

Peepoo Try Pakistan

Sindh Floods, November 2011



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Peepoo Try Pakistan – Executive Summary

Climate change is becoming evident in countries like Pakistan where frequent natural disasters have been experienced in the recent years. In Pakistan alone, 20 million people were affected by floods in 2010, and 5 million more in 2011. In many emergency situations access to adequate sanitation is one of the strongest determinants of survival by people directly affected.

Many times, especially in difficult contexts such as floods, humanitarian actors lack viable solutions and sufficient capacity to ensure that those who are directly affected have access to adequate sanitation. New innovative sanitation solutions are urgently needed to change the current situation that accounts for such a heavy toll on human life, especially for the most vulnerable, women and children.

In this context UN-HABITAT Pakistan decided to trial and evaluate the innovative Peepoo sanitation solution as an emergency sanitation solution and catalyst for behavioural change in the 2011 floods in Sindh. The purpose of the trial was to demonstrate Peepoo's viability, acceptance, effectiveness and benefits as an emergency response solution for Pakistan.

To demonstrate the Peepoo Humanitarian Response Model Peepoo has developed Peepoo Try, a small-scale trial for 10 families during 10 days. This method was used for the trial and two flood-affected villages in Sindh region, Ali Achar Rind and Lal Bux Rind, were selected. In total 10 families and 71 persons participated in the 10-day trial, of which about 50% were female and 50% male, 50% below 15 years of age and 50% above.

The overall conclusions from the Peepoo Try in Sindh were very positive. UN-HABITAT Pakistan concluded that the Peepoo is a viable and cost- and resource effective emergency response sanitation solution for Pakistan, bringing many benefits such as immediate disease control, rapid implementation, high user acceptance, flexibility and safety for women and children. Also noted was Peepoo's potential to act as a catalyst for behavioural change of sanitation practices to help end open defecation, acting as a transition solution into the recovery phase and bridging into development.

The Peepoo was easily accepted and positively received by the flood-affected communities. It was quick to implement as well as easy to understand and use. All people who participated in this evaluation were generally satisfied with the solution and wanted to continue using it. In particular women and children appreciated having easy access to a clean and personal toilet at family level at all times. However, Peepoo use without proper facilitation is not possible in a community.

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Peepoo Try Pakistan

1 Background

1.1 Pakistan

Climate change is becoming evident in countries like Pakistan where frequent natural disasters have been experienced in the recent years. On average more than 250 million people worldwide are affected by natural disasters globally every year. In Pakistan alone, 20 million people were affected by floods in 2010, and 5 million more in 2011. In many emergency situations access to adequate sanitation is one of the strongest determinants of survival by people directly affected. When disaster strikes, people are often trapped in extremely adverse living conditions, putting them at great health risks because of the collapse of crucial sanitation and water infrastructures.

Climate change coupled with conflicts and visible lag in achieving Sanitation and Water related MDGs require new thinking for making the MDGs practically achievable in Pakistan, and elsewhere. A paradigm shift to harness the humanitarian assistance in such a manner that it contributes to long-term development and achievement of MDGs is needed, taking a rights based approach serving the lowest quintile first. This calls for looking at disasters as an opportunity to start development work with both humanitarian as well as development resources.

Many times, especially in difficult contexts such as floodings, humanitarian actors lack viable solutions and sufficient capacity to ensure that those who are directly affected have access to adequate sanitation. Unlike increased availability of emergency water supply options, few alternatives to the pit latrine exist. New innovative sanitation solutions are urgently needed to change the current situation that accounts for such a heavy toll on human life, especially for the most vulnerable, women and children.

In this context UN-HABITAT Pakistan decided to trial and evaluate the innovative Peepoo sanitation solution as an emergency sanitation solution and catalyst for behavioural change in the 2011 floods in Sindh.

1.2 UN-HABITAT Pakistan

UN-HABITAT works to provide adequate shelter for all, including basic services such as water, sanitation and solid waste management. The cornerstone of UN-HABITAT's strategy is sustainable relief and recovery leveraging investments in the emergency and recovery phases into the longer-term development of human settlements. Through participation at the earliest stages, UN-HABITAT ensures that human settlements interventions are linked to long-term development strategies in disaster hit countries. UN-HABITAT Pakistan has over 500 national and international staff and has offices in Islamabad, Lahore, Karachi, Quetta and Mardan. In addition to these locations, UN-HABITAT maintains 12 field offices

throughout Pakistan. The field operations of UN-HABITAT Pakistan are based on community led development through its Community Agreement modality.

UN-HABITAT Pakistan's HySter (Hygiene, Sanitation and Water) Programme works through emphasizing on Behaviour Change Communication (BCC) for improved hygiene, total sanitation and safe drinking water with due emphasis as per order of acronym. HySter utilizes humanitarian assistance in a rights based manner to set basis of progress towards Sanitation and Water related MDGs.

