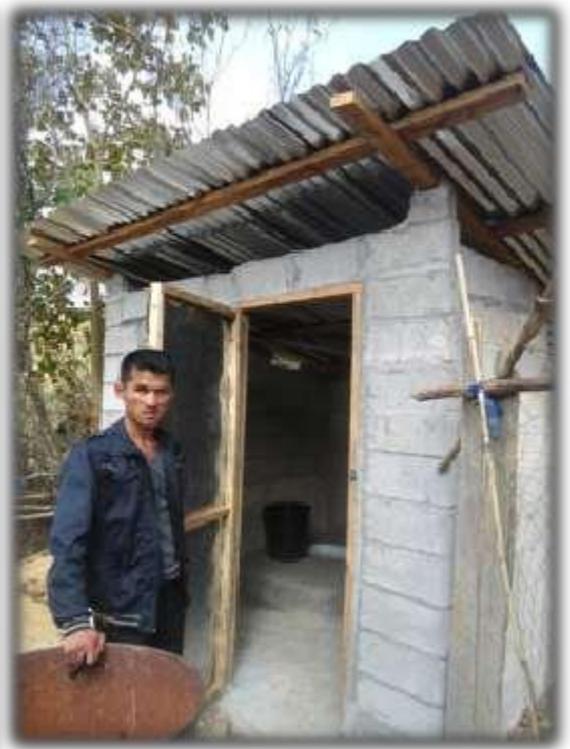


Reducing Childhood Diarrhea: Project Evaluation Report



In partnership with the Xieng Khouang Department of Health, Lao PDR May 2014

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Maps of Project Areas:



Xieng Khouang Province

Detail of villages (below). Distances from World Education office in Phonsavan: Keolerk village – 60 miles, Suanmone Village – 50 miles, Phousan Village 15 miles and Pakhom Village – 20 miles



List of acronyms and abbreviations:

CHT	Community Health Technician
CLTS	Community Led Total Sanitation
DoH	Department of Health
DRM	Dynamic Resource Map
EWB	Engineers Without Borders
GPS	Global Positioning System
LWU	Lao Women's Union
MHV	Model Healthy Village
NPA	Non-Profit Association
OD	Open Defecation
ODF	Open Defecation Free
ORT	Oral Rehydration Therapy
PwD	People with Disabilities
QLA	Quality of Life Association
RCD	Reducing Childhood Diarrhea
SDHC	Sub-District Health Center
SMS	Short Message Service (text message)
SNV	Netherlands Development Organization
SOP	Standard Operating Procedure
UXO	Unexploded Ordnance
VHC	Village Health Committee
VHV	Village Health Volunteer
WASH	Water, Sanitation and Hygiene

Executive Summary:

While Lao PDR is on track for meeting its Millennium Development Goal targets in clean water and sanitation, many rural communities do not have clean, year-round safe drinking water, nor access to sanitation. Only 7.1% of the most poor in the country and 50% of those who live in rural areas have access to improved sanitation facilities. 37% of the population does not have an improved toilet, and 28% still practice defecation (OD). The consequences of OD are poor environmental quality, increased exposure to bacterial and parasitic diseases.

The **purpose** of the *Reducing Childhood Diarrhea* (RCD) project was to: *combine community mobilization, education, and simple technologies to reduce the impact of diarrhea on children's health.*

The **objectives** of the RCD project were to:

1. Stimulate a community-based interest in toilet construction through the processes of **Community Led Total Sanitation**.
2. **Monitor the incidence of diarrhea cases** in the village through a **SMS-based reporting system** managed by volunteers based in the village and followed by district and province staff.
3. **Conduct an internal evaluation** two years after implementation with the Province Department of Health and the Health Departments in Kham and Paek District, Xieng Khouang Province with a three-fold purpose of:
 - a. Assessing progress in achieving the objectives and to document 'unexpected results' from both SMS and CLTS use.
 - b. Providing specific recommendations to guide potential project design in scaling up activities in both use of SMS monitoring and CLTS
 - c. Providing specific recommendations on potential partnerships and funding sources

The project has fulfilled its goals and targets for both components.

