Technical Review of Water, Sanitation and Hygiene Promotion Activities for T-Shelter Beneficiaries

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External Technical Review Consultant

Kay Mattson, MSW, MPH

A qualitative review of the Red Cross Red Crescent (RCRC) Water, Sanitation and Hygiene Promotion activities in communities in Jacmel, Petit Goave and Leogane, Haiti by the following Red Cross Societies:

International Federation of Red Cross and Red Crescent Societies

Croix-Rouge suisse
Schweizerisches Rotes Kreuz
Croce Rossa Svizzera

Croix-Rouge Haïtienne

Deutsches Rotes Kreuz

Røde Kors
Hindrer og lindrer nød

Cruz Roja Española

Austrian Red Cross

Rode Kruis

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EXECUTIVE SUMMARY

The Technical Review of Water, Sanitation and Hygiene Promotion (WatSan) activities for T-Shelter Beneficiaries in Leogane, Petit Gôave and Jacmel was commissioned by the International Federation of Red Cross (IFRC) in Haiti to identify the lessons learned and best practices of the WatSan activities implemented within the framework of shelter provision in rural areas of Haiti following the 2010 earthquake. The purpose of the technical review is to support the learning process within the Haiti Earthquake Operation as well as to provide insight and guidance for future Red Cross activities of a similar nature, both in Haiti and in other countries. A key component of the review was focused on gathering information on the technical aspects of the implemented activities to be archived for future reference. The review considered the WatSan activities implemented by seven Red Cross Red Crescent Societies (RC) including the IFRC, the German and Austrian Red Cross' Joint Recovery Program (GRC/AutRC), Netherlands Red Cross (NRC), Norwegian Red Cross (NorRC), Spanish Red Cross (SpRC) and the Swiss Red Cross (SwissRC) between May 2010 and August 31, 2013. All of the RC projects have ended, with the exception of the GRC/AutRC and SwissRC projects, which are set to end in September 2013 and April 2014 respectively. The review was conducted between August 10, 2013 and September 10, 2013 over a period of 25 days with ten days in Haiti. The project included a range of activities including review of over 100 documents, an on-line survey completed by WatSan staff members, site visits to implemented water and sanitation projects and focus group discussions with project beneficiaries.

The T-Shelter WatSan project had a significant impact on the communities of Leogane, Petit Goave and Jacmel. As a result of the RC efforts over 17,000 T-shelter beneficiaries have new, or rehabilitated latrines, and a broad range of water projects have been implemented that serve both T-shelter beneficiaries and their surrounding communities. A wide range of latrine models were implemented to fit the various terrain conditions (e.g. rocky soils and flood prone or high water table areas) of the targeted communities. Implemented toilet models included basic ventilated improved pit latrines (VIP), raised VIP latrines (raised double and single chamber concrete pit), pour flush toilets with a septic tank and EcoSan (urine diversion with dehydration) toilets. The majority of latrines constructed were VIP latrines. All projects involved beneficiaries in the construction of latrines, either through the digging of pits, and/or the transport of materials and provision of water for the concrete slabs/raised pits constructed on site. All the Red Cross Societies were involved in the prefabrication of some parts of the latrines, with two Participating National Societies (PNS)s (SwissRC and NorRC) establishing more involved prefabrication construction processes, including the prefabrication of concrete slabs that can be easily moved by households when latrines become filled with waste and need to be desludged, or moved. The majority of RCs provided a complete latrine structure to their targeted T-shelter beneficiaries, with both the GRC/AutRC and the SpRC requiring that some, or all, of their beneficiaries, be personally responsible for adding their own latrine walls. All but the SpRC implemented some type of new or rehabilitation water project, covered in more detail below.

Overall quality of the observed implemented projects was high with some noted areas for improvement, in particular related to the EcoSan toilets implemented by the IFRC, limited to no consideration related to what happens to latrines when they become full, and overall hygiene promotion

methods/approaches which were conducted with limited, to no, ability to measure change in knowledge and practices among targeted beneficiaries.

EcoSan toilets were constructed by the IFRC in seven communities of Leogane, with a significant number of the toilets constructed in the last three months of the project. The site visit conducted at one community during the review found few of the EcoSan toilets being used, or used properly, with households' reportedly practicing open defecation instead of making use of their EcoSan toilet. It appears that insufficient time was allowed to insure adoption or monitoring of this newly introduced technology by at least some of the targeted households. In addition, there are some questions as to whether or not this toilet is an appropriate technology for individual Haitian households without the combined implementation and availability of additional waste removal/collection strategies.

All of the latrines developed by the RC will require the household to either move, or have waste removed from their latrine pits or septic tanks, when they become full at a future date. None of the PNSs or the IFRC addressed this pending issue in their work, outside of some making some latrine slabs easily movable, with the prefabricated slabs discussed above. While this is a promising innovation, it only addresses one component associated with the future challenge of what to do when latrine pits are full.

Beneficiaries participating in FGDs overwhelmingly indicated that the latrines provided to them by the RC were an improvement in quality over latrines that they had prior to the earthquake, where many had no latrine. The exception was households in the one FGD that had received EcoSan toilets, where all participants stated that the quality of latrines had worsened. The price of constructed latrines based on available data ranged from $177 to $820 USD per latrine, not including labor and/or materials donated by beneficiaries, or RC costs, e.g. staff, logistics, etc.

Hygiene promotion efforts were undertaken in all of the RC projects. The PNSs and the IFRC used a variety of approaches; with most looking to cover a broad range of hygiene promotion messages and focuses related to hand washing, use of latrine and WatSan related disease prevention, most often cholera. Limited information was available to enable the review and assessment of materials and methods used. There was inconsistency in how hygiene promotion related baselines or endline surveys were implemented, if conducted at all, by the PNSs or the IFRC which would have enabled the implemented project's ability to measure change, and/or the level of effectiveness of implemented hygiene promotion programming, or overall programming that supports hygiene practice over time. FGD's found beneficiaries with varying degrees of knowledge and reported hygiene practices among participants. FGD Beneficiaries who looked to have been exposed to more frequent/strategic programming (based on RC reports) demonstrated a higher degree of accurate hygiene knowledge, and were able to provide a greater level of specificity associated with desired hygiene practices. For hygiene promotion efforts to be effective, an enabling environment needs to be in place to support the practice of such behaviours. The construction of household latrines by the RC is one critical enabling environment infrastructure component that will support the reduced practice of open defecation by T-shelter beneficiaries. However, only the IFRC implemented infrastructure, hand washing stations, that specifically supports the practice of hand washing after latrine use.

The water projects implemented by the RC were very diverse and varied from community to community. Household rain catchment systems which captured water off the roof of T-shelters into

plastic tanks were the most broadly applied water project implemented by the PNSs and the IFRC. Other methods included spring catchment and water distribution systems, a community level rain catchment cistern, water collection points/kiosks and borehole or artesian wells; the GER/AutRC Joint Recovery Program distributed ceramic water filters (CWF) to some of their T-shelter recipients. The SwissRC is in the planning phases of a larger, more permanent, rain catchment cistern system for households or groups of households, but the system has yet to be approved or implemented in the field, however it looks promising. Of the projects observed, most appeared to be of good quality and working, with the exception of some broken/inoperable taps, a common problem found among Haiti's water systems. The PNSs had mixed results with the household rain catchment systems, with at least one having significant issues with household's selling their water collection tanks and other identified problems associated with the quality of the plastic tanks, rain gutters (often PVC pipe) coming loose/breaking down and corrugated plastic piping. One problem with household rain catchment systems for Haiti is that Haiti experiences seasonal rainfall, making the systems inoperable during dry periods, which was being experienced during the site visit. This was known as an issue to the PNSs, and the systems were noted to be a supplementary system for households, rather than their sole source of water. Few households reported using these systems for their drinking water needs, even when it was raining and the tanks were full. RC staff, and reviewed reports, identified a range of problems associated with the implemented water projects including, but not limited to, a lack of community involvement in some areas, challenges with delivering construction materials to remote areas, problems with some contractors hired to do the work, and breakdown of drilling equipment. However, these problems were most often project specific and not pervasive throughout all water projects. Water quality tests were not conducted for all implemented projects, in addition there was a mix in the degree to which the PNSs and the IFRC developed and supported the training of local water committees for completed projects, with some not forming any such groups.

Overall the RC looked to have increased access to improved sanitation and improved drinking water to the targeted T-shelter beneficiaries and their surrounding communities, where applicable. Overall quality of infrastructure projects observed during the site visits was very good, with the exceptions, and caveats, noted above and in greater detail in the report. Much of the work was done under a relatively short time period, for example NorRC indicated that they built their 700 latrines in less than nine months. This is to be commended. However, such a rapid implementation may have also reduced the projects ability to effectively engage the community and to bring about sustainable hygiene behavior change. In addition, more work could have been done to monitor projects, for example none of the PNSs or the IFRC stated that they implemented any monitoring system of constructed latrines, and monitoring and evaluation of all projects activities, including the incorporation of baseline and endline surveys for all projects, could have been improved and enabled the projects to be evaluated over time. One of the significant shortcomings of implemented WASH sector projects is that projects are not sustainable and/or poorly managed shortly after the implementing organization have finished their work. To that end more work could have been done to increase the likelihood of sustainability. Overall the RC staff responding to the on-line survey felt that implemented projects were likely, or very likely, to be sustainable over the next three years (see below). To see if self-ratings are indeed accurate the RC will need to undertake a longer term evaluation to determine the final outcome associated with sustainability of implemented projects. A number of lessons learned and recommendations are outlined, which if implemented, would work to improve sustainability and overall quality of WASH programming for this and future RCM WASH projects. These are included in Sections 4 and 5 of the report.

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List of Acronyms, Terms and Abbreviations

ASECS	*Assemblés des Sections Communales neighborhood/communal representative*
Bayakou	Manual Sludge Removal Worker
BCC	Behavior Change Communication
CASEC	Local government administrator
CBHFA	Community Based Health and First Aid
CMs	Community Mobilizers
DINEPA	Direction Nationale de l'Eau Potable et de l'Assainissement (National Direction for Potable Water and Sanitation)
DRR	Disaster Risk Reduction
FGD	Focus Group Discussion
EcoSan	Ecological sanitation – urine diversification composting latrine
GRC/AutRC	German Red Cross/Austrian Red Cross Joint Recovery Program
HH	Households
HNS	Host National (Red Cross/Red Crescent) Society
HP	Hygiene Promotion
HRC	Haitian Red Cross Society
IFRC	International Federation of Red Cross & Red Crescent Societies
JRT	**Joint Recovery Program (German and Austrian Red Cross program)**
KAP	Knowledge, Attitudes and Practices
MDGs	Millennium Development Goals
M&E	Monitoring and Evaluation
MoU	Memo of Understanding
MSPP	Ministère de la Santé Publique et de la Population (Ministry of Public Health)
NGO	Non-Governmental Organization
NRC	Netherlands Red Cross
NORCROSS	Norwegian Red Gross
OD/ODF	Open Defecation/Open Defecation Free
OREPA	Regional water and sanitation office
PHAST	Participatory Hygiene and Sanitation Transformation
PNS(s)	Participating National Society(ies)
POU	Point-of-use water treatment
RC	Red Cross projects covered in this review
RCRC	Red Cross/Red Crescent Societies
SpRC	Spanish Red Cross
SwissRC	Swiss Red Cross
TEPACS	Water and Sanitation Technicians at the communal level
URD	Rural Departmental Units
VIP	Ventilated Improved Pit Latrine
WatSan	Water and Sanitation
WASH	Water, Sanitation and Hygiene

Acknowledgements

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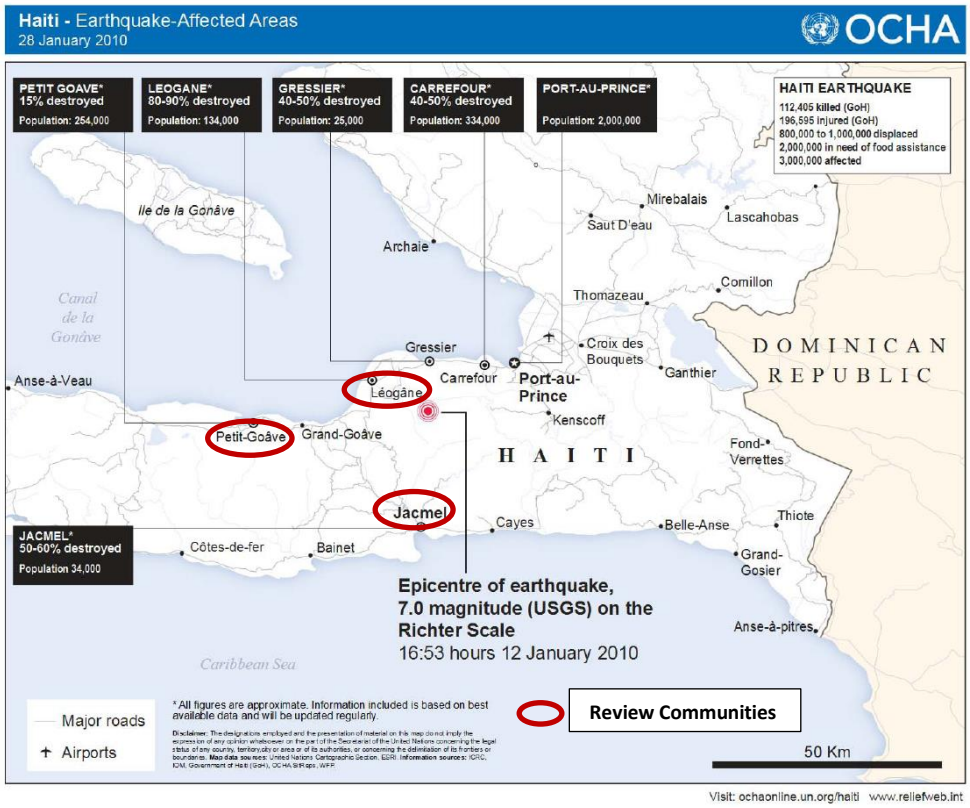
1. BACKGROUND

On the 12th of January 2010 an earthquake measuring 7.0 on the Richter scale struck Haiti. The earthquake's epicentre was approximately 15km south-west of the country's capital, Port-au-Prince, and close to the city of Léogane. According to statistics from the Government of Haiti, over 200,000 people died, 300,000 were injured, and 1.5 million people were displaced by the earthquake and the subsequent aftershocks that occurred during the weeks that followed. The communities of Léogane, Gressier and Jacmel were particularly affected by the earthquake with estimates ranging from 40 to 90% of these cities buildings destroyed by the earthquake.

Figure 1 - Haiti Earthquake Affected Areas and WASH T-shelter Target Communities

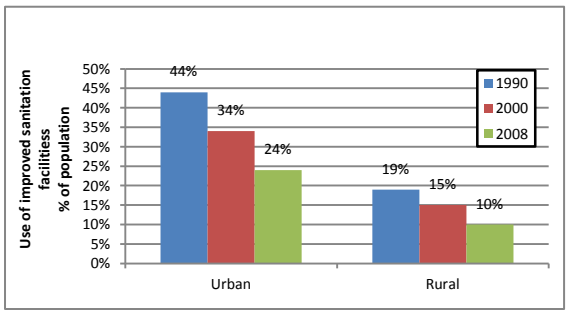


Source: United Nations Office for the Coordination of Humanitarian Affairs (OCHA)

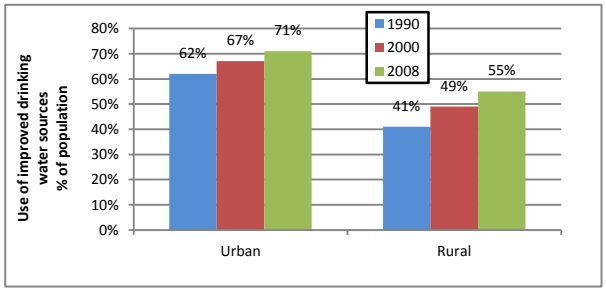
Prior to the earthquake, access to water and sanitation in Haiti was inadequate. In 2008, Haiti had the lowest sanitation and water coverage rate in the Latin America & Caribbean region. Unlike neighbouring countries, the sanitation situation in Haiti had deteriorated over the preceding decades. In 2008, no Haitian city had a centralized sewage system, and regular access to improved drinking water was available to only 63 percent of the country's population, with a mere 17 percent of the population having access to improved sanitation facilities. As in most developing countries, there are considerable water and sanitation discrepancies between rural and urban areas in Haiti, as shown in the graphs below. The lack of access to potable water and improved sanitation facilities is a major contributor to poor health, especially among young children under the age of five. In Haiti among the top three causes

for child under-five mortality is diarrhea, a WASH (water, sanitation and hygiene) associated disease. In addition to this health impact, there is a significant relationship between the lack of access to water and sanitation and poverty (Fisher, J. and van Wijk, C., 2004 and Bosch, C; Homman, K; Rubio, G.M; Sadoff, C and Travers, L., 2001). This is particularly relevant in Haiti, the poorest country in the Western Hemisphere, where the overall incidence of poverty is 77 percent and Gross National Income (GNI) at just $760 USD (World Bank, 2012).

Figure 2 - Haiti Rural and Urban Access to Improved Sanitation and Water Statistics (1990, 2000, 2008)



Use of improved sanitation facilities change in rural and urban settings of Haiti



Use of improved drinking water sources change in rural and urban settings of Haiti

Source: Progress on sanitation and drinking water, Update 2010 -WHO / UNICEF

The earthquake decreased the level of access to water and sanitation in earthquake affected communities, and challenged the already fragile infrastructure. This was compounded by a subsequent outbreak of cholera in the Central Plateau department in October 2010 that quickly spread throughout Haiti, resulting in over 669,000 cases and over 8,000 deaths as of August 4, 2014 (CDC, 2013), the largest recent cholera epidemic in the world. The Red Cross Red Crescent response to the earthquake emergency was significant, with over 54 Participating National Societies (PNS) providing support to emergency response and recovery efforts. The Red Cross (RC) was a major actor in the construction of T-shelters, working in both rural and urban areas the Red Cross constructed over 30,000 shelters in Haiti, with a total of approximately 40,000 shelter solutions implemented when upgraded and alternative shelter solutions are included in the overall total (IFRC 2011). As part of these efforts the International Federation of Red Cross (IFRC), and six PNSs (German/Austrian Joint Recovery Program, Netherland Red Cross, Norwegian Red Cross, Spanish Red Cross and the Swiss Red Cross) worked to address the significant WASH needs in the West and South-East Departments in the cities of Leogane, Gressier[1], Jacmel and Petit Goave[2]. The WASH activities undertaken by the IFRC and the PNSs in these communities were aligned with the RCRCs large scale transitional shelter (T-shelter) construction program. This report has been completed to support the RCRC Haiti Earthquake Operation learning process by working to identify lessons learned and best practices among the WASH activities implemented within the framework of shelter provision in the targeted communities.

[1] Given time constraints the WASH efforts implemented in Gressier by the German/Austrian Joint Recovery Program are not included in this review.

[2] For this report RC will be used when referring to the combined effort of the IFRC and the six PNSs.

1.2 Objectives of the Technical Review

The purpose of the technical review is to identify the lessons learned and best practices of the water, sanitation and hygiene activities implemented within the framework of shelter provision in rural areas. The technical review is to support the learning process within the Haiti Earthquake Operation as well as providing insight and guidance for future Red Cross activities of a similar nature in other countries. The complete Terms of Reference (TOR) for the review can be found in Attachment 2. The Technical Review was commissioned and funded by the IFRCs WatSan programme, with the intended audience of the report the Red Cross Movement, in particular the Haitian Red Cross, especially those working on water, sanitation and hygiene promotion activities.

The objectives of the technical review were as follows:

1. To gain a greater understanding of the major impacts (intended, unintended, positive and negative) of the water, sanitation and hygiene promotion activities associated with T-shelter construction in Leogane, Jacmel and Petit Goave.
2. To document and compare the technical approaches used for the implementation of water, sanitation and hygiene promotion activities associated with T-shelter construction in Leogane, Jacmel and Petit Goave.
3. To document and assess the involvement of the local and national authorities in the planning and implementation of the water, sanitation and hygiene promotion activities associated with T-shelter construction in Leogane, Jacmel and Petit Goave.
4. To document and assess the community participation in the water, sanitation and hygiene promotion activities associated with T-shelter construction in Leogane, Jacmel and Petit Goave.
5. To archive all technical documents and hygiene promotion materials used during the water, sanitation and hygiene promotion activities associated with T-shelter construction in Leogane, Jacmel and Petit Goave.
6. To produce a report of the technical review whose findings and recommendations will contribute to the learning process within the Red Cross Movement and serve as a guidance document for future Red Cross activities in Haiti as well as in other countries.

With the expected outcomes to include:

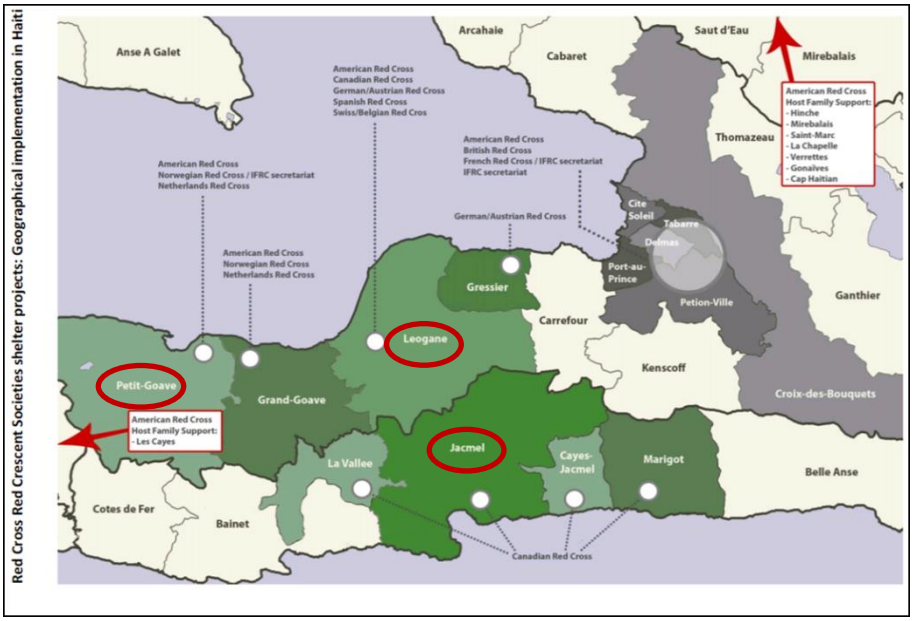
1. A detailed report of the technical review, including findings and recommendations;
2. An archive of all the technical designs (both for sanitation facilities and provision of water) that have been developed as part of the T-shelter construction in Leogane, Jacmel and Petit Goave;
3. An archive of all the hygiene promotion material that has been used as part of these activities;

1.1 Implemented Project Activities

This technical review covers the water, sanitation and hygiene promotion activities implemented in the three communities of Leogane, Petit Goave and Jacmel following the January 12, 2010 earthquake in Haiti by the Red Cross between July 2010 and August 2013. The majority of the RCs WASH interventions reviewed by this program were completed by June 2013, with two PNSs (German/Austrian Joint Recovery Program and the Swiss RC) continuing their efforts through September 2013, and June 2014,

respectively. The WASH interventions were implemented at RC constructed transitional shelters (T-shelters) as well as in/near the communities where the T-shelters were constructed. The map (Figure 3) below shows the geographical areas where the Red Cross implemented T-shelter programs and the areas (circled in red) that this technical review focuses on.

Figure 3 Map of Red Cross T-shelters



In total 17,524 latrines were targeted for construction for the T-shelters in the targeted communities[3] by the RC. In addition to latrines, with the exception of the Spanish Red Cross, the PNSs and the IFRC also implemented, various water source infrastructure methods in their targeted communities. As of this review the Swiss have not yet started to implement their water interventions; the plans for these interventions are underway and are expected to be implemented by the program's end date of June 2014. The water interventions used a wide range of methods and technologies including, but not limited to, household (HH) level rain catchment systems, construction of new or rehabilitation of existing borehole wells, reservoir/spring catchment and piped water and community water point systems, and distribution of HH ceramic water filters (CWF). Implemented infrastructure activities were accompanied by varying hygiene promotion approaches and associated activities, with most using all phases, or some components, of PHAST, or the RCRCs Community Based Health and First Aid (CBHFA) method.

As of August 31, 2013 a total of 16,285 latrines have been constructed or rehabilitated, with the Swiss RC and the German/Austrian Join Recovery programs still in process and to be completed as indicated above by the end of September 2013 and June 2014. Capturing the total number of water infrastructure projects completed is more difficult, given there was not a one T-Shelter to one water project equation.

The details, and findings associated with the above water, sanitation and hygiene promotion implemented activities, are captured in Section 3 Technical Review Assessment and Findings below.

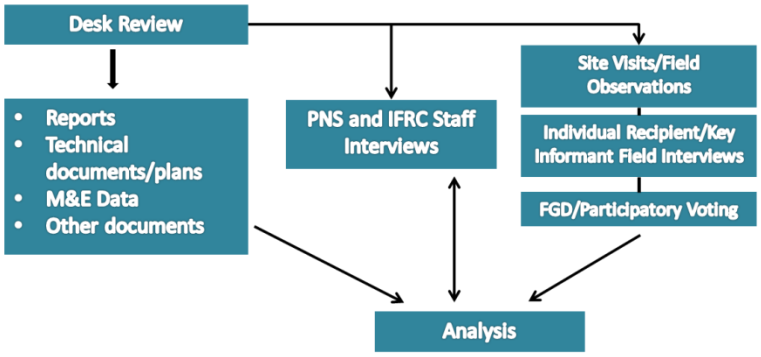
[3] Jacmel, Petit Goave, Leogane and Gressier

2. METHODOLOGY

This report documents findings based on a desk review of available documents, an implemented on-line survey to PNSs and field visits in the communities of Petite Goave, Jacmel and Leogane. The entire review, including desk review, data gathering and analysis, and reporting writing was conducted over 27 days between August 6, 2013 and September 10, 2013. A total of 10 days were spent in Haiti, with 7 days spent in the field in the three targeted communes. The original review plan called for additional days in Haiti, but due to administrative delays in the regional office, the field days in Haiti were reduced.

The review utilized a mixture of qualitative and quantitative methods, with the primary methods exploratory in nature. The review looked to triangulate multiple lines of evidence, where possible, in drawing conclusions. Methods employed included the following:

Figure 4- WASH Technical Review Methods



A significant component of the review encompassed reviewing all available documents from the PNSs and the IFRC. Attachment 3 (Summary Table of All RC Documents Reviewed for the Technical Review) provides a summary of all the documents reviewed and achieved with the IFRC for this review. The bulk of these documents were made available prior to departure to Haiti, however many were not made available until field visits were conducted, or shortly thereafter. The documents reviewed included project proposals/plans, fact sheets/project summary documents, reports and monitoring and evaluation data/reports, technical documents (e.g. technical drawings, photographs, training materials, material lists and associated calculations, etc. related to each of the intervention areas), as well as maps (both Google based and hard copy) of intervention areas, and forms developed for the project. Additionally, five large plastic containers of hard copy documents from the IFRC Leogane WASH program, which ended in June of 2013, were obtained in the field and brought back to the IFRC office for archiving[4]. Each RC project varied in their approach to documenting their work. The majority of documents were in English; however some are only available in French or Spanish.

[4] Due to timing of receipt, and the amount of materials, only a limited number of these documents were reviewed or incorporated into this review.

An on-line survey, using Survey Monkey, was developed and made available to available RC WatSan T-shelter staff that remained, or were formerly employed in the WatSan program, for whom email addresses were known to current staff. The survey was released on August 22, 2013 and remained open for respondents until September 2, 2013, a total of 11 days. A total of nine responses were received, with at least one response from each of the RCs. The survey worked to capture what specific water and sanitation infrastructure projects and hygiene promotion approaches were implemented by the respondents respective RC as well as an opportunity to collect qualitative data on the respondents own assessment of their projects work. For example questions were asked related to the greatest challenge and greatest accomplishment for each sector (water, sanitation and hygiene promotion), as well as questions which asked them to rate the likelihood of sustainability of their projects interventions. The survey also asked questions related to the projects work with local/national government organizations/groups, and whether or not they formed/worked with any community/beneficiary based groups to implement/support the WASH project, and if yes, were asked to discuss any training provided to these groups. Unfortunately, due to time constraints the survey was only made available in English. However, some non-English speaking staff were provided assistance to complete the survey. A copy of the survey questions is in Attachment 4, complete results of the survey can be found in Attachment 5 and are also incorporated into the Results section.

Given time constraints the review deployed a convenience sample methodology to assess as many of the different types of infrastructure projects implemented by the RC, as well as the targeted beneficiaries from each of the targeted communities. Field work included interviews and project site visits with the available PNS delegates and national staff and individual informal interviews and focus group discussions (FGDs) with project beneficiaries, and where possible interviews with other community members, e.g. CASES and ASECS[5]. A significant component of the site visits was focused on capturing both technical information (e.g. photos and measurements of implemented water and sanitation infrastructure projects) and qualitative information from beneficiaries and PNS staff. Attachment 6 is a copy of the form developed to capture field observations during site visits, particularly of latrines and water projects. The results of the site visits are incorporated into the results section, and where relevant other documentation (e.g. photographs and associated measurements of implemented infrastructure projects) has been provided to the IFRC, per the TOR, for archiving.

Participatory focus group discussions (FGD) with beneficiaries in all three targeted communities, using both quantitative and qualitative methods, were conducted (see Attachment 7 and 8 for FGD questions/complied results, quantitative voting results are also incorporated into the report in the Results section under Sanitation). RCRC staff were requested to invite seven to 15 beneficiaries, both men and women, to represent the targeted neighborhood to be visited to FGDs. In practice the FGD were somewhat larger, and one "FGD" grew from an initial 15 participants to over 30. While not ideal, the evaluator modified her processes for this "FGD", making it more of a community meeting and was able to obtain relevant information from the participants. Participants were informed of the purpose of

[5] *Assemblés des Sections Communales neighborhood/communal representative and administrator.*

the FGDs, that the information would be confidential and not tied back to them as individuals and that responses would be aggregated, requested to speak honestly and openly about the their feedback, and informed that if they did not want to respond to any question they did not have to. All participants were asked for their verbal consent to participate, to which all agreed.