1.3 Peepoople

Peepoople is the developer, producer, seller and distributor of the Peepoo sanitation solution. The Peepoo is a self-sanitising single-use biodegradable toilet that after use turns into valuable fertilizer. Peepoople's mission is that everyone should have access to hygienic and dignified sanitation.

In the event of emergencies and areas struck by disaster, the Peepoo can save lives on a massive scale by effectively preventing the spread of disease at the source. Peepoople has developed a model for rapid widespread implementation of Peepoo in the crucial emergency response phase. This Peepoople Humanitarian Response Model provides a solution to deliver hygienic in-home sanitation to minimum 50,000 beneficiaries within three weeks time by integrating the distribution of Peepoos with already proven models for Hygiene Promotion.

To demonstrate the Peepoople Humanitarian Response Model for potential partners Peepoople has developed Peepoo Try, a small-scale trial for 10 families during 10 days.

1.4 People

The people who worked with Peepoo Try in Pakistan were:

Kamran Naem, Manager Basic Services Unit, UN-HABITAT Pakistan

Enayat ur Rehman, BCC Officer, UN-HABITAT Pakistan

Tahir Badsha, Social Mobiliser, UN-HABITAT Pakistan

Ayesha, Social Mobiliser, UN-HABITAT Pakistan

Maria Berndtsson, System Designer and Field Officer from Peepoople in Sweden

2 Purpose

The purpose of the Peepoo Try project with UN-HABITAT Pakistan was to demonstrate Peepoo's viability, acceptance, effectiveness and benefits as an emergency response solution for Pakistan.

3 Responsibilities

UN-HABITAT was responsible for:

- Selecting the trial area and the ten families to participate in Peepoo Try.
- Providing community mobilisers, translator and transportation.
- Hosting Peepoople's personnel.

Peepoople was responsible for:

- Supplying Peepoos, supporting products and training material.
- Providing one Peepoople Field Officer to lead and implement the Peepoo Try project.
- Training UN-HABITAT's community mobilisers.

UN-HABITAT and Peepoople were jointly responsible for the evaluation.

4 Method

4.1 Implementation

4.1.1 Facilitator Introduction and Training

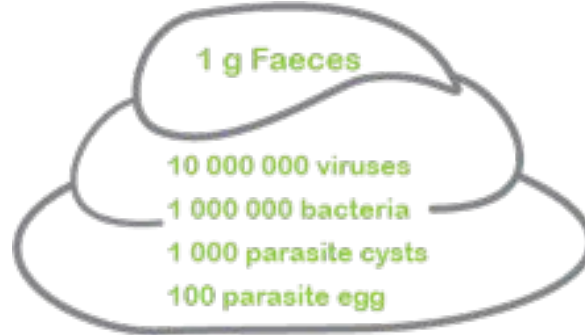
A one-day Peepoo introduction and training was conducted with two local UN-HABITAT community mobilisers / facilitators. The two community mobilisers were selected by the local UN-HABITAT office in Hyderabad, one male and one female to be able to have separate community training sessions for men and women if needed.

It was later shown that the community training could be conducted jointly for men and women in both villages. The evaluations, however, were conducted separately because of the sensitive nature of the questions asked, where women were interviewed by the female mobiliser and men by the male mobiliser.

The training was divided into three main blocks; Introduction, Why to use Peepoo? and How to use Peepoo. In between the blocks time was given for the mobilisers to practise what to say and how to convey the messages effectively to the community.

