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UNISEX URINAL USABILITY TESTING

REPORT

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Executive Summary: Uni-sex urinal testing in Nairobi slum (Part 1 of 2)

- **Background**: Industrial designer Sarah Keller, working and living in Kampala, Uganda from 2008 to 2009, wanted to design a product that serves the inhabitants of urban slums in Africa. A Nairobi slum was chosen for testing as a seriously affected urban area lacking a basic sanitation system. The sanitation situation in the slums of cities like Kampala and Nairobi is characterised by dirty latrines; filled up pits; long queues of waiting users; idlers, drunkards and bang smoking men around the facilities, all of which makes it hard, especially for women, to use the public facilities. The result of Sarah Keller's work is the unisex urinal, which was developed in cooperation with Crestank, a Uganda subsidiary of a production company specialized in water containers, storage tanks and toilets made from plastics. Their HQ is in Nairobi.
- **Goal of unisex urinal**: The design was led by the overall aim to enhance the slum residents' human dignity. Especially designed to serve the needs of women, it should also serve the other family members. It should be producible with local material and local industrial partners. As a sustainable product, it should have a far reaching impact in areas such as hygiene, health, environment, education and economy.

Executive Summary: Uni-sex urinal testing in Nairobi slum (Part 2 of 2)

- **The testing phase:** The needed baseline, selection of families, community mobilization and testing phase lasting 3 months included placement of the unisex urinal with 2 x 10 families for 2 weeks and 1 week at a large primary school in a slum of Nairobi. The testing with families and school children was to assure that the product served the goals of the unisex urinal can be reached in the local context. One of the main intentions was to gain user feedback to ensure that the final product will be successful and can then be mass produced as a part of a scalable value chain for sanitation. The collection and sale of sanitized urine to farmers will serve the community as a source of income to maintain the value chain serving the community.
- **Results of testing phase**: We experienced a great support by the community at all levels before and during the testing phase. The primary users (women) were very happy about the sense of relief, security and function the product gave them. The test has confirmed that women want to have access to this product. There is a certain willingness to pay for such a product, therefore additional studies should be undertaken regarding the market, production, distribution and information campaigns. We should also see how the unisex urinal can be customized for disabled people who gave great feedback when using it while bedridden.

OUTLINE

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Introduction
Organizations' Goal / Mission / Objectives

- **Sustainable Sanitation:**

  A common goal to SuSanA (GIZ: Funds provider) and Sustainable Sanitation Design (Urinal Designer and Project manager). Hence, their commitment in improving hygienic conditions of residents and schoolchildren of Mukuru kwa Njenga slum by providing them with an effective, user-friendly sanitation product: a unisex urinal.

Introduction
Organizations' Goal / Mission / Objectives

Sustainable Sanitation Alliance (SuSanA) :

- Contribute to the achievement of the MDGs by promoting sanitation systems which take into consideration all aspects of sustainability
- Raise awareness of what sustainable sanitation solutions are and promote them on a large scale
- Highlight the key role of sanitation for achieving a whole series of MDGs showing how sustainable sanitation systems should be planned with the participation of all stakeholders and go hand in hand with hygiene promotion
- Aim at a paradigm shift in sanitation by the promotion of reuse-oriented sanitation approaches without compromising health

Introduction
Organizations' Goal / Mission / Objectives

- ***Sustainable Sanitation Design (Susan-Design) :***
  - Design better sanitation equipment and delivery systems that bring back the nutrients to the soil through agriculture is one way of creating income and incentives for increased sustainability. By combining good products, seamless logistics, business incentives with micro-finance, the system can be implemented in cities across Africa.
  - Create and implement solutions for improved sanitation in urban slums and schools across Africa. Income creation and going to scale with better products will secure sustainable sanitation service to millions of people.

Introduction
Product: Susan Design Unisex Urinal

- The urinal has been developed by industrial designer Sarah Keller working in Uganda in cooperation with Crestank.
- It is expected that the urinal would enhance slum residents' human dignity and have far reaching impact in areas such as hygiene, health, environment, education, economy, ...
-The testing phase of the urinal prototype aims at getting users' feedback regarding its usability, efficiency and users' friendliness which would assist in improving the product before its industrial production.

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Introduction

Testing Site: Mukuru Kwa Njenga Slum

–***Mukuru kwa Njenga*** is one of the largest slums in Nairobi with a population of more than 100,000. Situated in eastern part of the Kenyan capital, the slum had cholera outbreaks in 2009 and 2010. Insecurity, poverty, ignorance, alcoholism, waterborne diseases, HIV/Aids and lack of proper sanitation are some of the Mukuru residents' challenges.

–Mukuru kwa Njenga, like any other slum in Nairobi, is an informal and illegal settlement that is not included in the city planning for any kind of sewerage, drainage or water services. Lack of these services renders the slum an unhygienic living place for the residents who consider it as their 'home'. Every small open space is a toilet for children and adults who, at times, use plastic bags (flying toilets) to defecate and dispose of it wherever they can. The few toilets in this filthy area are charged at kshs 3 to 5 (Euro cents 3 –5).

Introduction
Pre-Testing Survey Report

The urinal usability testing was preceded by a period of community and participants mobilization during which a pre-testing survey was conducted to get some feedback information on the sanitation habit and challenges within the participating community. The survey report underlined the following:

1. Use of toilet facilities during the day

- The area has provisions of both formal (pit latrines, paying toilets) and informal toilet (polythene bags, empty cooking fat plastic containers) facilities.
- The major problems associated to daytime use of the available toilet facilities include: Dirty latrines; filled up pits; long queues of waiting users; idlers, drunkard and bang smoking men around the facilities; lack of money for the paying toilets; restrictions by the latrines' owners; and the few numbers of toilet facilities.

2. Use of toilet facilities at night

- Due to fear of insecurity outside the houses, household members do not use the external toilet facilities at night. Majority of the residents use small empty cooking plastic containers, which are emptied in the mornings and kept for reuse. Others use polythene bags (flying toilets) that are later thrown away in the morning, whereas a few use plastic basins that are emptied in the morning, cleaned and reused for washing or bathing...