Reduction in Childhood Diarrhea: At the start of the project, diarrhea rates in all age groups, particularly children under five and under one, was high. By the end of the project, the SMS reports provided information that the rate of diarrhea had decreased, particularly in children and infants. This is the most important impact of the project, in line with the goal.

By April 2014, **100% toilet construction** has been achieved in two of the four villages, along with the accomplishment of the indicators establishing them as Model Healthy Villages. With the exception of toilet subsidies for a limited number of poor villagers, the villagers contributed their own funds, estimated between \$30,000 and \$50,000 for the four villages.

Villagers' understanding of the causes of diarrhea, and ways to **prevent diarrhea through better sanitation and hygiene has improved.**

The **SMS component provided quick and up-to-date information through a computer-based platform**, which both kept the province and district Departments of Health informed as well as provided information to the villagers on the number of diarrhea cases in their villages and the impact on health.

The **SMS reporting also contributed to monitoring the impact of the CLTS triggering**, toilet construction and reduction of disease, particularly diarrhea in children.

Key Findings

Objective #1:

CLTS training and mentoring activities: Key components of the CLTS philosophy are the participatory nature of the activities and in facilitating villagers' engagement in decision making to build and use toilets. Training key people in the province and district Departments of Health and World Education staff built capacity to organize CLTS triggering activities.

These staff were able to engage the CHTs to be co-trainers for CLTS triggering activities and all aspects of monitoring and follow-up. The CHTs themselves feel that they could continue to fulfill this role as co-trainers as part of a training team which would include DoH staff.

- **Establishment of village health committees** which have been the foundation of project activities through providing leadership, monitoring and promotion of toilet construction and use.
- **Developing the capacity of the district and province staffs** to monitor toilet construction and promotion of healthy behaviors in the villages.

Objective #2:

The Departments of Health and the villagers had **access to up-to-date and accurate information** about diarrhea in the village. This was achieved through an SMS reporting system which updated a Dynamic Resource Map on the web-based platform developed by InSTEDD¹. Prior to the start of the project, all information about diarrhea in the villages came through the VHV reports to the health centers, which went onward to district and province levels. This process could take a month, which would not provide information about emergent situations. The SMS reporting provided quick updates.

The steps to achieve the results of this objective included training of village, district and province staff in using GPS, sending text messages and accessing the DRM through the web-based platform.

High Level Lessons Learned:

The pilot nature of the project allowed flexibility in trying different approaches and to make changes during the project implementation. The lessons learned (the complete list is below, within the body of the report) will provide the foundation for implementation for scaling up.

- 347 out of the 376 families were able to finance their own toilet construction. Because of their contribution, the financing of toilets was not included in the project budget, which allowed the project to focus on capacity development of the DoH to implement CLTS. However, there are some families which, because of lack of income or disability/ illness, could not finance their own toilets. For these families, a smart subsidy provided funds for basic toilet supplies.
- The SMS reporting provided quick information and improved monitoring of project impacts. The ability to receive information on the reduction in diarrhea cases was

¹ <http://www.instedd.org>

particularly important, as this was related to the overall project goal.

- The close collaboration with government partners allowed for discussion and their follow-up within the established systems within the health sector.

Recommendations:

Scaling up: The Xieng Khouang Department of Health has been able to see the impact of better monitoring and that CLTS activities are more effective in improving both use as well as increased access to toilets. They would like to scale up the program in Xieng Khouang Province.

In order to scale up the project, additional funding needs to be sought. This will require the development of sample action plans and costing for project activities.

World Education should contact other organizations within Laos to determine what funding opportunities are available. However, as many organizations already have their work plans and funding arrangements already, this may require collaboration for joint proposal writing. As there is a continued need to reach the other 40% of the population living in the most remote areas, researching and writing proposals for external organizations will be important.

