

Results field observations/questionnaires

1 UDDTS at a church and nursery school



Figure 1: On the left side the school building, in the background the front view of the UDDT (source: L.Kraft, May 2011)

1.1 Operation and maintenance

The superstructure is in good conditions without visible damages. The rainwater harvesting system is in place and connected to the water tank. All collection chambers are well functioning and have containers for faeces inside. The urine tank is well connected and not overflowing but has a small leakage in the connection pipe to the soak pit. For small repairs of the toilet the bishop is responsible. The school and church community contributed unskilled labour and water during the construction.



Figure 2 Left: Back view of UDDT facility with single chambers, double chambers and rainwater harvesting system Right: Handwash facility with soap and toilet paper (source: L.Kraft, May 2011)

The handwash facility was in good conditions but there was no water available as the rainwater harvesting tank cracked. According to the teacher interviewed the children carry water to wash their hands. Toilet paper and soap is provided by the school and was available on both sides (male/female).

The double vault UDDT on the ladies side was not in use. According to the teacher there are only few people using the toilet therefore they closed one toilet. The single vault UDDTs on both sides are in use. There was ash available for the ladies side but on the male side the bucket with ash was empty therefore fresh faeces were not covered properly. As observed the person using the toilet last tried to cover the faeces with toilet paper instead.



Figure 3: Wet faeces covered with toilet paper as there was no ash available (source: L.Kraft, May 2011)

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Figure 4: Left: Inside view of the toilet used by men Right: Inside view of the toilet used by women (source: L.Kraft, May 2011)

There are no instructions on usage in- or outside the toilets. The smell in the toilets was tolerable but the cubicles were not well cleaned especially the one which is used by men. As shown in the picture above there was urine on the floor and also signs of faecal cross-contamination in the urine section of the toilet slab. The teachers are cleaning the toilet when need arises and additionally a person is employed for cleaning the toilet once a week. The emptying of containers is done by a church elder for no fee. The containers are emptied after every three month when the school is closed.



Figure 5: Left: Urine tank with small leakage in pipe Right: Container for faeces collection (source: L.Kraft, May 2011)

1.2 Reuse of urine and treated faeces



Figure 6: Church bishop and teacher in front of maize field in the school compound (source: L.Kraft, May 2011)

A field for reuse is available but according to the information given by the bishop of the church, neither faeces nor urine are reused at the moment. The urine goes to a soak pit and the faeces are buried on-site.

According to the bishop the reason is that there is no treatment facility (drying shed) on-site therefore faeces are not yet dry and suitable for reuse. For him it is not practically to transfer the full containers to the double vault to let them dry there as there is not enough space and there are no additional containers for exchange.

The bishop and the teacher would prefer to reuse UDDT products on-site and want therefore to construct a drying shed. They believe it is a valuable fertilizer and there is no health risk after treatment.

1.3 User acceptance

The teachers are training the children on the use of the UDDT and therefore the facility is usually used by all children without problems. Sometimes the new pupils block the urine part as they accidentally pour ash there. To unblock the urine pipes they are just flushed with water. They children are also taught about the importance of handwashing and soap is provided by the school.

According to the teacher the training and workshops were very useful as the explanations were very clear and it enabled toilet users to operate and maintain the toilet by themselves. There is still regular contact with the project implementation team and the school is very happy about the support given by them.

The teacher explained that generally the user acceptance is high. Most of the users feel comfortable in using it and think the design is attractive. They feel that the UDDT is more hygienic and cleaner than the pit latrines used before.

1.4 Challenges:

The main challenge is that there is no collection of the faeces as planned. The school was not provided with a drying shed therefore there is no proper treatment of the faecal matter. According to the bishop

the faeces container are emptied after three month and buried. This could cause a risk to the environment and to the person handling the faeces.

1.5 Recommendation:

It is highly recommended to construct a small drying shed for on-site treatment. There is a field available therefore it would not be a problem to reuse the faeces onsite. The teachers and the bishop would be willing to reuse treated faeces as a fertilizer for maize and bananas planted in the school/church compound.