- The use of these sanitation devices has its own problems, such as strong faeces and urine smell within the houses, shame of parents using them in the presence of their children, and difficulty in disposal of the waste in the mornings.

Introduction
Pre-Testing Survey Report

3. Sanitation challenges faced by residents

– Majority of residents walk about 100 to 200 m to access the latrine. They expressed some of the sanitation challenges as follows: poor hygiene, scarcity of water, the few toilet facilities available are dirty, open sewage, poor drainage, permanent strong odor in all trenches, lack of money to access the paying toilets, cases of waterborne diseases like typhoid, dysentery and cholera (Mukuru kwa Njenga had a cholera outbreak in mid-2010).

4. **Use of Susan Design Unisex Urinal**

– Sampled users were willing to use the urinal that would solve the urine smell problem in households, help them to save money and avoid embarrassment related to improvised toilet items and disposal of urine. The distance issue to public sanitation facilities and security would be addressed and they will be able to make some money when urine would be commercialized as fertilizer. Amongst the challenges, they cited adults' daytime use would not be practical especially in the presence of children or visitors in their small single roomed houses and improper use by children.

– Participants requested to keep the urinal after the testing and to have more urinals that would be enough for every one in the slum. They have expressed the need of having a similar project for faeces and of adjusting the urinal unit to suit its use by young girls.

Introduction
Post-Testing Survey

The production of a prototype toilet product that suits the residents' physical, social and cultural environment would help them to acquire self-confidence and regain their human dignity. Such a product needed to be first tested with a small group representing the community so as to get the users' feedback regarding its usability, efficiency and users' friendliness before offering them to the whole community for use.

The prime goal is to validate the new home urinal and create a discussion on how this product can be integrated into a collection system that later is to be part of the urban slum sanitation service chain.

This report gives a summary of data and findings related to the urinal usability testing and other pertinent information collected during the daily site visits and the post-test survey exercise.

Test Planning

Community Mobilization

The planning was done step by step with most of the time dedicated to community mobilization:

- Planning meeting with Mr. Karsten in Nairobi
- Meetings with community leaders, including the chief who was very much supportive of the project
- Meeting with the Mukuru CBOs Alliance Coordinator who mobilized the executive committees of CBOs members of the Alliance
- Constitution of Urinal Testing Steering Committee
- Steering Committee meeting and Sampling of participating households and the school.

Meeting with the chief

Getting the community involved

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Community Mobilization and Test Planning with Mr. Karsten in Nairobi

Steering committee's site visit

Mr. Karsten at the Mukuru kwa Njenga slum chief's office

Mr. Karsten meets the Steering committee members

– Meetings with the test participants

– Mr. Karsten's site visit: Meeting with the local authority (chief) and later with the Testing Steering committee

– Orientation of participating Families and school on the overall usability testing process

– Constitution of Susan Urinal Testing Team

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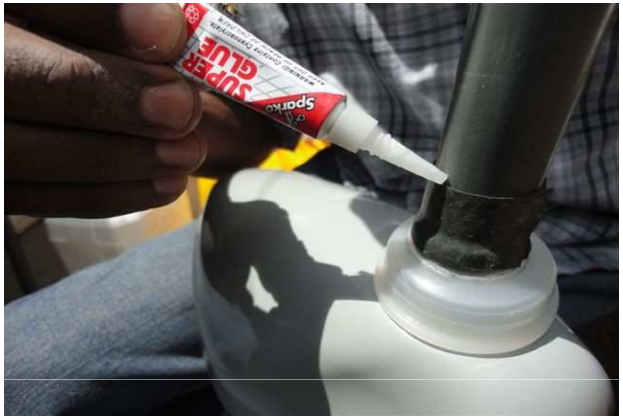
Test Planning
Assembling of Urinal Unit



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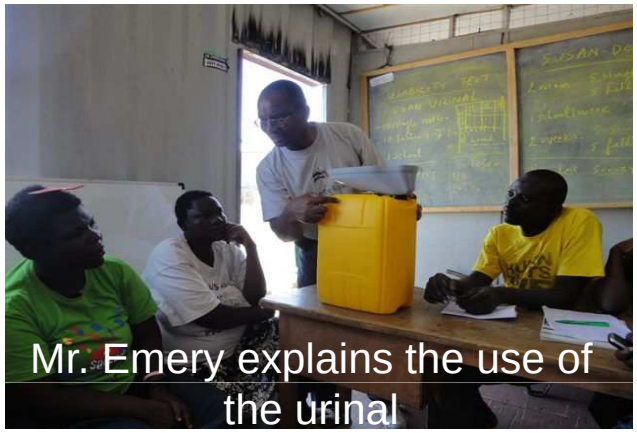
Test Planning
Community Mobilization


Mr. Emery explains the use of the urinal


A focus group discussion

- Susan Urinal Testing Team meeting with test participants and presentation of the urinal
- Dissemination of relevant information on the use of the urinal: meeting with users to provide them with necessary details on the use of the urinal.
- Meetings with the school staff and management
- Focus group discussion guide and Pre-testing survey.
- Home visits of the sampled families.

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Methodology

- Random Sampling of 1 zone (Sisal) and purposive sampling of the second one (Milimani, the centre of 2010 cholera outbreak) amongst the 12 Mukuru kwa Njenga zones, where a school (Mukuru Kwa Njenga Primary school) and 20 households participating to the testing came from.
- 10 single mother's families and 10 families with fathers passing most the time at home were sampled within the 2 zones – Each family consisted of at least 2 children with a minimum of 1 girl and 1 boy.
- The school was purposively sampled due to the sanitation challenge: it has well built, but not fully functional toilets. 10 urinal units were used for a week in conjunction with the other multi-user urinals that are in the school. 4 urinal units were placed in cubicles for girls, and boys used 6 units in an open space within the school.
- The testing took place in 3 rounds and 10 Prototypes of the urinal were used in each round : 1 week in the school, 2 weeks in the first group of homesteads and 2 weeks in the second group of families.