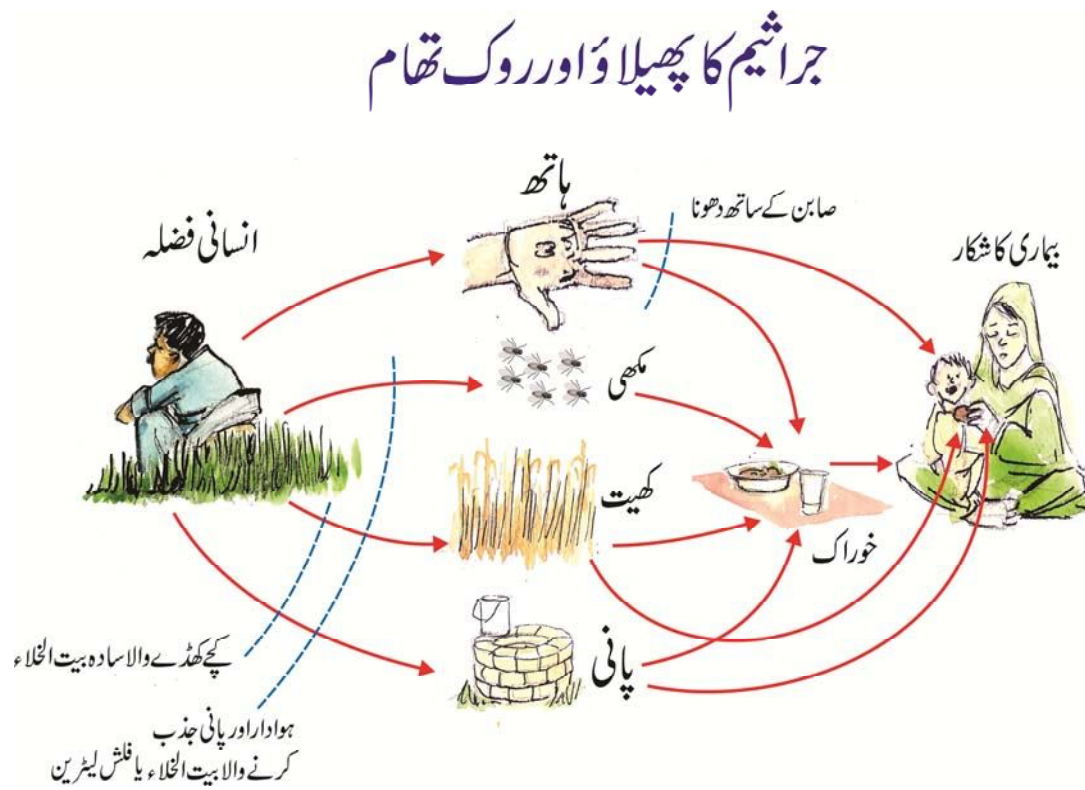
In the introduction a day-by-day plan for the Peepoo Try was agreed upon. The Peepoo Try would engage ten families to try Peepoos for a period of ten days. There would be a one-day training for the facilitators and then one day where the facilitators train and mobilise the community. After the training the ten families would start using Peepoo and follow up would be made to ensure correct usage and address possible issues. After the ten days an evaluation of the training, perceptions and usage would be carried out with the ten families.

In order to make the facilitators understand “Why to use Peepoo?” they were introduced to problems related to faeces and what faeces contain, illustrated in the image below.



When realizing that just one gram of faeces contains ten million viruses, one million bacteria, one thousand parasite cysts and one hundred parasite eggs it is easy to understand how rapidly diseases can spread from one person to another if there is no safe disposal of excreta, for example if open defecation is practiced.

The most commonly spread diseases due to lack of proper sanitation are diarrhoeal diseases, and to explain how these diseases spread from one host to another the four-F-diagram was used.



Four-F-diagram, UN-HABITAT BCC Material (Source: Participatory Hygiene and Sanitation Transformation Manual (PHAST) 1998)

In the four-F-diagram it is illustrated how faeces, from an infected person, migrates through carriers like fingers, flies, field and fluids through foods and further on to another host. The two most efficient ways to prevent this chain of disease spreading is to practice safe stool disposal and hand washing with soap. Using the four-F-diagram it is easy to understand how the Peepoo can secure completely safe stool disposal and prevent the spread of diarrhoeal diseases as the faeces are immediately contained and isolated from the individual and its environment at the source and then all pathogens are inactivated inside the Peepoo in just a matter of weeks.

The health benefits and unique disease preventing features are of course major reasons Why to use the Peepoo, but there are many other benefits for the user as well. The Peepoo offers easy access to a clean odour-free toilet in or next to the shelter at all times, ensuring especially women's and children's dignity, safety and protection. Being a personal toilet the Peepoo offers individual freedom as to where and when to use it, and children can easily be prevented from defecating in the open. It also cleans up the home environment and offers simple odour-free handling and disposal of excreta eliminating the risk of contaminating the environment and water sources. After use Peepoo becomes safe high-value fertilizer that can be used to help grow crops and improve livelihood.

A brainstorming session was performed together with the facilitators in order to identify the benefits that could best motivate the community in the two selected villages to use Peepoo.

The result can be seen in the list below:

- Using Peepoos eliminates the risk of animals eating human excreta on the ground followed by drinking or eating from people's potteries.
- Peepoo is good for vulnerable people that might be disabled from polio for example; since they cannot walk it is difficult for them to manage themselves.
- The Peepoo is secure for women because they do not have to venture out far from their home.
- The village can be kept clean, which means it is less smelly.
- It can protect from animal bites since the Peepoo can be used close to the home and people do not have to venture out in the bush for defecation.
- The Peepoo stops children from defecation close to the kitchen in the open.
- It is also good for the agriculture as the Peepoo can be used as fertiliser.
- It is free of charge.
- To make sure the community really realize the health risks from open defecation local examples to illustrate the problems and hazard with open defecation should be highlighted.
- Children often defecate just next to the kitchen and when the mother then cooks, flies travel with faeces onto the food.

- Animal such as goats or dogs often eat faeces that is lying around the home and then go and drink from plates and potteries.
- When woman are cleaning nappies on one side of the small river another woman is sitting cleaning herself taking in the same water in her mouth.
- To finish the “Why to use Peepoo?” session the facilitators were asked to practise, both in Urdu and English, to make sure they had understood and could pass on the messages.
- The “How to use Peepoo” session was much more practical and first the Peepoo field officer Maria showed how to use the Peepoo step-by-step and then the facilitators Ayesha and Tahir were asked to do the same.