Year round water supplies, through improvement of existing systems or building new systems, needs to be considered in expansion. Pour/ flush water systems are the gold standard for improved sanitation; without water, villagers find it difficult to use their toilets and keep them clean.

CLTS in the schools proved to be very important. In order to be more effective, development of a CLTS curriculum to provide year-round information and activities will help students improve their understanding. The students are the future consumers of sanitation and health services, as well as being resources within their families for motivating households to build and use toilets.

Follow-up: The four villages should be followed up annually in order to assess whether they are still using their toilets or if other problems have arisen.

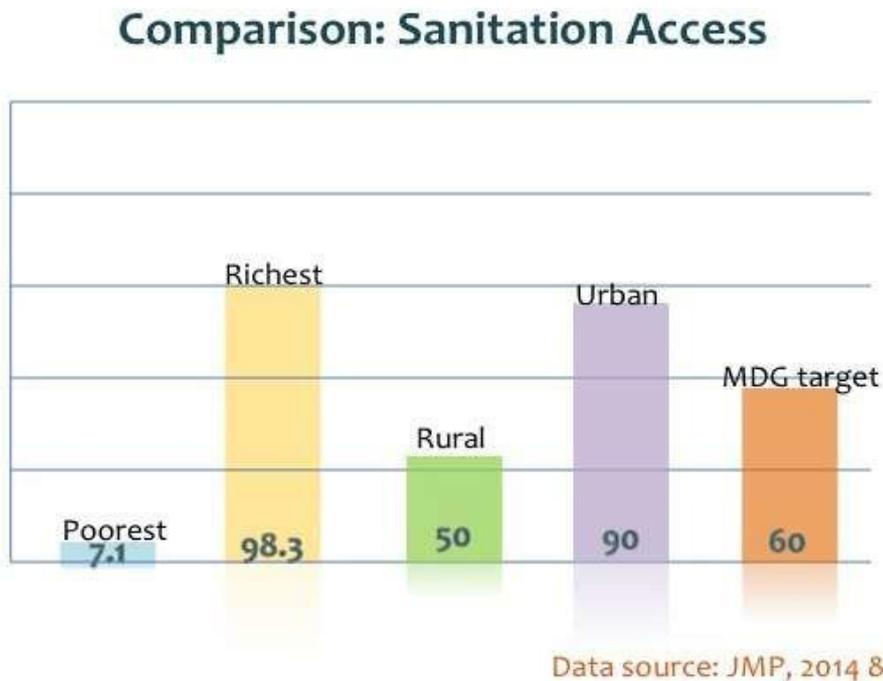
Integration within existing programs: CLTS training and triggering activities could be easily integrated into Model Healthy Village activities, which focuses on WASH and hygiene promotion. During the RCD project, the development of WASH governance informed the training of the Village Health Committee capacity development, which is part of MHV activities. The MHV program does promote toilet construction but currently does not use CLTS as its strategy. With the current research into the effect of poor sanitation on stunting and poor health in children, CLTS and promotion of ODF in villages could be integrated into mother and child health programs.

1. Background – sanitation and Lao PDR

Lao PDR has a population of 6.2 million people, 80% of whom live in rural areas, supporting themselves through agriculture. The poverty rate is 28%, largely concentrated in the 47 poorest districts in the most rural areas. The countryside in ten out of the eighteen largely provinces is heavily impacted by unexploded ordnance (UXO), largely deployed by the United States in support of the Royalist Lao Government, during the Indochina Wars. This UXO still has the capacity to explode if handled, and is a major obstacle in the development of agricultural land in remote areas.

As of 2013, 63% of Lao households had access to improved sanitation. However, 37% (2.3 million people) do not have access to improved toilets, of which 3% are in municipal areas and 41% are living in the most remote areas. 82% of that number are the 'poorest of the poor'.