Methodology

- 1 young girl who sustained severe burns on her thighs was presented to the Susan Urinal Testing Team as an emergency case. She was bedridden and had difficulties going to a public toilet. She used the urinal through out the testing period: 5 weeks.
- 3 mobilization meetings were organized with the participants. The urinals were introduced to them at the last meeting prior to the testing.

* The participants' feedback on the structure of the unit, its user friendliness and efficiency within domestic use were collected via focus group discussion guide and interview questionnaire, which were administered to 15 sampled respondents amongst the members of 20 households who used the urinal and to 16 pupils amongst the school population of 1700.

* The report takes into consideration the participants' daily feedback and the Susan Design urinal testing team's observations during the daily site visits.

Data and Findings
Preamble

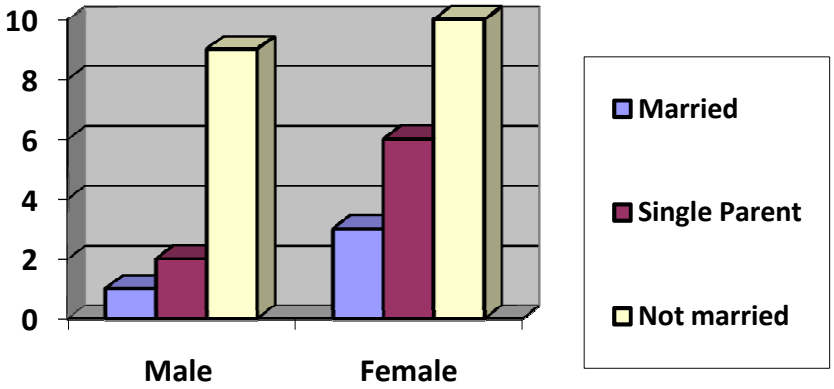
- The report focuses on the data that give key information on the usability of the urinal, mainly its **shape** and **size** indicating if its height, width and length allow comfortable usage and no splashing of urine when urinating, **odor** (smell) that could make it repugnant to be used, the **urine flow** in reference to the diameter of the funnel mouth allowing ease and quick flow in the container. The **color** that can make the urinal attractive to the taste of some users and the **usage frequency**, though noted, are secondary to this testing.

- The report refer mainly to the data and findings from households that used the urinal for 2 weeks though it takes into account the pupils' input since the school involvement provides additional user feedback from children. Where there is no mention of school respondents, the statement refers only to the household survey respondents.

Respondents' Profile

Marital Status

Chart 1: Household and school Respondents' Marital Status



Out of a total of 15 household respondents, 11 were female whereas 4 were male. Most of the respondents were single parents, majority of them being female. The least number of respondents in household survey were the unmarried. This category was taken care of via the testing in school where there was equal gender representation of 8 boys and 8 girls in a total of 16 respondents.

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Respondents' Profile
Respondents' ages

Chart 2: Household Respondents' ages

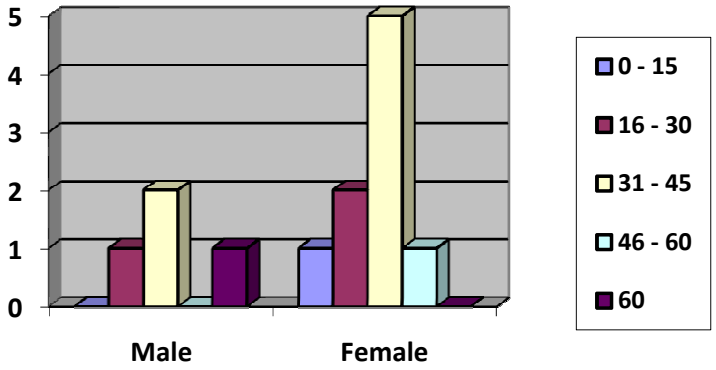
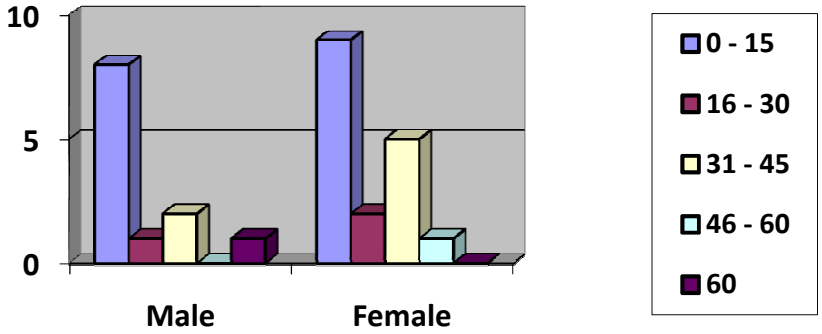


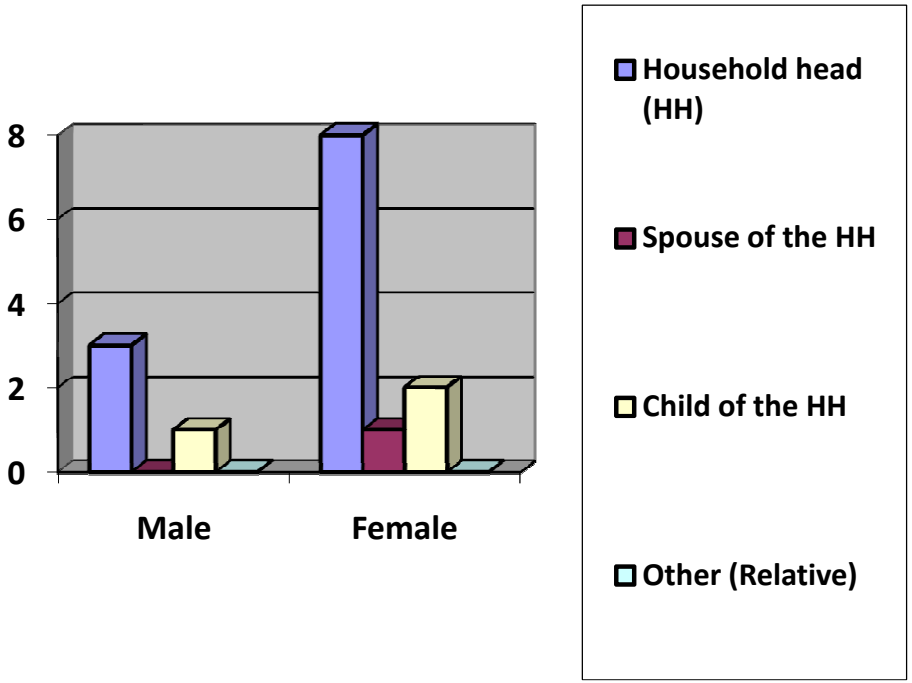
Chart 3: School & Household respondents' ages