2 **Case study: UDDTs and greywater treatment at Secondary School, Nakuru Kenya**



Figure 7: UDDT facility at Crater View Secondary School, in front girls' side background, boys' side (source: L.Kraft, May 2011)

2.1 Operation and maintenance

The superstructure is generally in good condition, but one glass of a window at the boys' side was broken. However on the inside walls there are some signs of vandalism especially on the boys' side. The walls have foot- and handprints and there some writings on the wall.

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Figure 8: Left: Foot- and handprints on the inside toilet wall, boy's side Right up: Broken window, boy's side Right down: Writings on toilet wall, boy's side (source: L.Kraft, May 2011)

The handwash facility is in place and functioning but only on the boys' side water was available. The gutter for rainwater collection was blocked which might cause the lack of water. If there is no water available, the rainwater tank it is not refilled manually. There is another handwash facility which is connected to pipe water but as it is far from the toilet it is usually not used by the students. It would be preferable if the handwash facility at the UDDT can be connected to the pipe water to ensure that water is available through out. Usually students use newspaper or toilet paper for anal cleansing but there is no paper or soap for handwashing provided by the school.



Figure 9: Blocked gutter for rainwater collection (source: L.Kraft, May 2011)

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All toilet cubicles and urinals are in use, but one urine pipe was blocked on the girls' side. According to the teacher, blockage of urine pipes was a common problem before. Therefore the school exchanged the old pipes with new pipes having a wider diameter and sieves.

There was ash available in 7 out of the 8 toilets however not one of the fresh faeces were covered with ash. There are no posters or explanations on the right use of the toilet therefore it might still be lack of knowledge. On the boys' side there was a strong urine smell emitting from the urinals, there were signs of cross-contamination, the toilets were dirty, the faeces containers were already filled up and flies were observed while the girls' side was generally cleaner and better maintained.



Figure 10: Left and right fresh faeces not covered with ash although ash is available (source: L.Kraft, May 2011)



Figure 11: Left: Pilled up faeces are visible as containers are filled up signs of cross-contamination in the front part Right: Blocked urine pipe in the girls section (source: L.Kraft, May 2011)



Figure 12: Signs of cross-contamination (source: L.Kraft, May 2011)

There is a person employed, cleaning the toilet once in a week. This person is also responsible for unblocking the urine pipes and generally observing the condition of the toilet. According to the information given by the teacher he also reports to the administration in case of small repairs and when it is necessary to empty the faeces container. The teacher also said the urine tank has not yet completely filled up and urine is not reused. It was observed that the urine tank is filled up but most likely urine is already overflowing and infiltrating in the soil.



Figure 13: Filled up urine tank (source: L.Kraft, May 2011)

2.1 Reuse of urine, treated faeces and greywater

According to the information given the containers have to be emptied after one month. When containers are filled up, the school employs a worker who empties the container in the drying shed which is located within the school's compound. The faeces at the drying shed are very dry, not smelling and ready for reuse. Unfortunately despite a container for sanitary pads the faeces at the drying shed still contain a lot of not degradable material like plastic bags, sanitary pads and degradable material like paper.



Figure 14: Dried faeces in the drying shed mixed with not degradable materials
(Source: L.Kraft, May 2011)

According to the teacher the faeces have been collected there since one year but have not been reused. It is planned to reuse treated faeces for trees and crops planted in the school compound however there is a concern that the students react negatively when faeces are reused. The teacher recommended another training for the students before the treated faeces can be used as a fertiliser.

The treated greywater has also not been reused by the school as the outlet is very little. According to the teacher the outlet was more in the beginning but it seems that the treatment system clogged. As observed the pre treatment containers are filled up with water therefore the problem might be within the system.