FGDs used a mixed methods participatory approach, using open ended questions, followed by discussion/clarifying questions along with "forced choice" questions. Responses to the "forced choice" questions were captured by voting using rocks to the specific questions, followed by discussion/clarifying questions. Given that latrine construction was the projects most significant intervention, the forced choice questions focused on capturing feedback related to the latrines implemented. This method was adopted from "pocket voting" methods described in *Methodology for Participatory Assessments* Metguide (Dayal, R, Wijk, C and Mukherjee, N., 1998). The guide developed through the Water and Sanitation Program (WSP) demonstrates how qualitative processes, such as FGDs, can incorporate the collection of quantitative data for assessments, monitoring and evaluation processes. Processes were also informed by methods discussed in *Participatory evaluation: tools for managing change in water and sanitation* (Narayan, D, 1994). Participants were very engaged in discussing the questions before "voting", as well as clarifying through discussion after their votes. Overall FGD participant engagement in the sessions was high. Picture Series 1 illustrates how the votes were cast using rocks (lines have been drawn for emphasis as pictures do capture the dividing lines well). A total of eight FGD were held. Table 1 provides a summary of the FGD held by community and gender.


Picture Series 1 - FGD participant voting

Table 1 Evaluation Focus Group/Meeting Discussions by Camp, Participants and Gender

FGD #	Commune	Habitation	PNS	Date	Participants	# Male	# Female
1	Petit Goave	Figaro	Norwegian	8/23/2013	18	8	10
2	Jacmel	Middle Macary	Netherland	8/26/2013	14	8	6
3	Leogane	Bellvue	German/Austrian	8/27/2013	31*	13	18
4	Leogane	Sus de Baba	German/Austrian	8/27/2013	16	7	9
5	Leogane	Brache	Spanish	8/28/2013	17	6	11
6	Leogane	Su Savon	Spanish	8/28/2013	12	7	5
7	Leogane	Bagadere	IFRC	8/29/2013	19	3	16
8	Leogane	Palmiste a Vin	Swiss	8/29/2013	11	5	6
	Total				138	57(41%)	81(59%)

*This number is approximate and there were many other observers at this FGD.

Following the week of field visits a brief debriefing session was held with IFRCs Water and Sanitation Movement Coordination Delegate (WSMCD), the Program Monitoring, Evaluation and Reporting Coordinator, and the Operations Manager. During the writing and analysis phase of the review further clarification was sought from PNS staff, as needed. In addition, after the consultant's departure the WSMCD was able to make a field visit to Leogane, which enabled gathering of additional information and site visits on the EcoSan latrines in Bagadere constructed by the IFRC.

Limitations

There are several limitations to this review, mostly associated with limited time and/or timing of the review. The work implemented by the PNSs and the IFRC was extensive, covering four communes and a wide variety of methods. Given only one week in the field there was insufficient time to conduct a representative sampling of beneficiary households, or targeted communities or to conduct a site visit of all the infrastructure methods deployed. As such, the findings in this report should be considered with caution when drawing inferences to the overall project, given the level of variability among projects and communities and the extent of the work implemented. Despite time constraint limitations, all three of the targeted communes were observed during the review. Another limitation was the timing of the review, which was conducted after most projects were completed or in the process of closing down. The German/Austrian Red Cross was set to end the end of September, 2013, the Swiss Red Cross project will continue through June of 2014, and the Netherlands Red Cross has ended, but is looking to start a new sanitation program in Jacmel. As a result a number of staff, including both delegates and national staff, were no longer available to interview. Another limitation of the review was missing and/or inadequate data or information about implemented project activities. This was attributed to several factors, according to the staff available for this review: 1) Delegates contracts had come to an end and they were not available for interview to provide such information, 2) High turnover, and gaps between incoming and outgoing WatSan delegate staff in some PNSs contributed to insufficient documentation of activities or insufficient handover of information, and 3) inadequate or multiple Monitoring and Evaluation (M&E) methods used from delegate to delegate over the course of the project period, which resulted in missing information, or information that was either not easy to access, or not well organized. As one delegate interviewed stated "I have so many drop boxes containing information that has been passed down over the course of the two years from previous delegates, but I don't have the time to go through all of it, and I'm not fully aware of what all is there, there is just so much and it's not necessarily well organized." Finally, another limitation in addition to not having access to all project materials (both M&E and technical information) is the lack of common standards, terminology and/or definitions for some of the WatSan work completed among the participating RCs. While this was not a significant limitation to the review, it meant that a fair amount of time had to be spent on clarifying implemented activities and also limited the ability to do any systematic evaluation of implemented activities. For example, various types of latrines were implemented and were described and called by different names, but were essentially the same type of latrine and some RCs counted a latrine, with two pits ("double pit") as one latrine, whereas others counted it as two. Overall the limitations did not look to have had a significant impact on the ability to conduct the review per the TOR, but do mean that caution should be observed when drawing inferences and overall conclusions from what was obtained during the review.

3. TECHNICAL ASSESSMENT RESULTS

3.1 Assessment of Monitoring and Evaluation Systems

The TOR did not specifically call for a technical assessment of the implemented WatSan program's M&E Systems; however the ability to do the overall technical review requires that a good M&E system be in place. Given the challenges discussed above under limitations associated with M&E this section includes a brief assessment of the M&E systems found to be in place for the WatSan program.

A good M&E system enables projects to both capture what was implemented (deliverables or "inputs"), as well as a means for measuring the outcome of implemented activities. To capture impact and outcomes a good M&E system should be put in place from the beginning and maintained throughout the life of a project. As projects are not static, activities and methods often change over the course of the project period, M&E systems need to be somewhat dynamic and account for these changes, whilst at the same time retaining all information from the beginning to enable accurate accounting of inputs and measurement of results. Having systems in place is great, but it's also critical that such systems are maintained. This is particularly important as staff turnover is often high in emergency response and post emergency WatSan programs. It's critical that systems are in place to enable adequate handover to incoming staff and that information is not lost when changes occur.

The following is a brief summary of what the review found related to the WatSan component of the T-Shelter projects:

- Varying levels of M&E systems exist or were available during the review. The RC utilized a wide range of data collection/reporting methods ranging from Excel spread sheets, Google maps and GPS data points, and Word document reports. Some of the available reports were quite extensive. IFRC for example, had monthly and quarterly reports and a final report that captured cumulative deliverables for each of its project components (water, sanitation and hygiene). The report captured details regarding the inputs delivered by the project, as well as qualitative and quantitative progress data and remarks related to constraints and solutions over the course of the project. The SwissRC had completed an internal interim report to assess work to date as well as to inform future interventions. The German Red Cross/Austrian Red Cross (Joint Recovery Programme) in Leogane had a well-developed interactive Google map that captured deliverables by household (HH) and various project components (e.g. water point, type of latrine constructed, etc.) using a well-developed coding system that captured among other things date of construction/rehabilitation. Other PNSs also provided hard copies of maps with GPS points of constructed latrines for example. However, most of the RCs indicated that they either did not have, or had lost, mainly due to staffing changes, at least some, and in some case a lot, of detailed project information.
- The systems are not in place to provide an aggregate account of the total number of HHs and beneficiaries served across all project intervention areas (water, sanitation and hygiene) for all the RCs. Some RCs only captured the number of T-shelters served with their sanitation interventions

and not the number of beneficiaries; others did not capture the HHs/beneficiaries served by constructed water points or HP efforts. This made it difficult to assess the broader level of impact beyond the number of HHs provided T-shelters and latrines.

- The RCs use different terminology for infrastructure projects, for example types of latrines. This is not a significant problem, but inhibits the ability to do comparison across project, or to capture total overall number of latrines implemented by type of latrine. Additionally, as some reports only capture the total number of latrines implemented without providing the specificity of type of latrines it is difficult to assess potential problems, satisfaction or other outcomes/impact by type of latrine.
- The review found mixed results in the RCs implementation of any type of formative research or assessment to inform their particular interventions. Several pointed to pilot projects, particularly related to latrines and several also utilized the entire PHAST process, the first phases of which gather formative information from communities. The SwissRC has recently been conducting workshops to gather specific input on future water projects as well as feedback on how to improve their latrine designs. Formative research, while challenging to undertake in post emergency operations, works to provide information that can lead to more satisfaction among beneficiaries, increased positive outcomes (e.g. associated with hygiene behavior), as well as increased use and management of implemented projects.
- There were varying degrees of measurement of outcomes by the RCs. Few look to have conducted baseline studies, and fewer still endline studies, or final evaluations that compared baseline to endlines. Only one baseline report (GRC/AutRC) was available for the review. The SwissRC conducted one in 2011, but complete results were not available for the review. Three had completed final evaluations that were available for review (SpRC, NRC and NorCross), that covered some, or all, of their project's implemented WatSan components and the SwissRC is planning on conducting an endline at the close of their project in June 2014. The NRC report was completed by an intern that covered work in addition to the NRC's WatSan in T-Shelter work, developed in part to inform future project activities. The SpRC had two outcome focused reports, one specifically focused on an evaluation of the PHAST project (in Spanish) and the other a beneficiary satisfaction survey (in French). The NorCross evaluation was conducted by an external evaluator that looked primarily at their shelter program, with a limited focus on WatSan, for both their Haiti and Sri Lanka programs. The IFRC looked to have done both a baseline and endline, but only the endline was available during the review. Their final June report does include comparison data (e.g. accessibility to sanitary latrines increased from 34% to 76%), but it does not provide any information as to when the surveys were conducted or other details about how they were implemented (e.g. representativeness). Of the PNSs responding to the survey monkey, only three of nine indicated that a baseline, or Knowledge, Attitudes and Practices (KAP) study, and endline survey had been conducted to measure hygiene behavior change.

In conclusion the review found a wide variety of M&E systems in place, with no one approach or system across the PNSs and the IFRC. As independent organizations this is to be expected, however some discussions on how there could be some common approaches and/or M&E methods might serve the RC WatSan program's work by making it easier to provide a snapshot of overall implemented projects

across the movement, and the outcome of those deliverables. There is significant variation among the RCs in terms of how, and whether or not, they measure outcomes of implemented activities. As a sector WASH is moving more and more towards measuring outcomes due to an increased awareness that WASH programs have a high degree of failure following implementation. There is an overall identified need to increase the measurement of impact, or outcomes, of programs by the implementing RCs. This is further discussed in Sections 3.2, 3.3 and 3.4 below.

3.2 Assessment of Technical Approaches to Increase Access to Water

The degree to which RCs were involved in any water component varied greatly, with one RC (Spanish) not involved in any water programming. The SwissRC had constructed some HH rain catchment systems, but was still in the process of planning and seeking their headquarter office approvals for their proposed water programs at the time of the review. Decisions as to whether or not to take on any water project looked to depend on the degree to which the RCs identified this as a need during their assessments, the degree to which funding was available for water projects, as well as support from their head offices for such projects. Given time constraints during the review it was not possible to conduct site visits to all of the water projects. To enable the most thorough review possible given the time constrains, the consultant looked to visit as many different types of water projects as possible in the targeted communities. This was somewhat constrained, in particular for the IFRC project, where no IFRC delegate staff remained on board to guide a review of their implemented water projects.

Unlike the latrine component of the T-shelter project, water projects often served the broader community beyond just the T-shelters beneficiaries. Given the inconsistency in how water project M&E data was collected, if at all, or was available for the review, it's not possible to report on the overall aggregate impact of the implemented water projects (number of HHs receiving improved/new water sources). The IFRC reports are the most comprehensive in terms of showing the number of HH served by each completed water project, but this is the only RC that provided/had such data, and there may be some duplicate HHs base on how the data is reported. For the IFRC alone over 19,000 households received access new or rehabilitated improved water sources. Table 2 provides a summary of the types of water projects undertaken by the RC in the WatSan T-Shelter Project. As seen by the table below the majority of water projects were implemented by the German/Austrian Joint Recovery Program and the IFRC, with the most common methods focusing on rain catchment, wells, spring reservoir catchment and new pipe distribution and water kiosks/water collection points (often implemented together). Of all the RCs, only one (Netherland) indicated that any payment system had been developed for the implemented water system (on-line survey response), however this system was not one of the Netherlands systems observed in the field. Only the IFRC and the GRC/AutRC established any form of water committee for their water projects (discussed in greater detail in Results Section 3.5 Assessment of Community Participation).

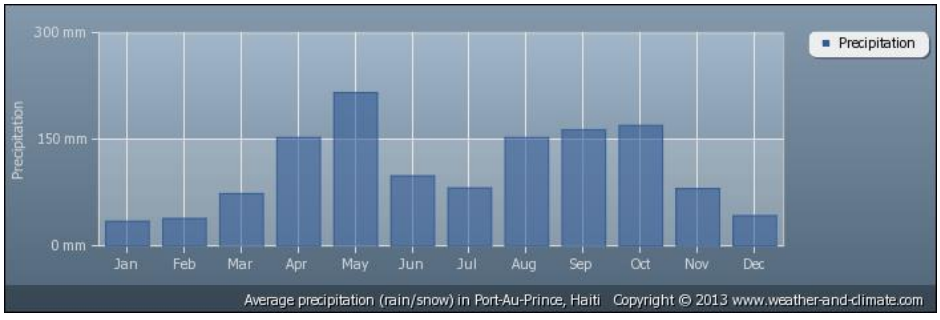
Table 2 - Water Project Implemented by Type of Project and Red Cross Society

Type of Water Project	Norwegian	Netherlands	GRC/AutRC	IFRC	Swiss
Rain Catchment	X-HH	X	X-HH		X-HH
Ceramic Water Filters (CWF)			X		
Pipe Distribution (new)			X	X	
Pipe Distribution (repair)			X		
Borehole wells/other (new)			X	X	
Borehole wells/other (repair)		X		X	
Cistern Construction					X[6]
Spring Reservoir Catchment (new/ repair)		X	X		
Water Kiosks/Water Collection Point			X	X	

This section will address the main water projects undertaken by type of water method.

Rain Catchment

Four RCs implemented rain catchment system's in their target areas in Jacmel, Leogane and Petit Goave. All of the rain catchment systems except the Netherland's projects, which was a community system were HH rain systems. The HH rain catchment systems were all similar in their designs. These systems main components included plastic "Tuff Tanks", Taps, PVC piping, and rain gutters (made of prefabricated rain gutters or cut PVC pipe), which were attached to T-shelters' roofs to collect rain water. The use of the rain water collection systems is meant to be as a supplementary water collection point for HHs as it is contingent upon rain. Haiti typically has distinct wet and dry periods (typically November through March is dry, with April through October considered the rainy season); however from year to year there are great variances. At the time of the review Haiti was experiencing an unusual dry rainy season. Of the HH rain catchment systems observed during the review, most were without water. The graph below indicates the average monthly precipitation for Port-au-Prince.



Most of the HH rain catchment systems with water were observed to be operational and those without water were reported to be operational by the HH. Of the issues identified for non-operational, or compromised systems, were broken taps and loose/poorly anchored gutters or fallen gutters. The

[6] Planned

Norwegian systems observed did have a first flush outtake valve, but HHs indicated that they did not use it either because they did not know how, wasn't aware what it was for, or claimed the valve was on too tight and they did not have the tools to remove it. The Norwegian RC worked to build a concrete platform to limit theft of Tuff Tanks (see Picture series 2). The SwissRC and German/AutRC used the same design, which varied little from the Norwegian design, except the tanks were much bigger (400 gallon versus 125 gallon), they used flexible piping and no first flush valve was observed. Theft and sale of the tanks was noted as a problem by all the RCs. The GRC/AutRC indicated that they installed a total of 519 rain catchment systems in three locations. In the community of Bellevue of the 175 systems installed, 66 had been sold.

Picture series 2 HH Rain Catchment systems L to R: Norwegian RC-Petit Goave system anchored in concrete, with concrete skirt, an example of a broken tap, PVC piping securely anchored to the house with first flush outtake valve.

Since the program started the RCs indicated that they or HHs had made modifications to their programs rain catchment system. For example some RCs switched to rain gutters from PVC pipe after rain gutters became available. The gutters were less expensive, but some of these gutters were observed to be less durable and reported to be less effective at capturing rain during heavy rain falls. The SwissRC initially used flexible black pipe (see picture series 3), which enabled the HH to have more flexibility in where to route the waterbut these pipes were less durable and many HHs had started to change out the piping to regular PVC.

Picture Series 3 From L to R: SwissRC- Leogane – HH water tank, flexible plastic pipe, and HH modified T-shelter piping depicting one of the new, sturdy, rain gutter systems, creative way to brace piping.

The Norwegian RC stated that the rain catchment systems cost $250 USD, including the tuff tanks, which were donated by the IFRC. The price of the Swiss/German rain water catchment system was not available.

Interviewed HHs and FGD participants from the NorRC and the SwissRC programs stated that they did not use the water from the rain catchment systems for drinking water. It was only used for personal hygiene and cooking. Some of the GRC/AutRC FGD participants indicated they used the water for drinking, but indicated they treated it prior to drinking. The GRC/AutRC project distributed CWF to HHs, which were reportedly used by some FGD participants. Participants noted that the flow rate for the filters was too slow and inhibited their using them. Unfortunately, due to time constraints limited time was spent on assessing CWFs in the field. The GRC/AutRC provided its beneficiary CWF training curriculum. (See picture right for a photo of the CWF's used by the GRC/AutRC).

GRC/AutRC CWF

The Netherlands RC constructed one community level rain catchment system in Fondwa, Leogane in November 2011. They had planned to construct a total of five, but no other HHs were willing to provide the land for the systems. Picture series 4 provides photos of the constructed system. At the time of the review the cistern had water and was reportedly being used. The system was working, but the copper nob was broken. The man charged with maintaining the system insisted that the system was available for everyone from the community to use, particularly on market days when people passed by his house; although the WatSan Delegate had heard otherwise from community members. The box to the tap was locked when we visited. The attendant reported that he treated the tank from time to time with Aquatabs or *Chlor* (Chlorine), but did not use a set amount/dose or treated the water on regular basis. He stated that they did it from time to time, just to kill bacteria. The design had a first flush valve, but the attendant said he did not use it. He also indicated that the gutters had not been installed correctly, and as a result it takes longer for the water to be captured. The gutters are an example of the less durable rain gutters observed on the rain catchment system, and were precariously attached. The PVC pipe that supported the gutter from the roof of the church to the cistern appeared fragile, but thus far had not failed. He indicated that since the system was constructed it always had water.


Picture Series 4 Netherlands RC- Leogane, Fondwa from Community Rain Catchment System.

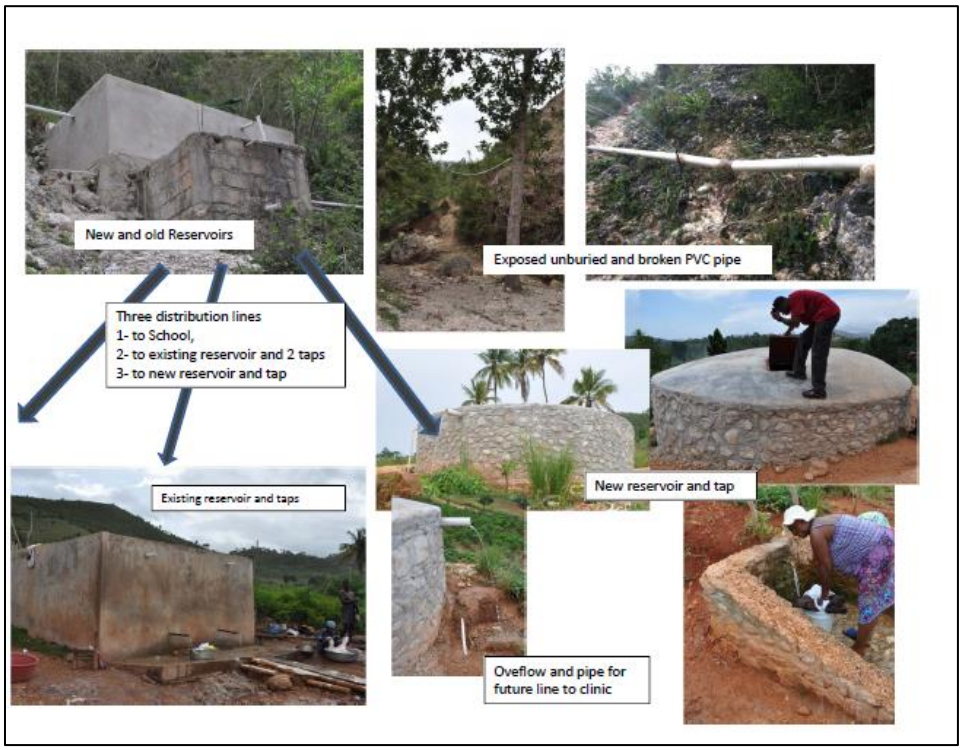
Spring Catchment Systems

Three spring catchment systems were able to be observed during the site visits. Two of the Netherlands RC in Jacmel and one system of the GRC/AutRC in Leogane. The two Jacmel systems were in communities that were over two hours' drive from Jacmel in the mountains (in Morne a brule' and Middle Macary) and the GRC/AutRC system was in Sous de Baba along the main highway that goes through Leogane. No technical documents are available for the Netherland's systems. An extensive report is available on the Sous de Baba system, the report covers the three spring catchment systems implemented by the GRC/AutRC (Final Technical Reception for Spring boxes/Pipe Network, 01.06.2013). At the time the July 2013 referenced report was written the Sous de Baba system was still being finalized, but was completed at the time of the review. As the GRC/AutRC systems are well documented more attention is focused here on the Jacmel systems.

<u>Morne a brule System</u>

This system was both a rehabilitation project and an expansion of an existing system. The system was built by local laborers and masons; overall community participation was low and a challenge. The project took two months to build, mainly due to the lack of participation, and challenges associated with getting materials delivered to the site. The site which is located on a hillside, made it difficult to bring stone, cement, sand and gravel to the construction site. The project included replacing a reservoir at the top of the system and adding two additional lines, one to a school (which provided water to two pour flush latrines and to eight new school taps) and one a new catchment cistern and a distribution tap. At the time the project began the system already had one reservoir and water collection point, which remained in place. A fourth line from the new cistern was installed, that would eventually go to a clinic, once it was completed. The system appeared to have adequate flow for all of these distribution points, even with a significant observed break in one of the exposed pipes, water was observed coming out of both the two distribution overflow pipes. However, the school was not open at this time, which could presumably decrease the flow on the system. The repairs improved the initial reservoir by adding additional storage capacity and the new lines expanded capacity to new areas. The system had an extensive amount of exposed pipes, with one pipe crossing a steep ravine, one significant break was observed in the pipe. The pipe was reported to not be buried due to a) very rocky soil which made it difficult to bury the pipe and b) the community was not interested in doing the work. No water committee was established for the system, as the RC WatSan delegate indicated there was no interest in one. Repairs were reported to be made by local community members when needed. DINEPA has visited the community to look at the system, but an official payment system or water board had not been established at the time of this review. Water quality tests were not conducted on the system and the system was not treated. Beneficiaries using the system at the time of the review were asked if they used it for drinking water and all indicated yes. One of the women said she treated her water before drinking it with Aquatabs or Chlorox. (See figure 5 below for a depiction of the system).

Figure 5 – Depiction of Morne a brule Spring System



Middle Macary System

This was a repair to an existing system spring catchment project reported to have originally been built in 1993. The project was completed in November 2011. The project involved building a wall (28'7" long, 1'8" wide and 3'9" high at its highest end) to protect the spring catchment from an uphill stream that was reportedly subject to flooding. In addition a new, and larger, spring catchment box (approximate box dimensions 13' long by 7'.5" wide, by 3'5" deep) was built. The system was reported to have 17 water collection taps from one gravity flow line from the spring box. The water distribution line (2'' PVC pipe with two joined pipes) sat in the creek bed that flowed by the spring box (see photo right). The pipe that extended from the spring box down the hill was all above ground. Some of the water point taps were observed along the road to the spring. Of six taps observed, all were not working or not working properly (2 had no flow, and 4 had no functional taps with valves that could be shut off, so water was free flowing). One of the taps along the system was reportedly cut off some time ago, as it was reported to have flooded a nearby house, so to prevent that from continuing they cut the line to the tap. The hatch to the spring box was not locked and the spring box had no shut off valve to the distribution lines in case repairs to the lines were needed. The quality of the spring box was good, but was covered in dirt and branches and some plant growth. The project reportedly took six months to complete. During the review we were able to interview the relevant ASECS and CASES about the system. They reported that the Red Cross had


Spring box outflow and water distribution line in creek

provided them with some training (mainly on how to keep the system clean). They noted that recently a new health/water board had been established that was overseen by them. It was not clear the role of this new group. They indicated that sometimes the flow was inadequate to meet the community's needs, especially during the dry season. They indicated that it was difficult to make any repairs to the system when needed. When there were problems they usually called on volunteers to both repair the system and to donate funds to buy spare parts as needed. A water committee had not been formed, nor had a fee collection system been established. DINEPA had not yet visited the community to discuss their water system. The Red Cross had not left any spare parts with them. They indicated that the old system did have a shut off valve, but that one was not put on the new system. The system was not treated and no water quality tests had been conducted. Figure 6 depicts the system and some of the distribution point taps.

Figure 6 - Middle Macary System

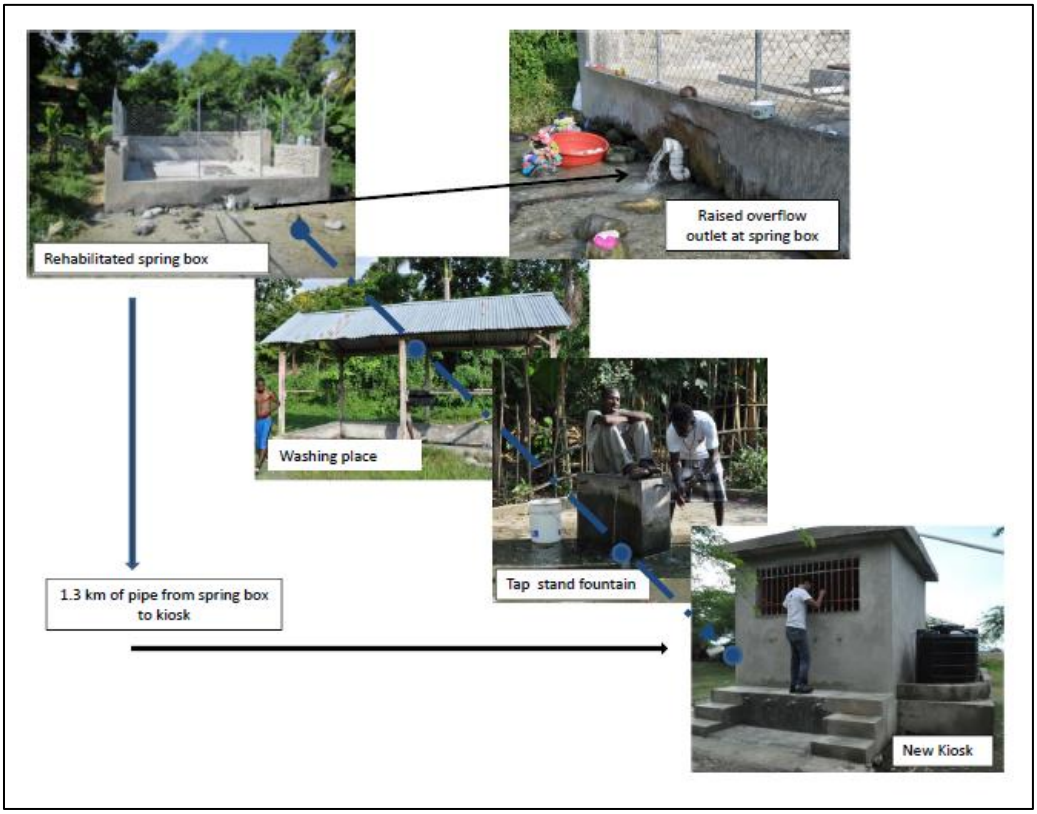
Sous de Baba System

The GRC/AutRC Sous de Baba project consisted of rehabilitation of a spring box previously built by the GRC/AutRC, construction of a tap stand fountain and water kiosk. The system is discussed thoroughly in the GRC/AutRC report (Final Technical Reception for Spring boxes/Pipe Network, 01.06.2013). Since the June 2013 report was completed the system's kiosk (constructed according to DINEPA design

specifications) was modified and was recently made operational. Adjustments were made to the kiosk (transfer of Tuff Tanks from the roof to almost ground level and lowering the taps) as there was insufficient flow to bring the water to the roof. The GRC/AutRC delegate noted that the flow from the spring was limited. The community was advised to manage the use of water (to use water for drinking and cooking only and not for washing) as the flow was inadequate to provide water at all times. The delegate indicated that had there been more time he would have adjusted the size of one of the pipes to increase the flow, but as the program was coming to an end this was not possible. Regardless, he noted that the flow was limited and would always have to be rationed due to the flow from the spring, and the distance and the low level of elevation difference, between the kiosk and the spring. At the time of the visit the valves at the kiosk were turned off, and the tuff tanks had about 20cm of water in each tank/10cm above the outflow, which the delegate determined was a good sign that the community understood the need to manage the water. A community member at the kiosk at the time of the visit suggested that the lids to the tuff tanks be locked to prevent people from throwing things inside the tanks. A water committee has been formed for the kiosk, and it was suggested that this be brought to their attention. Figure 7 captures the main components of the system.