- The category of respondents' ages highly represented was 31 – 45 years, with 5 female and 2 male respondents.
- The age categories that were least represented were 0 – 15 (with only 1 female), 46 – 60 (with only 1 female) and that of 60 and above (with only 1 male). The testing feedback for 0 – 15 years old category came from the school where all the 16 pupils participating in the survey were of ages between 9 – 15 years. The combination of school and household respondents' ages is illustrated in chart 3.

Respondents' Profile
Respondent's Relationship to Household

Chart 4: Respondent's Relationship to the Household



The highest number of respondents was household heads, with the most of them being female at 8 and male at 3. These were followed by children of the household heads and lastly spouses to the household heads. There were no relatives or household guests who appeared as respondents.

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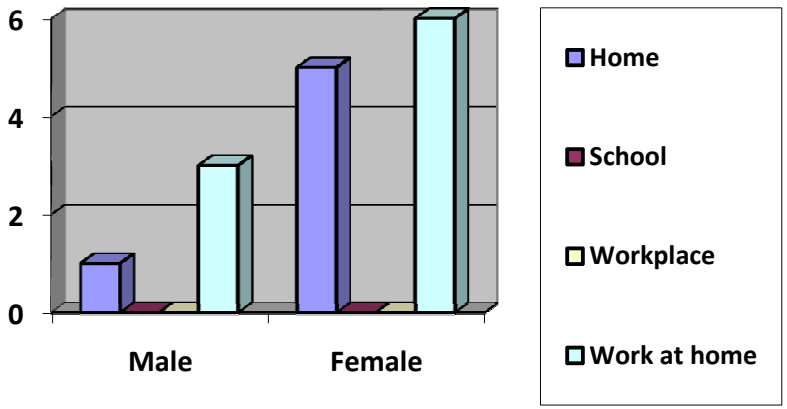
Respondents' Profile
Location of Respondents

Chart 5: Location of Household respondents during the testing period



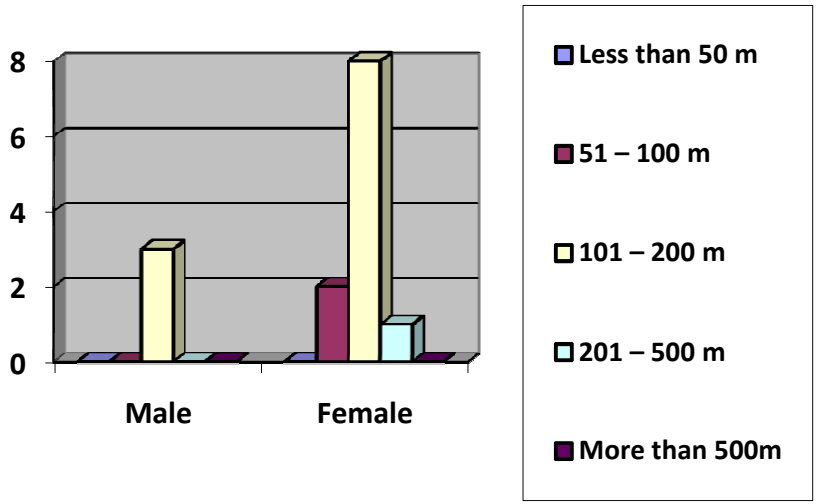
The highest number of respondents had spent most of their time at home either as domestic workers/house wives for the female or working around the households for the male.

With pupils being in school through out the testing and household participants spending most of the time at home where the urinal was placed, it can be said that the users had opportunity to access the urinal any time the need arose, rendering them more acquainted to the product for which they have given the feedback.

They actually knew what they were talking about during the survey. The closeness to the urinal explains as well the high frequency of use by both groups: the household and the school.

Respondents' Profile
Distance between households and toilet facilities

Chart 6: Distance from Respondents' residence to the toilet facilities



The distance from respondents' residence to the toilet facilities ranges from 51 meters to about 500 meters. Most households fall within the range of 101 m – 200 m, which corroborates with the pre-survey information. Pupils had toilet facilities - inadequately functional - within the school.

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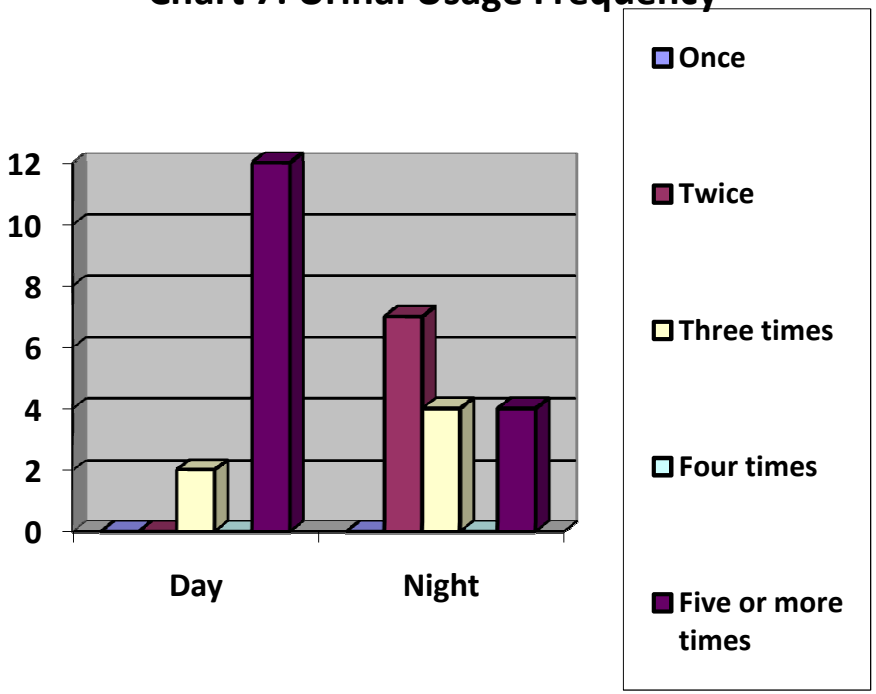
URINAL USABILITY
Frequency of Urinal Use

All respondents used the product at school or at home.