Figure 15: Left: Greywater treatment system with settlement tank Right: Outlet of treatment system with very little outflow (source: L.Kraft, May 2011)

2.2 User acceptance

According to the teacher most of the students use the UDDT but especially for urinating while some of them still prefer the pit latrines. Girls also often use the pit latrine to dispose their menstrual pads despite the fact that there are also containers for pads in the UDDT.

The teacher said the workshops were very useful and helped the teachers and students to understand and use the UDDT toilet well. There is only a challenge when new students come as they did not participate in the workshop but they are usually guided by the older students. The project implementation team is still in touch with the school and come for follow up visits. Generally the UDDT attracts many visitors who sometimes come from outside Nakuru district.

There were 6 female and 9 male students interviewed by using a short questionnaire. The results of the questionnaire are summarised below.

The students know the importance of handwashing and are aware that diseases can be prevented by washing hands. They wash their hand if water is available but they do not use soap as it is not provided

by the school. Majority of students interviewed prefer the UDDT before the pit latrines. Main reasons are they are clean, build in a nice/beautiful way and the UDDT offers more space and is therefore less congested. However majority of students admit that there is a smell in the UDDT.

Students like the UDDT toilet because it is never filling up but not all students believe that urine or faeces are a valuable fertiliser and also some students believe there is a health risk especially if somebody is sick. 6 students out of 15 believe that there is no health risk, 4 believe there is a health risk while the rest was not sure or did not answer the question. 9 students out of 15 believe that faeces and urine is a valuable fertilizer, 3 say they are not and the other 3 were not sure or did not answer the question.

Out of the 15 students interviewed only two prefer to use the pit latrines while 13 prefer the UDDT. The reasons given why the students like the pit latrines were, it is less complicated to use and the management of the UDDT is poor and therefore the toilets are dirty and smelly.

2.3 Challenges

There is still a challenge with the operation and maintenance and mainly with the reuse of the UDDT products. So far neither urine nor faeces have been reused by the school. There is the need of creating more awareness on the reuse of faeces and urine for teachers and students. However there are already students who know that faeces and urine are valuable fertilisers and they believe that there is no health risk as long as faeces are treated. According to the students there is also a problem with the proper management of the toilets. Many students indicated that there is a smell in the UDDT and that the toilets are sometimes dirty and not well maintained.

2.4 Recommendation

It would be good to have another workshop mainly focusing on the reuse of the UDDT products. The toilets should be cleaned and emptied more regularly. Problems with proper use of the toilet could be solved by putting posters on how to use them in every toilet. To ensure that there is always water available for handwashing it would be preferable if the taps can be connected to the piped water.

3 UDDTs at a residential plot Nakuru, Kenya



Figure 16: Front view of UDDT at residential plot (source: L.Kraft, May 2011)

3.1 Operation and maintenance

Generally the superstructure is in good condition only some of the stairs are cracked. During the construction the landlord provided water, some construction material and labour. The handwash facility was functioning and water was available. The water source of the handwash facility is rainwater collected from the toilet roof and stored in a tank. There is only one cubical and one urinal in use, the other two toilets are locked as the containers are filled up. The toilet which is in use is only used by the landlord while the tenants use the old pit latrines.

The toilet in use is clean but there is no ash available inside the toilet, as ash is stored outside under the sink. Fresh faeces are not covered with ash, look wet and there are flies in the toilet. There are no instructions on the right use of the UDDT in or outside the toilet.

Urine and faeces are not collected and reused. Urine overflows in the pit of the old pit latrine. The landlord and owner of the UDDT has exchanged the filled up container twice by himself. The first time he dumped the faeces near the dump site during the night as there was no treatment facility or collection service. The second time he exchanged the container and kept them in one of the bathrooms next to the old pit toilet. Now again all the containers are filled up and he does not know what to do with the faeces. As there is still no solution for his problem he decided to lock the UDDTs and now the tenants have to use the pit latrine again.