The GRC/AutRC chlorinated all of their spring box project sites following construction and had conducted water quality tests at all sites. All were found to not be contaminated at the time they were tested. The contracted out cost for all three of the GRC/AutRC spring boxes, one pipe network and the water kiosk was $188,275.33 USD. This does not include RC associated overhead costs. No cost data is available for the Netherland systems.

Figure 7 - Sus de Baba System



Wells

The RC looked to implement or rehabilitate two types of wells, artisan and boreholes. All of the well projects were completed by the IFRC and the GRC/AutRC, with the IFRC the largest implementer (see Table 3 below). Unfortunately due to time constraints and available information[7] only two of borehole wells (implemented by the Ger/AutRC), were observed during the review and are covered in this review. In total, 78 wells were either rehabilitated or constructed at, or near, targeted WatSan T-shelter project communities. All well projects were conducted in Leogane.

Table 3 - Type of Well Projects Implemented

Type of Well Project	IFRC	GRC/AutRC
Artisan well rehabilitation to distribution networks	10	
Rehabilitation of existing borehole wells	6	
Rehabilitation of existing borehole well equipped with hand pumps rehabilitated	30	
New boreholes drilled (4 artesian/25 hand pump)	29	3
Total	75	3

The two wells observed were representative of the three wells constructed by the GRC/AutRC. The three wells were reported to be sixty, sixty-six and seventy feet deep respectively. All of the wells were constructed in May/June 2013. All the wells used India Mark II India hand pumps. The drilling and pump installation was contracted out to a US firm, Allied Recovery International (ARI) out of Virginia, based in PAP. ARI is the same company that had constructed the GRC/AutRC spring boxes. This was reportedly the firms first time working with the Mark II India wells, and as such there were problems with the construction process (including the drill rig breaking), which led to construction delays. At the time of the review the two observed wells were fully operational and the third was reported to be. The GRC/AutRC had established water committees for all wells. The committees were trained on the job during the construction process and while no spare parts were left with the committees, each received (or would soon receive) a tool repair kit. During the field visits, a member of each water committees happened to be at the wells. One indicated that he had recently repaired the chain on the pump that had come loose (this was an identified problem at both hand pumps, assessed to be the bolt holding the chain not being strong enough). The AutRC Water delegate was encouraged that the committee had taken care of the problem on their own. Per the contract with the ARI, ARI is responsible for making repairs/replacing broken parts for six months after the well is completed. After that the water committees are responsible for repairs. The committees have been provided with ARI's contact information. The second well initially had some slight sand turbidity in the water when completed, which at the point of the review looked to have mostly settled. The hand pump was slightly leaking, but

[7] As noted earlier the IFRC WatSan Delegate was no longer on board and no electronic technical documents were available for review, with only hard copies of documents received the last day in the field, too late for the consultant to review.

fully functional and not affecting water quality. There was a slight catch in the pump, which may be attributed to the slightly sandy water. All of the GRC/AutRC wells were chlorinated at completion and water quality tests were conducted. The tests showed no indication of coliforms. One test had positive results for bacteria associated with skin, which the AutRC Water delegate felt may have been attributed to the tests being contaminated due to tester contact with the sample. Additional tests were going to be conducted prior to the close of the project (September 30, 2013) to assess whether the water was contaminated or not. (See Photo Series 5 for photos of constructed wells)

Picture Series 5 Borehole wells - GRC/AutRC - Leogane borehole wells with India Mark II handpumps; IFRC – Tamarin New Drilled Borehole

Water Distribution Point/Tap Stands

The other significant water project was the construction and/or rehabilitation of water distribution points, or tap stands. Again, the IFRC was the major implementer of these stands in Leogane (see Table 3 above) and as noted earlier the review of these systems was limited. The consultant did observe approximately 8 tap stands in Leogane, in or near the community of Bagadere, where the EcoSan toilets had been constructed (discussed below under Sanitation Assessment findings). The IFRC national staff person, accompanying the review team during the site visit, indicated that the IFRC implemented two types of community tap stands - an open (presumably free flowing water with no taps), and tapped. There was no breakout, or differentiation in types of distribution point systems, in the available electronic reports. Of the tap stand observed, the majority had working taps, with two taps not (it's not known if these taps ever had valves, or if they were broken). See picture series 6 for photos of some of the observed tap stands and/or from available reports.

Picture Series 6 IFRC – Leogane L to R: Bagader tap stand, tap stand (location unknown), new water point Nolivos 3

Overall there were mixed results of the tap stands observed for this project. The physical structures were general in good condition, and had appropriate water drainage systems. Most were observed to

be in fairly clean condition. Not surprisingly the main issue was missing, broken or inoperable taps. This is a significant issue in Haiti, not unique to this program.

Water Treatment

Outside of the initial chlorination of newly constructed/rehabilitated systems (conducted by the GRC/AutRC) none of the water systems implemented were treated. The majority of participants in FGD indicated that they treated their drinking water (Point of Use – POU treatment), regardless of source (unless and sometimes again, from water purchased from kiosks that has already been treated). Treatment was reportedly done with Aquatabs or Chlorox or Jif (liquid chlorine), with a smaller number reporting they boiled their water. When asked if they had Aquatabs or chlorine today, results were mixed with approximately 30-40% saying no. So it is probable that drinking water is not treated all of the time, increasing the risk of water-borne infectious disease transmission. Aquatabs were distributed broadly during the height of the cholera outbreak, which began in October 2010, but has tapered off significantly. HHs said that Aquatabs were available in local pharmacies for purchase, but most could not afford them. When asked, individual beneficiaries and FGD participants were overall able to accurately describe the dosing required to treat water with Aquatabs (of various sizes – two are common in Haiti) and chlorine, as well as other methods to keep it safe/potable (e.g. waiting period after treatment, shelf life of treated water and importance of keeping water containers cleaned, covered and to not use ones hand to remove water from the container). There is however no overall baseline/endline data to measure change in water treatment and safe handling practices over the project period for all RCs.

Staff Comments/Project Summary Table

Overall RC staff interviewed during the review, and those that completed the online survey, felt very positive about the water project that had been implemented by their organization. In terms of sustainability of the water projects respondents to the online survey indicate that the likelihood of sustainability of projects over the next three years was mostly high to very high, 60% percent to 20% respectively, with one person rating the likelihood of sustainability as neutral (See Section 4 for overall project sustainability ratings). Complete on-line survey results, including responses to open ended questions can be found in Attachment 5

The following table on page 28 provides a summary of the various water projects employed by the RC WatSan T-shelter project and the respective strengths and challenges of the methods deployed.

Table 4 - Summary of Employed Water System Method Strengths and Challenges

Method	Identified Strengths	Identified Challenges
Rain Catchment	Technically simple to implement on T-shelters and provided secondary water source for HH use during adequate periods of rains. Demonstrated (Netherlands RC) and piloted (Swiss RC) larger rain catchment cistern systems provide potential for increased volume collection and use.	Systems only work when there is rain. Gutter systems not always durable, or secured properly. Broken taps observed. First flush either not in place, or not being used (not a problem if HHs are not using the water for drinking/cooking and/or not treating the water before drinking). Some challenges, for some RCs significant, with tanks being stolen/sold. Flexible PVC tubing is not durable. Lack of availability of land to construct larger catchment systems. HH maintenance of systems varied. Mixed results on ability of beneficiaries to repair systems (e.g. taps and gutters) when broken.
Spring Catchment	Overall construction of reservoir tanks looked to be of high quality. Mixed flow results, with most found to be adequate at the time of the review (a relatively dry period).	Inconsistent development of water committees or training of local water users to manage systems. No available spare parts left with the communities. Some PVC distribution lines exposed, increasing potential of breaking and contamination (Netherlands RC-Jacmel). Mixed community participation involvement in systems construction process/maintenance. Mixed flow results, in part due to spring capacity and other technical (e.g. size of pipe and open taps). Spring box unlocked. One spring observed to have no shut off valve to enable making system repairs to distribution line. Treatment of systems mixed (GRC/AutRC treated upon completion and tested for coliforms, no treatment or testing by Netherlands).
Wells	Overall wells observed to be working well and with functional water committees. Water quality test conducted and results overall good. India Mark II pumps look to be fairly functional, and easy to repair with parts and technicians available in-country for repairs.	Significant number of wells were not observed, results cannot be extrapolated to all WatSan in T-shelter constructed/rehabilitated wells. Problem identified with India Mark II pump chain, looks to be easily repaired, but should be addressed for future pumps. One contractor was inexperienced with installing India Mark II pumps. GRC/AutRC wells treated and tested with positive (no coliform) results found.
Water Distribution Points/Taps	Overall quality of tap stands blocks (mostly formed concrete) was good. Systems had incorporated drainage areas as well as some cleaning platforms.	Broken taps (missing and broken) noted at some tap stands, “normal” for water projects observed in Haiti. Issue looks to be related to a variety of factors – quality of tap, maintenance ability of locals to repair, lack of fees available to replace, vandalism. No indication of water quality tests conducted (outside of those above associated with GRC/AutRC spring catchment systems).

3.3 Assessment of Sanitation Technical Approaches

Sanitation was the central component of the T-Shelter WatSan program, with all the RCs engaged in constructing new, and in some cases rehabilitating existing, latrines in their respective targeted communities. The RC had a significant impact on increasing the number of latrines in the targeted communities. As of August 31, 2013 a total of16,285, primarily household, latrines had been constructed since July 2010 in the targeted communities by the PNSs and the IFRC. The majority of the latrines constructed were tied to a specific T-Shelter, with a small number of latrines constructed at Internally Displaced Person (IDP) camps and at schools. This review specifically focuses on the latrines constructed at T-shelters. Figure 8 provides a summary of the total number of household latrines implemented by the RC in the communities covered by this review, as well as in Gressier. Table 5 on page 30 provides latrine summary data by RC organization, community and latrine methods used by each RC.

Figure 8 - Total Latrines Implemented by Community

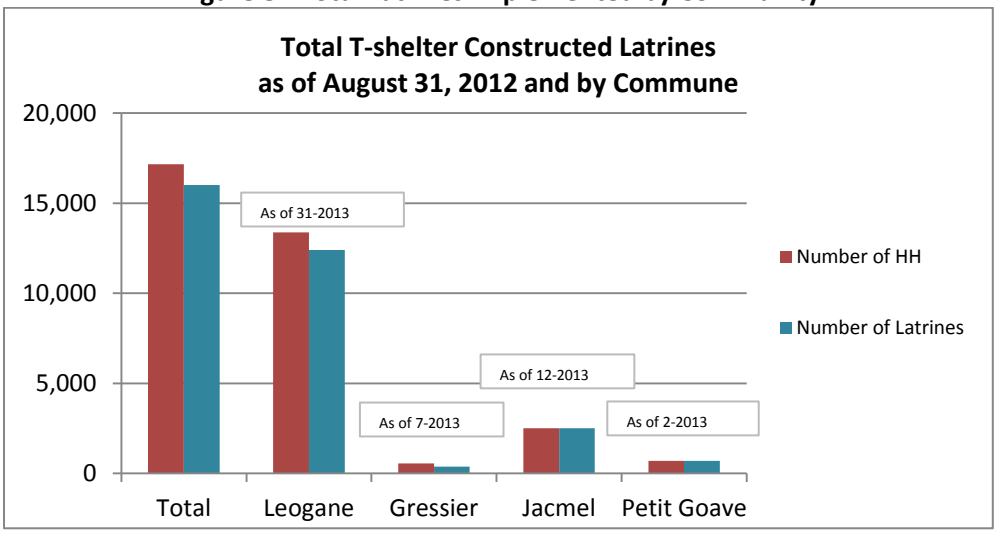


Table 5 – Latrines by Red Cross Society and Commune as of August 31, 2013

RCM Organization	Commune	Sanitation interventions	Target/Completed HH/Latrines	As of	Time frame[8] Start	Time frame[8] End
German/ Austrian Joint recovery program	Léogâne Gressier	• Latrine Constructed • Simple Basic VIP Latrine (single/double pit) • Reinforced VIP Lined Latrines (single/double pit) • Raised two chamber VIP Latrines • Rehabilitation of Latrines	2961/2961[9]	Aug 2013	March/April 2011	Sept 2013
IFRC Secrétariat	Leogane	• Latrines Constructed • Basic VIP Latrines • Double Concrete lined VIP Latrines • EcoSan Latrines • Montpelier+Rico Latrines[10] • Promotional Latrines[11]	2900/3065	June 2013	July 2010[12]	June 2013
Netherland Red Cross	Léogâne	• Latrine Constructed • Pour Flush coupled with Septic Tank Latrines • VIP Double Pit Latrines	5000/4668	July 2012	Sept 2010	June 2012
	Jacmel	• Latrine Constructed • Single VIP Latrines • School VIP Block Latrines (not included in totals)	2519/2521	July 2012	Aug 2010	Feb 2012
Norwegian Red Cross	Petit Goâve	• Latrines Constructed • Raised Two Chamber VIP Latrines • Basic VIP Latrine	700/700	Feb 2013	March 2012	Jan/Feb 2013
Spanish Red Cross	Léogâne	• Latrines Constructed • Rehabilitation of Latrines • Basic VIP Latrines	1290/1289[13]	Dec 2012	Jan 2011	Dec 2012
Swiss Red Cross	Léogâne	• Latrines Constructed • Single Pit VIP • Closing and Decontamination of Old Latrines	705/1200 target (705 as of 8/2013)	Aug. 31, 2013	Feb 2012	Dec 2013

[8] Latrine Construction Start/End Time unless indicated otherwise

[9] These include Gressier T-shelters/Latrines. A total of 2,411 T-Shelter beneficiary households have been covered by the sanitation programme (2.346 units built/rehabilitated, 55 HH sharing double latrines with other households, due to lack of space for construction in the area). An additional 550 HHs received a latrine during a cholera intervention but are not T-shelter beneficiaries.

[10] These were latrines constructed at an IDP camp

[11] These were latrines constructed during the initial phase of the program, designed to get input from communities

[12] Start date of latrine construction not available to reviewer

[13] Doesn't include 104 latrines rehabilitated. The total number of latrine stalls = 1527 is more than the number of HH (1.290) because 399 households received a double latrine and 1 household received a triple latrine due to its size.

Household latrine construction selection methods

In general the RC policy was that every T-shelter would receive a new latrine, or in some cases a rehabilitated latrine. In practice, the majority of T-shelters constructed were provided with a latrine. At the time of the review some latrines were still under construction (see endnote 15), and a few others were never constructed, mostly due to the T-shelter having been moved by the occupants, or the occupants had moved and were no longer occupying the T-shelter[14], or in a small number of cases the T-shelter occupants did not own the land and were not authorized to have a latrine built, or lacked space for a latrine. The RC T-shelter WatSan project served to significantly increase overall latrine access, and works to support DINEPA's (Haiti's national water and sanitation department) 2012 established goal that by 2022 every household in Haiti will have a latrine (DINEPA, 2012). On aggregate the FGDs found that the majority of participants did not have a latrine prior to the earthquake. Some RCs expressed some concern with the one latrine to one T-shelter policy, stating that it was "indiscriminate, giving some T-shelter beneficiaries latrines where they already had one, where right next door at a neighbour's house, no latrine existed." This was observed during site visits, where several households had received a new latrine from the RC, built alongside an existing latrine that was still operational. In several instances the household had yet to use their new latrine, instead "locking it up and saving it until the old one became full". There were also several observed instances of T-shelters that had been taken down, or the initial T-shelter residents had moved (Leogane and Petit Goave), where a toilet remained and was not being used, and/or the latrine frame wall materials had been removed, reportedly by the previous occupant. These examples were observed to be the exception, rather than the norm, during the site visits. However, there was no data available to capture the overall incidence of such occurrences. The SwissRC[15] indicated that they recently had started to undertake a more in-depth analysis of their remaining T-shelter target population to determine the specific, if any, latrine needs of each HH and of the immediate surrounding T-shelter HHs, before proceeding with implementation. Other RC delegates interviewed indicated that this would have been a more prudent approach, however it would have required more time and resources, and most were operating under tight time frames.

Latrine design and construction methods

The PNSs and the IFRC implemented a broad range of latrine designs (discussed further below). The designs took into consideration a variety of factors, such as different terrain needs (e.g. high water tables, or flood plains, rocky/hard soil, frequent high winds, availability of water, etc.). Overall the PNSs and the IFRC worked to construct latrines that fit the environmental conditions and challenges of the targeted communities. In general, the PNSs and the IFRC did not look to consult individual households on what type of latrine they wanted constructed at their T-shelter, however the majority of HHs participating in the FGD indicated that they had been consulted on the location of where to build their latrine (see figure 9 on page 41). While there were some modifications made to some latrines primarily

[14] All the PNSs and the IFRC indicated that they had experienced some dynamic issues with respect to changing T-shelter occupancy and teardown/move of shelters over the course of their program.

[15] The Swiss Red Cross program is set to end in March 2014.

for the elderly and disabled, in general the model(s) selected by the RC were replicated from HH to HH using the same designs for the particular neighborhood.

There were three general approaches to the construction of latrines: 1) The latrine was entirely constructed (e.g. slab and foundation poured, etc.) on site, 2) Portions of the latrine (e.g. slab, seats, wall frames and seats, etc.) were constructed at a pre-fabrication facility and transported to the site where construction was completed, and 3) The superstructure and the frame for the walls were provided by the PNSs or the IFRC (constructed either on site or at the prefabrication facility), with beneficiaries responsible for finishing the walls with materials they choose and paid for. For HHs that received a ventilated improved pit (VIP) latrine all were required to dig their own hole, or paid someone to dig their hole. There were some exceptions to this for HHs who lacked resources or abilities. Reported pit depth dimensions varied (ranging from 9 feet to 20 feet, with one HH reporting 35 feet). Overall the average reported depth was 9 feet, with most HHs given specific dimensions that they were requested to follow. Individual beneficiaries interviewed, and participants of the FGD's, found that some HHs dug their pits deeper, so that they would last longer, where a few complained that the pits were not deep enough and that they would have dug them deeper had they known they could. In addition to digging the pits, most the RCs required HHs to contribute water (if the slab and foundation was formed on site), and to carry materials from the drop point to the construction site (for some HHs this was significant, given the remoteness of their house and the terrain). These later contributions were also required of HHs who received raised latrines. Construction of latrines was undertaken by RC staff directly, or was contracted out to local construction companies. Table 6 provides a summary of the type of HH latrines constructed by the RC. Photos of the latrine models from site visits and other latrine associated technical documents referenced in Attachment 3 for all RC technical documents reviewed for this project have been archived as part of this review.

Table 6 – Constructed Latrines by Red Cross Society and Latrine Type

RCM	Single (VIP) unlined	Double (VIP) unlined/lined	Raised/Lined Single or Double VIP	Pour Flush latrine with septic tank	Eco San
Norwegian	X		X		
Netherlands	X	X - lined		X	
German/Austrian	X	X- unlined	X		
IFRC	X		X		X
Spanish	X				
Swiss	X				

As mentioned above, two of the PNSs, the Norwegian and Swiss, had developed prefabrication facilities for their latrines. At the time of the review only the Swiss facility was still in operation, although both sites were visited. The development and use of these facilities was determined as one of the best practices identified through this review as the process enabled mass construction of latrine components, which worked to expedite construction of latrines (the Norwegian RC was able to construct 700 latrines in approximately nine months) and overall better quality control. In addition to these two facilities, the Netherland's RC designed and pre-fabricated their fiberglass pan for their pour

flush toilets. Construction of latrines was completed both by PNS and IFRC staff as well as outside area contractors.

Both the Norwegian and Swiss prefabricated pit slabs. The slabs were designed to be removable for HHs when their pits became full, to either move to a new location or to enable removal of waste from the pit. The Netherlands slab constructed on site was also formed to enable removal for their double pit and pour flush designs, but their slabs were larger/heavier, and will require some breaking of concrete seams to remove. Whereas, the Norwegian and Swiss slabs have handles and simply rest on the foundation frame (see picture series 7). The Norwegian designed handles served a dual purpose of providing a place to secure the latrine frame.

In general the PNSs and the IFRC looked to construct the appropriate latrine design for the given environmental condition, specifically raised and lined latrines were built in known flood prone/high water table areas and in rocky areas which prohibited the digging of pits. The households that had received a pour flush toilet with septic tank in Leogane reported that they had plenty of water (most HHs in the area had/have a traditional open well on their property) to use for the latrines. The designs called for adequate lining and methods to prevent seepage into ground water; however the review was not able to assess construction quality or to determine if any seepage had taken place. The reviewer was told that given that the current ground water was contaminated this was not a significant concern of the design. Regardless, good practice should always work to prevent environmental contamination. EcoSan (urine-diversion with dehydration) toilets were constructed by the IRFC and are addressed separately below.

Prefabricated and Removable Pit Latrine Slabs

Picture series 7 L to R – Norwegians RC Petit Goave slab - rebar handles/ties, Swiss Leogane slab – nylon rope handles, Netherlands- Leogane removable slabs.

Materials and Quality Assessment

A variety of materials were used/observed in the constructed latrines. Table 7 provides a summary of the materials used by latrine component and the associated observed strengths and identified issues (EcoSan toilets are discussed in greater detail below).

Table 7 - Summary of Latrine Materials and Strengths/Identified Issues

Latrine Component	Primary Materials	Identified Strengths	Identified Issues
Foundations	Formed concrete over concrete blocks, concrete blocks/grouted, rocks	Locally available materials and skilled masons.	Transport to some areas difficult given terrain and distance. Grouting of some blocks observed to be deficient. In flood/high water tables some foundations may not be sealed well enough or pose inundation or leaching risks, particularly if not built high enough, or sealed properly.
Walls	Plywood, corrugated sheet metal, corrugated plastic, plastic sheet, concrete block, 5/16" fiber-cement board, concrete block	Broad range of materials available at various costs. Opportunity to provide "choice" to beneficiaries as well as to address area environmental conditions.	Attached materials subject to removal (stolen or sold) and may not withstand hurricanes or high winds. Metal and plastic were reported to make the latrine hot. Some materials have to be imported, increasing cost.
Wall structures	Steel frame and timber frame	Metal frames more expensive, but structurally more sound.	Timber more subject to wind damage and rot and less structurally sound.
Doors/locks	Plywood, corrugated sheet metal, corrugated plastic, 5/16" fiber-cement board	See above walls	See above walls. Hinges were observed to be weak on many latrines, poor quality. Not all latrines included an outside lock, none of the latrines were observed to have a lock on the inside.
Vents	4" PVC pipe and block	See below	See below
Roofs	Corrugated metal, iron sheet	Standard across all latrines observed	Most identified problems were related to the roof being poorly secured to the structure (blown off during high winds or hurricanes) or had been removed.
Seats	Formed concrete (oval, round and square), wood frame with a plastic seat/lid, slab with fiberglass pour flush pan	See below	See below

Three components looked to have more substantial issues based on observation and/or reported to be significant concerns by beneficiaries during interviews or during FGDs. These are captured in Table 8 below.

Table 8 – Highlighted Substantial Latrine Issues/Concerns

Component	Identified/Observed Issues/Concerns
Vents (Picture Series 8)	• Only two of all latrine vents observed were painted black (assists to absorb heat to create convection to enable heat, and thus odors, to rise from pit through the vent). While the cement formed vent pipes are designed to hold up to heavy winds, they are also known to not absorb heat as well, which inhibits convection and potentially increases smell. • Few vents (< 10%) were found to have netting still in place. Some HHs indicated that it was never in place, others that it had been blown off. RC reports were mixed on whether the netting had been placed at all. • Vents were constructed both inside and outside of the latrine block, with neither method looking to be better over the other, other than perhaps vents inside of latrines that were locked, less likely to potentially be subjected to theft.
Seats (Picture Series 9)	• There were a range of identified issues, most had to do with comfort and/or preference. Some HH indicated the seats were very uncomfortable (concrete was not smooth and "cut them", or the shape of the seat made it uncomfortable to sit on or was too wide/too narrow). Beneficiaries looked to have mixed preferences between wanting a squat, or a sit down seat, but reported that they were not given an option between one design or another. Some HHs indicated the cabin space was too small, which prohibited them from being able to sit on their latrine and shut the door at the same time.[16] Most RCs did not provide seat covers when they constructed their VIP latrines and few latrines were found to be covered. Some HHs had developed their own cover with a piece of scrap wood or metal. HHs had varying degrees of knowledge related to the relationship between covering the seat and the presence of flies and smell in the pit.
Anchor systems (Picture Series 10)	• Various systems were used to anchor the latrine structure to the foundation. Some were found to be weak either in how the anchor was secured to the super structure or to the slab/foundation. Use of rebar to secure frames to foundations appeared to be the most secure. • Door hinges in some latrines were of poor quality and had already fallen off or were very loose. • Some roofs were observed to be missing, reported by some HHs to have been blown away during a storm, some staff indicated that some roof materials had been removed and sold, or stolen.

Vents

[16] At least one RCM, the Netherlands identified this as a problem and worked to increase the size of the latrine cabin in latrines constructed later in the project.

Picture Series 8 Top L to Right - Norwegian RC – Petit Goave blacken vent and Swiss – Leogane screened vent, and Spanish RC screened vent, Netherlands RC concrete vents, Netherlands- Leogane pour-flush vents

Seats








Picture Series 9 Top L to R: German RC-Leogane round (they also used square similar to next picture), Netherlands – Jacmel, IFRC EcoSan toilet seat, Swiss –Leogane examples from fabrication facility (RC provided picture), Bottom Row L to R: Netherlands- Leogane (round and box –not concrete lids) and pour flush, Norwegian oval with rim (note lid)

The Swiss RC had conducted a workshop where they designed different seat designs and received input back from beneficiaries. Of all the concrete designed seats observed for "sitting", this one was the only one observed to have a smooth surface. It is the seat the Swiss are currently placing in latrines. None of the designs made any special consideration/design for young children (see below regarding FGDs and use of latrines by young children).

Anchor Systems





Picture Series 10: Top Row L to R: Netherlands RC – Leogane missing roof and well secured roof, Spanish RC – Leogane Frame secured to concrete block that were unsecured to the slab. Bottom Row L to R: German/Austrian – Leogane metal tabs used to secure to foundation, Netherlands- Jacmel frame set in concrete (secured in the concrete but coming loose), IFRC-Leogane EcoSan frame secured to slab with rebar.

Rebar properly imbedded and secured to the shelter frame was observed to be the most secure anchors for latrine frames. For two pit raised or double pit latrines the structure will need to be moved to the second pit and HHs will need the ability to loosen and move the structure, as of the review no HHs had the need to move to the second pit. The middle picture, bottom row, was the least secure structure observed. It also shows exposed nails, which poses a risk for potential puncture wounds and potential tetanus infection risk[17], particularly to young children.

EcoSan Toilets

The IFRC was the only organization to implement EcoSan (urine diversion with dehydration) toilets among the T-shelter WatSan RC projects. These were constructed in Leogane, with a reported total of 366 EcoSan toilets constructed as of the end of June 2013. Of these 92 were built in June (IFRC Report WS June 2013). The design was chosen for the targeted areas due to high water tables and the risk of flooding (IFRC Dossier EcoSan Latrines Implementation Report, 30/10/2012). During the review site visit and a subsequent visit by the IFRC Water and Sanitation Technical Movement Coordination Delegate EcoSan toilets were observed in two communities, Bagadere and Neply. In Bagadere a FGD was conducted with latrine beneficiaries. This review is based on this information and information available from IFRC reports, a former IFRC HP assistant now working as IFRC Health Assistant and information provided by a former IFRC Delegate, now working for the Netherlands RC WatSan program, both of which had previously worked on the IFRC WatSan team for the Leogane programme.

The FGD in the Bagadere neighborhood of Leogane had 19 participants; all but one of the participants had received an EcoSan toilet. Only three of the 18[18] were currently using the latrines, the rest said that they mostly practiced open defecation. According to March 2012 to May 2012 reports and the final project report in June, 79 EcoSan toilets were constructed in this neighborhood, with the majority of the toilets constructed between March and May, the last three months of the project. All three of the latrines reported to have been used were visited, in addition latrines not being used were also observed.

[17] Tenus is endemic in Haiti, with a reported 10-60% case fatality rate. Only an estimated 50% of Haitians are immunized against tetanus. (CDC, 2010)

[18] Represents 23% of HH's who received a latrine in this neighborhood.

Of those that were being used, all had just started to use the latrine in the last month, with one in just the last week. The main reason these HHs reported for not using their latrines earlier was due to their not having bagasse (fibrous matter byproduct that remains after sugarcane stalks are crushed to extract the juice. The bagasse is to be placed in the pit after each use to help with the composting process). These HHs indicated that they had not been able to afford the Bagasse up until recently. They indicated the cost of Bagasse was between $11 to $15 USD, with one person saying she most recently paid 500 Haitian Gourdes (HTG), about $11 USD, for a 50 lb. bag. The former IFRC staff person thought that reported price was way too high, and noted that bagasse was readily available for free. After our site visit we drove by a sugar cane bagasse collection point that was less than a ½ mile away from the neighborhood (see picture series 12); thus bagasse is readily available in the area.

Outside of not having bagasse, there were two main reasons that HHs reported for their not using the latrines. The primary reason was that the design was completely new to them (only a couple of the 18 participants had a latrine before the earthquake), and they did not like the design (e.g. the pit was too small[19], the pit smelled, they do not want to be responsible for waste removal, and they do not have any use for the compost as none of them were farmers). Basically as one participant stated "it is too much work". The second reason for not using them was due to missing pit compartment hatch doors, reported to have been stolen (see picture series 12). As a result the compartment for capturing the waste was exposed. There was some discussion as to whether or not some HHs had removed and sold their metal doors. It is not completely known what was done with the doors, or how they came to be missing. However, that hatches could be so easily removed, and HHs did not appear to be provided with locks (based on latrine construction supply sheets and the bill of quantities) missing hatch doors was a significant problem in this area. Of the three HHs that were using the latrines, one was using it without the hatch as it had been reported to have been stolen (see picture series 12), and the other two had theirs hatches locked with locks they had purchased. They had also placed sticker bushes around the hatches, to deter theft. Both of these houses were also more secure (surrounded by walls) than the other houses with latrines that had missing hatches. The one woman who was using the latrine without the hatch brought out the metal slab cover during our visit. She said she was keeping it inside, so that it too didn't get stolen (see photo in picture series 12). Observation of latrines visited in Neply by the current IFRC Water and Sanitation Technical Movement Coordination Delegate (WSMCD), shortly after the review site visits found more latrines reported to be used (see picture series 11), however most HHs complained about the odor, and many had stopped using the latrine due to the odor

Picture Series 11 IFRC Leogane Neply EcoSan Latrines. (Note locking system and HH added support/protection for the urine diversion pipes)

[19] The Dossier report indicated that on average a pit would be full and need to rest after four months.