Household usage frequency

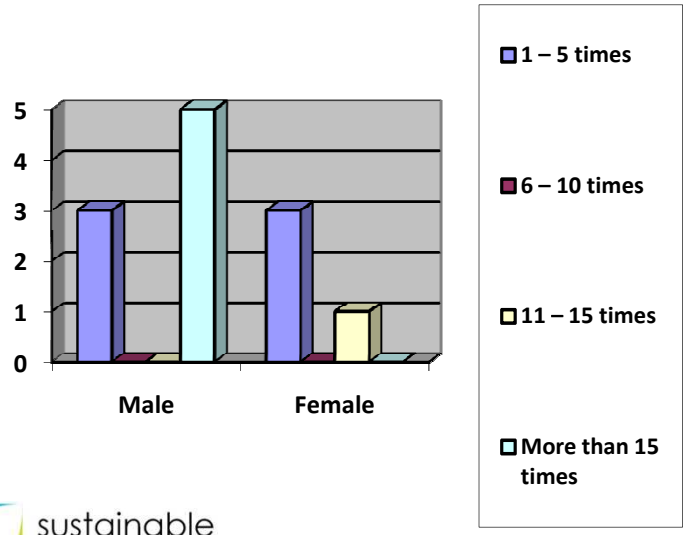
Most household members used the urinals during night hours. Majority of them visited the urinal twice during the night, with a few others visiting more times, either three or five times. In general however, the frequency of day visits by users was pretty high, where almost all visited five times.

URINAL USABILITY
Frequency of Urinal Use

- **School Usage Frequency**

The frequency of usage at school level was recorded through daily tallying of visits by the pupils. Boys used the urinal more frequently than the girls did with an average of 1163 and 758 visits per day respectively in a school of 1700 pupils. Boys filled up an average of 7 containers x 20 liters per day.

Chart 9: School respondents' Usage of Urinal in 5 Schooldays



While girls had an average of 3 x 20 liters.

It is apparent that boys enjoyed using the urinal slightly more than girls with a record of 100% for boys and about 98% for girls who took part in the survey. These high rates were attributed to the fact that the school had dirty/unhygienic toilets, with no comfort in comparison to the urinals. The chart illustrates the frequency as per the response of the 16 pupils who used the urinals within a week; which is in fact 5 schooldays.

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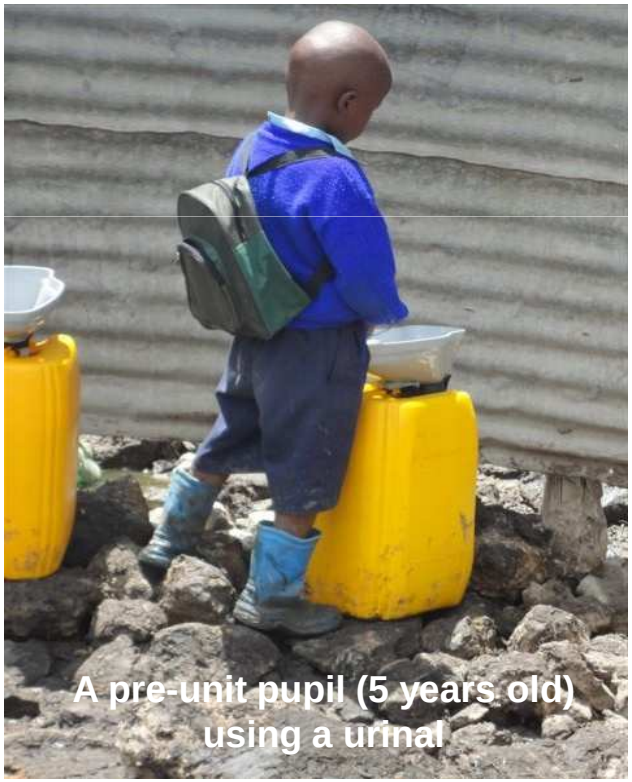
URINAL USABILITY
Urinal User-friendliness

• From the responses, all the users expressed their joy and satisfaction in using the urinal. Majority of them found the urinal convenient in terms of avoiding frequent movements outside, thus time saving and safer during the nights. A few others compared the equipment with their usual improvised items and expressed the equipment's satisfaction in terms of being odorless and usable. Others gave their impression in terms of privacy, reduced chances of infection and as an alternative to the scarcity of toilet facilities.

• According to the school (boys and girls) respondents, over 98% had no problem using the urinals. For instance, boys felt that it was the right size for both the big and small ones with the right number of distribution. For girls, the urinals were viewed as clean, easy to use and of the right size.



