime she has to go, someone has to get her a basin with water to wash her hands	11	Low	High
My daughter also has a problem with her leg, but she was moved to Kampala by humanitarian aid	11	Low	Low
During the war in South Sudan they had to run, it was too cold and his muscles and joints became stiff	fam. X	Low	Low
In some zones, poles are more rare, so they cost more	13	Low	Low
My latrine is cleaned for me, since I cannot clean it myself	14	Low	Low
Situation in South Sudan			
The cost for emptying was 4.000 South Sudan Pounds (27,87 euro's)	10	High	High
The latrines in South Sudan could stay operational for longer	10	High	Medium
The latrine in South Sudan could be deep (8-10 metres), since the soil was not as rocky as in Imvepi	6	High	Low
The latrine in Congo could be deeper than in Imvepi	12	High	Low
In South Sudan, the latrine could be emptied	9, 10	Medium	Medium
Most of the time, the living condition in South Sudan was similar to worse than in the settlement	5	Medium	Low
Land size in Imvepi is larger than in South Sudan	6	Medium	Low
In the rural areas of South Sudan, there is lots of open defecation, in the cities everyone has latrines	8	Medium	Low
In South Sudan, more things are constructed with corrugated steel sheets	6	Low	Medium
Participant described her latrine in South Sudan as her perfect toilet, corrugated steel roof, cemented walls & floor and able to be emptied	9	Low	Low
The walls & slab were made from poles & mud	11	Low	Low
The latrine slab in Congo was made with wood poles & mud	14	Low	Low
Latrine location			
This participant wants the toilet to face away from the entries of the houses in his commune, to keep away flies and with them disease from their homes.	1	High	Medium
The latrine is built on a dry location	7	High	Medium
I do not want my latrine too close to my home, because of the smell and flies	8, 9, 15	High	Medium