Table 1: Comparison of sectors of the population and access to improved sanitation²



Of the 37% of the population who do not have access to toilets, 28% practice open defecation while 9% have poor quality toilets or dry latrines. Open defecation is a problem in the environment as raw sewage contaminates water sources. In addition to open defecation in targeted villages affecting water sources within the village, villages upstream of target villages, if they are not open defecation free (ODF) can impact villages downstream. In addition, fecal matter can be move from open defecation sites into the household areas. While people generally go into surrounding forest, open areas in villages – where children play or where adults walk - are often chosen for open defecation. Fecal matter can then be brought into the house through people's clothing and shoes. From entrance into the house, fecal matter can contaminate water storage and food.³

² Slide from "Learning Workshop" in Vang Vieng, April 2014

³ The impact of open defecation is discussed in Black and Fawcett, The Last Taboo: Opening the Door on the Global Sanitation Crisis, Chapter 3: "In Dignity and Health."

In the early 2000's, Kamal Kar, a community organizer in Bangladesh, started to promote Community-Led Total Sanitation. In 2002, the Water and Sanitation Program of the World Bank started to promote this method as the foundation for mobilizing sanitation initiatives in the region. In 2009, PLAN International and SNV organized a training, led by Kamal Kar; at that time, they translated his handbooks into Lao and started to work with the Clean Water Department of the MoH to provide training and organized community initiatives. While CLTS is increasingly accepted by some government organizations, the dominant feeling of health initiatives is that an outside entity should provide the funds for building toilets, with the villagers contributing by their labor and in-kind contributions. This often can complicate more participatory methods, as some villages may feel that they want to wait until an external source provides materials. In addition, many organizations have found that if people receive donations, they might not feel ownership so do not use or maintain toilets once the project has finished.⁴

2. Project Implementation

The project started data gathering in March 2012 with discussions and community visits to identify target villages and community health technicians. The main criteria for selection was villages which had a water supply (even if not year-round), less than 10% of the households having access to improved sanitation and for the SMS component, a cell phone signal strong enough for sending text messages. Baseline information about diarrhea in villages was difficult to determine as the reporting of diarrhea is recorded only if people sought care at health centers or hospitals; VHV's themselves did not know about the incidence of diarrhea in the villages surveyed, as most people treated themselves at home.

The villages were in two districts out of the eight in Xieng Khouang Province. Paek District is the biggest district in the province, containing the administrative center of the province with the Department of Health and the province hospital in the municipal area of the district. Kham District is the next largest district, with its own department of health and district hospital.

The villages chosen were Keolerk and Suanmone in Kham District, and Phousan and Pakhom in Paek District, as shown in the map at the beginning of the report.

After selection of four UXO-affected villages with 10% or less toilet coverage, WEL and the Department of Health organized the first training in use of SMS monitoring in June 2012. In July, the CHTs started their system of surveying households, meeting together to decide who would send in the SMS report, and providing the details of the people affected by diarrhea – name, sex, age, probable cause, type of diarrhea, treatment site, etc. While the initial text messages were incomplete or incorrect, by the second month of implementation, the text reports were accurate and were able to identify an outbreak of Diarrhea in Suanmone Village.⁵

Trying to mobilize CLTS activities is difficult during the rainy season. Villagers often construct bamboo huts and stay in their fields during the cropping season. After the harvest, when villagers spend more time in the villages as their children have returned to school, and they have more money from the sales of their crops, CLTS triggering activities are easier to

⁴ This was noted when the consultant visited villages in Salavan where a project had provided toilets to all households in a village. In 2009, flooding from Typhoon Ketsana disrupted the village gravity feed system; instead of repairing the system, the villagers bought their drinking water from a supplier or used the two remaining borewells. While there was a river nearby, they did not carry water to clean the toilets and stopped using them.

⁵ RCD report, December 2012

organize. CLTS activities started with a pilot in October 2012, followed by a review meeting to determine what went well and what to improve. CLTS activities then proceeded for the following two months.