A pre-unit pupil (5 years old) using a urinal

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URINAL USABILITY
Urine into the container

Chart 10: Household Urine Flow

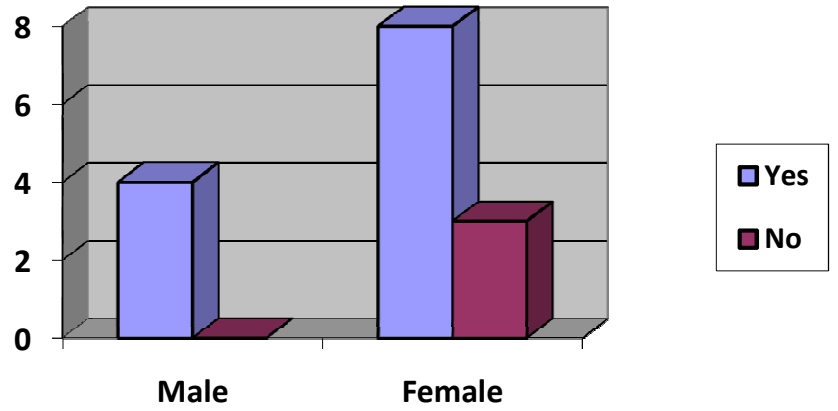
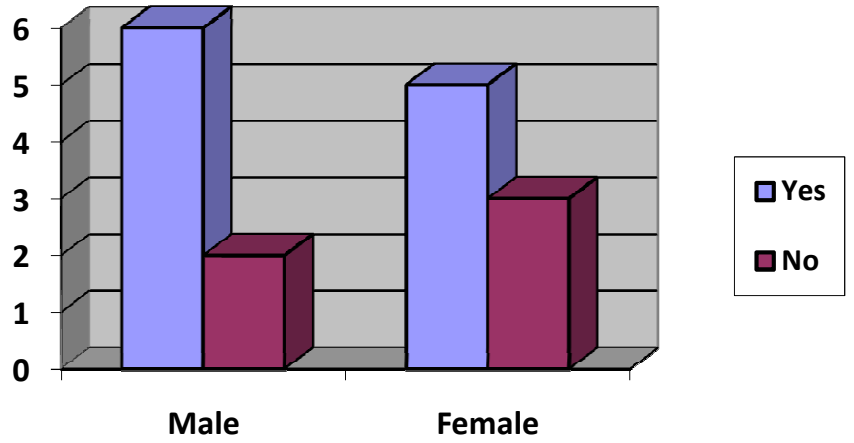


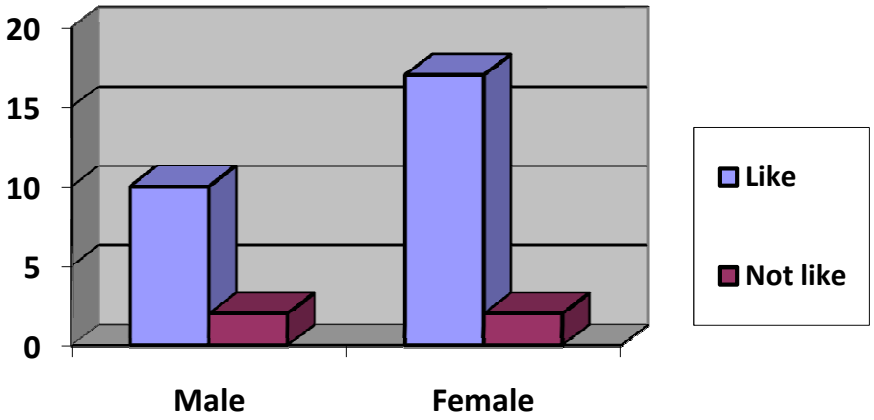
Chart 11: School Urine Flow



There were more female than male respondents who encountered problems in relation to urine entry flow into the container. Majority of the respondents though, felt that the urine flowed well into the container. Those (at household and school levels) who objected to the fact stated that the urine took long to flow into the container due to narrow drainage component.

URINAL USABILITY
Urinal Shape

Chart 12: Household & School Responses to Urinal Shape



An overwhelming number of school and household users liked the shape of the urinal and related it to the formal toilet. Only 1 out 5 respondents who did not like the shape justified her answer saying that she would prefer a circular urinal, while the other 4 talked of its size saying that it was small.

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URINAL USABILITY
Urinal Color

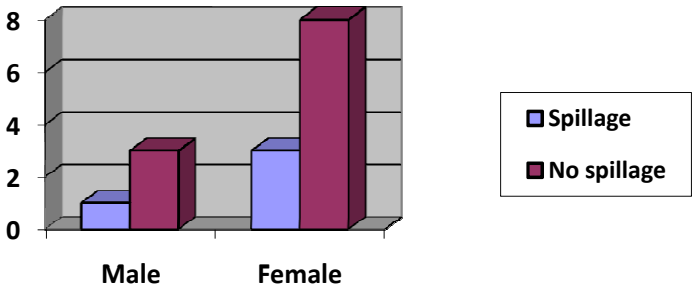
Though the question was not specific to different components of the urinal unit - the funnel (grey) or the container (yellow) - most of the users liked the color of the urinal equipment. Its transparent nature (yellow container) enabled them to view the level of urine and the color (grey funnel) was appropriate in terms of managing dirt. Amongst the pupils, a girl preferred a pink urinal saying that it is her preferred color, another girl suggested color blue and white being the colors of their school uniform and a boy talked of blue color without any explanation.

The designers intention was for it to be blue to secure its hygienic character. Grey was not chosen - prototypes were grey due to production limitations.

URINAL USABILITY

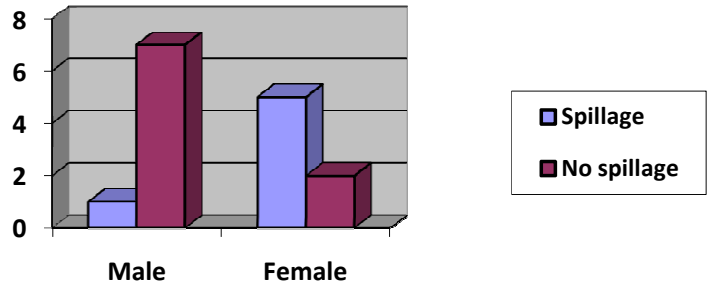
Splashing and Spilling of Urine

Chart 13: Household Response to Urine Spillage



Most users never experienced urine splashing during use. However, the few who noticed the problem attributed it to the container being high, with a narrow collecting plate as expressed by female users, and force/pressure while urinating by the male. Most school girls experienced splashing of urine during use. The reasons given were mainly similar to the household respondents' in additions to loose tape and unstable urinal.