The different steps are basically:

1. Show the Peepoo and explain that it is a single-use personal toilet that works like a micro-treatment plant and cleans the faeces inside through a powder in the bottom.
2. When the faeces are clean inside you can use the Peepoo as a fertiliser just by digging it down in the ground.
3. When using the Peepoo you start by folding down the outer bag.
4. Then you fold out the green inner layer so that it creates a funnel.
5. After that you need to make sure that the Peepoo is open all the way down to the urea powder.
6. Then you just place the Peepoo over a bucket or any kind of container, use it and when finished you toss the green inner layer back into the outer bag and close the Peepoo with a knot.



Children demonstrating “How to Use the Peepoo”

The “How to use Peepoo” session was also finished off with a practice session. Last of all an action line of how the community training would be conducted was made. It would start with an introduction of Peepoo and UN-HABITAT followed by a few questions to get the community engaged. The questions would concern if they have latrine or not and what they do if they do not have access to latrine and also if they face any problems. When the introduction and warm-up questions are done the four-F-diagram would be introduced and the local examples on how it looks like in their villages brought up. After that the Peepoo would be introduced, as a solution to the problems with open defecation. And finally the facilitators would practically show how to use the Peepoo.

4.1.2 Community Mobilisation and Training

It was decided that two villages were to be selected for the Peepoo Try and those were Ali Acbar Rind and Lal Bux Rind in the Sindh region. Criteria for selecting villages were that they should not have access to toilets and that the majority of the community should practise open defecation. Also it was important that the village community gave their consent and were willing to participate in trying the Peepoo. The two selected villages were quite close to each other but still far enough so they would not influence each other when it came to the result of the Peepoo Try evaluation.

In the first village Ali Acbar Rind the Peepoo team with Maria from Peepoo and Ayesha, Tahir and Enayat from UN-HABITAT were introduced to the head teacher of the school in the village and he was also the head of the village. After a short introduction and explanation of the purpose to our visit the head teacher gathered the village community and there were 35-40 persons present, around 55 per cent women and 45 per cent men. The head teacher was asked if he preferred to have the training divided between male and female or all together and he declared that it would be fine to conduct the training jointly.



Women gathered for the Peepoo Training

When the community had gathered Ayesha took the floor and started by explaining what was the purpose of us being there and also described what kind of organisation UN-HABITAT is. Ayesha explained that UN-HABITAT is working with flood-affected communities promoting water, sanitation, hygiene and shelter. She also explained that UN-HABITAT had been doing an assessment in the community earlier if they recognized them from before.

Then to start interact with the community Ayesha asked how many have latrines, and as suspected no one had a latrine and they all practiced open defecation. Ayesha then explained the problems related to open defecation. The four-F-diagram was introduced and it was explained how fingers, flies, field and fluid can transport faeces and thereby spread diseases from one person to another. Ayesha also gave examples from the community's everyday life that they could relate to, such as children defecating close to the cooking place and then flies travel from the excreta straight onto the food.



Ayesha and Tahir describing the four-F-diagram in Ali Acbar Rind

When the community had realized the problem Ayesha introduced the Peepoo saying that it can prevent all the above problems and explained the benefits with the Peepoo e.g. clean home environment, children do not defecate in the open next to the kitchen, it makes the faeces safe and it can provide security for the women so they do not have to go far at night, etc. She also described how the Peepoo, that is completely mobile, can be of good help for disabled people, e.g. persons with polio that cannot move.

After stating the benefits with the Peepoo both Ayesha and Tahir took part in demonstrating how to use the Peepoo. The community got to feel the urea powder in the bottom and they

said they could relate the way to use Peepoo as a fertilizer to the way they use animal manure in their farming.



Ayesha demonstrating the urea powder in the Peepoo in Ali Acbar Rind

The demonstration covered all the different steps; open, use, close and disposes. To make sure the community had understood volunteers from the community were asked to do the same demonstration in front of the group.



Volunteer from the community demonstrating that he has understood how to use the Peepoo

The training session was finished off with reconnecting to see if the community had understood. They were asked if they had understood and if they could remember the benefits of using Peepoo. The community answered that it is good because you will not be ill and you will have a clean environment. Also the faeces will not come into your food through flies and other means. It is good for patients, elderly and pregnant that are not so mobile. It is also good for the security, but here they said their fear is more related to animal and snakebites when practicing open defecation.



Demonstrating the day's snake catch

Then it was explained that we wanted to have volunteers for using the Peepoo and we got many families that were interested to participate in the Peepoo Try. The community selected the six families to participate. One Peepoo Personal Pack and one bucket were distributed to each family, and we also walked around the village visiting all six families in their homes.



Volunteers for Peepoo Try in Ali Acbar Rind

Lal Bux Rind was selected as the second village. Lal Bux Rind is a bit smaller than the first village with about 35 households compared to Ali Acbar Rind's 150 households.