Picture Series 12: IFRC Leogane Bagadere area Eco Latrines. Top Row L to R: Missing hatches, locked hatched and sticker bushes covering hatch. Middle Row L to R: Latrine in use with cloth cover over hatch hole, woman showing hatch from slab she was keeping inside her home and sugar cane stalk collection point. Bottom Row L to R: latrines (three on the right were not being used)

Historically composting latrines constructed in Haiti have had very mixed results. The organization SOIL, probably most well-known for construction of compost latrines in Port-au-Prince (PAP), has had mixed results in the implementation of composting latrines in an urban environment. One of the most significant challenges faced by SOIL in Haiti regarding the adoption of compost latrines has been the issue of waste removal (who does it) and the uptake and use of compost. Soil has learned, (SOIL, 2011) and EcoSan's guiding documents (WaterAid, 2011 and ESF, no date) also indicate, that the implementation and uptake of compost latrines requires a long user sensitization and training period. Composting latrines to be effective need to be properly managed to ensure safety of waste byproduct (Chien, 2002 and Berendes, 2013) and there needs to be a use for the waste byproduct. This means that the HHs have a use for the byproduct in their own agriculture or gardening practices, or there is a market for the product, or that there is sufficient and safe (e.g. above flood plain or low water table) ground to bury broken-down waste. None of these appear to exist at least for this community, and while

the FGD participants had received training on the use of the latrines, it appears it was inadequate for ensuring adoption and proper use. To successfully implement composting latrines in Haiti will no doubt be a challenge. Haitian culture, at least to date, does not look to have much support for the use of human waste bi-products in agriculture. In addition, latrine waste in general is not something that Haitians are comfortable handling, particularly in rural areas, as indicated by the traditional practice of digging a new pit when one becomes full rather than having waste removed from the pit for re-use. Bayakou (people who conduct manual desludging of latrines) were reported as rare in the target area and there is a high level of negative stigma associated with Bayakous. Given these barriers it is not surprising to find low adoption of the EcoSan latrines, particularly given the relatively short implementation period[20]. One final concern with the design selection was that they were built to provide an option for HHs residing in known flood plains and/or high water table areas and yet the issue of water inundation was identified as a design issue for the latrines that had continued to be a concern even after the latrine was modified ("water infiltration into the vault is still a problem", "Water level has reached a very (sic) high level during raining period, and this water has come inside the vaults through the rear doors." IFRC, 2013 Dossier Report). Water was observed in at least one of the latrine compartments in Bagadere, and one was not being used in Neply because it was built very near a little river that after heavy rains, which had just occurred, filled the compartment with water.

Unfortunately the IFRC Leogane WATSAN delegate had already ended her contract and was not available to further discuss, or clarify questions, associated with the EcoSan latrines.

Latrine Quality and Beneficiary Satisfaction and Associated Outcomes

Outside of the EcoSan toilet issues discussed above, other latrines constructed by the RC were found to be of a general high quality, generally clean and reported to be used by beneficiaries during FGDs and site visits (outside of those reported above to being "saved" for future use). The latrines were all fairly new; most were constructed in 2011 and 2012. None of the HHs reported that their pit latrine or septic tank had become full yet. When asked what they were going to do when it did become full, HHs had a range of responses from: 1) I don't know, to 2) Dig a new hole and move structure/build a new structure, and 3) Hire a Bayakou. Only one of the RC WatSan project Survey Monkey respondents said that they had established a plan for removal of waste when the latrines become full, with the majority (71.4%) stating that had not come up with a plan. This was echoed by RC delegates during interviews in the field. In addition, only 50 percent of Survey Monkey respondents indicated that their organization monitored the usage and maintenance of latrines after they were constructed, and of those less than 50 percent stated they had any monitoring data in a format that could be made available.

Overall FGD satisfaction with latrines based on a series of posed questions (see below figures 9 to 16) was high. Outside of the EcoSan latrines the only other exception with latrine dissatisfaction was found with the latrines that were partially constructed by the GRC/AutRC and SpRC whereby the HHs were responsible for purchasing and adding their own walls to the foundation and super structure provided

[20] IFRC piloted their first EcoSan latrine design in December 2011, the design was later modified (latrine hatch doors were added to enable easier removal of waste).

by the PNSs. Most of these beneficiaries were not happy about having to build their own walls, stating that they could not afford the materials, and that they were aware that in other areas walls were provided by the Red Cross. Some participants indicated they continued to use the latrine pits, despite their latrine not having walls. Some had used natural materials or plastic tarpaulin to add walls to their latrines.

As discussed in the Methods Section FGDs were held in eight of the target communities (see FGD Key below which indicates the FGD number and associated community. In addition to open ended questions, participants were asked a series of forced vote questions. The following figures 9 to 16 show the results of some of the posed questions and highlights discussions following voting for these questions. FGD participants were asked about lighting and not surprisingly lighting was found to be adequate during the day, but not at night. Participants said the lack of lighting at night did not deter their use, saying they used their cell phone lights or candles or lamps as needed (see Attachment 8 for complete FGD results, including the question related to lighting and photos of some of the FGD participants).

FGD Key: **FGD 1** = Petit Goave-Figaro (Norcross), **FGD 2** = Jacmel – Middle Macary (NRC), **FGD 3** = Leogane-Bellvue (German/Austrian RC), **FGD 4** = Leogane Sus de Baba (German/Austrian RC), **FGD 5**= Leogane-Brache (SPRC), **FGD 6** = Leogane-Su Savon (SPRC), **FGD 7** = Leogane-Bagader (IFRC), **FGD 8** = Leogane- Palmiste a Vin (SWISSRC)

Figure – 9 Latrine Placement Decision

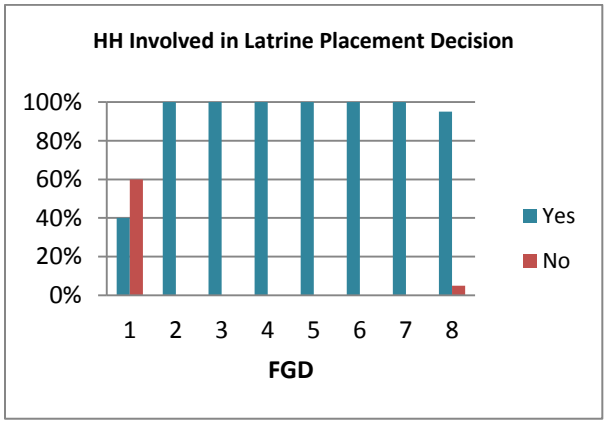
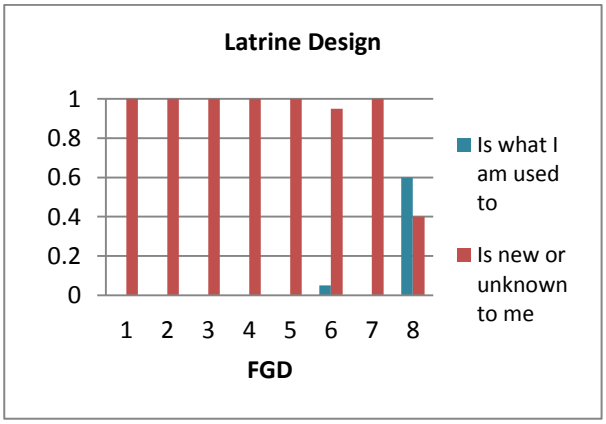


Figure – 10 Familiarity with Latrine Design



Overall HHs felt that they had a role in deciding where their latrine was placed. The only FGD where this was not the predominate finding was in FGD 1, where available appropriate land was an issue and few options were reportedly available to HHs. There were a variety of reasons for HHs overwhelming reporting that the latrine designs were new to them ranging from their not having a latrine before, to the seat being different, the frame (wood structure versus more permanent concrete block structure, or it lacking walls as was the case for FGD 3 and 6 and type of latrine (e.g. pour flush toilet with septic tank and EcoSan).

As indicated earlier all of the latrines had been constructed fairly recently, so it is not surprising to find that no HHs had yet to empty, or otherwise deal with waste in their latrines. The few HHs in FGD 6 (Figure 10) that had waste issues reportedly had larger HH sizes and had not dug their pit very deep. There was mixed results related to the participants rating of the physical structure question, which

asked respondents to vote on whether the structure (superstructure, frame, and seat) was solid with no issues or lacking in some way and not structurally sound. The two FGDs that reported the most problems (FGD 3 and FGD 5) were among the areas where they were responsible for providing/adding the wall materials and the majority of concerns related to the structure had to do with this aspect of their latrines. Other problems identified were limited, but in some cases significant. In FGD 1, one person's latrine had failed because the land underneath it had collapsed, attributed to rain/mud slides, to the structure being very loose and coming detached from the foundation (FGD 2) and in FGD 7 outside of the issues reported earlier related to the EcoSan aspect of the latrines, participants reported that the latrine structure shakes, especially when it is windy (reported by other FGDs) and is overall weak (the only latrine that used plastic for walls), that it was too small and that when it rains they get wet inside.

Figure 11- Amount of Waste in Pit

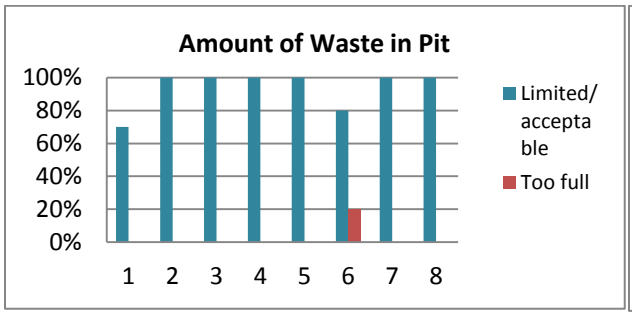
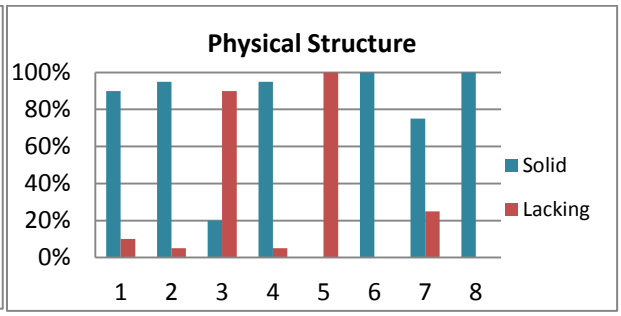


Figure 12 - Rating of Physical Structure



FGD participants were asked to vote on the level of smell and the amount of flies and insects in the latrines, common problems with VIP latrines. Responses to these questions were the most mixed. Reponses looked to have a lot to do with individual HH's practice, e.g. whether or not the HHs covered their seat or not, with most found to not be covering their seat. Interestingly in FGD 2 and 3, HHs reported the latrines as being too smelly, but had few flies or other insects. In FGD 7[21], EcoSan toilet recipients were the only FGD where 100% of participants (representing only three HHs using the latrines) reported problems with flies and other insects. When discussed most HHs did not appear to be knowledgeable about the purpose of having a screen on their vent, or for covering their pit and the role this would play in reducing the amount of flies/insects and the smell.

Figure 13 -Latrine Smell

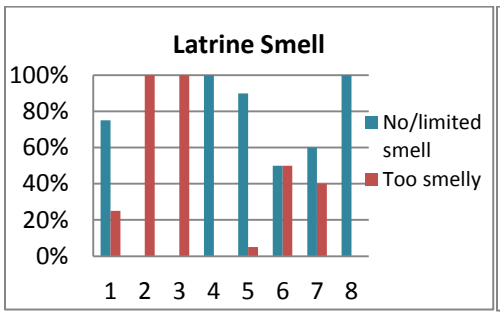
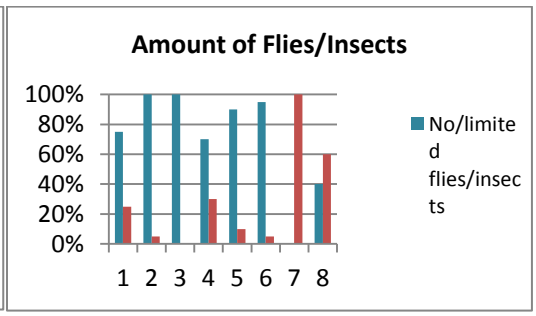


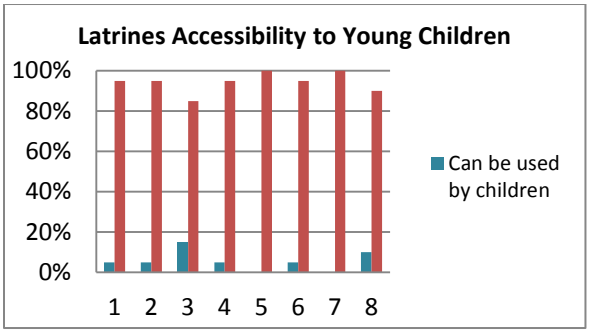
Figure 14 - Amount of Flies/Insects



[21] Only respondents who were using the latrines in FGD 7 were allowed to vote on some of the questions, e.g. amount of waste in the pit, smell, flies, etc.

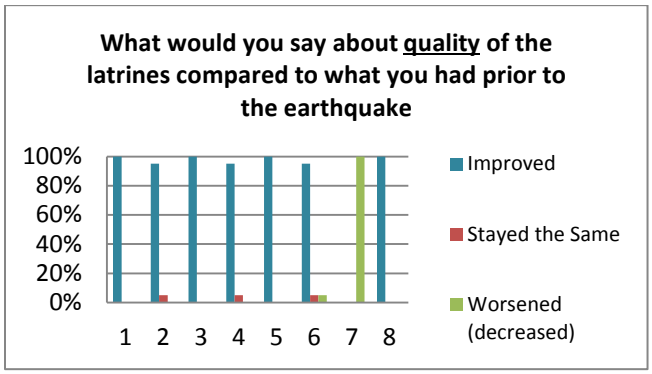
FGD participants were asked whether or not the latrines were accessible and can be used by young children, aged five and under. With few exceptions all indicated that the latrines were not accessible to young children. Participant's main concern was they feared young children could fall into the pit. Unfortunately a FGD was not conducted with participants who received a pour flush latrine to see if this made a difference in perception. None of the HHs reported that a child had ever fallen in a latrine, so the fear appeared to be more of a perception than a real risk. When respondents were asked at what age children would start to use the latrine, it was late, around age six or seven. Prior to children being able to use the latrine, they were reported to use a pot, which the parents said is dumped into the latrine pit with some saying children just went in the field. Regardless of whether or not the risk of falling in is real, or that it is the real reason for their not using the latrine (other FGD's conducted by the consultant in other communities in Haiti found similar findings, with some indicating children were messy in the latrine and thus they discouraged their use), that children are not using the latrine probably means that open defecation (OD) by young children is more prevalent than reported, given few "pots" were observed and children are not supervised all of the time. This defeats the overall purpose of having latrines and use of latrines by young children should be considered in sanitation program planning.

Figure 15 - Accessibility to Young Children



FGD participants responded overwhelmingly that the overall quality of the latrines had improved compared to what they had prior to the earthquake (See Figure 15 on page 43). The exception to this was FGD 7, recipients of EcoSan toilets, where all participants' stated that the latrines were worse than what they had before. This was indicated by participants who did not have a latrine prior to the earthquake and for whom many reported to continue to practice OD. Of the few others that had voted that quality had stayed the same or worsened in FGD's 2, 3 and 6 these were mostly due to their not being many differences between what they had now, and before the earthquake, or they were not satisfied with some aspect of their latrine (e.g. in FGD 6 their latrine was provided without walls).

Figure 16 - Overall Quality Rating of Latrines



Latrine Cost

The cost of latrine construction varied considerably. A report conducted for the Canadian Red Cross (Weicker, 2013) indicated that the average cost of latrines in the South East Department and Leogane between 2010 and 2012 was $475 per latrine. The range of latrines constructed by the PNSs and the IFRC was found during this review, based on the available information, to be between $350 USD to $820 (See Table 9). Cost varied depending upon latrine type/design and construction methods, and upon labor and transportation costs. Costs do not include RC overhead costs associated with construction of latrines.

Table 9- Cost of latrine by Type and Red Cross Society

Type of Latrine	Price USD
Single Pit VIP	$$419 (Jacmel Netherlands) $399 (Swiss) $177 to $387[22] (Spanish) $350[23] (Norwegian)
Concrete/Raised VIP or double VIP	$540 (Netherlands) $600 (Norwegian)
Pour Flush Septic	$635 (Netherlands)
EcoSan	$820[24] (IRFC)

Overall RC staff interviewed during the review, and those that completed the online survey, felt very positive about the latrines that had been implemented by their organization. In terms of sustainability of the latrines, respondents to the online survey indicate that the likelihood of sustainability of latrines over the next three years was mostly high to very high, 66.7 percent to 16.7 percent respectively, with one person rating the likelihood of sustainability as neutral (See Section 4 for overall project

[22] These do not include the cost of wall materials. The Spanish RC contracted out the construction of their latrines.

[23] This is just the cost of the latrine (prefabricated) for the single. The super structure for their raised double pit, was contracted out.

[24] This is an estimate based on information available, which had a slightly different design that what was implemented by the IFRC. As the WatSan Delegate for the IFRC was no longer on board and not available for the review the final cost is unknown.

sustainability ratings). Complete on-line survey results, including responses to open ended questions can be found in Attachment 5

3.4 Assessment of Hygiene Promotion Methods and Materials

The PNSs and the IFRC were all involved in some level of HP activities throughout the course of their project's implementation period. The degree to which HP activities were undertaken varied greatly based on the available information. This area was the most difficult WatSan program component to assess as most programs had come to a close and most HP staff, were no longer available to interview and the evaluator was not able to observe any of the activities or methods deployed. In addition, there were very limited HP materials available for review, and/or documentation of HP activities was limited (See Attachment 3, which includes a covers all project materials reviewed, including HP related materials/documents). The assessment of HP methods and materials is based on what was available, and therefore may not capture the breadth of the activities implemented.

Effective hygiene promotion programs are informed by formative research that is conducted prior to, or during the early phases, of project interventions to ensure that the project activities are relevant and appropriate for the target population (IRC 2011 and Mosler, 2012). No information was available to indicate any formative research was conducted to identify what motivates behavior change related to hygiene among the targeted beneficiaries. Conducting such research is without a doubt a challenge in emergency situations; however these projects were implemented in a post emergency phase and had such research been undertaken, it would have worked to ensure that HP interventions that were employed were particularly relevant to the targeted populations and conditions. Some of the materials used by the PNSs and the IFRC are known to have been developed in Haiti, and are specifically for use in Haiti(e.g. UNICEF and MSPP cholera prevention posters and PHAST/CBHFA behavior cards). The extent to which there is variance among the populations in the communities targeted by this program is not known. Effective HP programs should undertake at least some level of formative research to see if their materials resonate with their specific target population.

Of the RC projects reviewed only one baseline was available for review (GRC/AutRC), with the Swiss indicating one had been conducted but was not available for the technical review.[25] Three PNSs (SpRC, Netherlands RC and GRC/AutRC) and the IFRC conducted some form of an endline, or HP related, or general WatSan focused final evaluation.[26] The SwissRC plans to conduct an endline at the close of their project in 2014. The IFRC endline was conducted by the IFRC WatSan – HP Delegate and covered water, sanitation, hygiene, food hygiene, waste management, vector control, and awareness of disease prevention specific to malaria, dengue and diarrhea. The Spanish RC conducted two final evaluations,

[25] The IFRC references baseline data in its final June report as does the IFRC endline survey, but the study, if conducted was not available at the time of the review. Further Japanese RC staff, who are now managing HP and health focused programs in Leogane previously managed by the IFRC said such a report was not conducted, although some qualitative information was available to assess impact.

[26] The Netherlands Final report had a very limited focus on HP and the quality of the questions and methods used to assess HP was limited and did not use sector standards. The GRC/AutRC was conducted in July and was not available at the time the technical review was conducted.

one was focused on the satisfaction of the projects HP Community Facilitators with respect to the training they received, the HP projects' implementation process and how well the facilitators felt they were integrated into the project. The other Spanish RC evaluation was a latrine beneficiary satisfaction survey. These reports were only available in Spanish and French respectively, making them difficult to review for this report, particularly given time limitations. The IFRC's final June report includes endline data (presumably from the previously mentioned report) compared to baseline data, but no baseline data report was available for review. Given the lack of aggregate data it is not possible to make an overall assessment of the outcome of HP activities for the T-shelter WatSan program, or to report on any level of aggregate change in hygiene behaviors over the course of the project period.

HP Methods and Focus Areas

According to the on line survey (N=6) the HP approaches deployed by the RC included PHAST (Participatory Approach for the Control of Diarrheal Disease, WHO, 2000) (67%), CHAST (Child Hygiene and Sanitation Training) (50%), Behavior Change Communication (BCC) (17%), Community Based Health and First Aid (CBHFA) (50%), RC developed their own approach/methods (17%), with some RC reporting to use more than one approach/methodology or portions of a methodology (e.g. aspects of PHAST, but not the complete process). Table 10 indicates what methods were used, by what PNS or the IFRC, according to materials reviewed, responses to the on-line survey, and interviews with available staff.

Table 10 - Hygiene Promotion Methods Used

RCM	PHAST	CHAST	BCC	CBHFA	Developed their own
Austrian/German	X	X			X
Netherlands			X		
Norwegian				X	
Spanish	X	X			
Swiss	X			X	
IFRC	X				

Hygiene promotion activities focused on a broad range of hygiene practices/behaviors. No RC looked to narrow the scope of their HP to a few key HP behaviors (e.g. hand washing at specific times) at the exclusion of other HP areas to increase impact of HP efforts. Some RCs (4) indicated that they did focus on promoting hand washing at specific times (shown to be more effective in preventing disease than broad, general, hand washing campaigns, Curtis V., Cairncross S, 2003). Of those RCs, they focused on: ***hand washing before preparing food***, ***after using the toilet****, ***after taking care of a baby that has defecated***, ***before feeding a baby/giving breast to the baby****, ***before eating/handling food****, *after promenade, after touching money*, when you arrive at home and before handling baby*. Of these times the time **in green** are incidences when research has shown to be the most effective in preventing diarrheal disease (*indicates more than one PNS and/or the IFRC focused on this hand washing time).

Of the six RCs, four indicated that they focused on the prevention of specific diseases, i.e. cholera, diarrhea, malaria, tuberculosis (TB), poliomyelitis (polio), dengue and typhoid. Of these, all but TB is water borne, water washed or water related (malaria and dengue) and relevant to a WASH program either directly or indirectly. The degree to which the programs focused on these diseases is not known.

Specific disease prevention is a component of CBHFA, although it is not known if all of these diseases were/are covered in CBHFA resource materials.

The RC used a wide variety of activities in their HP efforts, including theatre, songs, small group activities, large community events, house to house visits, demonstration of hygiene practices, posters and flyers. Of these, house to house visits and small group activities were the most common, conducted by 60 percent of RCs (on line survey, delegate interviews and FGDs). All RCs made use of Community Hygiene Promoters (CHP) or "Community Facilitators" to implement their HP activities among the targeted communities. Household visits by community facilitators were identified by those interviewed, as well as participants in FGD, to be the most effective HP method employed by all RCs. However, the RCs use of CHPs and overall HP strategies implemented by CHPs varied considerably. Household visits by CHPs looked to range from CHPs visiting the targeted HHs only a few times over the course of the project period (e.g. Norwegian RC based on review of available materials, FGD participant responses and interviews with WatSan delegates), to somewhat regular visits over the project period which sometimes focused on an established calendar of activities/themes from week to week or every other week (Netherlands, Swiss, Spanish, IFRC). The GRC/AutRC program's HP approach required that to receive a latrine T-shelter beneficiaries had to attend at least two of three HP meetings (the GRC/AutRC primary HP activity). In addition, they conducted large community level HP events and HP in schools using CHAST methodology, along with some reported house-to-house visits. FGD participant responses to hygiene behavior focused questions looked to be more specific, and more accurate, in the FGDs where more targeted and more frequent visits by RC CHPs were implemented by the RC. For example participants from these communities were able to identify the most important times for hand washing, how to specifically prevent diarrhea, and how to treat their water with a high degree of specificity.

Limited printed materials were available to review (see Attachment 3 for documents/pictures available). The IFRC June report references making available the following materials – hygiene calendars, banners, posters, booklets, PHAST manuals, PHAST card sets, flip charts, F-diagrams, hygiene kits, and t-shirts and stickers. However none of these were available for review (it is possible that hard copies of these are among the documents provided to the consultant during the last day in the field).

While PHAST was reported to be among the most used methods, most did not follow the complete community based seven step methodology. In addition, infrastructure implementation (e.g. construction of latrines) often preceded HP activities, which is not in line with PHAST methodology. Of the PHAST components used, the most frequent component was the use of picture cards of desired practices (e.g. hand washing with soap, use of a latrine, etc.) in house to house visits. The IFRC made use of a PHAST manual translated into Creole and also references preparing PHAST training curriculum (June report). The Creole PHAST manual is available electronically.


Hand washing station. Photo credit IFRC.

For hygiene promotion to be effective, enabling infrastructure to support the desired behavior, such as hand washing facilities and soap, is required (Curtis, 1999, Curtis, 2003 and Curtis, 2009). Of all the RCs, only the IFRC

looked to support the establishment of hand washing stations in their project (see photo right). However, none of these facilities were observed in the community of Bagadere at the time of the review. It's not known if these communities received these hand washing facilities or, if they did, what had happened to them. This observation should therefore not be extrapolated to other IFRC neighborhoods. The sustainability and/or effectiveness of the stations could not be determined by this review.

FGD participants were asked how they washed their hands, with most reporting that they washed their hands with soap. However, when asked if they had soap in their homes that day, a significant number of them stated they did not. Of those that did not have soap they said they used detergent or chlorine to wash their hands. The IFRC endline survey had a question that asked respondents what they washed their hands with, 92 percent reported that they washed their hands with soap every time. The survey, however did not ask the respondent whether soap was available in the home on the day of the survey, or observed if hand washing facilities were available, to determine if the enabling environment was in place to support the reported practice.

The review found great variation in the implementation, and thus associated outcomes related to hygiene promotion activities in the target communities based on qualitative data (FGD responses and field observations). Research has shown that for behaviors to change knowledge alone is not enough to bring about change and that BCC needs to be specific, repeated and integrated into other activities (Akudago, 2013, Pinfold, 1996). Behavior change also requires an enabling environment to support the practice of the desired behaviors (Loevinsohn, 1990, Ejemot-Nwadiaro, 2008). More work could have been done to develop an enabling environment through the implementation of hand washing stations/facilities to support hand washing practice, particularly after using latrines, a key component of the T-shelter WatSan project. This looks to have been a missed opportunity.

Measuring the effectiveness of hygiene promotion components of programs is difficult at best. At a minimum most organizations work to measure change in knowledge over the project period. While knowledge does not necessarily mean that practice follows, it is often a first step in behavior change. Unfortunately there is insufficient data and information to measure change on an aggregate basis over the course of the RC T-shelter WatSan project in the communities of Leogane, Jacmel and Petit Goave. One additional challenge with this project is that it was conducted in Haiti after the earthquake, and the cholera outbreak, when multiple organizations (other PNS, MSPP, other NGO's, etc.) were conducting HP efforts, thus any changes in knowledge and/or practice that have occurred would be difficult to attribute solely to the RCs efforts.

3.5 Assessment of Involvement of Local and National Authorities

As with hygiene promotion there were varying degrees of involvement of the RCs with local and national authorities and even less documentation of such efforts. Unfortunately, there was insufficient time to assess this work, particularly from the local and/or national authorities' perspective, given the tight field schedule. This very brief assessment is therefore based on interviews with RC WatSan delegates and available documents, and one interview held w/ASECS and CASECS in Jacmel Middle Macary

neighborhood. All RCs discussed having some communications with ASECS and CASECS. Most often the communication was the RC reporting to them on particular activities underway or planned, rather than any higher two-way level of engagement. This was echoed in another evaluation conducted for the Canadian Red Cross related to engagement of local officials (Weicker, 2013). Engagement of ASECS and CASECS in decision making looked to depend on the given community and the relationship of the RC with that community as well as the level, capacity and degree of interest of the ASECS and CASECS. No documents exist that capture the extent of, or dates of meetings with local officials for any of the RCs. In the one meeting that the reviewer had with some of the ASECS and CASECS in Jacmel she found that they had been, and continued to be, very engaged with the Netherlands RC, with a high degree of satisfaction.

The RC had greater contact with DINEPA, particularly more so as time went on as DINEPA looked to increase its capacity and oversight of water and sanitation operations in the targeted area. As above, there is limited, to no, documentation of regular meetings between DINEPA and the RC delegates outside of the IFRC, where meetings with DINEPA were incorporated into their monthly and final reports. These reports discuss meetings with DINEPA specific to project/contract approvals (e.g. drilling of wells, water points/kiosks) and water quality testing. Involvement with DINEPA looked to be greater with respect to water projects, particularly in the Leogane area. Of the water projects visited in the Jacmel area, DINEPA was not involved. Other RCs indicated that work with DINEPA was associated with particular specific project, and meetings/work was conducted on an as needed basis. Involvement with DINEPA also occurred during WASH cluster meetings when they were taking place.