Figure 17: Left: Container for faeces collection (in use) Right: Old, filled up faeces container stored in the bathroom (source: L.Kraft, May 2011)

3.2 Reuse of urine and treated faeces

The landlord thinks that there are no health benefits from the UDDT as long as there is no safe way of disposing the faeces and it even creates a health hazard as he has to store the faeces himself. The 70l container fills up within 2 month. There is a challenge as only the faeces which are on top of the container dry up while the ones down are still wet.

He believes that treated faeces and urine is a valuable fertiliser but he is not sure if there is a health risk unless there are samples taken to the laboratory.

3.3 User acceptance

During the interview the landlord said that he likes the UDDT as it is well constructed and the design is good but that there are challenges when there are many users. Especially children and drunken men have difficulties to use the toilet properly. Before he closed the toilets he gave keys only to tenants who are responsible and maintain the toilet properly. The toilets do not meet the needs of women who are menstruating as there is no container for menstrual pads. Therefore women have to use the pit latrine to dump their pads.

In the beginning he was very satisfied with his toilet and the input given by the ROSA team but afterwards when it came to the collection he feels that there was not enough support. In his area he knows ca. 10 other households which constructed a UDDT toilet. He started to construct one for himself but after he saw the challenges he stopped the construction.

3.4 Challenges

According to the landlord interviewed, the construction is very good but the operation is a headache. He also feels that the problem is left with landlord and tenants since the project ended and that there is nobody who feels responsible.

Different households with UDDTs were visited within the area and many people said that the UDDT superstructure is of good quality and that they like the way it looks, additionally since the underground is very rocky they prefer the raised UDDT as digging a pit is more expensive. For this reason the idea spread and as mentioned above there are approximately 10 more household UDDTs within the area. Many people took a loan from Family Bank to finance a UDDT but since there is no collection service most of this UDDTs are not in use. Many users shifted back to the pit latrines after the containers filled up and feel like they wasted their money. Some of the UDDTs which are in use might not dispose the faecal waste in a safe way and therefore create a hazard for the environment and people's health. Generally many people feel cheated as they were promised a safe and improved way of sanitation but what they got is worse than they had before.

The landlord who is also the chairmen of MEWAREMA was interviewed twice. Once to explain the challenges he is facing as a UDDT owner and secondly to explain the challenges of the collection service MEWAREMA.

4 **Menengai Waste Recyclers Management (MEWAREMA)**



Figure 18: Dumpsite, compost site and drying shed of MEWAREMA
(source: L.Kraft, May 2011)

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The Menengai Waste Recycling Management (MEWAREMA) is a CBO and licensed as operator for solid waste collection within the peri-urban areas Hilton and London. They further have experience with organic compost production which was done by a women group collecting biodegradable waste from the dump site and supported by Practical Action. During the ROSA project they agreed to offer a collection, transport and treatment service for the faecal matter from UDDTs. Unfortunately since the end of the project no collection of faeces was done by MEWAREMA.

When interviewing James Kilonzo, chairman of MEWAREMA the following key constrains /challenges where identified.

- No market for urine and faeces or co-compost
- Tried to mix urine with organic waste but there are not enough customers
- High investment cost in the beginning
- No profit will be made in the first years of operation (also see MEWAREMA Business Plan written by Franziska Grambauer: http://www.susana.org/docs_ccbk/susana_download/2-801-article2.pdf)
- There are no subsidies available for supporting the collection service in the beginning before it can make profit
- It is not possible to access a loan as they do not have enough money in the bank

Generally MEWAREMA is still willing to do the collection, transport and treatment of the faecal matter but the challenges mentioned above seem hard to overcome. They got a donkey cart which was financed by Practical Action and two donkeys which the group bought for the collection but the drying shed was destroyed by strong winds. However without a market or a customer to sell the co-compost/ faecal material they might not engage at all.



Figure 19: Left: MEWAREMA drying shed which was destroyed by strong winds Right: Donkey cart for transport of faeces (source: L.Kraft, May 2011)

According to the ROSA operation and maintenance strategy MEWAREMA should sell the co-compost to NAWACOM (Nakuru Waste Collectors and Recyclers) who are responsible for marketing and compost selling.