Around 25-30 people gathered for the training in Lal Bux Rind and it was about 60 per cent women and 40 per cent men. The training was performed in the same manner as in the first village, with the only difference being that Tahir had the leading role.



Tahir introducing Peepoo in Lal Bux Rind

4.1.3 Follow up

The follow up was made the day after the community mobilisation and training was conducted. The purpose of the follow up was to ensure all ten families had understood and started using the Peepoo.

How it was done was that Maria, Ayesha and Tahir went from household to household to ask some informal and check-up questions to the head person in each family. Ayesha talked to the women and Tahir talked to the men in order to make the participants speak more openly and answer honestly to our questions. This worked very well and there was a good and trusting relation to all community members.

Usage record was also taken and from that it was showed that all except one household had used Peepoos. The reason that one household had not started using Peepoo the first day was that they thought they should wait to start until the follow up was made the second day. During the follow up we were also taking the opportunity to talk to some of the children from selected families. It was recognised that a few of the children were somewhat shy when it came to using the Peepoo. For this reason a separate session about the "How to use the

Peepoo” was made for the children to gain increased confidence in using Peepoo. It was a very successful exercise and in the end we could see a high usage of Peepoo and a positive attitude towards Peepoo among children.



Special Peepoo training session for children

4.2 Evaluation

4.2.1 Observations

Observations were made in the two villages at different times during the ten days that the Peepoo was used to see in practice how and where Peepoo was being used.

Peepoos were typically used in or just next to the families' shelters, or in some other private place such as the bathing area.

Used Peepoos were collected and stored in biodegradable disposal bags (Peepoo Moyla) at household level until disposed of in dug holes in the fields just outside the villages.



Storage of used Peepoos in Peepoo Moyla (biodegradable disposal bag)

4.2.2 Questionnaire

Since Peepoo Try included only ten families the evaluation result are not statistical but rather showing a tendency and giving qualitative answers and feedback. The evaluation was made with the volunteering contact person in each family and it was divided into three main parts: 1) personal information, 2) questions concerning the Peepoo training session, and 3) the usage and performance of the Peepoo.

Looking at the composition of the families the total number of participants in Peepoo Try was 71 persons. Out of these 71 half was over and half under fifteen years old, also the distribution between male and female was divided 50/50. Out of the ten contact persons eight were women and two were men.

When looking at the answers concerning the Peepoo introduction and training all of the participants thought it was easy to understand the facilitators. All participants also thought they got sufficient information at the training to independently use the Peepoo and no one felt they needed more information.

The part of the evaluation concerning the use and function of the Peepoo started with a few background questions about the participants' current state of sanitation facility. Out of the ten families no one had a latrine before the flood and now after one family had got a dry pit latrine, although they still used the Peepoo. All families without latrine practised open defecation and the three most frequently mentioned problems when defecating in the open were snake and dog bites together with the hassle of having to go far from home. The user acceptance of the Peepoo was very high and all of the members in the participating families were using Peepoo, only with the exception of the really small children still too young.



Woman using Peepoo Kiti (Peepoo holder for sitting or squatting) and Peepoo Yizi (privacy tent)

Regarding the perceived experience and feeling when using the Peepoo all users declared that they felt it was safe, private and clean. Most common reasons for feeling safe were that the Peepoo could be used near to the home protecting above all women and children from having to venture out far from the home. This also helped the people to avoid being bitten by animals and made it possible for them to save time when not having to walk far. The feeling of privacy was also explained by the fact that Peepoo could be used at home. The main reasons for the Peepoo feeling clean was that it did not smell when used and for taking away bad odour in the home.

When it comes to more practical aspects of the Peepoo all users except one thought the size of the Peepoo was good and that the excreta could enter easily. The one user that did not like the size thought that the volume was not enough and had trouble knotting the Peepoo because it was too full. The volume was also the issue for half of the participants not to use the Peepoo for both urine and faeces because they were afraid it would get too full and they would have problem knotting it. However, none of the participants that did use the Peepoo for both pee and poo declared they had any problem with knotting it. When it came to the smell one user thought it smelled, three users occasionally experienced some smell and six users experienced no smell at all.

The participants were also asked to state what they thought to be the most important benefit of the Peepoo and the winning benefits were the health benefits and the fact that it is clean and does not smell. Other benefits mentioned were that it could be used at home, that it is easy to use and good for the environment.

To conclude the evaluation all participants agreed that they wanted to use the Peepoo and half of the users wanted to continue using the Peepoo forever. All users thought the Peepoo was a very good sanitation solution for a shorter emergency period that might last a few months.

A summary of the questionnaires is found in Appendix 1, and the individual questionnaires for each family are found in Appendices 2-11.

4.2.3 Usage

We measured the usage in each family to see how many Peepoos were used per day. In the village of Ali Akbar Rind they used on average 0,9 Peepoos per person per day and in the village of Haji Lai Bux they used on average 1,6 Peepoos per person per day.