The latrine is currently far away from the homes, when it rains it is hard to reach and causes people to use a bucket or basin to defecate, which is later thrown in the latrine	10	High	Medium
I want my latrine in front of the house entrances, so it is easy to reach and leaves room for crops	14	High	Medium
My latrine has to be behind the house entrances, so it is secret, it has no door, so I do not want to be seen	10	Medium	High
The toilet should not be in the way of walking	3	Medium	Medium
If my toilet is close to the main road, expansion or an accident could cause it to be destroyed	6	Medium	Medium
I want my latrine behind the entrances of the houses, because of the smell	7, 11, 12	Medium	Medium
The toilet should be in sight to keep an eye out	3, 4	Medium	Low
Menstruation			
It is shameful for people to know you are on your period	4	High	Medium
If there are no menstrual pads available, you do not go out in public	2	High	Low
When you are on your period, you should have enough underwear and pads	9	High	Low
If the latrine is not deep, you will see the menstrual product in it and she will not throw it in, but instead go home	2	Medium	High
If I need to change my menstrual product in public, I will not use a latrine with no door, a broken door or no roof, I need my privacy	7	Medium	High
I take water or toilet paper with me to wash my menstrual product when I go somewhere	10	Medium	High
I will use any latrine, otherwise blood will come through	10	Medium	High
If you have soap and water you can clean your menstrual pads, if not, they are thrown into the latrine	2	Medium	Medium
Cleaning is done in the washing room, not the latrine	2	Medium	Medium
When the toilet I have to change my menstrual product in is dirty I have fear & I will not use it	9	Medium	Medium
The Ruby Cup I can wash in the latrine and reuse immediately, I thoroughly clean it after my period is over	10	Medium	Medium
When I am not close to home, I ask people if I can use their latrine	10	Medium	Medium
If I am not home, I will ask a neighbour for a basin, water & soap and wash in their washroom	13	Medium	Medium
When your period starts and you have no pads, ask a friend for one	4	Medium	Low
When her period starts, she bathes often	9, 13	Medium	Low
When there are a lot of bushes I have fear of going to the latrine to change my menstrual product	9	Medium	Low
Menstrual pads and rain are a bad combination, also to bring with you	10	Medium	Low
Having only 2 reusable pads is not enough	10	Medium	Low
I need to change the product every 3/4 hours	10, 14	Medium	Low
I bathe every time I need to change my menstrual cloth, so 2/3 times a day	13	Medium	Low
If the washroom is dirty (with people's pee), I fear infection	13	Medium	Low
For menstruation, pads are available in the shop, but not always affordable. Pieces of cloth are used, they can leak and smell and make it hard to go out in public.	2	Medium	Low
When I am not close to home, I put my cottonwool menstruation pad in a Kavera (plastic bag) and look for a place to throw it away	9	Low	Low
If you have menstrual pain, traditionally we use warm water & a cotton cloth pressed to the abdomen	10	Low	Low
Traditionally, leaves are used as menstrual pads	10	Low	Low
I will always ask a lady if I need to use their washroom for my menstrual product change	14	Low	Low
Women's safety			
I do not have a bad experience with men at the latrine	10, 11, 13	High	High
Even with the toilets being right next to each other, separating men and women would lower the chance of aggression against women	2	High	Medium
I feel safe when going to the latrine	10	High	Medium
I put the separation of men and women first, because: I am worried about getting an infection from a man	15	High	Medium
If you have good neighbours, men and women do not have to be separated	3	Medium	Medium
I put the separation of men and women first, because: I do not want a man to see a woman on the latrine and vice versa	14, 15	Medium	Medium
I put the separation of men and women first, because: I want to have another toilet	13	Low	Low
I put the separation of men and women first, because: I do not want to be inconvenienced	13	Low	Low
Tricycle transport			
I can get everywhere in the settlement with the 3 wheel ambulance	Ambulance driver	High	High
Max. 150 kg's of load on the ambulance	Ambulance driver	High	High
Difficulty with muddy places during rain	Ambulance driver	High	High
During raining season rain can wash the driver	Ambulance driver	High	Medium
Difficulty with overflowed rivers during rain season, the exhaust cannot go under the water	Ambulance driver	High	Medium
Every 1000 km's, the car needs to go for maintenance. Request it after 780 km's. Oil check, etc.	Ambulance driver	High	Low
Payment is 10.000 UGX (2,50 euros) per day, very low	Ambulance driver	High	Low
He has to be available 24/7	Ambulance driver	High	Low
Equipment like a raincoat or boots are not provided by employer	Ambulance driver	High	Low
Main road: 50-55 km/h max. speed	Ambulance driver	Medium	Medium
Small roads: 35/40 km/h max. speed	Ambulance driver	Medium	Medium
Run by UNHCR & IAD	Ambulance driver	Medium	Low
with a 20L tank, you can go 280-300 km's (14-15 km's/L)	Ambulance driver	Medium	Low

Descriptions		Counter	Participant no.															Average:
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Interview time (minutes)		60	1								1							87,14
		65	1		1													
		70	2			1		1										
		75	1														1	
		80	1									1						
		85	1						1									
		90	4				1			1				1		1		
		100	1												1			
		105	1					1										
		150	1			1												
Gender	Woman	9			1	1			1	1	1	1			1	1	1	
	Man	6		1	1		1	1		1				1				
Age		22	1											1				36,53
		23	1								1							
		25	1									1						
		26	1							1								
		28	2						1	1								
		30	1												1			
		32	1		1													
		34	1			1												
		37	1					1										
		38	1													1		
		42	1					1										
		44	1			1												
		65	1										1					
		74	1														1	
Nationality	South Sudanese (Refugee)	10			1	1	1	1	1	1		1	1	1				67%
	Ugandan (Host community)	3								1					1		1	20%
	Congolese (Refugee)	2													1		1	13%
Latrine walls made from:	Bricks	7						1	1	1	1	1		1			1	
	Poles & mud	3												1	1		1	
	Bricks & plaster	1										1						
	Tarp	0																
Latrine roof made from:	Grass	10				1		1	1	1	1	1		1	1	1	1	
	Corrugated steel	1											1					
	Tarp	1										1						
	Not present	0																
Latrine slab made from:	Branches and mud	7			1		1	1			1	1	1		1			
	Concrete	2													1		1	
	Branches and concrete	2					1			1								
	Plastic	1									1							
Latrine door made from:	Tarp	2											1				1	
	Not present	1								1								
	Cloth	1				1												
	Sticks bound together	1						1										
	Kavera's (plastic bags)	1												1				
	Corrugated steel	0																
Depth latrine hole	3 meters	4						1			1				1		1	
	2 meters	2												1			1	
	4 meters	1													1			
	5 meters	1										1						
	1 meter	0																
Used to clean themselves	Old papers	13			1	1	1	1	1	1	1	1	1	1		1	1	
	Leafs	9			1	1	1	1	1	1	1			1				
	Water	7			1	1				1	1	1	1		1			
	Toilet paper from shop	1							1									
Hand washing facility	Soap	7						1		1	1		1		1	1	1	(Both disabled)
	Jerrycan with foot pedal	5			1				1						1	1	1	
	Jerrycan	3				1	1				1							
	Jerrycan inside toilet	2								1		1						
	Basin	2												1				
	Not present	1				1												
	Jerrycan with tap on an elevation	1						1										
	Bucket with tap on elevation	1									1							
Used to clean latrine	Broom	12			1	1	1	1	1	1	1	1		1		1	1	
	Ash	1				1												
	Water	6							1	1	1	1		1		1		
	Brush	2									1				1			