5 NAWACOM (Nakuru Waste Collectors and Recyclers)



Figure 20: Office and selling point of NAMACOM (source: L.Kraft, May 2011)

NAWACOM is an NGO based in Nakuru, they operate a packing and mixing machine which is used to produce the organic fertilizer "MAZINGIRA". The manager of NAWACOM Wilfred Tarus and two of the employs were interviewed.

Main challenges which were identified during the interview were:

- Marketing is a challenge as people value chemical fertilizer more than organic fertilizer
- Many people believe that chemical fertilizer is having a better effect than organic fertilizer
- Compost containing urine and faeces cannot be market openly but it can be used as long as customers not know (compost from "organic waste")
- Doubts if produced co-compost is "safe", they would only buy when lab tests are done and it can be proved that it has not high amount of heavy metals, pathogens or other harmful substances

6 Municipality Council Nakuru

During the implementation of the ROSA project the Municipality Council of Nakuru was one of the important stakeholders therefore also the Director of Environment Sammy Kimani was interviewed.

According to him there was no change or adjustments of regulations concerning sanitation or reuse of faeces and urine. The reason given was that ROSA was a pilot and the uptake is slow therefore only special conditions were given for composting onsite in small scale. Generally he welcomes the involvement of the private sector for operation and maintenance of sanitation systems. Entrepreneurs in that field are given licenses and have to agree on given conditions concerning hygiene, management and charges for the offered service.

The municipality was supposed to partner with WASTE and Practical Action to develop a five years business plan to facilitate upscaling of on-site sanitation. This business plan was aimed to be funded by the Dutch SPA (Sanitation Program Africa). However the proposal was never handed in and according to Mr. Kimani it can only be handed in after the ISSUE 2 (Integrated Support for Sustainable Urban Environment) program ends in Dec.2011.

7 Conclusion and recommendations

Generally the UDDT itself, the design and also the usage is widely accepted and liked by the users. However the concept of reusing treated faeces and urine as a fertiliser seems still a big issue to many even at the ROSA pilot sites where people were well trained and educated on the reuse of UDDT products.

Lack of a functioning collecting, transport and treatment system is a key constrain to the sustainability of the constructed UDDTs. Therefore there is an urgent need to overcome the challenges otherwise a lot of users have no other option than demolishing or abandoning their UDDTs and return to the pit latrines or flying toilet they used before.

From the observations in the field and the interviews done with different stakeholders the main challenge is the marketing of the UDDT products. Therefore it is crucial to invest in different marketing strategies to increase the demand on organic fertilizer containing urine and treated faeces. This could be done through demonstration fields, free fertilizer distribution, awareness creation through advertisement, workshops or direct contacting potential customers like tree nurseries or flower farms.

Another solution could be that urine and faeces are reused in a different way for example to produce biogas or to feed larvae of black soldier flies which are very nutritious and can be used to feed animals (see <http://www.esrla.com/pdf/landfill.pdf>). However it is necessary to react quickly as people get more and more frustrated and many already stopped using the UDDTs after investing a lot of money.

Questionnaire for Crater View Secondary School Students

1 General Data

1.1 Gender: female male

1.2 Age:

2 Questions on the toilet facility

2.1 What do you think of the toilets at the school?

2.2 Which toilet do you like better, the old toilet (pit latrines) or the new toilet (UDDT)?

Please give reasons why?

2.3 Are there any problems with the UDDT toilet? Please write yes/no

- Dirty	
- Smell	
- Flies	
- Too far away	
- Not big enough	
- No privacy	
- Difficult to use	

Questionnaire for Crater View Secondary School Students

2.4 Do you use the UDDT toilet?

Give Reasons: Why, or why not

2.5 Do you ever wait to go to the toilet until you are home?

Why?

2.6 Do you wash your hands after using the toilet?

Why/ why not?

2.7 When do you use soap?

Why?