DINEPA is looking to have an increasing role in sanitation, in part due to their recent (March 2012) strategy which calls for all households to have a latrine by 2022 (DINEPA, 2012). As part of this strategy DINEPA directs organizations to not subsidize the construction of HH latrines and that institutions and households should be encouraged and supported to build their own proper sanitation solution. The strategy states that partial or total subsidy for public sanitation blocks (blocs sanitaires) is supported, alongside a six month period in which the community should be supported in preparing to take over the maintenance and management of the system on their own. This strategy was put in place towards the end of the WatSan in T-shelter project. T-shelters were omitted from following this new policy as DINEPA did not want aid agencies to construct shelters or housing without a toilet. All RC indicated that while DINEPA's reach and capacity was expanding that they were stretched and often a challenge to work with, particularly when there were pressing deadlines. Their increasing role was overall seen as a positive move for Haiti, despite the challenges experienced.

In addition to ASECS, CASES and DINEPA a small number of RCs indicated they worked with other organizations in their on-line survey responses as follows: Mayor's offices (3), TEPACS (1), OREPA (1), URD(1), MSPP (Public Health Department).

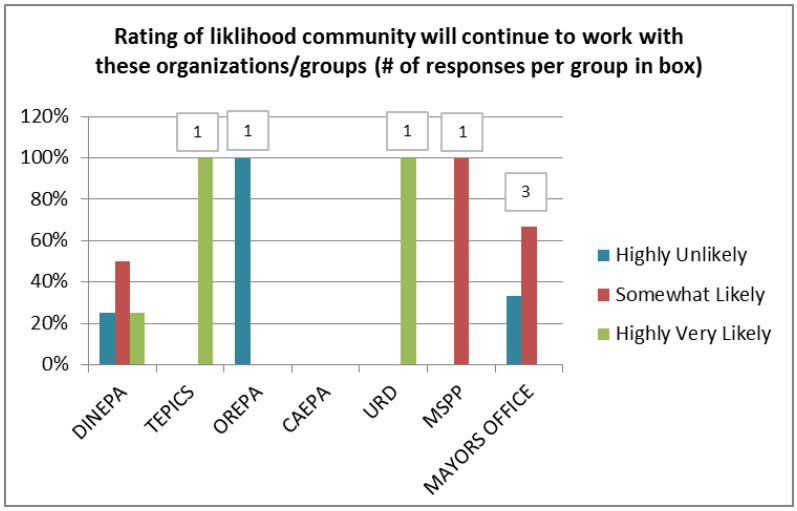
Respondents to the online survey also reported the following challenges and/or lessons learned when working with the above group (specified if indicated):

- *DINEPA - approvals can take between 1-3 months for boreholes, water testing results also very slow*

- *The most difficult point with these group is to choose the person in charge of the finances*
- *DINEPA should be consulted before doing any intervention. TEPAC don't have a lot of support from DINEPA to be really effective. URD is a good source of information (drawing, plan, statutes, etc). Leogane MAYOR office is regularly informed but they aren't giving any support. Efforts should be made to give to those groups regular reports, which include detail of activities and maps so they have an idea of what is going on*

Online survey respondents were asked to rate the likelihood of the communities continuing to work with the following organizations, results are included in the figure below. The results were mixed. Given the relatively limited involvement the RCs had working with these groups; it's not surprising to find that the future estimation of continued participation of the communities with these groups is overall relatively low.

Figure 17



3.6 Assessment of Community Participation

As with hygiene promotion, and work with local and national government organizations/groups community participation varied from each RC. The Netherlands RC, the GRC/AutRC and the IFRC employed national staff Community Mobilizers[27] (CMs) that were particularly involved in working with the T-shelter beneficiaries around the latrine construction project. In their role they helped to mobilize households in the digging of pits for their latrines, carrying latrine materials and water collection for the construction of latrine superstructures and slabs. The IFRC looked to use local volunteer community mobilizers within the communities, who also participated in latrine construction as well as distribution of Non Food Items (NFI), e.g. hand washing stands. The communities and beneficiaries contribution to latrine construction was significant, with close to 17,000 latrines built, most of which were VIP latrines, requiring pits of up to 9 feet, and deeper, to be excavated.

[27] GRC/AutRC referred to these positions as "supervisors", but had the same tasks of linking the community and the RC.

Outside of RCs engagement of beneficiaries in the construction of HH latrines, there were varying degrees of involvement of RCs in the formation of local water boards/committees or other groups to support the work of the T-shelter WatSan program. The formation of water boards/committees is discussed here (see also the Water Assessment Results Section). The GRC/AutRC formed water committees for each of its associated water projects. The groups received four days of training over a six month period. The trainings covered the technical components of water management of the associated project (e.g. use, pump, springbox and kiosks capacities), organizational training (cost to replace and repair components, and collection of money from the community, etc.). The IFRC formed and held similar trainings for 50 water committees associated with hand pumps (operation and maintenance), although the extent of the trainings and topics covered is not known. No curriculum for the trainings conducted is available, or was made available, for the review (again these materials may be among the hard copies collected at the end of the review, but unable to be reviewed during this process). General community meetings were also reported to be held with communities by the IFRC surrounding the over 100 rehabilitated water points. The Swiss and GRC/AutRC also provided training to HHs on the maintenance of their rain catchment system and CWFs (discussed earlier).

The SwissRC is working with the Haitian RC and the local Haitian Civil Protection Department in the formation of EIC's (Equipe d'intervention Communautaire) Community Response Teams. The EIC will conduct work in 13 rural area communities in the SwissRC's target area among HHs, schools and at community events. The teams traditionally have had a focus on Disaster Risk Reduction (DRR), but the SwissRC are working with the EIC's to incorporate aspects of HP using some components of CBHFA and PHAST in the communities with they have. In particular the EIC will be trained on how to prevent and fight epidemics and will be in charge of:

1. an active surveillance of cholera cases in the community;
2. prevention of cholera and
3. disinfection of houses of cholera patients.

RCs reported mixed results with respect to community participation and various challenges working with local communities. The influx of NGO's and associated goods/services following the earthquake was significant throughout Haiti and in Leogane area in particular, given it was at the epicenter of the earthquake and therefore particularly impacted. No doubt this had an impact on beneficiaries, with some level of donor fatigue, and/or confusion over the different approaches taken by different organizations (e.g. some paid "volunteers" such as community health promoters and some did not). These differences were seen within the RC itself with respect to the construction of latrines, where some built the entire latrine (minus digging of the pit) and others (GRC/AutRC and SpRC) requiring HHs to provide their own latrine walls. The differing approaches and the nature of aid-giving following an emergency looked in some ways to discourage community contribution in the T-shelter WatSan targeted communities programs. RCs indicated that it was easier and more productive to engage the community in the more remote and rural areas of the project.

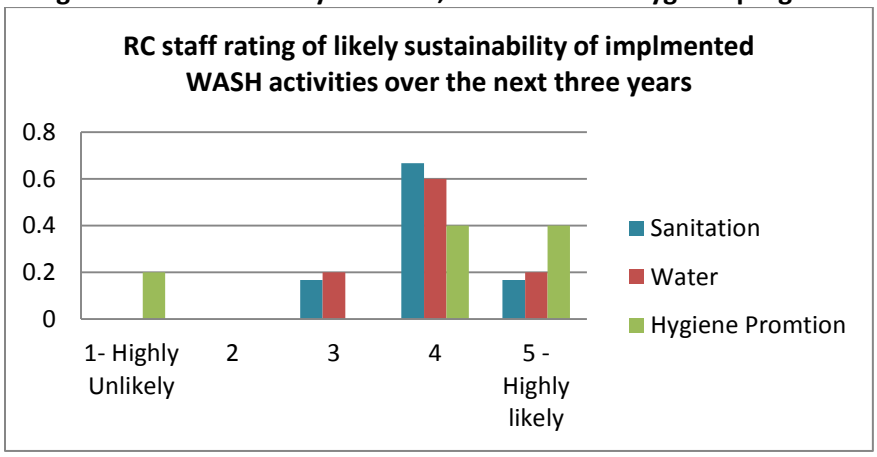
4. KEY FINDINGS AND LESSONS LEARNED

The following provides an overview of the key findings and lessons learned from this review.

Overall the RC looked to have increased access to improved sanitation and improved drinking water to the targeted T-shelter beneficiaries and their surrounding communities, where applicable. Overall quality of infrastructure projects observed during the site visits was very good, with the exceptions, and caveats, noted above in the report results section. Much of the work was done under a relatively short time period, this is to be commended. However, such a rapid implementation may have also reduced the projects ability to effectively engage the community and to bring about sustainable hygiene behavior change in some instances. Whether or not a WASH program is sustainable over time is something all WASH programs should take into consideration during the implementation period. The degree to which the RC did take steps to insure sustainability varied across RCs, as well as within different project components. To assess whether the implemented components are sustained will to some degree be determined over time and will require a later stage evaluation to ultimately assess the final outcome associated with sustainability of implemented projects. A number of lessons learned and recommendations are outlined below, which if implemented, would work to improve sustainability and overall quality of WASH programming for this and future RCM WASH projects. When RCs on line survey respondents were asked about the sustainability of their implemented activities they rate the likelihood likely to highly likely (See Figure 18 below).

Sustainability

Figure 18- Sustainability of water, sanitation and hygiene programs



Review Process

The breadth and extent of the WASH in T-shelter programming was significant, covering a large geographic area, six PNSs and the IFRC and a broad array of methodologies. The review timeline was very ambitious, and even had the time in country not been reduced, due to some contract delays, more time spent in the field would have been helpful for gathering additional information to inform the review process and this final report. In particular more time would have been helpful to:

- Meet with more community leaders and government officials to gather their input on the RCs programming, perhaps through FGDs.
- Meetings with Water Boards/Committees and Community Hygiene Promoters to assess their level of knowledge and training received that was in support of the WASH in T-shelter programming.
- Complete site visits and observation of additional IFRC and GRC/AutRC programming in Leogane, particularly in remote areas, that were in some cases three hour's drive (one way) from the center of town.
- Additional time to glean through and review some of the documents in the six boxes of IFRC materials, particularly given the absence of electronic documents and the IFRC's WatSan delegates no longer being available.

Despite the limitations and limited information in some areas, a review which looks to capture some of the salient findings was completed. In addition to the issues outlined under Monitoring and Evaluation Assessment section among the key findings and lessons learned from the review about the WatSan in T-shelter project include the following by assessment area:

<u>Water</u>

- Overall the quality of water projects was fairly high. Identified challenges were among those commonly found in water projects related to management and maintenance of water projects, quality of construction and associated material issues.
- Water needs and solutions vary greatly by area, there is no one size fits all solutions. RCs that are going to engage in water projects need to have the ability to implement a range of water projects in both rural and urban areas.
- There appears to be no standard water quality testing/treatment approach, or policy associated with RCs water programming. As has unfortunately been learned the hard way by other organizations (e.g. UNICEF and arsenic in drinking water in Bangladesh) the RC should be more circumspect when it comes to water quality testing to avoid any potential liability issues, as well as to insure water quality is safe, and/or guide beneficiaries on what approaches need to be taken to treat water, if needed.
- The formation of water boards/committees was conducted at different levels, or not at all, by the RCs.
- Limited work was conducted to develop mechanism for fee collection to support the ongoing maintenance and management of water infrastructure projects.

<u>Sanitation</u>

- The WatSan in T-shelter program had a significant impact towards increasing access to improved sanitation among the targeted communities. The number and overall quality of toilets constructed in the project time period should be commended. Improvements and adjustment to designs can be easily made to improve outcomes moving forward for this or other sanitation projects.

- As with the water projects, there is no one size fit all solution for toilets. While the RC did implement different options across all six RCs there was a tendency for some to find a design and stick with it until all toilets were completed. While this enabled targets to be met, rapidly in some cases, it didn't allow for enough time to make modifications that would have improved outcomes (e.g. beneficiary satisfaction and use) over the long term in some cases.
- The pre-fabrication of latrine components is considered a best practice for large scale sanitation projects.
- There looked to be differing philosophical or methodological approaches on how to go about implementing latrine projects in high need communities related to how much should be given to beneficiaries, versus how much beneficiaries should contribute.
- None of the RCs looked to address what is going to happen to the waste in latrine pits when they become full. With over 17,000 toilets, this is a large looming issue for the targeted communities, with no/limited options for HHs.

Hygiene Promotion

- A wide variety of approaches and methods were deployed by the PNSs and IFRC, with most appearing to take "off the shelf" approaches or components of approaches (e.g. portions of PHAST) that may/may not be relevant or effective with the target populations. HP, for some programs, looked to be a component that should be checked off, rather than fully integrated into the WatSan program. Unfortunately, there is limited information overall to assess the impact of these efforts in terms of increase in knowledge or changes in behavior.

5. RECOMMENDATIONS

The following is a list of key recommendations for consideration by the IFRC and PNSs in relationship to WatSan tied to T-shelters:

Overall:

- Recommend improving overall Monitoring and Evaluation of WatSan programming by the RC to enable capturing of implemented activities across PNSs and the IFRC as well as moving beyond just capturing inputs to measuring outcomes and impact.
- Suggest that the RC retain records of HHs (e.g. though addresses, lists, GPS points etc.) that received latrines through the T-shelter WatSan project and work to conduct a statistically significant survey sample of HHs to determine longer term outcomes/issues associated with the implemented latrines (e.g. in one to three years). This could be focused on water interventions as well. Such an effort would work to inform future project with respect to sustainability and measurement of quality of implemented projects over the longer term.
- For such large scale WatSan projects baseline, mid-term (if possible) and endline surveys should be conducted. Where possible mid-term, even over final evaluations, should be undertaken. This will enable findings to be incorporated into programming when the program is underway, as well as better opportunities for the evaluator to observe program activities and to interview

program staff, beneficiaries and other key informants while they are still actively engaged in the program.

Water

- Water quality testing should take place for all RC initiated water projects, regardless of the type of water system implemented.
- The RC should always look to form and support local water committees. The formation and operation of such groups can be a challenge and their effectiveness overall in WatSan programming can be improved, however in the end it is the local community that will be responsible for managing their system and the RC should work to build their capacity to do so. This will serve to decrease their dependency on outside groups over the long term.
- In addition to training local water committees the RC should look to either making available spare parts for some components of water systems, and/or ensure that such parts are readily available so that communities can repair their own systems. The RC should also consider providing training targeted to women for some, or all aspects of their water projects (e.g. rain catchment systems and basic repair/replacement of taps handles) as women are often the primary water system caretakers, especially of local/household systems.
- Similarly the RCs should work to develop training materials and mechanisms related to fee collections and/or work with the local governing board (e.g. DINEPA) to develop such systems/capacity.

Sanitation

- The RC would potentially benefit from hosting a latrine workshop to discuss latrine designs and lessons captured/learned from this project and how modifications can be made for future projects. The ground work, including designs, photos, costs etc. has already been laid through this project and by the RCs and can be further improved upon with the technical expertise of engineers. However, such a workshop should also fully integrate experts from public health/social sciences, as effective implementation and use of latrines by the community is much more than just an infrastructure problem/solution. Outside of addressing technical issues identified in this report, the process should include the following
    - how to incorporate the needs of children in latrine designs,
    - capturing of the pre-fabrication processes, costs, etc. so that it can be easily replicated in other areas and improved upon
- Where one poos matters! The RC should work to improve engagement of beneficiaries when it comes to some latrine design aspects, particularly when it relates to the type of seat preferred, and offer choices (squat versus sit, and surface, shape) to beneficiaries, if only a limited number of options to choose from. Recommend that public health/social scientist participatory processes and both genders be engaged in the formative research phase of this work, as this is more than just an engineering problem/solution.
- It's imperative that RC think about what happens in the future with respect to latrines that are constructed, particularly when they become full with waste, and work with the community to

provide or develop community/HH options/solutions. (Some potential options for consideration include - O'Riordan, 2009, Republic of South Africa, no date, and WELL, no date.)The IFRC should conduct a deeper assessment of the EcoSan toilet project to determine the extent of the problems identified and address identified problems, where found. The latrines identified that are not operational, or are not operating correctly should be addressed to prevent contamination and potential spread of diseases, as well as HHs reverting to OD.

- Globally sanitation, and in Haiti as per DINEPA's national sanitation strategy, is moving away from direct provision of toilets by agencies and moving more towards a CLTS and bottom up, user financed latrine process. It is suggested that the RC look at how such models can be better incorporated into their sanitation programs in the future.

Hygiene Promotion

- To determine whether HP efforts have been effective, or not, baseline and/or KAP studies as well as endlines should always be conducted, especially for longer term projects such as these. It is recommended that the RC work to develop and implement such processes/tools that can be adapted and applied to different environments as needed. Having some standards will support to have some level of quality control of surveys, so that overall impact and lesson learned can be transferable or applied across projects to some degree.
- Efforts should be undertaken to conduct some level of formative research as a component of, or in addition to KAP/baseline surveys to help direct HP efforts to the specific conditions/behaviors of greatest need in the target community (WSP, 2012 provides a good example specific to hand washing with soap). Care should also be taken when selecting the appropriate HP approach that will be used for a given WatSan project to ensure that it is applicable to the given situation, that all staff have the skills and training to implement it, and that it is implemented per the methods described approach. For example PHAST is a *participatory community* process with distinct phases, each building upon the previous phase. When only some components of PHAST are used (e.g. picture cards of desired behaviors to teach hygiene and sanitation concepts) critical steps are missed which will ultimately result in desired behavior changes not being implemented by the community. For behavior change to take place, more than knowledge transfer needs to occur (Rosenstock, et. al. 1998, VanWijk and Murrie, T. 1995).
- WatSan "engineer" delegates' qualifications should include a higher level of HP knowledge/skills/experience, or be required, and supported, to acquire such knowledge/skills within a short period of time after they have been hired. While they might not be the implementers of HP, integration of knowledge of the "social sciences/public health skills" will also work to increase the effectiveness of infrastructure projects.
- Overall the RCRC should consider changing its terminology for its work in water, sanitation and hygiene now referred to as *WatSan* to the more common sector definition of *WASH*. While this may seem to be just a technicality, that hygiene is not integrated into the basic definition used by the RCRC is somewhat indicative of hygiene promotion activities, in many cases, getting secondary or less emphasis, which ultimately affects the overall impact of implemented water and sanitation activities.

ATTACHMENT 1

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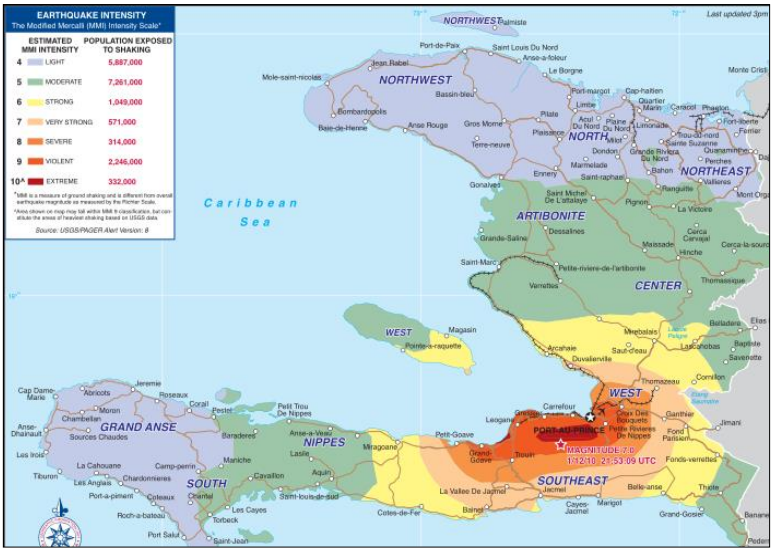
International Federation
of Red Cross and Red Crescent Societies

Technical Review of Water, Sanitation and Hygiene Promotion activities for shelter beneficiaries
Leogane, Petit- Gôave and Jacmel
Terms of Reference
Haiti Earthquake Operation

BACKGROUND

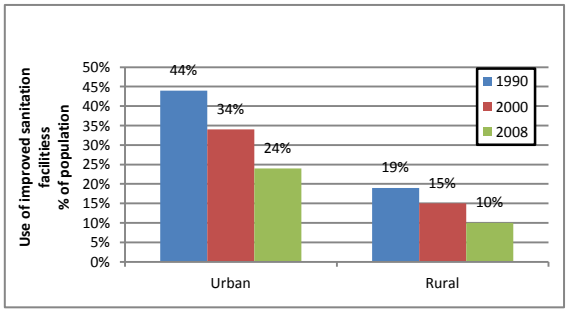
Watsan context and earthquake impact



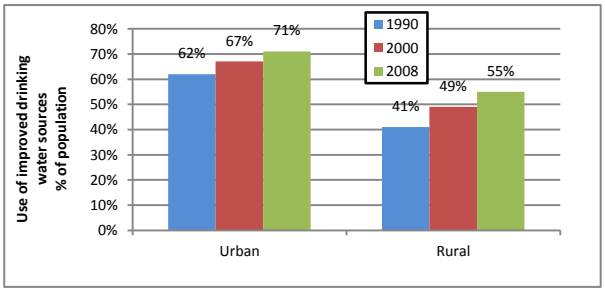
On the 12th of January 2010 an earthquake measuring 7.0 on the Richter scale struck Haiti. The earthquake's epicentre was approximately 15km south-west of the country's capital, Port-au-Prince, and close to the city of Léogane. According to statistics from the Government of Haiti, over 200,000 people died, 300,000 were injured, and 1.5 million people were displaced by the earthquake and the subsequent aftershocks that occurred during the weeks that followed.

Prior to the earthquake, access to water and sanitation in Haiti was poor. Haiti had the lowest sanitation and water coverage rate in the Latin America & Caribbean region in 2008. Unlike its neighbouring countries, the sanitation situation had worsened over the preceeding decades. No Haitian city had a centralised sewage system, and regular access to improved drinking water sources was only available to 63% of the country's population, with a mere 17% of the population having access to improved sanitation facilities.

Strong discrepancies exist in access to water and sanitation services between rural and urban areas as shown in the graphs below:



Use of improved sanitation facilities change in rural and urban settings of Haiti



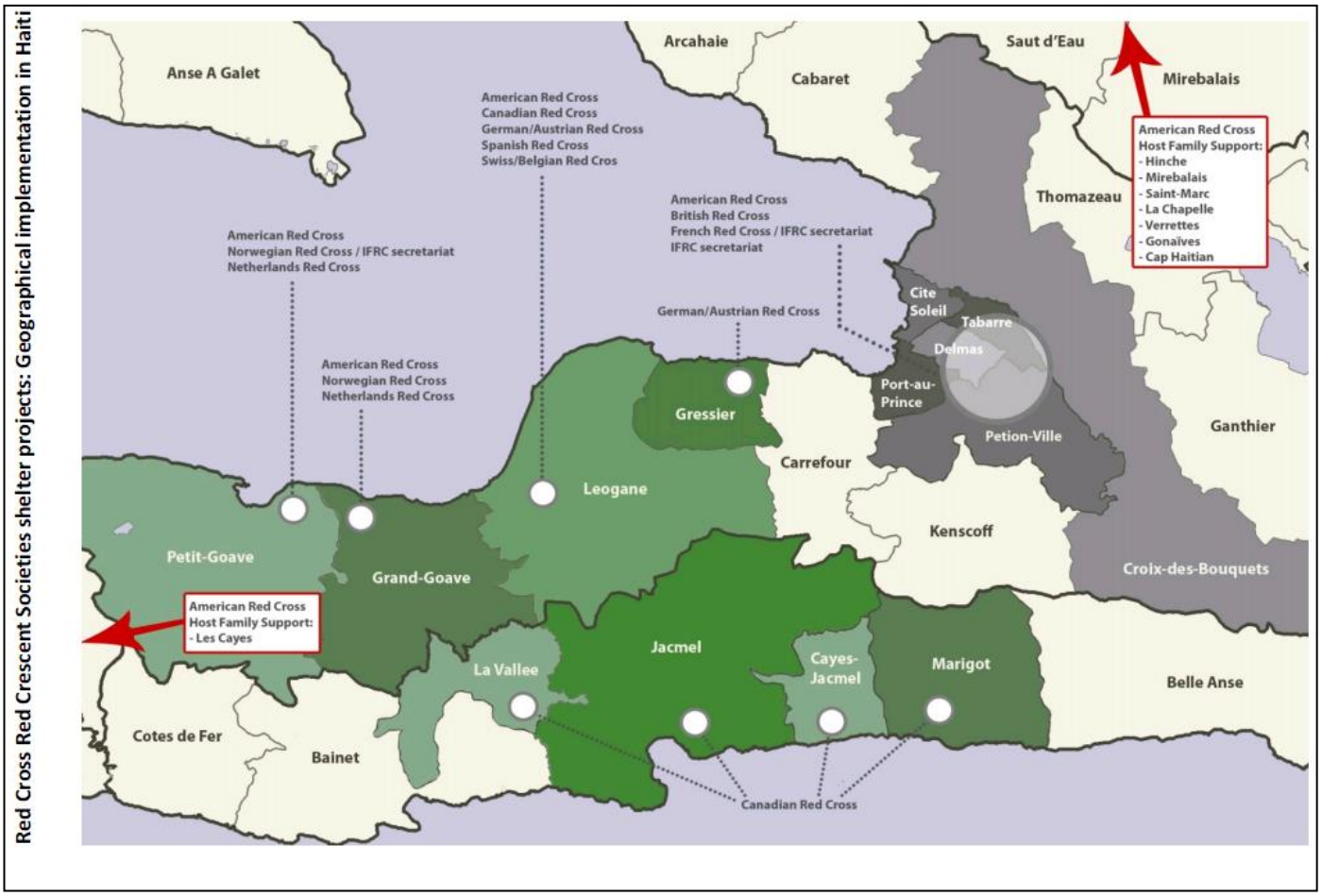
Use of improved drinking water sources change in rural and urban settings of Haiti

Source: Progress on sanitation and drinking water
Update 2010 -WHO / UNICEF

The lack of access to safe water and sanitation facilities contributed to poor health and hygiene and as such the poverty levels in the country. The earthquake worsened the water, sanitation and hygiene situation in Haiti.

The Red Cross Activities in Leogane, Petit Goave and Jacmel

Due to the large number of people who had been displaced due to the destruction caused to their homes by the earthquake, the international humanitarian sector decided to launch large scale construction of transitional shelters, or T-shelters. The Red Cross were a major actor in the construction of T-shelters, implementing programmes in rural and urban areas and constructing a total of over 30,000 shelters. The map below shows the geographical areas where the Red Cross implemented T-shelter these programs.



This large scale construction of T-shelters was accompanied with the provision of water and sanitation facilities which was supported through hygiene promotion activities. In the rural areas of Léogane, Petit Gôave and Jacmel the target number of latrines to be constructed as part of the T-shelter programme is fixed at 17,524. The beneficiaries of these latrines are the families who received T-shelters as well as neighbours living in the area who did not receive a T-shelter. The table in following pages gives an overview of the WASH activities in the Leogane, Petit Goave and Jacmel area.

Summary of WatSan activities directly linked to shelter program							
	Location			Main water and sanitation interventions	Target/Completed	Time frame	
	Department	Commune	Section communale		HH Latrines	Start	End
German/Austrian Joint recovery program	Ouest	Léogâne	15ème Palmiste à vin	• Construction of latrines • Hygiene promotion activities • Construction & rehabilitation of water points/sources	3000/ ?	May 2010	September 2013
		Gressier	1er Morne à bateau				
IFRC Secrétariat		Leogane	• Section 3	• Rehabilitation and constructions of water points / water systems • Latrines construction • Hygiene promotion	2900/2900	July 2010	June 2013
			• Section 1 • Section 2	• Rehabilitation and constructions of water points / water systems • Latrines construction • Hygiene promotion			
Netherland Red Cross		Léogâne	• 1 - Dessources • 2 - Petite Rivière • 3 - Grande Rivère	• Latrine construction • Rehabilitation of water points • Hygiene promotion	5000/4500	July 2010	June 2012
	South East	Jacmel	• NA	• Latrine construction • Réhabilitation of water points • Hygiene promotion	2519/?		December 2012
Norwegian Red Cross		Petit Goâve	• 10ème Section des Palmes • 12nd Section des Fourques • 11st Section Ravine Sèche	• Family latrines construction • Rehabilitation / constructions of rain water harvesting systems • Hygiene promotion	700/ ?	January 2011	March 2012
Spanish Red Cross		Léogâne	• Downtown • Section 3 : Grande rivière • Section 2 : Petite rivière • 4ème fond de Boudin	• Family and schools latrines construction • Hygiene promotion	2205/1527	2010	December 2012
Swiss Red Cross		Léogâne	• 15ème Palmiste à Vins • 12ème Cormiers • 4ème Fond de Boudin	• Latrines construction • Rehabilitation of rain water harvesting systems • Rehabilitation / constructions of water points/sources • Hygiene promotion • Creation and training of Community Intervention Teams • Distribution of health and hygiene kits	1200/?	1/10/2011	31/03/2014
					17524		

The strategies of the Red Cross societies for the implementation of shelter and watsan activities are provided below:

Members	Strategy
Swiss Red Cross Norwegian Red Cross	These Red cross societies are implementing themselves their T- shelter and WASH activities.
Spanish Red Cross	The Spanish Red Cross shared one part of it's WatSan activities with the IFRC secretariat (construction of latrines and water points).
Canadian Red Cross Netherland Red Cross	The Netherland Red Cross was in charge of implementing WASH activities while the Canadian Red Cross dealt with T-shelter construction.
German /Austrian Red Cross	These Red Cross societies have set up a joint recovery program including both T-shelter activities and wash activities.
IFRC secretariat	The IFRC secretariat is implementing itself WatSan activities - construction of latrines and water points inside the Spanish Red Cross working areas and outside.