Activities which occurred during the rainy were an important component of WASH governance. Between July and September, the Departments of Health organized training for the Village Health Committees. The committees consist of key members of the village administration, which includes the village chief, Lao Women's Union, Lao Youth Union, the Neo Hom (National Front for Construction), Village Security, the Village Health Volunteer, and other members as defined in their charters. In the past, villagers had been appointed to a Water Users Committee but they had not received training in how to fulfill this role; they were included in this structure. Throughout the remainder of the project, they met frequently to review the content of the trainings and to draft village regulations, plan follow-up and monitoring sessions, mobilize villagers in the implementation of the MHV principles and indicators.

The CLTS triggering used the information provided by the text reports to confront villagers' denial about the extent and cause of diarrhea. Initially, they estimated only a few cases per year, with the cause being either certain kinds of foods or drinking boiled water (In Suanmone village, people thought that the water precipitate at the bottom of their kettles, caused by dirt and minerals in the water, caused diarrhea). During the CLTS triggering in Suanmone village, the triggering team found that people were open defecating above the water source which led into a pond where the Hmong children liked to swim after school. Once people confronted their denial that open defecation was a problem, they did change their behavior.

Table 2: Progress in Toilet Construction:

Village name	HH	Dec 2012	Jan 2013	March 2013	May 2013	Aug 2013	Nov 2013	Dec 2013	April 2014	Still
Pakhom	69	7 (10%)	44 (63%)	46 (64%)	52 (75%)	59 (86%)	69 (100%)	69 (100%)	69 (100%)	0
Phou-san	123	11 (9%)	34 (49%)	58 (47%)	67 (54%)	68 (55%)	99 (80%)	103 (84%)	119 (97%)	4
Keolerk	82	5 (7%)	11 (9%)	19 (26%)	38 (46%)	64 (78%)	82 (100%)	82 (100%)	82 (100%)	0
Suanmone	96	16 (16%)	27 (28%)	37 (38%)	39 (40%)	37 (39%)	73 (76%)	86 (90%)	96 (94%)	6
	370 (376 at end of project)								366 / 376 (97%)	10

During April 2013, the DoH, WEL staff and the Quality of Life Association (QLA) conducted a joint survey of vulnerabilities. This included survivors of UXO incidents, people with disabilities, and the most poor in the villages. The Project used this information to discuss

with the VHC about providing subsidies for these families. In some cases, the issues of not building a toilet were not just lack of funds, but also lack of labor or knowledge about how to build a toilet. The VHC worked with villagers to recruit volunteers to help with the toilet construction and the DoH provided the technical expertise and design.

Also, during September, the WEL RCD staff and DoH joined TOT for CLTS offered in junction with the Clean Water Department of the Ministry of Health and SNV in Savannakhet province. This provided the materials and the techniques which the staff used for subsequent training of district staff and for VHC during the pre-CLTS training sessions in the villages.

In September 2013, the project provided the subsidies for 29 families, totaling \$3,100. Over the subsequent month, the families built their toilets.

During the final six months of the project, all four villages met the standards for the designation of Model Health Villages. This designation indicates compliance with ten areas of health in the village and 25 indicators for the MHV program. By May 2014, Pakhom had 100% compliance with total construction. In Phousan, 4 families had not completed toilets because of family problems (husbands had separated from families). In Suanmone, six families had not completed toilets; this is due to newlyweds moving to their own houses and not yet having the time or funds to build toilets (these people are either using a dry unimproved latrine or using the toilets of their parents). In Keolerk, the medical students from the National University of Laos worked with villagers to build dry latrines; once this was completed, villagers built improved pour/ flush toilets with the exception of five families, who plan to build toilets after the harvest.

As an incentive for villages completing the indicators for toilets, the project provided loudspeakers which the village will use for village news and for broadcasting health information.