2.8 Do you think treated faeces and urine is a good fertilizers?

Why/Why not?

2.9 Do you think there is a health risk to use treated faeces and urine as fertilizer? Why?

Thank you for your participation. Please let me know if you have any questions.

Questionnaire for Crater View Secondary School

1 General Data

1.1 Date

1.2 Number of pupils: total, girls, boys

1.3 Age range of students

1.4 Data of the respondent(s)

Name	Function	Telephone and/or e-mail

2 Questions on the toilet facility

2.1 Describe the toilet conditions before and after the project. What has changed?

2.2 Are there any problems with the toilet?

– Cleanliness	
– Smell	
– Flies	
– Distance	
– Not big enough	
– Poor construction	
– Operation/Maintenance	
– Usage	
– Design	

- 2.3 Do children use the toilets? If they don't, where do they go?

- 2.4 Are students urinating /defecating outside the toilet? (Where/since when)

- 2.5 What material do students use for anal cleansing?
(Water/toiletpaper/newspaper/other..)

- 2.6 What do girls do when they have their menstrual periods?

- 2.7 Do the current conditions meet the needs of girls who are menstruating?

- 2.8 Where do the girls dispose their menstrual pads?

- 2.9 How do girls accept the female urinals, are there any problems in usage?

- 2.10 Do students always wash their hands after using the toilet? Why/ why not?

- 2.11 Is soap provided by the school, if yes which kind, if not why not?

2.12 Was handwashing promoted to the school during the ecosan project?

2.13 In your opinion, do you think that the toilet facility brought some health benefits to your school?

2.14 What recommendations would you make to improve the toilet?

3 Questions on operation and maintenance

3.1 By whom and how often is the toilet cleaned?

3.2 Who is responsible for maintenance and small repairs of the toilets?

3.3 If the urine pipe is blocked, what do you do?

3.4 How do you remove and dispose sanitary pads and other non-decomposing material?
(Burn, throw in pit, bury...)

3.5 Who is responsible for emptying the container for urine and faeces?

- 3.6 How often are containers for faeces and urine emptied?
- 3.7 If urine collection tank is full, how do you empty it?
- 3.8 Who is filling the rainwater collection tank if there is no rain (water is used for what?)?
- 3.9 How do you maintain the facilities in general and during and after school holidays?
- 3.10 What are the running costs? (Operation and maintenance)
- 3.11 Have there been any problems with operation and maintenance?
- 3.12 What recommendations would you make to enhance operation and maintenance of the toilet?

4 Questions on reuse of urine and treated faeces

- 4.1 What happens to the collected faecal material?

- 4.2 How and for how long are urine and faeces stored before reuse?
- 4.3 Is the collected urine used?
- 4.4 Are collected faeces used?
- 4.5 What plants are fertilized with urine and treated faeces?
- 4.6 Do you think treated faeces and urine are valuable fertilizers? Why/Why not?
- 4.7 Do you think there is a health risk to use treated faeces and urine as fertilizer? Why?
- 4.8 Do you think the use of urine and faeces has any impact (positive/negative) on crop production? Why?
- 4.9 Have there been any problems with the reuse of urine and faeces?

4.10 What recommendations would you give to improve the reuse of urine and treated faeces?

5 Questions on the greywater treatment system

5.1 Who is responsible for maintaining the greywater system?

5.2 Is the treated greywater used?

5.3 What are your experiences with using treated greywater?

5.4 Have there been any problems with the use of greywater or the greywater treatment system?

5.5 How could the greywater treatment system be improved?

6 Questions on project implementation

6.1 Are you satisfied with the support you got by the project implementation team?
(Training, design, construction...)

- 6.2 Was there any contribution to the construction costs by the school (in cash and/or in kind of...?)
- 6.3 Do you think the awareness creation and training workshops were useful for the students and teachers to understand and accept the ecosan technology?
- What did you like most about the workshops?