Technical Review of WASH Activites Associated with T-shelter Construction

1.1 Purpose of the Technical Review

The purpose of the technical review is to identify the lessons learned and best practices of the water, sanitation and hygiene activities implemented within the framework of shelter provision in rural areas. The technical review will support the learning process within the Haiti Earthquake Operation as well as providing insight and guidance for future Red Cross activities of a similar nature in other countries.

1.2 Audience

The primary audience for the technical review is the Red Cross Movement, in particular the Haitian Red Cross, especially those working on water, sanitation and hygiene promotion activities. The technical review is also expected to be of interest to planning, monitoring, evaluation and reporting (PMER) in Haiti and also in Panama and Geneva. This technical review will also be shared with the government authority for water and sanitation as well as all other external actors working in the water and sanitation sector in Haiti.

Results and conclusions drawn from the technical review will be communicated to participating beneficiaries via a context appropriate communications strategy.

The findings of the technical review will be made available to the wider Red Cross Red Crescent Movement via reporting of findings to the WatSan Technical Committee, the Movement Operations Committee (MOC) in Haiti, and as appropriate to other international IFRC WatSan programmes.

1.3 Objectives and Expected Outcomes of the Technical Review

The objectives of the technical review are as follows:

1. To gain a greater understanding of the major impacts (intended, unintended, positive and negative) of the water, sanitation and hygiene promotion activities associated with T-shelter construction in Leogane, Jacmel and Petit Goave.

2. To document and compare the technical approaches used for the implementation of water, sanitation and hygiene promotion activities associated with T-shelter construction in Leogane, Jacmel and Petit Goave.
3. To document and assess the involvement of the local and national authorities in the planning and implemenation of the water, sanitation and hygiene promotion activities associated with T-shelter construction in Leogane, Jacmel and Petit Goave.
4. To document and assess the community participation in the water, sanitation and hygiene promotion activities associated with T-shelter construction in Leogane, Jacmel and Petit Goave.
5. To archive all technical documents and hygiene promotion materials used during the water, sanitation and hygiene promotion activities associated with T-shelter construction in Leogane, Jacmel and Petit Goave.
6. To produce a report of the technical review whose findings and recommendations will contribute to the learning process within the Red Cross Movement and serve as a guidance document for future Red Cross activities in Haiti as well as in other countries.

The expected outcomes of the technical review are as follows:

1. A detailed report of the technical review, including findings and recommendations;
2. An archive of all the technical designs (both for sanitation facilities and provision of water) that have been developed as part of the T-shelter construction in Leogane, Jacmel and Petit Goave;
3. An archive of all the hygiene promotion material that has been used as part of these activities;

1.4 Report Structure

The following structure should serve only as a guide for the report:

Section	Number of pages
Executive summary	1
Objectives of the Technical Review	1
Brief overview of the water, sanitation and hygiene promotion activies associated with T-shelter construction in Leogane, Jacmel and Petit Goave	3
Technical review methodology	2
Assessment of technical approaches used for provision of water and to increase access to water	6
Assessment of technical approaches used for provision of sanitation facilities	6
Assessment of hygiene promotion methods and materials used	6
Assessment of the involvement of local and national authorities	4
Assessment of the community participation in water and sanitation activities	4
Key findings and identified lessons learned	3
Recommendations for future large scale programming of a similar nature	3
Bibliographic references and documentary ressources	1
Total	40

1.5 Commissioners

The International Federation's WatSan programme in Haiti is the commissioner and funder of this evaluation.

1.6 Reporting

The person conducting the technical review will report to the Water and Sanitation Coordination Delegate and the Planning, Monitoring, Evaluation and Reporting Coordinator of the International Federation, based in Haiti.

1.7 Duration

The contract for the technical review is for 25 working days, of which at least 20 days will be spent in Haiti. The evaluation report can be finalised remotely.

1.8 Timeframe

The preferred commencement date for the evaluation is Wednesday the 14th of August 2013, in Haiti.

- Technical review of 20 working days to be completed in Haiti,
- Preliminary findings presented to the relevant stakeholders on the 10th of September 2013,
- Final report due on the 17th of September 2013.

1.9 Location

The consultants will be required to spend at least 20 working days in Haiti, residing at Red Cross houses or approved hotels when in Leogane, Jacmel and Petit Goave and the Red Cross Base Camp when in Port-au-Prince. Visits to WatSan sites and localities will be undertaken in accordance with security conditions and guidance provided by the International Federation security coordinator in Port-au-Prince.

Attachment 3 - Summary Table of ALL RC Received and Reviewed

WASH In T-shelter Review Documents Reviewed and Received As of 9-9-13

Document/Report Type by Target Community and Organization	Type of doc	Date	Type of Document										
			Proposal/ Plan	Fact Sheet/ Descrip	Report	Technical			Community	Pics	Map	Financial Info/forms	Other
Léogâne and Gressier* and Jacmel**						Water	San	HP					
German/Austrian Joint Recovery Porgram (May 2010-Sept 2013)*													
Briefing Water component	word	N/A	X	X									
Activity Overveiw Nov 2012	word	Nov-12			X								
WASH Quartlery Report June 2013	word	Jun-13			X								
WASH Project Manager Monthly Report July 2013*	word	Jul-13			X								
Wash Project Manager Quartlery Report March 2013	word	Mar-13			X								
Final Technical Reception Spring Boxes	pdf	May-13			X	X				X			
Swiss Rainwater concrete base notice	word	N/A				X							
Final Technical Reception Boreholds	pdf	Mar-13			X	X				X			
Rainwater Technical Sketches	word	N/A				X							
Best Practice HP Shelter & Latrine Benefciaries	word	N/A			X								
Annual Repot (Joint Recovery Program 1 January - 31 December 2012	pdf	?			X								
DRK_T Shelter Project Google Map	Google map	N/A									X		
KAP Baseline Report	Word	Sep-10			X								
KAP Baseline Survey	excel	Sep-10										X	
Spring box Technical drawings (drawings of 2 of 4 spring boxes implmented) (6 files)	pdf	N/A				X							
Rainwater harvesting system and ceramic water filter training	ppt	N/A				X				X			
IRFC (July 2010-June 2013)													
Fact Sheet Leogane WS	word	N/A		X									
June 2013 Monthly report	word	Jun-13			X								
May 2013 Monthly report	word	May-13			X								
April 2013 Monthly report	word	Apr-13			X								
March 2013 Monthly report	word	Mar-13			X								
November 2012 Monthly report	word	Nov-12			X								
Dossier EcoSan Latrine Implmenetation	Word & PDF	Oct-12											
Eco San Sketeches	Hard copy	N/A	X				X						
EcoSan V1 Photos (20 of Eco San Construction Project)	JPGs	N/A								X			
EcoSan V2 Photis (20 of Eco San Construction Project)	JPGs	N/A								X			
Eco San Latrine Material Photos (20 photos)	JPG and Wo	N/A					X			X			
Test Agua (Compost Toilet Bacterialogical test results)	pdf	Sep-12			X								
Compost Bacterialogical tests results	pdf	Oct-12			x								
Compost Bacterialogical tests results	pdf	Oct-12			x								

Compost Bacterialogical tests results	pdf	Oct-12			X								
EcoSan Auto Cad drawing (6 drawings)	pdf	N/A					X			X			
Ecosan Quadrillage Platforme, quadrillage 35X60 Recover, Plan Toilette	dwg	N/A					X						
Ecosan Platforme modifiee 2, Platforme modifiee 4, Plaforme modfiee 1m30X 1m13, Platforme modifie1	Adobe, JPG	N/A					X			X			
Ecosan Block Structure Drawing	JPG	N/A					X			X			
Ecosan Super Structure and Super Structure 1	skp	N/A					X						
BOO Ecosan	excel	N/A					X						
Ecosan Plans	excel	N/A					X			X			
Hand Washing Station Stand (7 Photos)	jpg	N/A						X		X			
VIP Photos (5 photos)	jpg	N/A					X			S			
EcoSan Leaflets (3) (Creole)	pdf	N/A					X						
EcoSan Survey Form	word	N/A										X	
EcoSan Photos (Not IFRC's)	word	N/A								X			
EcoSan Technical file for Ecosan latrine seat	word	May-11					X			X			
Instruction on how to Use Ecosan illustrations	pdf	N/A								X			
Illustrations of Dos and Don't for EcoSan toilets (SOIL)	jpg	N/A					X			X			
Sizing of latrine UDDT vault caluclations	pdf	N/A					X						
Training Material on "Urine-Dirversion Dehydration Toilets" (UDDT) and Urine management	pdf	N/A					X						
PHAST Guide Creole	word	N/A						X					
Inventory of HP posters	excel	N/A						X		X			
Cartoon Poster of Water Cycle	excel	N/A								X			
IFRC The endline survey report - Water, Sanitation and Hygiene Promotio project in Leognae Haiti	word	Jun-13			X			X					
Netherland Red Cross (July 2010-June 1012 and Dec 2012)**													
Evaluation Study Final Report	pdf	Nov-12			X	X	X	X		X			
Evaluation of Latrine Projects in Haiti to inform fugure latrine component of CBHFA project implmented by CRC/HRC	pdf	Jan-13			X		X						
Monthly WASH Report (26 March 2012)	word	Mar-13			X								
Monthy WASH Report (20 April 2012)	word	Apr-13			X								
Latrines Completed WASH Jacmel	word	Feb-13			X								
Latrines figures end of September 2012	word	Sep-12			X								
Ferro Cememnt Rain Catchment Tank Fondwa Legogane Photos (4)	jpg	N/A				X				X			
VIP Latrine Double Pit Fondwas Leogane Photos (5)	jpg	N/A					X			X			
Pour Flush Toilet Leogane Photos (14)	jpg	N/A					X			X			

Pour Flush Toilet Pan Production Leogane Photos (3)	jph	N/A					X			X			
Training of Haitian Toilet Pan Production (Photos)	PPT	N/A					X			X			
Spanish Red Cross (March 2010 to December 2012)													
Beneficiary Sanitation and HP Satisfaction Survey (in Spanish)	pdf	Dec-12			X								
Satisfaction Evaluation Report on PHAST Community Faciliators (in Spanish)	pdf	Jul-13			X								
Technical Field Assessment form for Boreholes	excel	N/A				X						X	
Comparison of IndianMark-Vergent-Afridev pumps	excel	N/A			X	X							
Comparison of five different pumps	pdf	N/A				X				X			
Preliminary assessment for use of VES to construct groundwater wells in Leogane	word	May-11			X	X							
List of Companies and NGO's specialized in drilling and/or repair and sale of spare parts for pumps in Haiti	excel	N/A											X
Monitoring Matrix (data through May 2012)	excel	May-12			X								
Leogane Latrine Project 2010-2012 (French)	word	N/A	X				X						
Acknowledgement of family latrine/recipeint obligations form	word	N/A										X	
Manuelle pompe mecate franciaise	word	N/A				X				X			
Etapes construction latrines CRH/CRE (Steps for building latrines)	word	N/A					X						
FICHE DE CONTROL DE FORAGE (Well Drilling Planning Form)	word	N/A				X						X	
Latrine Construction Contract - Leobel	pdf	Feb-12											
Latrine Construction Contract - Horizon Constuction	pdf	Sep-11											
Swiss Red Cross (Jan 2011 to March 2014)													
Project Proposal "Haiti Pamiste a Vin, Water, Sanitation, Hygiene & Health Promotin (WASH)	pdf	N/A	X										
Intermiediate Report 01.10.2011-31.03.2013	pdf	Mar-13			X								
2013 Hygiene Promotion Planning Calendar	excel	N/A						X					
Map of Project Area Carte Leogane	jpg	N/A									X		
Cisterne technical drawing(1&2)	jpg	N/A				X				X			
Cistern Photo	jpg	N/A				X				X			
VIP Latrine technical drawing	jpg	N/A					X			X			
VIP and Shower technical drawing	pdf	N/A					X						
HH rainwater catchment Photo	jpg	N/A				X				X			
Interium Report Project Photos	excel imped	Mar-13			X	X	X						
PROJET WASH /PROMOTION A L'HYGIENE	word	N/A						X	X				
WASH Community Response Team ("Equipe d'intervention Communautaire"- EIC)	word	N/A						X	X				
METHODOLOGIE PILOTE EQUIPES D'INTERVENT ION COMMUNAUTAIRE (French)	pdf	N/A											X
Solar Kiosk technical drawing	jpg	N/A				X							
School rain water harvesting technical drawing	jpg	Apr-11				X							

Project map (Interium report Attachment 5)	pdf	N/A									X		
Petit Goâve													
Norwegian Red Cross (January 2011-March 2012)													
Approved Project Proposal for Transtional Shelter/WASH	pdf	Jul-12	X										
Draft Evaluation Report - Shelter for Haiti and Sri Lanka	pdf	Jun-12			X								
Assessment Report	pdf	Jul-10			X								
Google earth GPS Points (700)	Google map	N/A											X
Lumpsum Sheet	Excel	N/A										X	
BoQ for High Water Table latrines	Excel	N/A					X					X	
HP Weekly Registration Sheet	Excel	N/A						X				X	
Norcross WASH program	word	N/A		X									
Shelter Portfolio Report Jan-Feb 2012	word	N/A			X								
Shelter progress Dec-March Year? for WASH	Excel	N/A	?		?								
Update on shelter program	word	Dec ?			X								
Shelter Portfolio Report Dec 2011	word	Dec-11			x								
Shelter progress updated Septembr (Aug-January Year?)	Excel	?	X		X								
Shelter Technical Brief Data Collection Form	word	Nov-11			X								
Risk Analysis Norcross Shelter Project Petit Goave	word	N/A											X
Bil of Quanity TS New Type for Vernada	excel	Jul-11											X
Photo of rain catchment sistern (t-tank) and pipin on house (2)	jpg	NA				X				X			
Photo of two pit VIP latrine	jpg	N/A					X			X			
Phot of pit latrine slab consttuction process	jpg	N/A					X			X			
Photo of Base camp	jpg	N/A								X			
Photo of truck w/ wood being delivered	jpg	N/A								X			
Photo of T-shleter	jpg	N/A								X			
Norcorss Shelter Points	pdf	N/A								X	X		
Raised VIP Pit Latrine	jpg	N/A								X			
Single VIP Pit latrine	jpg	N/A								X			
New Organigram	pdf	Jul-12											X

Technical Review of WASH Activities for Shelter Beneficiaries in Haiti

Greetings IFRC and PNS' WASH Component of T-Shelter Programs staff,

This survey has been developed as part of the Technical Review of the WASH Component of the T-Shelter Programs' Activities in Jacmel, Leogane/Gressier and Petit Goave, Haiti currently being conducted in Haiti to gather information from key staff who have worked on the WASH project. The purpose of the Technical Review is to identify the lessons learned and best practices of the water, sanitation and hygiene activities implemented with the framework of shelter provision in rural areas. The technical review will support the learning process within the Haiti Earthquake Operation as well as provide insight and guidance for future Red Cross activities of a similar nature in other countries. A major component of the Technical Review is to capture and archive technical documents used by the IFRC and PNS', as such throughout this survey you may be prompted to send in additional information for this review.

Your thoughtful and honest feedback is greatly appreciated. Survey data results will be presented in the final report in aggregate form. No names will be tied to specific survey responses, so anonymity will be retained.

You are requested to please complete the survey no later than the end of the day on August 29, 2013. If you have the requested technical documents we request that you send these in as soon as possible as the Review work is on a very short time frame.

Thank you for taking the time to complete the survey!

Kay Mattson
External WASH Consultant

Siobhan Kennedy
Water & Sanitation Movement Coordinator Delegate

Mununri Musori
PMER Coordinator

DEMOGRAPHICS/RESPONDENT INFORMATION

***What organization do you/did you work for?**

***What is your name? Your responses will be kept anonymous in the final results.**

What is your e-mail address in case we need to contact you?

What is/was your position in the Haiti T-shelter WASH project?

Dates of employment in Haiti in this position:

From Month/Year	
To Month/Year	
Total Months	

Technical Review of WASH Activities for Shelter Beneficiaries in Haiti

What were/are your organizations WASH T-Shelter Component project start and completion dates?

	MM	DD	YYYY
Start Month/Year	/	/	
End Month/Year	/	/	

WATER INFRASTRUCTURE

The following questions are about specific water projects implemented by your organization.

What WATER SUPPLY methods did your project implement?

	Check for all methods implemented	If YES, Was this meant to be used for drinking water?	Was this method treated?	Did you conduct Water Quality tests for this Method?	If Yes, Did the Water Quality Tests meet XXX standards?
Rain Catchment					
Pipe Distribution (New)					
Pipe Distribution (Repair)					
Borehole Well (New)					
Borehole/Other Well (Repair)					
Cistern Construction					
Spring Reservoir Catchment Construction					
Ceramic Water Filter Distribution					
Water Kiosk					
N/A - We were not involved in any water project activities					

Other (please specify)

If water quality tests were conducted above please describe the testing methods used, what you were testing for and the frequency of tests.

Did your organization work to establish a water user payment system for the above WATER SUPPLY Methods?

◯ Yes ◯ No

For any of the above WATER SUPPLY Methods implemented do you have technical drawings, photos, construction methods used, or other information that describes what was implemented?
(If YES and you have not already done so please send to Siobhan Kennedy at siobhan.kennedy@ifrc.org by August 29, 2013. Thank you!)

◯ Yes ◯ No

For the above WATER SUPPLY Projects you were involved in implementing, please describe your GREATESTCHALLENGE (consider human and financial resources, technical, materials, community, place, etc.)? (If more than one method was implemented please relate your comments to each specific method.)

For the above WATER SUPPLY Projects you were involved in what, if anything, would you do differently to insure greater success if you were to do the project over again? (If more than one method was implemented please relate your comments to each specific method)

For the above WATER SUPPLY Projects what do you feel were your GREATEST ACCOMPLISHMENTS?

SANITATION INFRASTRUCTURE

The following questions are about any sanitation activities you were involved in implementing

Technical Review of WASH Activities for Shelter Beneficiaries in Haiti

What sanitation methods were you involved in implementing at the households/T-shelter level?

(If you have any technical information, drawings, photos construction methods used, or other information that describes what was implemented please send it to siobhan.kennedy@ifrc.org by August 28, 2013

	Check Yes for all Methods used	If YES, do you have technical drawings, photos or other information that describes what was implemented?
VIP latrines (unlined)	☐	☐
VIP latrines (lined)	☐	☐
Raised latrine	☐	☐
EcoSan latrines	☐	☐
Composting latrines (Other than EcoSan)	☐	☐
N/A we were not involved in any latrine infrastructure construction	☐	☐

Other (please specify)

Did your organization establish any plans for desludging of latrines when they become full?

- ◉ Yes
- ○ No
- ○ N/A

Did your organization monitor the usage and maintenance of household latrines after they were constructed?

- ○ Yes - we have the data and can make it available
- ○ Yes - but we do not have the data in a format we can share
- ○ No

Was your organization involved in the Pre-fabrication of latrine components?

- ○ Yes
- ○ No

If you were involved in the Pre-fabrication of latrine components what were the Pros and Cons of doing this and lessons learned? Again, if you have any technical documents you can share about this process please send them to siobhan.kennedy@ifrc.org. Thank you!

For the above Sanitation Projects you were involved in implementing, please describe your GREATEST CHALLENGES (consider human and financial resources, technical, materials, community, place, etc.)? (If more than one method was implemented please relate your comments to each specific method.)

For the above SANITATION PROJECTS you were involved in what, if anything, would you do differently to insure greater success if you were to do over again? (If more than one method was implemented please relate your comments to each specific method.)

For the above Sanitation Projects what do you feel were your GREATEST ACCOMPLISHMENTS? (If more than one method was implemented please relate your comments to each specific method)

HYGIENE PROMOTION

The following questions are related to hygiene promotion activities your organization was involved in conducting

Were hygiene promotion activities implemented by your organization for this project?

◯ Yes ◯ No

If Yes, What Hygiene Promotion methods/approach did you use? (Check all that apply)

	Yes
PHAST	☐
CHAST	☐
Behavior Change Communication (BCC)	☐
CBHFA	☐
Nothing formal, we developed our own.	☐

Other (please specify)

What hygiene practices/behaviors did your project specifically focus on addressing, if any? (check all that apply)

	Check for each practice/behavior focused on	For each behavior you focused on, please rate on a scale of 1 to 5 (with 5 highest degree of change) how effective do you think your method was at bringing about change is this area
Hand washing (general)		
Hand washing at specific times		
Disease prevention		
Stopping/decreasing open defecation of adults		
Disposal of child feces in latrines		
Safe food practices		
Safe water handling practices		
General personal hygiene		
General household/yard cleanliness		
Latrine cleanliness		
No specific behaviors/messages were focused on		

Other (please specify)

If your hygiene promotion efforts focused on hand washing at specific times, please list the specific hand washing times you focused on:

If your hygiene promotion activities focused on disease prevention please list specific diseases you were focused on trying to prevent:

What hygiene promotion methods did your organization use? (Check all that were used)

- [ ] Theater/Skits
- [ ] Songs
- [ ] Small group activities
- [ ] Large community events
- [ ] House to House visits
- [ ] Demonstrations of hygiene practices
- [ ] Posters/Flyers

Other (please specify)

Did your program conduct any baseline or Knowledge, Attitudes and Practice (KAP) or endline surveys to measure change of your HP efforts? (If Yes, please provide if possible the results/report of these efforts to siobhan.kennedy@ifrc.org by August 28, 2013)

- ◯ Yes
- ◯ No

Where do you think you had the most success (as measured by increased knowledge and/or positive changes in behavior) in your hygiene promotion efforts and why?

Where do you think you had the GREATEST CHALLENGES in your hygiene promotion efforts and why?

Did your organization use Community Hygiene Promoters to implement your hygiene promotion activities in the community?

- ◯ Yes
- ◯ No

If Yes (you used Hygiene Promoters) What, if any, training did they receive? Describe the training as much as you can (# of trainings held/total training days, topics covered, who conducted the training, etc.)

If your organization, or the Haitian Red Cross, was not involved in Hygiene Promotion, was hygiene promotion conducted by another non-RCRC organization?

- ◯ Yes
- ◯ No

If the training was provided by another organization other than Red Cross Society can you share your reason(s) for using another organization?

COMMUNITY/BENEFICIARY GROUPS & WORK WITH GOVERNMENT

The following questions are about your work with Community/Beneficiary Groups and with Haiti Government organizations/committees:

Did you form/use any community/beneficiary groups to help implement/support the WASH project?

◯ Yes ◯ No

If yes, Check all groups that you formed/used and whether or not you provided training to that group:

- ☐ Water System/Water Point Committee
- ☐ Handpump Repair Committee (for wells or cisterns)
- ☐ Sanitation Committee
- ☐ Water User Committee
- ☐ Water Kiosk Committee

Other (please specify)

Did you provide any training for the committees/groups you formed/worked with?

◯ Yes ◯ No

If yes, Please describe the training you provided, topics covered, extent of the training (e.g. approximate # of days over what period of time), materials used. If you have any training materials/curriculum or training agendas that you can share can you please send them to siobhan.kennedy@ifrc by August 28, 2013. Thank you!

Did you interact/work with any of the following local/national government organizations/groups? (Check all that apply)

	Worked with these groups	Likelihood of the Community continuing to work with these organizations/groups?
DINEPA	☐	☐
TEPICS	☐	☐
OREPA	☐	☐
CAEPA	☐	☐
URD	☐	☐
MSPP	☐	☐
MAYORS OFFICE	☐	☐

Please share any challenges and/or differences between working with these groups, and lessons learned that could inform future projects when working with these or similar groups:

SUSTAINABILITY

The following questions are about the sustainability of WASH project activities implemented by your organization:

On a scale of 1 to 5 (with 5 high- greatest likelihood of sustainability) please rate the likelihood of your project implemented activities being sustained (sustained is defined as maintained in the same condition when completed and working and maintained over the next 3 years) for each of the following areas:

	1 - Highly Unlikely	2	3	4	5 - Highly likely
Sanitation Projects	◯	◯	◯	◯	◯
Water Projects	◯	◯	◯	◯	◯
Hygiene Promotion Knowledge and Practices of beneficiaries	◯	◯	◯	◯	◯
Community Committee/Group formed by your organization (likelihood that they will continue to maintain the support systems in place to sustain the above activities)	◯	◯	◯	◯	◯

For all items rated a 1 or 2 above please describe briefly why you think this is LIKELY SUSTAINABLE:

For all items rated a 3, 4 or 5 above please describe briefly why you think this is NOT LIKELY OR HIGHLY UNLIKELY that they will be sustained:

THANK YOU AND FINAL COMMENTS

Thank you for taking the time to complete the survey! Your responses are greatly appreciated. Results of the survey from all respondents will be incorporated into the final WASH Component in T-Shelter Program Technical Review Report expected to be available in September 2013.

Please provide us with any other comments and/or additional information that you think might be relevant and informative to the WASH Technical Review below. Thank you!

Technical Review of WASH Activities for Shelter Beneficiaries in Haiti

SurveyMonkey

1. 1. What organization do you/did you work for?

	Response Percent	Response Count
Austrian RC	**22.2%**	**2**
German RC	0.0%	0
IFRC Secretariat	**22.2%**	**2**
Japanese RC	0.0%	0
Netherland RC	11.1%	1
Norwegian RC	**22.2%**	**2**
Spanish RC	11.1%	1
Swiss RC	11.1%	1
answered question		**9**
skipped question		**0**

2. 2. What is your name? Your responses will be kept anonymous in the final results.

	Response Count
	9
answered question	**9**
skipped question	**0**

3. 3. What is your e-mail address in case we need to contact you?

	Response Count
	8
answered question	8
skipped question	1

4. 4. What is/was your position in the Haiti T-shelter WASH project?

	Response Count
	8
answered question	8
skipped question	1

5. 5. Dates of employment in Haiti in this position:

	Response Percent	Response Count
From Month/Year	100.0%	7
To Month/Year	100.0%	7
Total Months	100.0%	7
answered question		7
skipped question		2

6. 6. What were/are your organizations WASH T-Shelter Component project start and completion dates by Month/Year? (note day is not needed - leave blank or 00)

	Response Percent	Response Count
Start Month/Year	100.0%	5
End Month/Year	100.0%	5
answered question		5
skipped question		4

7. 7. What WATER SUPPLY methods did your project implement? (For every method implemented please answer Questions 7a-7d)

Check for all methods implemented

	X	Respon Coun
Rain Catchment	**100.0% (5)**	
Pipe Distribution (New)	**100.0% (3)**	
Pipe Distribution (Repair)	**100.0% (2)**	
Borehole Well (New)	**100.0% (3)**	
Borehole/Other Well (Repair)	**100.0% (3)**	
Cistern Construction	**100.0% (1)**	
Spring Reservoir Catchment Construction	**100.0% (2)**	
Ceramic Water Filter Distribution	**100.0% (2)**	
Water Kiosk	**100.0% (2)**	
N/A - We were not involved in any water project activities	**100.0% (1)**	

7a. If YES, Was this meant to be used for drinking water?

	Yes	No	Respon Coun
Rain Catchment	**60.0% (3)**	40.0% (2)	
Pipe Distribution (New)	**100.0% (3)**	0.0% (0)	
Pipe Distribution (Repair)	**100.0% (2)**	0.0% (0)	
Borehole Well (New)	**100.0% (3)**	0.0% (0)	
Borehole/Other Well (Repair)	**100.0% (3)**	0.0% (0)	
Cistern Construction	**100.0% (1)**	0.0% (0)	
Spring Reservoir Catchment Construction	**100.0% (2)**	0.0% (0)	

Ceramic Water Filter Distribution	**100.0% (2)**	0.0% (0)	
Water Kiosk	**100.0% (1)**	0.0% (0)	
N/A - We were not involved in any water project activities	0.0% (0)	0.0% (0)	

7b. Was this method treated?

	Yes	No	N/A	Respon Coun
Rain Catchment	**80.0% (4)**	20.0% (1)	0.0% (0)	
Pipe Distribution (New)	33.3% (1)	0.0% (0)	**66.7% (2)**	
Pipe Distribution (Repair)	**100.0% (1)**	0.0% (0)	0.0% (0)	
Borehole Well (New)	**100.0% (2)**	0.0% (0)	0.0% (0)	
Borehole/Other Well (Repair)	**50.0% (1)**	**50.0% (1)**	0.0% (0)	
Cistern Construction	**100.0% (1)**	0.0% (0)	0.0% (0)	
Spring Reservoir Catchment Construction	**100.0% (1)**	0.0% (0)	0.0% (0)	
Ceramic Water Filter Distribution	0.0% (0)	0.0% (0)	**100.0% (1)**	
Water Kiosk	0.0% (0)	0.0% (0)	**100.0% (1)**	
N/A - We were not involved in any water project activities	0.0% (0)	0.0% (0)	0.0% (0)	

7c. Did you conduct Water Quality tests for this Method?

	Yes	No	Respon Coun
Rain Catchment	0.0% (0)	**100.0% (4)**	
Pipe Distribution (New)	**100.0% (1)**	0.0% (0)	
Pipe Distribution (Repair)	**100.0% (1)**	0.0% (0)	
Borehole Well (New)	**100.0% (2)**	0.0% (0)	
Borehole/Other Well (Repair)	**100.0% (2)**	0.0% (0)	

Cistern Construction	0.0% (0)	**100.0% (1)**	
Spring Reservoir Catchment Construction	**100.0% (1)**	0.0% (0)	
Ceramic Water Filter Distribution	0.0% (0)	0.0% (0)	
Water Kiosk	0.0% (0)	0.0% (0)	
N/A - We were not involved in any water project activities	0.0% (0)	0.0% (0)	

7d. If Yes, Did the Water Quality Tests meet DINEPA standards?