In March and May 2014, there were two study tours to other villages. Villagers from Keolerk visited Pakhom village to learn about they achieved their targets. The VHC in Phousan visited Nong Oln, a successful MHV in Kham District. The sharing of accomplishments and skills would be an important component to continue in the future.⁶

SMS reporting:

While many developing countries have been reporting great strides in use of smart phone and SMS apps in health and other projects, this revolution has barely started in Laos. Some projects have used texting to a central phone number for health reports, and others have used GPS data for mapping. At the same time that InSTEDD was developing a SMS reporting system for the Center of Malaria, Parasitology and Epidemiology (CMPE), the project was able to tap the resources of InSTEDD staff who traveled to Laos to work with CMPE staff.

In May 2013, an external consultant conducted a two week field visit to determine if this platform was the most effective, and how scalable it could be if more villages were added to platform. WEL also organized a one-day workshop with CMPE, MoH and RCD staff to discuss issues with the platform and how it could be improved. At the conclusion of the consultation, WEL and partners decided that the platform was working well enough, and that additional changes would be confusing to CHTs.

Once a CHT sent in a diarrhea report, WEL or DoH staff would contact the CHT to determine

⁶ The reports of the study tours, which included objectives and results, have not been made available.

additional information, such as the name, age, gender of the patient(s). While a phone call was still required to obtain that information, the SMS report did alert staff that there were diarrhea cases. This was also important when monitoring the decrease number of cases of children under age 5.

One addition to the map was implemented. Since the CHTs had been successfully reporting the types of diarrhea, the project challenged them further by asking them to include the house location when they reported cases of diarrhea (see the next section).

Village mapping:

Since the iconic story of John Snow removing the pump handle from a water source contaminated by cholera, mapping has been a useful tool in the investigation of outbreaks of disease and their causes. Providing a visual diagram often helps people to make relationships between cause and effect.

In 2013, the RCD staff finished mapping all the houses and water taps in the villages, assigning each house a reference number. The information was entered into another free online mapping program called Geocommons. Through adding datasets of completed toilet construction, the map could be populated.

While mapping has been helpful to follow-up toilet construction and to determine where diarrhea is occurring, it doesn't yield as clear cut results. During the diarrhea outbreak in Suanmone Village, no clear relationship could be determined from the map – the people affected by diarrhea were largely children. Later, the relationship of the Hmong children swimming in the contaminated water could be determined.

The mapping did provide information about relationships of people who were not building toilets. For example, one section in Phousan had not built any toilets, which could be seen more easily in the section mapping. When investigated, it turned out that the people living in the section were all in the same clan, and the section leader was not performing his job of educating the villagers in this section. The clan leader also did not promote the construction of toilets.

Originally, a large format map for each village was proposed. Many villages have land-use maps; however, these maps are not useful for health mapping. Towards the end of the project, the maps were finally completed but there was no space on the village announcement boards to display them.

While the large format maps were not used during the project, the section maps were put into notebooks, which were used by both the CHTs and the VHC when monitoring toilet construction. This was considered appropriate as many members of the VHCs are semi-literate and they could circle the houses which met the MHV indicators.

Each house received a reference number, which the CHTs used in the diarrhea reporting. After the initial month of adding the location, the CHTs were able to send in SMS reports with the locations. This helped WEL and DoH staff when they called the CHTs to obtain more information.

Water system Assessment:

All villages had issues with water, and did submit plans for improving their water systems. However, during the project period, funding could not be obtained for any of these projects.

Although one of the project indicators was "An increase in the availability of potable water to schools and individual households by 50% above the established baseline", the baseline figures were difficult to determine, as all villagers had water at some point during the year, and all villagers did not have access to water during the dry season and had to find other methods for obtaining and conserving water. In addition, there were no activities associated with this indicator, as well as no funding. During the project lifetime, WEL and partners worked to find funding sources for supplies, with the villagers agreeing to supply the labor and other supplies.

In addition to providing enough water for daily needs, water systems also reduce the amount of time involved in collecting water, which is mostly borne by women and often, children.