 - What could be done differently?
- 6.4 Do you believe the training enabled the students and teachers to operate and maintain the toilet facility by themselves?
- 6.5 Do you still have contact with the project implementation team? When was their last visit?
- 6.6 Do you have any recommendations how the support by the project implementation team could be improved?

7 Wrap up

- 7.1 Do you know of any other schools which have constructed a similar toilet facility?

Questionnaire for UDDTs at a residential plot

1 General Data

1.1 Date

1.2 Number of users/door:

1.3 Data of the respondent(s)

Name	Function	Telephone and/or e-mail
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2 Questions on the toilet facility

2.1 Describe the toilet conditions before and after the project. What has changed?

2.2 Are there any problems with the toilet?

– Cleanliness	
– Smell	
– Flies	
– Distance	
– Not big enough	
– Poor construction	
– Operation/Maintenance	
– Usage	
– Design	

- 2.3 Do children use the toilets? If they don't, where do they go?
- 2.4 Are children urinating /defecating outside the toilet? (Where/Since when)
- 2.5 Do all tenants use the toilet? If they don't, where do they go?
- 2.6 What material is usually used for anal cleansing? (Water/toiletpaper/newspaper/other..)
- 2.7 What do female users do when they have their menstrual periods?
- 2.8 Do the current conditions meet the needs of women who are menstruating?
- 2.9 Where do the female users dispose their menstrual pads?
- 2.10 Was handwashing promoted to the school during the ecosan project?
- 2.11 In your opinion, do you think that the toilet facility brought some health benefits?

2.12 What recommendations would you make to improve the toilet?

3 Questions on operation and maintenance

3.1 By whom and how often is the toilet cleaned?

3.2 Who is responsible for maintenance and small repairs of the toilets?

3.3 If the urine pipe is blocked, what do you do?

3.4 How do you remove and dispose sanitary pads and other non-decomposing material?
(Burn, throw in pit, bury...)

3.5 Who is responsible for emptying the container for urine and faeces?

3.6 How often are containers for faeces and urine emptied?

3.7 Who is filling the rainwater collection tank if there is no rain (for what is water used)?

3.8 What are the running costs? (Operation and maintenance)

3.9 Have there been any problems with operation and maintenance?

3.10 What recommendations would you make to enhance operation and maintenance of the toilet?

4 Questions on reuse of urine and treated faeces

4.1 Are the collected urine and faeces used onsite or collected by a service provider?

- If used onsite:
 - How and for how long are urine and faeces stored before reuse?

 - What plants are fertilized with urine and treated faeces?

 - Have there been any problems with the reuse of urine and faeces?

 - What recommendations would you give to improve the onsite reuse of urine and treated faeces?

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- If collected:

Name of service provider:

Contact of service provider:

How often is urine collected?

How often are faeces collected?

Amount of money charged per collection/How paid (monthly/weekly/after collection...)

- of urine
- of faeces

Are you satisfied with the service offered?

What could be improved to make the collection service better?

4.2 Do you think the use of urine and faeces has any impact (positive/negative) on crop production? Why?

4.3 Do you think treated faeces and urine are valuable fertilizers? Why/Why not?

- 4.4 Do you think there is a health risk to use treated faeces and urine as fertilizer? Why? /Why not?

5 Questions on project implementation

- 5.1 Are you satisfied with the support you got by the project implementation team? (Training, design, construction...)
- 5.2 Was there any contribution to the construction costs by the school/ church community (in cash and/or in kind?)
- 5.3 Do you think the awareness creation and training workshops were useful for the students/teachers/church members to understand and accept the ecosan technology?
- What did you like most about the workshops?

 - What could be done differently?
- 5.4 Do you believe the training enabled the students/teachers and church members to operate and maintain the toilet facility by themselves?
- 5.5 Do you still have contact with the project implementation team? When was their last visit?

- 5.6 Do you have any recommendations how the support by the project implementation team could be improved?

6 Wrap up

- 6.1 Do you know of any other households which have constructed a similar toilet facility?