Chart 14: School response to Urine Spillage



Urine spillage in girls' cubicle

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URINAL USABILITY
Urine Smell during and after Use

Chart 15: Household Response to the Urine Smell

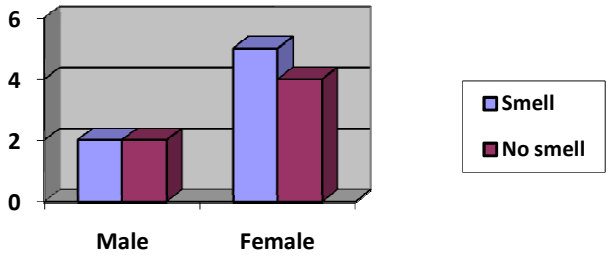
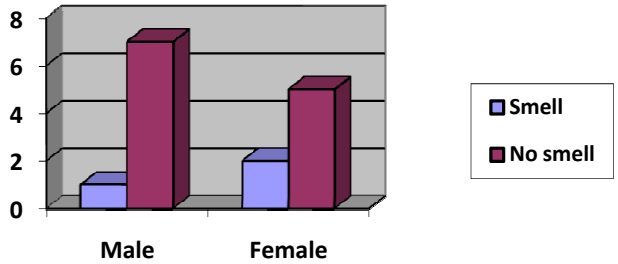


Chart 16: School Response to Urine Smell



- A high number of users felt that there was smell during and / or after use. They mainly attributed this to destruction of the tape during use, thus affecting its airtight nature. The problem was solved when the urinal was air-tightened, they noted.

(P.S. tape is only used for the prototype – the final version will have better link/holding system between jerry can and urinal)

- Most pupils said that there was no bad smell during and after use. However, a few realized there was a slight odor immediately after use, attributing it to the splashing effect during use. There were suggestions to have the collection container stationed a distance away from the urinal and have some clean water to sprinkle over the plate after use.

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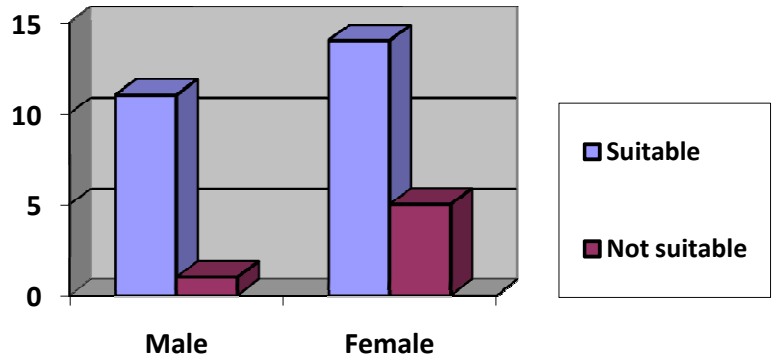
URINAL USABILITY
Urinal Size

Most of the school and household respondents (25 out of 31) found the size of the urinal unit suitable while 1 male and 5 female respondents said that it was too high for small girls and there was a need of making it lower and wider.

The issue of urinal size (the height of the container, the funnel width and length) is once more raised here below.

Chart 17: School and Household responses to the size of the Urinal Unit



URINAL USABILITY
Challenges / Problems experienced

- While all male users having no problems, some of the female users experienced problems using the urinal. These were attributed to the following:
  - Inability to use when children are present in the house.
  - High in level thus affecting the usability and low quality of the supporting tape.
  - Narrow top plate.
  - Small drainage pipe.

- Few girls in the school encountered similar problems. They felt that the size of the plate was small and narrow, causing urine spillage if used without keenness. For the small girls, there was a need of improvising 2 stones they could step on to gain some height and use the urinal more easily.

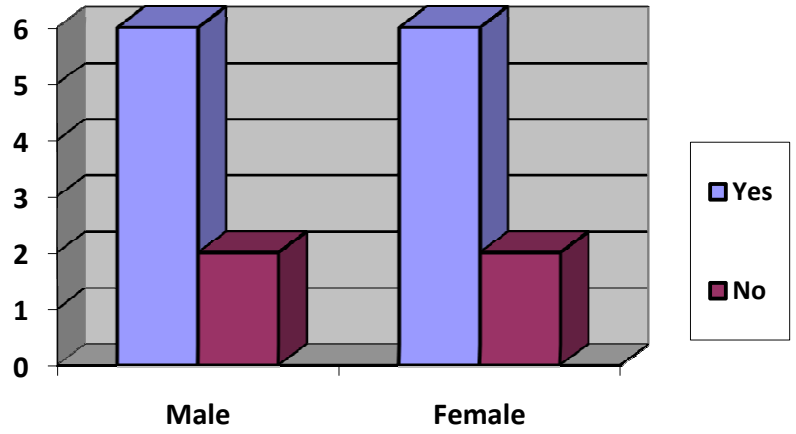
Young girls' cubicle with a urinal between 2 stones. The angle of the urinal reveals a challenge of its use by small girls.

URINAL USABILITY
Suggestions/Proposals on Urinal Modification

- The household users suggested the following modifications:
  - The plate to be widened for better accommodation of urine.
  - The entire equipment should be lowered for easy access.
- Most of the pupils' proposals were similar to those mentioned by the household respondents. In addition, it was suggested that:
  - The urinal be made smaller/shorter to improve use by smaller girls.
  - The plate shape to be made circular and bigger to accommodate urine to avoid splashing.
- However, it was noted among a majority of pupils that the urine flowed easily through the pipe without spilling.
- Despite the challenges in the use of urinal, 95% of the participants in the focus group discussion said that they would prefer using the urinal as it is – same height - in case that the provider is unable to find a shorter container than what was used during the testing period. It was argued that urinating takes only few seconds, thus the pressure put on muscle while urinating is only for few seconds and the users would avoid splashing of urine in case that they urinate without haste.