There were more infants in the families of Ali Akbar Rind, which resulted in a lower average usage of Peepoos.

| Village 1 | Ali Akbar Rind | | Date | | | | | | |
|-----------|----------------|--------------|--------|--------|--------|--------|--------|--------|-------|
| NO. | Name: | Family size: | 26-Oct | 27-Oct | 28-Oct | 29-Oct | 30-Oct | 31-Oct | 1-Nov |
| 1 | Zebonisa | 9 | 6 | 3 | 2 | 8 | 8 | 8 | 1 |
| 2 | Zaida | 5 | 2 | 5 | 5 | 4 | 4 | 5 | 3 |
| 3 | Shazia | 5 | 1 | 7 | 3 | 4 | 3 | 3 | 3 |
| 4 | Shahjaha | 10 | 8 | 8 | 4 | 8 | 8 | 8 | |
| 5 | Ghulam Haider | 10 | 3 | 8 | 14 | 4 | 5 | 2 | 4 |
| 6 | Shahnawaz | 10 | 0 | 4 | 7 | 7 | 6 | 5 | 3 |
| Total | | 49 | 20 | 35 | 35 | 35 | 34 | 30 | 14 |
| Average | | | 0,41 | 1,75 | 1,00 | 1,00 | 0,97 | 0,91 | 0,45 |

| Village 2 | Haji Lal Bux | | Date | | | | | | |
|-----------|--------------|--------------|--------|--------|--------|--------|--------|--------|-------|
| NO. | Name: | Family size: | 26-Oct | 27-Oct | 28-Oct | 29-Oct | 30-Oct | 31-Oct | 1-Nov |
| 7 | Zenat | 4 | 3 | 7 | 9 | 6 | 7 | 8 | 10 |
| 8 | Latifa | 5 | 1 | 4 | 5 | 5 | 6 | 5 | 5 |
| 9 | Halima | 7 | 5 | 3 | 11 | 7 | 6 | 7 | 5 |
| 10 | Sikandar | 6 | 5 | 7 | 6 | 6 | 6 | 6 | 6 |
| Total | | 22 | 14 | 21 | 31 | 24 | 25 | 26 | 26 |
| Average | | | 0,64 | 1,50 | 1,48 | 0,77 | 1,04 | 2,81 | 2,81 |

Usage of Peepoos per family

5 Conclusions

The overall conclusions from the Peepoo Try in Sindh were very positive. The Peepoo was found to be an attractive, viable and cost-effective sanitation solution for emergency response in Pakistan.

The Peepoo was easily accepted and very quickly adopted in the communities affected by flooding. It was quick to implement as well as easy to understand and use. All families who participated in this evaluation were satisfied with the solution and wanted to continue using it. In particular women and children appreciated having easy access to a clean and private toilet at family level at all times.

The results from the Peepoo trial in the Sindh floods in 2011 showed that the communities very quickly adopted the Peepoo sanitation solution and open defecation quickly came to an end. As part of the implementation, training and promotion on sanitation and hygiene was conducted and the start of positive behavioural change was clearly noted among the users. The beneficiaries also saw the direct value of utilising the used Peepoos as fertiliser, which nurtures the community livelihood.

These results show that the Peepoo solution offers a good opportunity to capitalise on humanitarian assistance when moving into recovery and development phase. The Peepoo would be able to lay the foundation for the behavioural change that needs to happen in order for the MDG's on sanitation and water to be reached.

5.1 Promotion and Community Mobilisation

The trainings for both facilitators and for users were conducted faster than expected and it was very easy for users to understand how to use the Peepoo. We got good response from our local examples as people could identify themselves and realize the problem and understood how Peepoo could be a solution.

The fact that users after the training could consider to be promoters for others indicates that it is easy to understand how to use Peepoo and to explain how the system works.

To have a separate promotion session for children proved to be very effective and contributed to good response and high acceptance among children.

5.2 Usage

Both villages embraced the Peepoo solution. All users liked the fact that it was clean, safe and private, and they found it easy to understand how to use the Peepoo. They liked the system already when they attended the training and we got more volunteers than we could support during the demonstration.

The system with Peepoo Moyla (disposal bag) for storage and collection of Peepoos on household level until disposed of proved to work very well.

From the experiences in Pakistan it was concluded that children could start using the Peepoo by themselves without assistance from the age of five.

The users understood and appreciated the value of used Peepoos as fertilizers, and easily accepted to use Peepoos on their fields.

5.3 Cost comparison

UN-HABITAT and Peepoople jointly did a cost comparison, comparing Peepoo with the cost of constructing an Emergency pit latrine and a Raised latrine in Sindh based on UN-HABITATs estimations. All costs throughout the value chain were included, as well as hygiene promotion and hygiene kits. The outcome varies depending on for how long the intervention is assumed to last and how many are assumed to share each latrine.

| USD One person | 1 month 20 p/latrine | 1 month 40 p/latrine | 3 months 20 p/latrine | 3 months 1 HH/latrine |
|-------------------------|-------------------------|-------------------------|--------------------------|--------------------------|
| Peepoo with Kiti & Yizi | 10 | 9 | 16 | 17 |
| Pit latrine | 18 | 11 | 18 | 44 |
| Raised latrine | 28 | 16 | 30 | 78 |

The most fair comparison would be to assume one latrine per household, in which case a 3 months period per person would cost 17 USD for Peepoo, 44 USD for Pit latrine and 78 USD for a Raised latrine, assuming on average 7 persons per household.