	Yes	No	Respon Cour
Rain Catchment	0.0% (0)	0.0% (0)	
Pipe Distribution (New)	**100.0% (1)**	0.0% (0)	
Pipe Distribution (Repair)	**100.0% (1)**	0.0% (0)	
Borehole Well (New)	**100.0% (1)**	0.0% (0)	
Borehole/Other Well (Repair)	**100.0% (2)**	0.0% (0)	
Cistern Construction	0.0% (0)	0.0% (0)	
Spring Reservoir Catchment Construction	**100.0% (1)**	0.0% (0)	
Ceramic Water Filter Distribution	0.0% (0)	0.0% (0)	
Water Kiosk	0.0% (0)	0.0% (0)	
N/A - We were not involved in any water project activities	0.0% (0)	0.0% (0)	

	Other (please specify)
	answered question
	skipped question

8. 8. If water quality tests were conducted for any of the above (Question 7c) please describe the testing methods used, what you were testing for and the frequency of tests.

	Response Count
	2
answered question	2
skipped question	7

9. 9. Did your organization work to establish a water user payment system for the above WATER SUPPLY Methods?

	Response Percent	Response Count
Yes	20.0%	1
No	**80.0%**	**4**
answered question		5
skipped question		4

10. 10. For any of the above WATER SUPPLY Methods implemented do you have technical drawings, photos, construction methods used, or other information that describes what was implemented? (If YES and you have not already done so please send to Siobhan Kennedy at siobhan.kennedy@ifrc.org by August 29, 2013. Thank you!)

	Response Percent	Response Count
Yes	**60.0%**	**3**
No	40.0%	2
answered question		5
skipped question		4

11. 11. For the above WATER SUPPLY Projects you were involved in implementing, please describe your GREATEST CHALLENGE (consider human and financial resources, technical, materials, community, place, etc.)? (If more than one method was implemented please relate your comments to each specific method.)

	Response Count
	4
answered question	4
skipped question	5

12. 12. For the above WATER SUPPLY Projects you were involved in what, if anything, WOULD YOU DO DIFFERENTLY to insure greater success if you were to do the project over again? (If more than one method was implemented please relate your comments to each specific method)

	Response Count
	4
answered question	4
skipped question	5

13. 13. For the above WATER SUPPLY Projects what do you feel were your GREATEST ACCOMPLISHMENTS?

	Response Count
	4
answered question	4
skipped question	5

14. 14. What sanitation methods were you involved in implementing at the household/T-shelter level? (If you have any technical information, drawings, photos construction methods used, or other information that describes what was implemented please send it to siobhan.kennedy@ifrc.org by August 28, 2013

Check for all Methods used

	X	Response Count
VIP latrines (unlined)	**100.0% (3)**	3
VIP latrines (lined)	**100.0% (3)**	3
Raised latrine	**100.0% (4)**	4
EcoSan latrines	**100.0% (1)**	1
Composting latrines (Other than EcoSan)	0.0% (0)	0
N/A we were not involved in any latrine infrastructure construction	0.0% (0)	0

If YES, do you have technical drawings, photos or other information that describes what was implemented?

	Yes	No	Response Count
VIP latrines (unlined)	**66.7% (2)**	33.3% (1)	3
VIP latrines (lined)	**66.7% (2)**	33.3% (1)	3
Raised latrine	**75.0% (3)**	25.0% (1)	4
EcoSan latrines	**100.0% (1)**	0.0% (0)	1
Composting latrines (Other than EcoSan)	0.0% (0)	0.0% (0)	0
N/A we were not involved in any latrine infrastructure construction	0.0% (0)	0.0% (0)	0
		Other (please specify)	2
		answered question	**6**

skipped question		**3**

15. 15. Did your organization establish any plans for desludging of latrines when they become full?

		Response Percent	Response Count
Yes		14.3%	1
No		**71.4%**	**5**
N/A		14.3%	1
	answered question		**7**
	skipped question		**2**

16. 16. Did your organization monitor the usage and maintenance of household latrines after they were constructed?

		Response Percent	Response Count
Yes - we have the data and can make it available		14.3%	1
Yes - but we do not have the data in a format we can share		**42.9%**	**3**
No		**42.9%**	**3**
	answered question		**7**
	skipped question		**2**

17. 17. Was your organization involved in the Pre-fabrication of latrine components?

	Response Percent	Response Count
Yes (go to 17a)	100.0%	6
No (Skip to 18)	0.0%	0
answered question		6
skipped question		3

18. 17a. If you were involved in the Pre-fabrication of latrine components what were the Pros and Cons of doing this and lessons learned? Again, if you have any technical documents you can share about this process please send them to siobhan.kennedy@ifrc.org. Thank you!

	Response Count
	6
answered question	6
skipped question	3

19. 18. For the above Sanitation Projects you were involved in implementing, please describe your GREATEST CHALLENGES (consider human and financial resources, technical, materials, community, place, etc.)? (If more than one method was implemented please relate your comments to each specific method.)

	Response Count
	6
answered question	6
skipped question	3

20. 19. For the above SANITATION PROJECTS you were involved in what, if anything,WOULD YOU DO DIFFERENTLY to insure greater success if you were to do over again? (If more than one method was implemented please relate your comments to each specific method.)

	Response Count
	6
answered question	**6**
skipped question	**3**

21. 20. For the above Sanitation Projects what do you feel were your GREATEST ACCOMPLISHMENTS? (If more than one method was implemented please relate your comments to each specific method)

	Response Count
	6
answered question	**6**
skipped question	**3**

22. 21. Were hygiene promotion activities implemented by your organization for this project?

		Response Percent	Response Count
Yes - Go to 21a		**100.0%**	**6**
No - Go to 21(NOaa) and 21 (NObb)		0.0%	0
answered question			**6**
skipped question			**3**

23. 21 (NOaa). If your organization, or the Haitian Red Cross, WAS NOT involved in Hygiene Promotion, was hygiene promotion conducted by another non-RCRC organization?

	Response Percent	Response Count
Yes	0.0%	0
No	0.0%	0
N/A	0.0%	0
	answered question	**0**
	skipped question	**9**

24. 21 (NObb) If the training was provided by another organization other than Red Cross Society can you share your reason(s) for using another organization? THEN SKIP TO QUESTION 22

	Response Count
	0
answered question	**0**
skipped question	**9**

25. 21a. If Yes- (Your organization implemented HP activities), What Hygiene Promotion methods/approach did you use? (Check all that apply)

	Yes	Rating Count
PHAST	**100.0% (4)**	4
CHAST	**100.0% (2)**	2
Behavior Change Communication (BCC)	**100.0% (1)**	1
CBHFA	**100.0% (2)**	2
Nothing formal, we developed our own.	**100.0% (1)**	1
	Other (please specify)	0
	answered question	**6**
	skipped question	**3**

26. 21b. What hygiene practices/behaviors did your project specifically focus on addressing, if (check all that apply)

Check for each practice/behavior focused on

	X
Hand washing (general)	**100.0% (5)**
Hand washing at specific times	**100.0% (5)**
Disease prevention	**100.0% (5)**
Stopping/decreasing open defecation of adults	**100.0% (5)**
Disposal of child feces in latrines	**100.0% (5)**
Safe food practices	**100.0% (5)**
Safe water handling practices	**100.0% (5)**
General personal hygiene	**100.0% (5)**
General household/yard cleanliness	**100.0% (4)**
Latrine cleanliness	**100.0% (5)**
No specific behaviors/messages were focused on	0.0% (0)

For each behavior you focused on, please rate on a scale of 1 to 5 (with 5 highest degree of change) how effective do method was at bringing about change is this area

	1	2	3	4	5
Hand washing (general)	0.0% (0)	0.0% (0)	**50.0% (2)**	**50.0% (2)**	0.0% (0)
Hand washing at specific times	0.0% (0)	0.0% (0)	25.0% (1)	**50.0% (2)**	25.0% (1
Disease prevention	0.0% (0)	25.0% (1)	**50.0% (2)**	25.0% (1)	0.0% (0)
Stopping/decreasing open defecation of adults	0.0% (0)	0.0% (0)	25.0% (1)	**50.0% (2)**	25.0% (1
Disposal of child feces in latrines	0.0% (0)	0.0% (0)	**50.0% (2)**	25.0% (1)	25.0% (1

Safe food practices	0.0% (0)	25.0% (1)	**50.0% (2)**	25.0% (1)	0.0% (0)
Safe water handling practices	0.0% (0)	**25.0% (1)**	**25.0% (1)**	**25.0% (1)**	**25.0% (1**
General personal hygiene	0.0% (0)	**50.0% (2)**	25.0% (1)	25.0% (1)	0.0% (0)
General household/yard cleanliness	0.0% (0)	**33.3% (1)**	**33.3% (1)**	0.0% (0)	**33.3% (1**
Latrine cleanliness	0.0% (0)	25.0% (1)	**50.0% (2)**	25.0% (1)	0.0% (0)
No specific behaviors/messages were focused on	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)

Other (please sp

answered que	
skipped que	

27. 21c. If your hygiene promotion efforts focused on hand washing at specific times (checked above), please list the specific hand washing times you focused on:

	Response Count
	5
answered question	**5**
skipped question	**4**

28. 21d. If your hygiene promotion activities focused on disease prevention please list specific diseases you were focused on trying to prevent:

	Response Count
	5
answered question	**5**
skipped question	**4**

29. 21e. What hygiene promotion methods did your organization use? (Check all that were used)

	Response Percent	Response Count
Theater/Skits	60.0%	3
Songs	80.0%	4
Small group activities	**100.0%**	**5**
Large community events	60.0%	3
House to House visits	**100.0%**	**5**
Demonstrations of hygiene practices	80.0%	4
Posters/Flyers	80.0%	4
Other (please specify)		1
answered question		**5**
skipped question		**4**

30. 21f. Did your program conduct any Baseline or Knowledge, Attitudes and Practice (KAP) or Endline surveys to measure change of your HP efforts? (If Yes, please provide if possible the results/report of these efforts to siobhan.kennedy@ifrc.org by August 28, 2013)

	Response Percent	Response Count
Yes	**60.0%**	**3**
No	40.0%	2
answered question		**5**
skipped question		**4**

31. 21g. Where do you think you had the most success (as measured by increased knowledge and/or positive changes in behavior) in your hygiene promotion efforts and why?

	Response Count
	5
answered question	5
skipped question	4

32. 21h. Where do you think you had the GREATEST CHALLENGES in your hygiene promotion efforts and why?

	Response Count
	5
answered question	5
skipped question	4

33. 21i. Did your organization use Community Hygiene Promoters to implement your hygiene promotion activities in the community?

	Response Percent	Response Count
Yes	100.0%	5
No (Skip to 23)	0.0%	0
answered question		5
skipped question		4

34. 21-ii. If Yes (you used Hygiene Promoters) What, if any, training did they receive? Describe the training as much as you can (# of trainings held/total training days, topics covered, who conducted the training, etc.)

	Response Count
	4
answered question	**4**
skipped question	**5**

35. 22. Did you form/use any community/beneficiary groups to help implement/support the WASH project?

	Response Percent	Response Count
Yes	42.9%	3
No (SKIP to 23)	**57.1%**	**4**
answered question		**7**
skipped question		**2**

36. 22a. If yes, Check all groups that you formed/used and whether or not you provided training to that group:

	Response Percent	Response Count
Water System/Water Point Committee	**100.0%**	**3**
Handpump Repair Committee (for wells or cisterns)	0.0%	0
Sanitation Committee	33.3%	1
Water User Committee	33.3%	1
Water Kiosk Committee	0.0%	0
	Other (please specify)	1
	answered question	**3**
	skipped question	**6**

37. 22b. If Yes, Did you provide any training for the committees/groups you formed/worked with?

	Response Percent	Response Count
Yes	**75.0%**	**3**
No (Skip to 23)	25.0%	1
	answered question	**4**
	skipped question	**5**

38. 22c. If yes, Please describe the training you provided, topics covered, extent of the training (e.g. approximate # of days over what period of time), materials used. If you have any training materials/curriculum or training agendas that you can share can you please send them to siobhan.kennedy@ifrc by August 28, 2013. Thank you!

	Response Count
	3
answered question	3
skipped question	6

39. 23. Did you interact/work with any of the following local/national government organizations/groups? (Check all that apply and complete 23a for all those groups you worked

Worked with these groups

	X	R
DINEPA	**100.0% (5)**	
TEPICS	**100.0% (1)**	
OREPA	**100.0% (2)**	
CAEPA	**100.0% (1)**	
URD	**100.0% (1)**	
MSPP	**100.0% (2)**	
MAYORS OFFICE	**100.0% (4)**	

23a. Likelihood of the Community continuing to work with these organizations/groups?

	1-Highly Unlikely	2-Somewhat Likely	3-Highly Very Likely	R
DINEPA	20.0% (1)	**40.0% (2)**	**40.0% (2)**	
TEPICS	0.0% (0)	0.0% (0)	**100.0% (1)**	
OREPA	**50.0% (1)**	**50.0% (1)**	0.0% (0)	
CAEPA	0.0% (0)	**100.0% (1)**	0.0% (0)	
URD	0.0% (0)	0.0% (0)	**100.0% (1)**	
MSPP	0.0% (0)	**50.0% (1)**	**50.0% (1)**	
MAYORS OFFICE	25.0% (1)	**50.0% (2)**	25.0% (1)	
			answered question	
			skipped question	

40. 24. Please share any challenges and/or differences between working with these groups, and lessons learned that could inform future projects when working with these or similar groups:

	Response Count
	4
answered question	**4**
skipped question	**5**

41. 25. On a scale of 1 to 5 (with 5 high- greatest likelihood of sustainability) please rate the likelihood of your project implemented activities being sustained (sustained is defined as maintained in the same condition when completed and working and maintained over the next 3 years) for each of the following areas:

	1 - Highly Unlikely	2	3	4	5 - Highly likely	Rating Count
Sanitation Projects	0.0% (0)	0.0% (0)	16.7% (1)	**66.7% (4)**	16.7% (1)	6
Water Projects	0.0% (0)	0.0% (0)	20.0% (1)	**60.0% (3)**	20.0% (1)	5
Hygiene Promotion Knowledge and Practices of beneficiaries	20.0% (1)	0.0% (0)	0.0% (0)	**40.0% (2)**	**40.0% (2)**	5
Community Committee/Group formed by your organization (likelihood that they will continue to maintain the support systems in place to sustain the above activities)	0.0% (0)	0.0% (0)	**50.0% (2)**	**50.0% (2)**	0.0% (0)	4
					answered question	**6**
					skipped question	**3**

42. 25a. For all items rated a 1 or 2 above please describe briefly why you think this is HIGHLY to UNLIKELY SUSTAINABLE:

	Response Count
	1
answered question	1
skipped question	8

43. 25b. For all items rated a 3, 4 or 5 above please describe briefly why you think this is Most LIKELY, LIKELY OR HIGHLY LIKELY that they will be sustained:

	Response Count
	4
answered question	4
skipped question	5

44. 26. Please provide us with any other comments and/or additional information that you think might be relevant and informative to the WASH Technical Review below. Thank you!

	Response Count
	5
answered question	5
skipped question	4

Page 2, Q4. 4. What is/was your position in the Haiti T-shelter WASH project?		
1	Sanitation delegate	Sep 1, 2013 5:48 PM
2	WASH delegate	Aug 30, 2013 12:57 PM
3	T-Shelter admin Assistant	Aug 28, 2013 8:00 AM
4	WASH Delegate	Aug 28, 2013 6:34 AM
5	SHELTER AND WASH PROGRAM MANAGER	Aug 27, 2013 1:06 PM
6	Hygiene promotion assistant (IFRC local staff)	Aug 27, 2013 6:13 AM
7	Training Manager	Aug 26, 2013 6:35 AM
8	WASH Project Manager	Aug 24, 2013 8:22 AM

Page 2, Q5. 5. Dates of employment in Haiti in this position:

	From Month/Year	
1	March / 13	Sep 1, 2013 5:48 PM
2	July 2012	Aug 30, 2013 12:57 PM
3	January 2010	Aug 28, 2013 8:00 AM
4	July 2010	Aug 28, 2013 6:34 AM
5	APRIL 2011	Aug 27, 2013 1:06 PM
6	September / 2011	Aug 26, 2013 6:35 AM
7	01/02/2013	Aug 24, 2013 8:22 AM
	To Month/Year	
1	October / 13	Sep 1, 2013 5:48 PM
2	March 2014	Aug 30, 2013 12:57 PM
3	March 2012	Aug 28, 2013 8:00 AM
4	November 2012	Aug 28, 2013 6:34 AM
5	MARCH 2012	Aug 27, 2013 1:06 PM
6	December / 2012	Aug 26, 2013 6:35 AM
7	15/10/2013	Aug 24, 2013 8:22 AM
	Total Months	
1	8	Sep 1, 2013 5:48 PM
2	21 months	Aug 30, 2013 12:57 PM
3	14	Aug 28, 2013 8:00 AM
4	29 months	Aug 28, 2013 6:34 AM
5	12 MONTHS	Aug 27, 2013 1:06 PM
6	15 Months	Aug 26, 2013 6:35 AM
7	8	Aug 24, 2013 8:22 AM

Page 2, Q6. 6. What were/are your organizations WASH T-Shelter Component project start and completion dates by Month/Year? (note day is not needed - leave blank or 00)

	Start Month/Year	
1	01/10/2011	Aug 30, 2013 12:57 PM
2	03/01/2011	Aug 28, 2013 8:00 AM
3	01/01/2011	Aug 27, 2013 1:06 PM
4	05/09/2011	Aug 26, 2013 6:35 AM
5	01/06/2010	Aug 24, 2013 8:22 AM
	End Month/Year	
1	31/03/2014	Aug 30, 2013 12:57 PM
2	31/03/2012	Aug 28, 2013 8:00 AM
3	01/03/2012	Aug 27, 2013 1:06 PM
4	31/12/2012	Aug 26, 2013 6:35 AM
5	30/09/2013	Aug 24, 2013 8:22 AM

Page 3, Q2. 8. If water quality tests were conducted for any of the above (Question 7c) please describe the testing methods used, what you were testing for and the frequency of tests.

1	For the borehole OXFAM INTERMON helped us to do the initial water test with DELAGUA Kit. The quality was good. But users are advised to treat water at household level.	Aug 28, 2013 7:03 AM
2	Testing was done for bacteriological components, EC and TC only. The laboratory used by the Contractor also tested for other pathogens.	Aug 24, 2013 8:34 AM

Page 3, Q5. 11. For the above WATER SUPPLY Projects you were involved in implementing, please describe your GREATEST CHALLENGE (consider human and financial resources, technical, materials, community, place, etc.)? (If more than one method was implemented please relate your comments to each specific method.)

1	Rain catchment PVC tank : short time of execution (3months for 531 rainwater harvesting system) - availability of adequate material (UV treated flexible pipe) Cistern Construction : find a system in replacement of the PVC tank system - make a proper beneficiary identification	Aug 30, 2013 1:32 PM
2	The borehole has a pump coupled with solar system. The water is distributed to around 30 beneficiaries through piping system. NLRC provided a new pump and make the functioned again. I am not sure the water committee has a capacity to collect enough money to ensure the sustainability of the system. It is in Laferonay - Leogane. Ferro cement of 25 cubic meters was built in Fondwa - Leogane. The system function well but I am not sure if other members of the community have access to the water. It was planned initially to build 5 units of ferro cement tanks but only one person provide land. Then we were enable to build the 4 remaining tanks because nobody want to give his land.	Aug 28, 2013 7:03 AM
3	Maintenance of the rain water system is not done by the beneficiaries sometime, its basically cleaning of leaves from the roof,	Aug 27, 2013 1:13 PM
4	Community remoteness, community cooperation (in one case), technical challenges in case of boreholes	Aug 24, 2013 8:34 AM

Page 3, Q6. 12. For the above WATER SUPPLY Projects you were involved in what, if anything, WOULD YOU DO DIFFERENTLY to insure greater success if you were to do the project over again? (If more than one method was implemented please relate your comments to each specific method)

1	Rain catchment PVC tank : use PVC pipes instead of poor quality flexible pipe - make platforms that better protect the tanks Cistern Construction : use mobile technology to improve the collection and analysis of data survey	Aug 30, 2013 1:32 PM
2	No comment	Aug 28, 2013 7:03 AM
3	we didnt find already made gutters on that time, and we used 4" PVC pipes instead, now normal gutters are available and its better to do it with these gutters,	Aug 27, 2013 1:13 PM
4	The Water component faced a lot of time constraints as it was implemented relatively late in the project phase. A contractor was hired for the most time- and resource consuming components of the work. The contractor was weaker on the well-drilling component of the project and I would not hire the same company for this area of expertise.	Aug 24, 2013 8:34 AM

Page 3, Q7. 13. For the above WATER SUPPLY Projects what do you feel were your GREATEST ACCOMPLISHMENTS?

1	At mid-term project, we decided to change the type of rainwater system installed. Instead of keeping installing a PVC tank we decided in coordination with our donors to provide reservoirs with higher storage capacity to maximize the water harvesting potential. After several weeks of reflexion and study we came out with a semi-buried stone reservoir that combine cost efficiency, availability of materials and reproducibility of the construction process.	Aug 30, 2013 1:32 PM
2	The rain water collection system with the ferro cement tank was just a demonstration for future project of NLRC in Haiti.	Aug 28, 2013 7:03 AM
3	700 rainwater catchment system and I see after 2 years still its working and people use them, I am happy for this	Aug 27, 2013 1:13 PM
4	Implementing all the above components with in a time of only 6 months. Also, construction quality 3/4 of spring catchments exceeded expectations.	Aug 24, 2013 8:34 AM

Page 4, Q1. 14. What sanitation methods were you involved in implementing at the household/T-shelter level? (If you have any technical information, drawings, photos construction methods used, or other information that describes what was implemented please send it to siobhan.kennedy@ifrc.org by August 28, 2013

1	VIP Double Pit Latrine with lining and Pour flush latrine	Aug 28, 2013 7:55 AM
2	We made VIP latrines but we dont know if it is lined or unlined	Aug 27, 2013 6:13 AM

Page 4, Q5. 17a. If you were involved in the Pre-fabrication of latrine components what were the Pros and Cons of doing this and lessons learned? Again, if you have any technical documents you can share about this process please send them to siobhan.kennedy@ifrc.org. Thank you!

1	Lo valoro positivamente, ha sido una actividad que no ha sido problematica y ha supuesto un ahorro logistico importante.	Sep 1, 2013 6:14 PM
2	Advantage: reducing cost per unit - quality control – when prefabs are done it allow to put in place a continuous process of installation - rapidity of installation. Disadvantage: construction of a proper workshop - strong follow up required - need adequate staff to manage and control the process	Aug 30, 2013 1:47 PM
3	The toilet pan for the pour flush latrine was in fibreglass. It was made by local people I trained in Leogane.	Aug 28, 2013 7:55 AM
4	Pros: - fast production - quality control - cost efficient - carpenters capacity increase - avoid waste of material Cons: - the staff and workshop was not used after completion of the project,	Aug 27, 2013 1:20 PM
5	I appreciated working with the community	Aug 26, 2013 6:43 AM
6	See (Sanitation Delegate) answer for details	Aug 24, 2013 8:37 AM

Page 4, Q6. 18. For the above Sanitation Projects you were involved in implementing, please describe your GREATEST CHALLENGES (consider human and financial resources, technical, materials, community, place, etc.)? (If more than one method was implemented please relate your comments to each specific method.)

1	Would emphasize two aspects The implementation of the software, especially in elevated toilets (which will require a more frequent maintenance). It has taken into account the quality of the construction technique at the expense of the formation and consolidation of knowledge on environmental friendly practices. We often realize that latrines are not priority for beneficiaries, and to raise the awarenes about the importance in the use of the latrine has been underated.	Sep 1, 2013 6:14 PM
2	VIP latrine : prefab all the elements - organize a continuous process in terms of prefab and installation - find all necessary materials in bulk quantity without importing them - do a proper beneficiary identification	Aug 30, 2013 1:47 PM
3	How to make the toilet pan in fibreglass was the challenge. The mould was not available here in Haiti. I trained myself in my country Togo and acquired the mould in Togo. Then I trained local people in Leogane on how to make the mould and produced the toilet pan. Another challenge was the chemical used for the fibreglass. The resin and fibreglass was available but the gel coat was not. We got few quantity of gel coat from the local market. Later we got gel coat from abroad US or Canada. Then we were able to produced 5000 toilet pans and siphon. Money was not an issue. At the end of the project we have money left.	Aug 28, 2013 7:55 AM
4	- ground formation, hard ground, high water table, - slow community contribution in digging pits, - scattered construction sites and difficult road access	Aug 27, 2013 1:20 PM
5	The greates challenges were the thefts of material and the lack of interest of the beneficiaries. But at the end of the project, they were more interested.	Aug 26, 2013 6:43 AM
6	See (Sanitation Delegate) answer for details	Aug 24, 2013 8:37 AM

Page 4, Q7. 19. For the above SANITATION PROJECTS you were involved in what, if anything,WOULD YOU DO DIFFERENTLY to insure greater success if you were to do over again? (If more than one method was implemented please relate your comments to each specific method.)		
1	- To reinforce the software around the latrines use. In some cases (I have no a figure) we realize that beneficiaries were accepting the latrine to avoid loose an oportunity to receive some material but their interest were not enough, we found some cases of people selling materials or abandom the latrine. - The use of local material was canceled for schedule reasons, a better planning would allow to us to use them. - Mechanismes control during the implementation. After to set a process to identifie and supply the entitled beneficiaries, some mechanisme control would had avoid some inconsistencies in the implementation (beneficiaries receiving two latrines, distances between the latrine and shelter too long...). Those implementition bugs were erradicated when the project was in his middle (too late in my opinion).	Sep 1, 2013 6:14 PM
2	VIP latrine : use mobile technology to facilitate the collection and analysis of data	Aug 30, 2013 1:47 PM
3	For the alternate double pit latrine I will increase a bit the defecation hole. I can also improved the supervision of construction activities and give a better training for masons.	Aug 28, 2013 7:55 AM
4	- I am convinced with what we have done and I will do the same,	Aug 27, 2013 1:20 PM
5	I would improve the PHAST sensitization before, while and after the start of the project.	Aug 26, 2013 6:43 AM
6	See (Sanitation Delegate) answer for details	Aug 24, 2013 8:37 AM

Page 4, Q8. 20. For the above Sanitation Projects what do you feel were your GREATEST ACCOMPLISHMENTS? (If more than one method was implemented please relate your comments to each specific method)		
1	The technical quality of the construction is a good point. The speed in the construction and the way to manage the community work (including their training and supervision) was quite good in my opinion.	Sep 1, 2013 6:14 PM
2	VIP latrine : Initially the cost per latrine was too high in regards of the budget available. We had to find solutions to decrease the cost without cutting down the quality aspect.	Aug 30, 2013 1:47 PM
3	The number of beneficiaries of latrine program (4450 Pour Flush latrines and 110 alternate double pits latrines) in 21 months. The performance of the teams was the great.	Aug 28, 2013 7:55 AM
4	700 latrines and I see still people use them,	Aug 27, 2013 1:20 PM
5	I think the biggest acomplishment is the fact that the people of Leogane are using latrines and they don't defecate outside.	Aug 26, 2013 6:43 AM
6	See (Sanitation Delegate) answer for details	Aug 24, 2013 8:37 AM

Page 5, Q5. 21b. What hygiene practices/behaviors did your project specifically focus on addressing, if any? (check all that apply)		
1	rain water use and system maintenance, latrine maintenance	Aug 27, 2013 1:29 PM

Page 5, Q6. 21c. If your hygiene promotion efforts focused on hand washing at specific times (checked above), please list the specific hand washing times you focused on:		
1	when you arrive at home before eating before handling food before handling a baby after touching money	Aug 30, 2013 2:05 PM
2	Before preparing food After using the toilet After taking care of a baby who defecate Before feeding the baby Before eating	Aug 28, 2013 8:27 AM
3	after deification, before eating	Aug 27, 2013 1:29 PM
4	Before cooking after using toilet after wiping, cleaning babies before feeding babies after coming back from the street	Aug 27, 2013 6:13 AM
5	Before eating, After using the latrine, after promenade, after touching the money, before giving breast to the child	Aug 26, 2013 6:55 AM

Page 5, Q7. 21d. If your hygiene promotion activities focused on disease prevention please list specific diseases you were focused on trying to prevent:		
1	cholera malaria typhoid diarrhea dengue	Aug 30, 2013 2:05 PM
2	Cholera and diarrhoea Parasites intestinal Malaria Prevention of tuberculosis Prevention of gale	Aug 28, 2013 8:27 AM
3	diarrhea, cholera, other	Aug 27, 2013 1:29 PM
4	Diarrhea & cholera malaria, dengue & tyfoid skin infection & vaginal infection	Aug 27, 2013 6:13 AM
5	Malaria, diarrhea, polyomelite, cholera, dengue	Aug 26, 2013 6:55 AM

Page 5, Q8. 21e. What hygiene promotion methods did your organization use? (Check all that were used)		
1	Sensitization in the countryside	Aug 26, 2013 6:55 AM

Page 5, Q10. 21g. Where do you think you had the most success (as measured by increased knowledge and/or positive changes in behavior) in your hygiene promotion efforts and why?		
1	By creating local committees (EIC) who are taking care of their own hygiene promotion and sensitization	Aug 30, 2013 2:05 PM
2	The beneficiaries used the latrine which is built. They like the pour flush latrine	Aug 28, 2013 8:27 AM
3	disease prevention, hand washing	Aug 27, 2013 1:29 PM
4	3rd section in leogane	Aug 27, 2013 6:13 AM
5	The hand-washing, the use of latrines and the use of clean water	Aug 26, 2013 6:55 AM

Page 5, Q11. 21h. Where do you think you had the GREATEST CHALLENGES in your hygiene promotion efforts and why?		
1	Making sure the members of the local committees (EIC) keep being motivated and interested to support their own community.	Aug 30, 2013 2:05 PM
2	People know everything already. The problem was how to practise their knowledge.	Aug 28, 2013 8:27 AM
3	environmental hygiene, its very complicated, needs external help for managing solid waste	Aug 27, 2013 1:29 PM
4	1rst section in leogane	Aug 27, 2013 6:13 AM
5	The use of clean water	Aug 26, 2013 6:55 AM