URINAL USABILITY
Consideration of using urinals at home

Chart 18: Using the Urinal at Home



- 75% of the total number of pupil respondents would consider using the urinals in their respective homes. They attributed this to; its clean nature, privacy, central collection of urine, comfort in use and an alternative to the dilapidated toilets.
- The few who were opposed to its use at home had the fear of young children accessing the stored urine and tampering with the components.

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URINAL USABILITY
Urinal as a Sanitation Solution

'Kashorti', Simo and Mama Mary take a urinal to Vivian, the bedridden girl

There was a strong expression that the urinal would be a key solution to the deteriorated sanitation situation in the area.

'The irresponsible behavior of emptying used containers in the open environment, use of flying toilets and open air urinating due to shortage of toilet facilities would be addressed with the use of Susan Design Unisex urinal', said a respondent.

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URINAL USABILITY
Users' reaction when urinals were taken away

Household Users

• All users were unhappy following the withdrawal of the urinals after the study. They claimed they had got used to them and had difficulties readjusting. All expressed their interests in having the urinals back. This, they felt, would continue addressing the night insecurity, enhance their savings by avoiding pay toilets, improve the area hygiene and address the problem of toilet scarcity.

• They requested Susan Design Testing Team to avail them back as soon as possible in good number so as to be distributed to bedridden members of the community; evoking the case of its use by a fifteen year old girl who sustained severe burns.

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URINAL USABILITY

Users' reaction when urinals were taken away

School Users

- Most of the pupils expressed discontent since the urinals mitigated the toilet menace in the school and were already used to them. 100% of the users expressed their interest to have the urinals back. All acknowledged the urinal as a sanitation solution to the school and surrounding community.

- Pupils expressed a number of benefits of using the urinals: they discourage urinating in the school compound; they are cleaner et reduce the long queues to the main toilets; there is privacy in the use of urinals and there is no urine spilling all over the surface as it usually happens in school toilets.

- During a debate between girls and boys on who should keep the urinals after the testing period, girls justified their position by saying that they were more exposed to health hazards than boys when using unhygienic toilet facilities.

Debate: Girls vs Boys

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CONCLUSION
Respondents' impression on the testing

- Most of the respondents were happy having had an opportunity to participate in the testing exercise. Here are some of the benefits of their participation:
  - Learning about the health hazards associated to use of kasuku containers and polythene bags.
  - Learning how to use the Susan Design urinal and possibilities of future use.
  - Ability to sensitize others on the use of Susan Design urinal.
- However, some female participants disliked the testing process in terms of some difficulties in use of the urinal by young girls and of unhappiness for the withdrawal of the urinals.

Mzee Kariuki NJENGA, the founder of Mukuru Kwa NJENGA slum, a great supporter of the Unisex Urinal, honored the participants' testing closing meeting with his presence, underlining the 'beauty' of the urinal.

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CONCLUSION

Remarks

Urinal Testing in Household

- There were concerns about the urinals being withdrawn from households after users had gotten used to them. How the urinal would help the community in future was also an anxiety.
- The main benefits associated to the urinal included addressing night insecurity, financial savings, and opportunity for producing fertilizer in future.
- Users saw no problem paying some little money to ensure that the urinal be user friendly. The main concerns were to assemblers to have the taping done firmly to avoid destruction during use and the level of the urinal lowered for easy accessibility by all.
- There were requests to have the urinal brought back as a sustainable intervention to the insecurity and poor sanitation in the area. The designers were also challenged to be innovative in designing urinals for special users like the bed-ridden and people with disabilities.

Urinal Testing in the School

Pupil's thought that with the few modifications earlier proposed, the urinal would appropriately serve them. They appreciated having been part of the study and thus a resource towards improving the sanitation in their school and community. Some of their key suggestions on the way forward included:

- Need for supply of more urinals to accommodate the huge pupils population.
- Have someone responsible for cleaning the urinals often.
- Involvement in other development initiatives of such nature.
- Have a water tank nearby to always rinse the urinal (funnel) after every use.

RECOMMENDATIONS

- The second generation of urinal prototype to take into account the users' challenges and suggestions in regard to the use of the urinal - with particular attention to people with disabilities.

- The next urinal development phase is to involve more participants with a final product and not a prototype that did cause some problems.

- The diameter of the lower part of the funnel mouth to be the same as the upper part.

- A strong adhesive tape to be used to secure the air-tightening of the urinal

- To address the issue of urine splashing / spillage by increasing the depth and the width of the funnel by 1 to 2 inches

- The urinal to be produced in one piece: the funnel and the pipe (Note that the length of the pipe as attached to the upper part of the funnel mouth fits very well in the 20l jerrycan used in the testing), OR
- Both the tip of the funnel (where the pipe fits in) and the pipe's (where it fits in the funnel) to be threaded, so that the pipe is just screwed into the funnel tip.

- The challenge of small girls in using the urinal can be overcome by parents availing a potty to them and pouring the urine into the urinal.

RECOMMENDATIONS

- Other issues to be considered before production start: women in menstruation, the use of urinal in a bar, public places and how to assure access to people with severe disabilities.
- Susan-Design have started working on a 'home toilet unit' for defecation. Meanwhile Peepoople and Susan Design to work together in introducing Peepoo to slum dwellers alongside the urinal.
- To initiate a process of bringing farmers on board for the reuse of urine. (Proceed the value chain development – as the urinal is step one in the chain)
- To initiate a process of developing a urine storage that assures its qualities, distribution and commercialization is key to assure fertilizer/commercial value.
- Campaign awareness, sustainable communication and education on the use of urinal as a sanitation solution in slum environment and on the value of urine as fertilizer. Hence development of training and education materials. (Short and sweet communication)
- SuSan Design represents a vision for sanitation for all in urban slums – now that more elements are tested partners that can be part in empowering slum dwellers, improving/bettering their lives and taking them a step closer to the realization of MDGs should come forward.
- Perform an analysis of distribution and financial needs for production in RSA or Nairobi/Kampala. Both in terms of separate distribution and as part of the full value chain.

Annex

Susan-Design Urinal Usability Testing Team

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ASANTE

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