When assuming that 20 people share each latrine with the length of intervention being 3 months, the cost is 16 USD per person for the Peepoo compared to 18 USD for the Pit latrine and 30 for the Raised latrine. This is illustrated in the table below.

Cost comparison per person for 3 months

Assuming 20 persons per latrine in line with Sphere standard

| USD | Peepoo | Pit latrine | Raised latrine |
|--|----------------|----------------|----------------|
| Equipment and material | \$0.00 | \$8.25 | \$16.88 |
| Peepoos | \$10.13 | \$0.00 | \$0.00 |
| Bucket, Kiti, Yizi | \$1.36 | \$0.00 | \$0.00 |
| Construction cost | \$0.00 | \$0.75 | \$1.00 |
| Transportation and logistics costs in Pakistan | \$0.02 | \$0.87 | \$0.87 |
| Management cost | \$0.76 | \$3.50 | \$3.50 |
| Hygiene promotion incl. hygiene kit | \$4.16 | \$4.16 | \$4.16 |
| O&M | \$0.00 | \$0.00 | \$2.14 |
| Decommissioning | \$0.00 | \$0.50 | \$1.50 |
| | \$16.43 | \$18.04 | \$30.05 |

5.4 Conclusions on main benefits of Peepoo solution

UN-HABITAT Pakistan concludes that the Peepoo is a viable emergency response sanitation solution for floods in Pakistan, the main benefits being:

- Immediate disease control and effective prevention of communicable diseases by quickly ending open defecation and securing safe and sustainable containment and disposal of excreta, protecting water sources from becoming contaminated.
- Rapid and easy to implement at scale. Distribution of Peepoo should be combined with hygiene promotion and ideally also hygiene kit distribution.
- Flexibility and mobility. Addresses difficulties with planning figures, such as one latrine per 20 people and separate latrines for men and women. Peepoo is ideal for spontaneous settlements that are often difficult to plan and reach.
- Requires limited behavioural change since the usage of Peepoo is closer to current OD (open defecation) practices, as compared to directly having to convert to a fixed-point latrine.
- Safety and dignity, especially for women, girls and children who get easy access to a clean safe toilet in or next to their dwellings. Peepoo help reduce risk of gender-based violence in disasters.
- Possibility to fulfil the Sphere minimum standard in sanitation. Peepoo can be used in-shelter and is personal and single-use, eliminating shared sanitation facilities.
- The high acceptance among children makes it easy to prevent kids from defecating in the open close to living and kitchen areas.
- Compared to both emergency pit latrine and raised latrines Peepoo is a cost effective solution for up to 6 months usage, also working well as a transition solution into the development phase, helping catalyst crucial behavioural change required to make OD come to an end.