[illegible]

	(Comfortable) sitting bowl	3		1	1		1		
	Deep pit (used for many years)	3			1		1	1	
	Is made of (burnt) bricks	3			1		1		1
	Can be washed with water	2	1		1				
	Something to counter smell	2					1		1
	Washing facility inside	2			1	1			
	Sturdy latrine floor	2		1			1		
	Light inside	2			1				1
	Smeared wall	2			1			1	
	Smeared floor	2				1		1	
	Flushing mechanism	2			1	1			
	Lock outside	2				1		1	
	Slasher (sickle for grass)	2				1			1
	Easy to reach (even when raining)	2					1		1
	A ramp for the disabled	2						1	1
	Has no smell	1		1					
	Water	1			1				
	Broom	1			1				
	Washing facility outside	1				1			
	Washing facility with foot pedal	1					1		
	Washing facility, elevated	1						1	
	Mop	1			1				
	Small latrine hole	1			1				
	Light outside	1							1
	Grass	1			1				
	Ventilation	1			1				
	Stone floor that can be cleaned with water	1			1				
	Sturdy structure	1				1			
	Clean environment	1				1			
	Toilet paper	1					1		
	Looks beautiful	1						1	
	Walls painted	1						1	
	A part where you can sit on the outside, all around (apron)	1						1	
	Something to hold on to and support the disabled & help	1							1
	Hoe	1							1
Menstruation products used	Cloth pads	6		1	1	1	1	1	1
	Single use pads	1				1			
	Cottonwool from healthcentre	1					1		
	Ruby Cup	1					1		
Cloth pads	Washed with water & soap and reused	4			1	1	1	1	
	Discarded in latrine	3			1		1		1
Cottonwool	Discarded in latrine	1					1		
Ruby Cup	Washed with water and reused, water and soap after cycle	1					1		
Product changed in	Washroom (shower)	5		1	1	1		1	1
	Latrine	2					1	1	
	Any hidden place	1					1		
	When far from home, in a bush	1					1		

[illegible]

Attributes from literature	Ranking no.	Counter	Participant no.															Attributes from literature are ranked relating to one another, attributes from participants are ranked as their absolute ranking in the total.
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Men and women separate	1	10																
	2	3	1	1										1				
	3	2					1		1									
Lock on door	1	3			1	1								1				
	2	4						1	1						1	1		
	3	8		1	1	1	1			1	1	1					1	
Light outside toilet	1	2	1						1									
	2	8		1	1	1	1			1	1	1					1	
	3	5			1			1						1	1	1		

Attributes from participants	Ranking no.	Counter	Participant no.														
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Hand washing facility	1	1	1														
	5	2				1	1										
	6	1							1								
	7	1										1					
A cover for the latrine	2	1	1														
Free from smell	5	3	1											1		1	
No flies	4	1		1													
Strong & sturdy	1	2			1	1											
Easy to access	3	1			1												
Clean surroundings	1	1								1							
	2	1							1								
	3	1				1											
	7	1						1									
	9	1										1					
A door	1	1											1				
	2	3				1	1							1			
	3	1								1							
	4	1													1		
	6	2						1				1					
	6	1				1											
	7	2							1							1	
	8	1										1					
Structure	2	1				1											
	5	1					1										
Good location	7	1					1										
Roof should not leak	4	1						1									
No holes in the floor (snakes)	5	1						1									
Light inside	2	1														1	
	4	2										1		1			
	6	1						1									
A water flushing system	5	1							1								
Short distance to latrine	4	1								1							
Lock outside (over inside)	5	1								1							
Toilet paper	7	1								1							
Water	6	1														1	
	8	1								1							
Sitting bowl	2	1										1					