Page 5, Q13. 21-ii. If Yes (you used Hygiene Promoters) What, if any, training did they receive? Describe the training as much as you can (# of trainings held/total training days, topics covered, who conducted the training, etc.)		
1	The local committees (EIC) attend regular trainings which consist of a training of trainers (ToT) they can later carry on training the rest of the community members. They received training by two SRC nurses on : WASH Project - RC/RC - Calendar - Mapping (1 day) CBHFA & households visit (1 day) Tropical and infectious deseases (1/2 day) Cholera decontamination (1/2 day) Medical plants (1/2 day)	Aug 30, 2013 2:05 PM
2	The hygiene promoters were trained each 2 weeks on the subjects they are going to promote in the community for the two weeks. The subject were explained and the approach the are going to use also. And they have a role play on the subject.	Aug 28, 2013 8:27 AM
3	they received training in first 4 modules of CBHFA,	Aug 27, 2013 1:29 PM
4	They received the following trainings during 6 months : PHAST, Water treatment, etc	Aug 26, 2013 6:55 AM

Page 6, Q2. 22a. If yes, Check all groups that you formed/used and whether or not you provided training to that group:		
1	The committee includes a technician for repairs.	Aug 24, 2013 8:58 AM

Page 6, Q4. 22c. If yes, Please describe the training you provided, topics covered, extent of the training (e.g. approximate # of days over what period of time), materials used. If you have any training materials/curriculum or training agendas that you can share can you please send them to siobhan.kennedy@i...		
1	We did a water workshop (different type of water treament, the maintenance of the water point, we distributed cleaning tools)	Aug 27, 2013 6:13 AM
2	We trained during three days in each community about the role of committees, the importance of water points and how to maintain the water points	Aug 26, 2013 7:01 AM
3	4 days over 6 months, technical component water management (use, pump, springbox and kiosk capacities) organisational training (cost to replace and repair components, collection of money from community etc.)	Aug 24, 2013 8:58 AM

Page 6, Q6. 24. Please share any challenges and/or differences between working with these groups, and lessons learned that could inform future projects when working with these or similar groups:		
1	DINEPA should be consulted before doing any intervention. TEPAC don't have a lot of support from DINEPA to be really effective URD is a good source of information (drawing, plan, statuts, etc) Leogane MAYOR office is regularly informed but they aren't giving any support. Efforts should be made to give to those groups regular reports, which include detail of activities and maps so they have an idea of what is going on	Aug 30, 2013 2:53 PM
2	Changing DINEPA regulation in supporting latrine project,	Aug 27, 2013 1:31 PM
3	The most difficult point with these groups is to choose the person in charge of the finances	Aug 26, 2013 7:01 AM
4	DINEPA approvals can take between 1-3months for boreholes, water testing results also very slow through DINEPA.	Aug 24, 2013 8:58 AM

Page 7, Q2. 25a. For all items rated a 1 or 2 above please describe briefly why you think this is HIGHLY to UNLIKELY SUSTAINABLE:		
1	The beneficiaries know the hygiene promotion message but most of them did not put it in practise.	Aug 28, 2013 8:36 AM

Page 7, Q3. 25b. For all items rated a 3, 4 or 5 above please describe briefly why you think this is Most LIKELY, LIKELY OR HIGHLY LIKELY that they will be sustained:		
1	In particular, the model of elevated latrine choosen should involve more training. It is planned to improve this training but in my opnion that is something to be done at the begining in the implementation, and not at the end. It is a very particular model, it will be require the involvement of the beneficiary to make the desloudging.	Sep 1, 2013 6:20 PM
2	Sanitation and water projects were designed to last. Labors were selected among the community, so they have the knowledge to maintain and fix those infrastructures. Materials and accessories were bought locally. Hygiene Promotion knowledges and practices will remain because they were transmitted by members of the community themselves. Local Committees (EIC) will continue to run activities among their communities because they will keep receiving supports and trainings from other SwissRC/HRC projects (a three years DRR project and a new WASH project)	Aug 30, 2013 3:06 PM
3	Ferro cement tank is sustainable. Borehole pump with distribution of water in Laferronay are not sustainable. The users are not ready to give enough contribution to afford the maintenance or replacement of the pump. Alternate Double Pit latrine is durable. It can be emptied manually. Pour flush latrine can be emptied after 5 years.	Aug 28, 2013 8:36 AM
4	most beneficiaries use the latrines and they are happy with it, also they are clean relatively, most beneficiaries use rain water system and they appreciate it, HP activities were short and we didn't continue for long time, but when we visit the shelters after 2 years, we see that people have clean houses, mostly clean latrines and seems its not bad,	Aug 27, 2013 1:35 PM

Page 8, Q1. 26. Please provide us with any other comments and/or additional information that you think might be relevant and informative to the WASH Technical Review below. Thank you!		
1	I am sorry not to be available during the week of the consultancy, the head of my program took the duty to attend you while I was involve in other delegation tasks. In case you have any question you can contact me by email. Thanks.	Sep 1, 2013 6:23 PM
2	Two things : I found the translator during the focus group a bite pushy with the participants. My WASH colleagues didn't find time to complete this online survey, sorry for that.	Aug 30, 2013 3:12 PM
3	No additional comment. Please, share the result of your evaluation. My email address is komi.gbonsike@gmail.com	Aug 28, 2013 8:38 AM
4	more rain water system will be very useful to implement, also latrine construction is needed in many areas and will improve the hygiene condition,	Aug 27, 2013 1:36 PM
5	There is no WATSAN delegate in IFRC Leogane now. We have limited to answer those questionnaire.	Aug 27, 2013 6:17 AM

RCM HAITI WASH Technical Review
Leogane, Gressier, Jacmel, Petit Goave
T-Shelter Latrine and Water System Field Collection Data Observation Sheet

Completed by_____
Date _____

1. Community:

- ☐ Leogane _____
- ☐ Gressier _____
- ☐ Jacmel _____
- ☐ Petit Goave _____

Notes/Comments:

Terrain:

2. Type of Latrine:

- ☐ EcoSan (See additional Q' below)
- ☐ Composting - Other
- ☐ Improved VIP
- ☐ Pit (non-improved)
- ☐ Other _____

Photo #:

3. When constructed? _____/ _____(Month/Year) (Total Age Year/Months ____/_____)

4. Constructed by: _____ HH contribution? Materials/Labor/Funds/Other _____

5. Is HH currently using latrine? ____ Yes _____ No

5a. If Yes, How many people use latrine? _____ Total HH's Using Latrine: _____

5b. If No, Why not: _____

_____

6. Dimensions/Construction:

6a. Height: _____ 6b. Walls Front/Back: _____ 6c. Sides: _____
6d. Wall materials: __ metal __ natural grass __ wood __ Other (describe) _____
6e. Roof material: __ metal __ natural grass __ wood __ Other (describe) _____
6f. Pit Dimensions (if known): _____
6g. Vent Material: _____ (N/A)
6h. Floor/Slab: ___ concrete ___ molded plastic ___ rock ___ Dirt ___ Other (describe) _____
6i. Platform Type: ___ Squat ___ Concrete seat ___ Other (describe) _____

7. Condition:

7a. Cleanliness scale (1 Very dirty/feces present to 5 very clean):	1	2	3	4	5
7b. Presence of flies (1 none to 5 significant flies).	1	2	3	4	5
7c. Infrastructure (1 Significant failure to 5 No observed Failure)	1	2	3	4	5

Comments: (vent covered w/ screen, no lighting in pit except vent, slab solid, roof in place, adequate airflow in room, seat cover)

8. Waste Removal

8a. Has pit filled up yet? Yes No

8b. **If yes,** what has HH done?

1-Hired Bayakous 2-Empty self (bury) 3-Empty self (garden/flower beds) 4-Empty dump _____

5-Nothing (no longer using) 6- other (Describe): _____

7- Don't know

8c. If no, what is HH plan when it does fill?

1-Hire Bayakous 2-Empty self (bury) 3-Empty self (garden/flower beds) 4-Empty dump _____

5-Nothing (no longer using) 6- other (Describe): _____

7- Don't know

9. Hand Washing Facility at Latrine Yes No

9a. **If Yes,** Hand Washing facility operational (both soap and water available) Yes No

9b. **If No,** Other operational hand washing facilities available near by Yes No

10. EcoSan

10a. What training did you receive about your Eco San toilet? (What was covered, extent of training)

10b. How do you feel about using the waste for garden/agriculture?

11. General Satisfaction/Dis-satisfaction with Latrine

11a. What's liked? How compared to what you had before earthquake?

11b. What have been problem/concerns? What would you change?

12. Anything else you want to tell us about latrine?

Water System

Dimensions/Drawing

- ☐ Rain Catchment
- ☐ Pipe Distribution (New)
- ☐ Pipe Distribution (Repair)
- ☐ Borehole Well (New)
- ☐ Borehole/Other Well
- ☐ (Repair)
- ☐ Cistern Construction
- ☐ Spring Reservoir
- ☐ Catchment Construction
- ☐ Ceramic Water Filter
- ☐ Distribution
- ☐ Water Kiosk

Water Method/System Questions:

1. Who constructed/repaired the system
    a. How did the construction process go, any problems/issues, how addressed/resolved? (materials, personnel, location, etc.)
    b. How long did it take to construct (est. months)
    c. When was it finished?
2. System is currently working?
3. Is system protected from animals?
4. Any problems/issues?
5. Level of maintenance?
6. Condition of structure?
7. What happens when it breaks down (who repairs, are parts available here, cost of parts, has it broken down at all since constructed)? If locals – were they trained in how to repair it?
8. Is water sufficient to meet communities daily water needs? (flow/rate liters per person per day)
    a. Is water used for drinking?
    b. Is water used for personal use (cooking, hygiene, cleaning)?
    c. Agriculture/Animals?
9. Water Quality (are tests done, results, turbidity)?
10. Is it treated? If yes how, frequency
11. Water board/other group manage it?
12. Do people currently pay to use this water? If yes, how much?
13. Other

IFRC WASH Technical Review
Beneficiary FGD Questions

Proposed:

FGD with project beneficiaries. Possible use of participatory methods, such as modified pocket voting *Methodology for Participatory Assessments* Metguide (Dayal, R, Wijk, C and Mukherjee, N., 1998) to gather some quantifiable information.

- Estimate 8 to 10 FGD total (total number TBD)
- Questions will focus on assessing impact of PNS/IFRC interventions (e.g. are beneficiaries still using latrines/water systems deployed, if not why; feedback regarding the quality of methods deployed, understanding of hygiene knowledge obtained, satisfaction proxy measures, input regarding how methods could have improved, etc.)

Introductions:

- Facilitators/Interpreter

Purpose of meeting: To gather feedback from _____ project beneficiaries about your experience with the WASH program, the latrines built by ____, use of the water system (if relevan) and your knowledge and practices related to hygiene. This meeting is being held to conduct a review of the WASH components implemented by _____ among T-Shelters. As an external evaluator we don't have any role in securing future services or goods by or on behalf of _____.

Meeting Points/Consent:

- This information gathered today will not be tied back to you as an individual, and will be kept confidential. Only summary results will be provided to IFRC/_____ (Red Cross).
- We want you to share openly and honestly about your experience
- If you are uncomfortable answering any question you do not have to answer it
- Are you willing to participate in this FGD? Again, you can change your mind at any time and do not have to answer questions you don't wish to. **If No – don't continue.**

Beneficiary Focus Group Participant Questions

Introductions

1) Please share with us your first name and about how many years you have lived in this community?
    a. Do you have now or have you had any WASH project responsibilities?

Program/Hygiene (HP) Awareness

2) How did you hear about_____ Red Cross (PNS/IFRC)?
3) Have you been visited by Project Hygiene Promoter at your home? If yes, can you tell us about your experience…
    a. What information did you receive from them?
    b. How often did they come to your shelter?
4) Have you participated in any group hygiene activities conducted by Hygiene?
    a. If Yes, when _____
    b. What was the focus of the meeting(s)?

Probe:

5) What about drinking water – what did you learn? Do you do anything to make it safe to drink?

6) What about <u>hand washing</u> – what did you learn? When are the three most important times for hand washing? Has your behavior changed as a result of what you learned? If Yes, how?
7) What about <u>sanitation</u> – what did you learn? Has your behavior change as a result of what you learned? If Yes, how?

<u>Drinking Water Source/Treatment</u>

- Where do they get their drinking water?
- Do they treat their water before drinking it? (Always, some of the time??) What do they treat it with?

<u>Latrines</u>

8) Did you have a latrine at your house before the earthquake? Do <u>you use the latrines</u> built by Red Cross? Probe: What is different about this latrine, like/dislike about it?
9) Did you have a role in building the latrine (if yes, what specifically)?

Would you say (stone voting if possible?)

a.	Were you involved in deciding on where the latrine was placed?	Yes	No
b.	Latrine Design (seat or squat)	Is what I am used to	Is new/unknown to me
c.	Distance to your house	Adequate	Too far
d.	Amount of waste in pit	Limited/acceptable	Too full
e.	Physical Structure	Solid	Lacking
f.	Lighting during day	Adequate/well lit	Not well lit
g.	Lighting at night	Adequate/well lit	Not well lit
h.	Accessible to young children	Can be used by children	Cannot be used by children
i.	Latrine Smell	No/limited smell	Too smelly
j.	Flies/Insects	No/limited flies/insects	Too many flies/insects
k.	What would you say about the quality of the latrines from what you used prior to the earthquake?	Improved ⬆ / Stayed the same	Worsened (decreased) ⬇

(Responses to above questions will be explored further, as needed)

Wrap-up:

10) Anything else you want us to know about the water, latrines or hygiene promotion conducted by the Red Cross?

<u>LATRINES (Additional questions)</u>

Eco San

- Are households involved in agriculture?
- What do HH do w/ waste from toilets (buried, placed on agriculture, gardens, flowers around house), frequency of removal
- Problems (does water get into urine…)
- What education was received related to these latrines

Rain Catchment

- If HH have rain catchment – what is the water used for? (drinking, HH cleaning, or?)
- Does it always have water? If not about what amount of time (try to get at %) does it have water (times of year…)
- Is the system working? If no – what is not working
- Like/Dislike about it.

RCM T-Shelter WASH Technical Review FGD Voting Combined Response Results

FGD #	Community	Zone	PNS	Date	Participants*	# Male	# Female
1	Petit Goave	Figaro	Norwegian	8/23/2013	18	8	10
2	Jacmel	Middle Macary	Netherland	8/26/2013	14	8	6
3	Leogane	Bellvue	German/Austrian	8/27/2013	31*	13	18
4	Leogane	Sus de Baba	German/Austrian	8/27/2013	16	7	9
5	Leogane	Brache	Spanish	8/28/2013	17	6	11
6	Leogane	Su Savon	Spanish	8/28/2013	12	7	5
7	Leogane	Bagader	IFRC	8/29/2013	19	3	16
8	Leogane	Palmiste a Vin	Swiss	8/29/2013	11	5	6
	Total by Gender				138	57 (41%)	81 (59%)

Petit Goave -Figaro

Jacmel – Middle Macary

Leogane – Sus de Baba

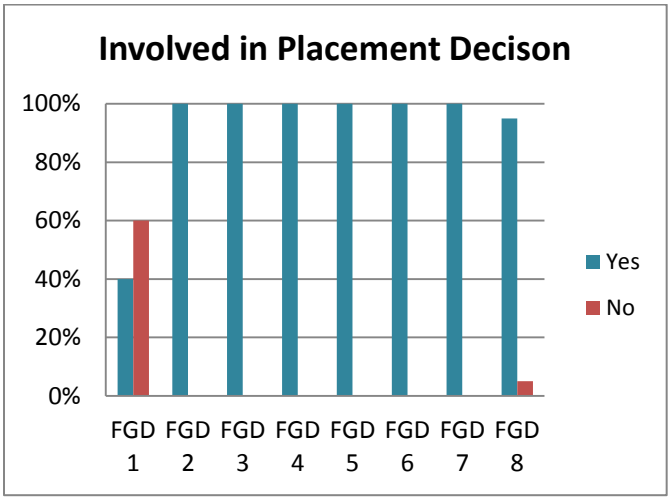
Leogane – Sus de Baba

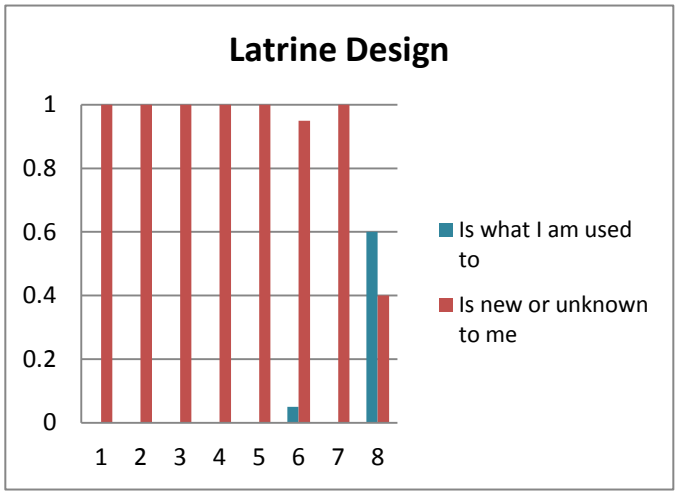
Leogane – Su Savon

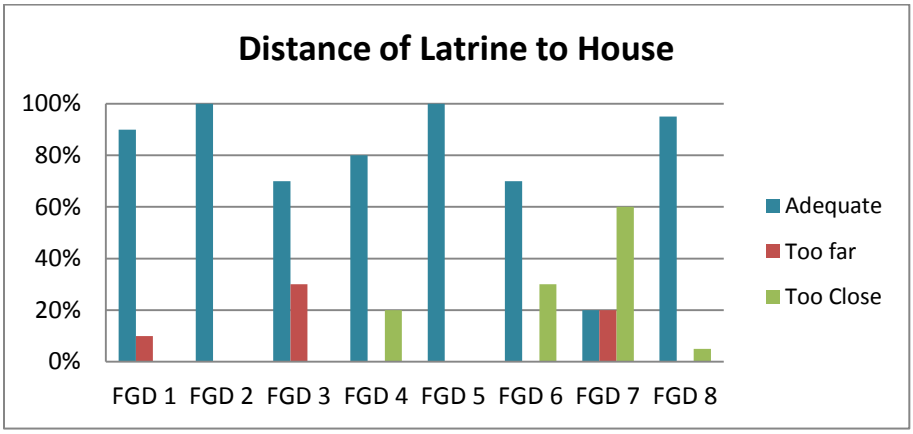
Leogane – Bagadere

Leogane Palmiste a Vin

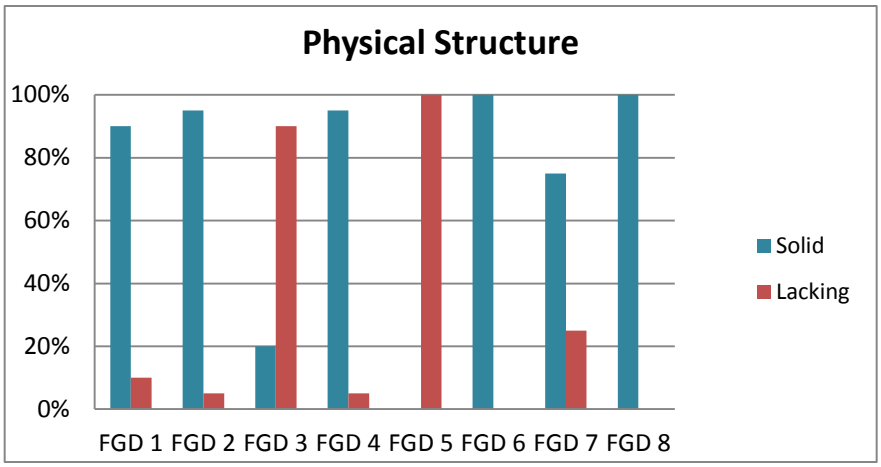
Leogane - Bellvue

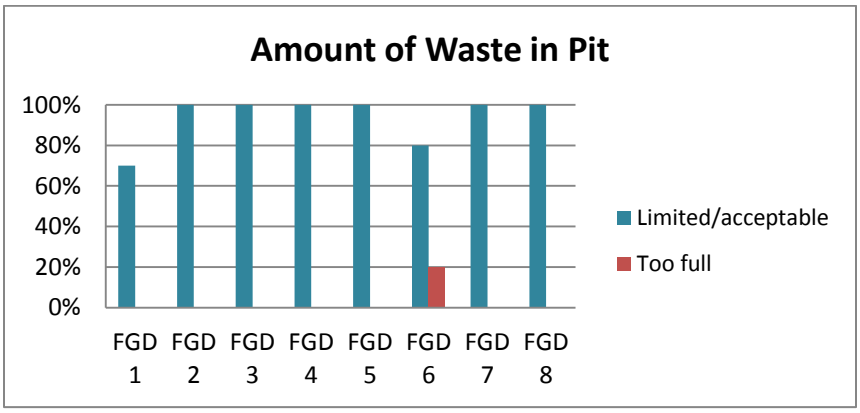


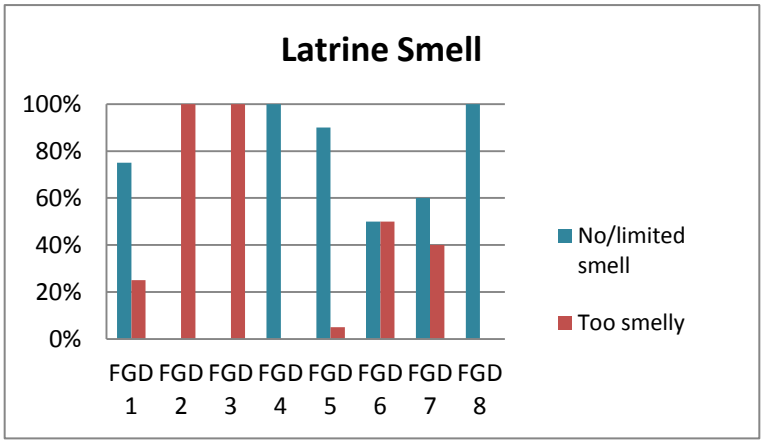


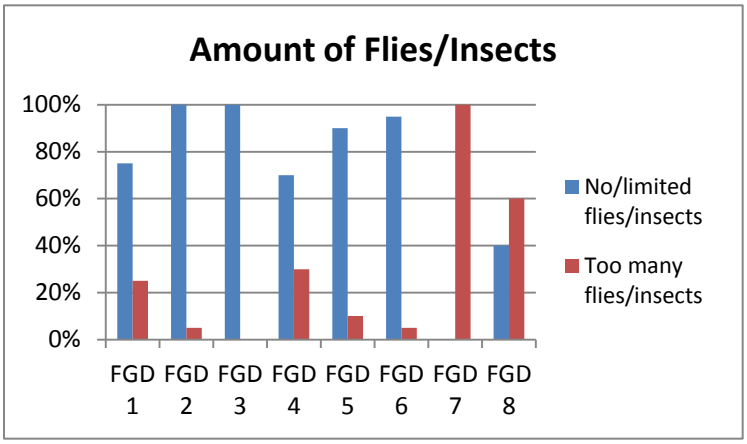


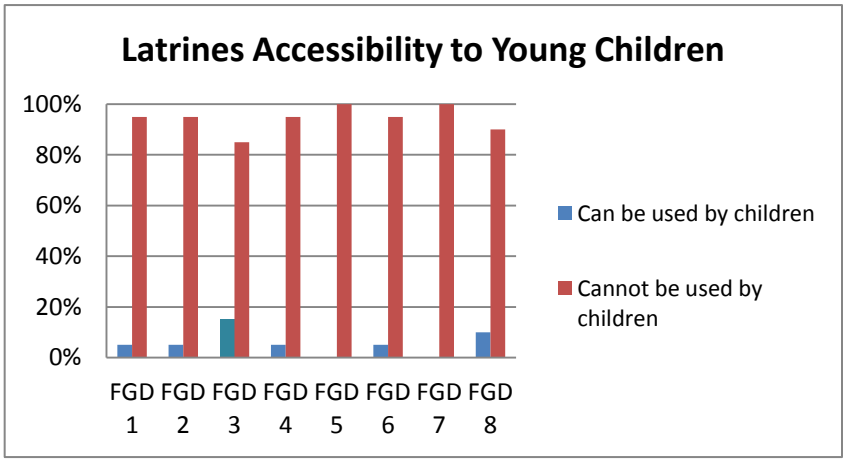
*Too close not asked for FGD's 1 through 3

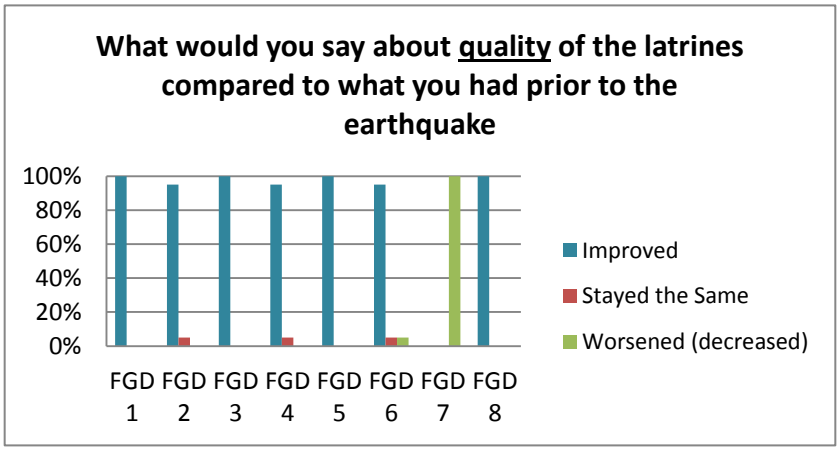


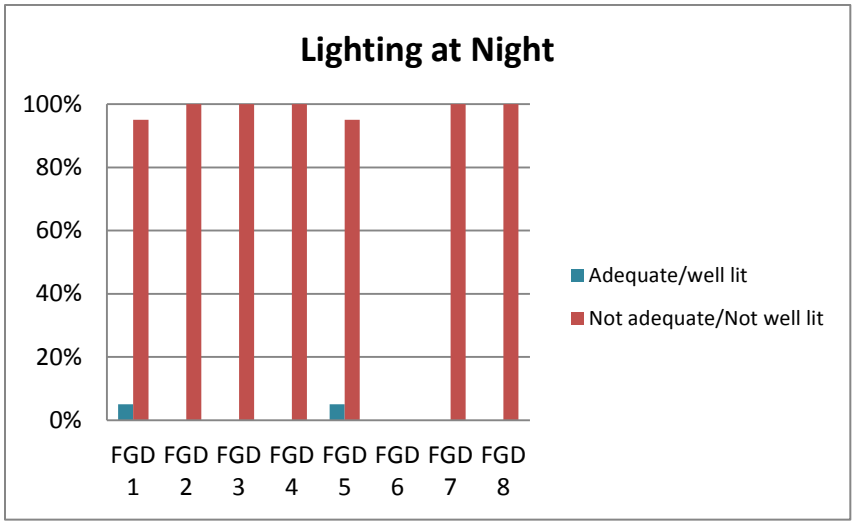

Amount of Waste in Pit
100%
80%
60%
40%
20%
0%
FGD 1
FGD 2
FGD 3
FGD 4
FGD 5
FGD 6
FGD 7
FGD 8
Limited/acceptable
Too full

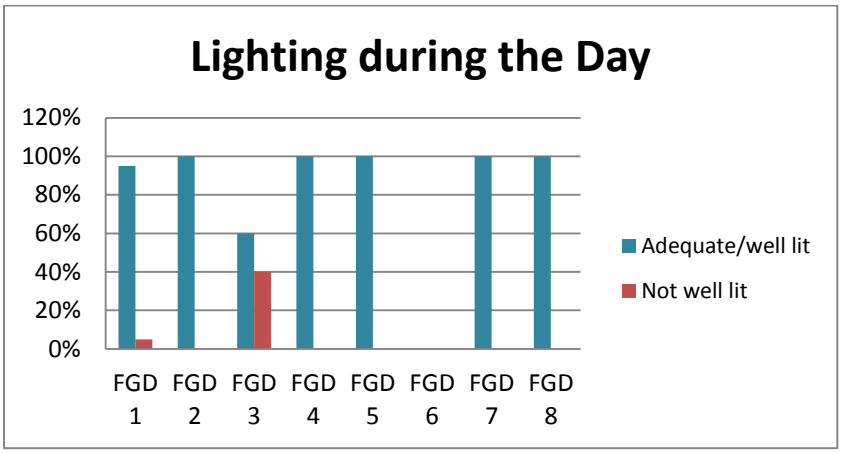

Latrine Smell
100%
80%
60%
40%
20%
0%
FGD 1
FGD 2
FGD 3
FGD 4
FGD 5
FGD 6
FGD 7
FGD 8
No/limited smell
Too smelly


Amount of Flies/Insects
100%
80%
60%
40%
20%
0%
FGD 1
FGD 2
FGD 3
FGD 4
FGD 5
FGD 6
FGD 7
FGD 8
No/limited flies/insects
Too many flies/insects


Latrines Accessibility to Young Children
100%
80%
60%
40%
20%
0%
FGD 1
FGD 2
FGD 3
FGD 4
FGD 5
FGD 6
FGD 7
FGD 8
Can be used by children
Cannot be used by children


What would you say about quality of the latrines compared to what you had prior to the earthquake
100%
80%
60%
40%
20%
0%
FGD 1
FGD 2
FGD 3
FGD 4
FGD 5
FGD 6
FGD 7
FGD 8
Improved
Stayed the Same
Worsened (decreased)





Lighting Questions were not asked of FGD 6 participants, as these HH's were responsible for adding their own walls, which many had not done and/or the walls were made of many different kinds of materials from HH to HH.