Appendices

Appendix 1 - Summary of the Questionnaires

Appendix 2 - Peepoo Try Evaluation, Shahnawaz

Appendix 3 - Peepoo Try Evaluation, Ghulam Haider

Appendix 4 - Peepoo Try Evaluation, Zabunisa

Appendix 5 - Peepoo Try Evaluation, Shazia

Appendix 6 - Peepoo Try Evaluation, Shahjahan

Appendix 7 - Peepoo Try Evaluation, Zaida

Appendix 8 - Peepoo Try Evaluation, Sikandar

Appendix 9 - Peepoo Try Evaluation, Zeenat

Appendix 10 - Peepoo Try Evaluation, Latifa

Appendix 11 - Peepoo Try Evaluation, Haleema

Appendix 1 - Summary Peepoo Try Evaluation

| Survey Form # | 1 | - | 0 | 1 | Survey date | 0 | 2 | - | 1 | 1 | - | 2 | 0 | 1 | 1 | |
|--|---|---|---|---|-------------|----------|------------|---|-----------------------------|---|--------|---|-------|---|---|--|
| 1 Personal Information | | | | | | | | | | | | | | | | |
| 1 | Name | | | | | | | | | | | | | | | |
| 2 | Age | | Mean: 26,6 Years (ranging from 16-38) | | | | | | | | | | | | | |
| 3 | Gender family contact person | | Male 2 | | | Female 8 | | | | | | | | | | |
| 4 | Occupation | | Health worker-3 Farmer-2 House wife-4 Student-1 | | | | | | | | | | | | | |
| 5 | Number of people in Family | | Average: 7,1 per family (Total: 71) | | | | | | | | | | | | | |
| a | | | Over 15 Years | | | | | | Equal or Less than 15 Years | | | | | | | |
| | | | Male 17 | | Female 18 | | Male 17 | | Female 19 | | | | | | | |
| 6 | Vulnerable in Family | | Disabled | | Elderly 1 | | Pregnant 2 | | | | | | | | | |
| 2 Information about Training | | | | | | | | | | | | | | | | |
| 7 | Did you get sufficient information to independently use the Peepoo; open, use, close and dispose? | | | | | | | | | | YES 9 | | NO | | | |
| a | If NO; what more informatin did you want? | | | | | | | | | | | | | | | |
| 8 | Did you understand the language of the trainer? | | | | | | | | | | YES 9 | | NO | | | |
| a | If NO; what did you not understand? | | | | | | | | | | | | | | | |
| 9 | Where you satisfied with the answers to your questions? | | | | | | | | | | YES 9 | | NO | | | |
| a | If NO; what question where not answered? | | | | | | | | | | | | | | | |
| 10 | Did the trainers take you approval to participate in Peepoo Try? | | | | | | | | | | YES 9 | | NO | | | |
| 3 Information on Peepoo and its Use | | | | | | | | | | | | | | | | |
| 11 | Did you have latrine before the flood? | | | | | | | | | | YES | | NO 10 | | | |
| a | If YES; what type of latrine? | | | | | | | | | | | | | | | |
| b | If NO; Why not? | | Not affordable | | | | | | | | | | | | | |
| 12 | Do you have latrine now? | | | | | | | | | | YES 1 | | NO 9 | | | |
| a | If YES; what type of latrine? | | Dry Pit-1 | | | | | | | | | | | | | |
| b | If NO; What do you do for defecation? | | Open Defecation-9 | | | | | | | | | | | | | |
| 13 | Do you face any problem when going for defecation? | | | | | | | | | | YES 7 | | NO 3 | | | |
| a | If YES; what type of problem? | | Snake bite-2 Far from home-2 Dog bite-3 | | | | | | | | | | | | | |
| 14 | Are all of your family members (including children) using Peepoo? | | | | | | | | | | YES 9 | | NO 1 | | | |
| a | If NO; Who is not using? | | Small children | | | | | | | | | | | | | |
| b | If NO; Why not? | | | | | | | | | | | | | | | |
| 15 | Is it easy to understand how to use Peepoo? | | | | | | | | | | YES 10 | | NO | | | |
| 16 | Would you like to have more information on how to use the Peepoo? | | | | | | | | | | YES | | NO 10 | | | |
| a | If YES; What kind of information? | | | | | | | | | | | | | | | |

| | | |
|-----------|--|--|
| 17 | How do you feel when using Peepoo? | |
| a | Safe | YES 10 NO |
| b | Clean | YES 10 NO |
| c | Private | YES 10 NO |
| d | If any NO; Why not? | |
| 18 | Does the peepoo have a good size? | YES 9 NO 1 |
| a | If NO; Did you have any problem?(specify) | It is small, when we use the Peepoo it will not knot |
| 19 | Does the human waste enter the Peepoo easily? | YES 9 NO 1 |
| a | If NO; Did you have any problem?(specify) | No it does not enter easily, it is a size problem |
| 20 | Did you use the Peepoo both for urine and faeces? | YES 5 NO 5 |
| a | If NO; Did you have any problem?(specify) | I think it will be difficult to tight is we use for both |
| 21 | After using the Peepoo was it easy closing/knot it? | YES 8 NO 2 |
| a | If NO; Did you have any problem?(specify) | No the knot does not close tight |
| 22 | Did you have problem with waste leaking from the Peepoo? | YES 1 NO 9 |
| 23 | Does the human waste ever come into the knot? | YES NO 10 |
| 24 | Does the peepoo smell after using? | YES 1 Little 3 NO 6 |
| 25 | Do you have a private place to use the Peepoo? | YES 7 NO 2 |
| a | If NO; Why not?) | |
| b | If YES; Is the place ok for woman to use? | YES 7 NO 2 |
| c | If NO; Why not?) | No need use Peepoo when men are not home |
| 26 | Can you use the Peepoo at night time? | YES 8 NO 2 |
| a | If NO; Why not?) | There is no light |
| 27 | What is the most important benefit of Peepoo? | Healthy environment-1 Can be used at home-2 Easy to use-1 Clean and no smell-3 Good for health-3 |
| 28 | Do you think the Peepoo will work in our community? | |
| a | Short Time | YES 10 NO |
| b | Long Time | YES 2 NO 8 |
| c | If any NO; Why not? | |
| 29 | Would you be willing to continue using the Peepoo? | YES 10 NO |
| a | If NO; Why not?) | |
| 30 | For how long would you consider using the Peepoo? | Short time-5 Forever-5 |
| 31 | If there would be no supply of Peepoos what will you do? | |
| a | Open defecation | 8 |
| b | Build latrine | 2 |
| c | Other (Specify) | |
| 32 | Would you be willing to conduct a Peepoo training for another community, in your area, if asked? | YES 9 NO 1 |
| a | If NO; Why not?) | Did not attend the training |