Mosquito repellent	10	1	1	
Daily washing	5	1		1
Hoe	8	1		1
Slasher (sickle for grass)	9	1		1

Attributes from literature are ranked relating to one another, attributes from participants are ranked as their absolute ranking in the total.

Attributes from participants	Ranking no.		Counter		Participant no.		
Water	3	3	1			1	1
	4	2		1	1		
	5	1				1	
	6	1			1		
Soap	4	3	1			1	1
	5	2		1		1	
Liquid soap	3	1				1	
Free from flies	3	1				1	
	4	1			1		
	5	1	1				
Outside clean	2	2			1		1
	4	2	1				1
Hand washing station	2	2	1	1			
Beautiful	2	1		1			
	9	1			1		
No smell	2	1				1	
	3	1		1			
	10	1			1		
Toilet paper	3	1		1			
Detergent (Jig)	3	1			1		
	4	1		1			
	6	1					1
	8	1			1		
Broom	6	1		1			
	7	1			1		
Brush	4	1			1		
	6	1					1
	7	2				1	1
Light	7	1		1			
Outside lock	8	1		1			
Good structure	9	1		1			
Deep pit	10	1		1			
No rubbish	3	1			1		
Door	5	1				1	
Bucket	4	1					1
	6	1				1	
Toilet paper	5	1					1
Can wash & sweep	6	1					1

Attributes from literature	Ranking no.	Counter	Participant no.														
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ceramic material	1	6	1					1	1	1	1		1				
	2	7			1	1		1	1				1		1	1	
	3	2		1		1											
Plastic material	1	6		1	1		1	1	1				1				
	2	5	1					1			1	1		1			
	3	4				1				1					1	1	
Stone slab	1	3				1									1	1	
	2	3		1			1			1							
	3	9	1	1			1	1	1		1	1	1	1			

[illegible]

Facemask	2	1	1
Slasher (scythe)	6	1	1

[illegible]

Configuration	Counter	Participant no.														
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Behind entrances	9	1	1			1		1			1	1	1	1		1
Diagonally from entrances	4				1	1		1		1						
Straight in front of entrances	2 0								1							1

Configuration	Ranking no.	Counter	Participant no.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ramp	Thumbs up	10		1	1	1	1	1					1	1		1	1	1
	Thumbs down	3							1	1					1			
Stairs	Thumbs up	3						1	1						1			
	Thumbs down	10		1	1	1	1	1					1	1		1	1	1

Organisation

The settlement is overseen by the governmental organization: Office of the Prime Minister. Intergovernmental organisations and NGO's with humanitarian objectives are present, the main ones relevant for this project are UNHCR (United Nations High Commissioner for Refugees), and Red Cross Uganda.



Office of the Prime Minister (OPM)

The Refugee management team of the Office of the Prime Minister, is responsible for receiving, documenting and settling refugees as well as coordinating stakeholders on refugee matters including MDAs, partners and NGOs. They are also



United Nations High Commissioner for Refugees (UNHCR)

UNHCR is an intergovernmental organisation focused on protecting the rights of the stateless and displaced. It receives support from the international community and works closely with the Office of the Prime Minister to document refugees. UNHCR is also closely involved with providing WASH (Water, Sanitation, and Hygiene) services throughout the settlement.



Water Mission

Water Mission, an NGO funded by UNHCR, provides water, sanitation, and hygiene (WASH) services in the settlement.

Its key contribution includes installing solar-powered drinking water taps, offering free clean water access to residents and improving overall hygiene.



Red Cross Uganda

Red Cross Uganda is a humanitarian aid NGO that focuses on refugee wellbeing in the settlement. One of the projects they have implemented is the fecal sludge treatment plant in the Odupi Refugee Settlement, as shown in the figure below. This treatment plant processes fecal sludge to produce fertilizer.