In Phousan village, a Japanese NGO provided gravity-feed system to the primary school at the time that they funded the school construction; this system by-passed the village. The village administration petitioned the Department of Education to allow them to access water from the collection tank. Through the system set up, the school has year-round access to water while there is only enough water for the village for 8 months of the year.

The US-based group, Engineers without Borders, was interested to both fund and help organize the digging of a new gravity feed system for Phousan Village. During an initial survey, they determined that a newly proposed water source, 9 km distant from the villages, was at an adequate location with enough water flow to be the site of the new water source. However, they were not given permission to work in the project area. In addition, the DoH did not approve the water course design that EWB proposed, as it was longer and would have required more time of the villagers to dig the trench and for UXO to check that the route was free from UXO. While EWB estimated that the construction of the water system would be approximately \$20,000, the DoH estimated \$45,000. One potential funding source was investigated; however, its funding ceiling was \$30,000. While the villagers at Phousan had collected over \$1,000 of their own funds to contribute to the project, this was still not enough to make up the difference. At the end of the project, the dream of the new water system was not fulfilled.

In Suanmone, the villagers proposed either building a larger and protected water tank for the current water source (a spring), or to build a gravity feed system to a water source 6 kilometers distant from the village. The village will likely coordinate with the DoH in the future.

Keolerk village proposes to expand the current gravity feed system another two kms to another water source, feeding it back into the existing water collection tank. The villagers already have a plan for extending the current water system to supply the school, using school fees and village labor for the construction, as well as a plan to the DoH so the Hmong section of the village can use an electric pump to pump water to a collecting tank 20 meters above the current spring.

Pakhom already received inputs from Engineers without Borders to improve their water system. Their water system is the most consistent year round. They only have requested more water taps.

During the evaluation, the team found that there was adequate water flow at Keolerk and Pakhom villages. In Suanmone village, there was no water and villagers were collecting

water in 20 L. containers, either by walking or by carrying them by motorcycle. In Phousan Village, there was little water flow in the village, so most villagers were either wheeling handcarts to Bouakop village, 1 km to the west or to stream 2 km to the east to collect water.

3. Key Findings

The following section summarizes the results of focus group discussions and individual interview responses. Approximately 60 men and 60 women were interviewed in focus group discussions, and 30 individual interviews were conducted in the four villages. The questions are included in the annex 3.

Water resources and use:

Who carries water?

When water is available through the gravity feed systems, water collection is simple affair. Women are responsible for carrying water, though they may recruit older children to help them. When water is available, communal bathing and clothes washing at the water tap are a part of the daily life, where women can chat together and children can play together.

Availability of water and action plans when there is not enough water:

When water is not available, families have to plan more carefully. Families who have motorcycles or vehicles will make several trips/ day, filling 20 L. containers to store at home. Very often, the husband will drive the motorcycle to carry water containers. Often, women and other children will make one trip, both to collect water and to bathe and wash clothes at the same site.

In Phousan village, there are two choices for collecting water – both about two kms from the village. Generally, women will use a wooden cart to collect water in 20 L. containers, and store water in the toilet rooms, if the room is large enough. People do keep the water covered to prevent contamination and to prevent mosquitoes breeding in the water. VHC have started to make sure that water taps are not leaking and that they are turned off, so the water tanks do not drain. During the dry season, VHCs do turn off the water at the tank, so that there is some water in the tanks for collection in the early morning or evenings. All people conserve water by not using too much while bathing (using only one bucket). All people who had toilets, affirmed that they do save water for cleaning the toilets. People in Phousan village said that they did observe some people open defecating during the dry season.

Toilet Construction:

How do families decide if a toilet is to be built?

Women in all villages said that the decision is jointly made; men said that husbands make this decision. Women said that women are in favor of having toilets more than the men; however, if the husband does not agree, the wife has to use alternative strategies to convince him. Women understand their husband's decision as this would require extra labor and use of family funds for building the toilets. Women did indicate that the CLTS activities and the subsequent monitoring did help them to convince their husbands to build toilets. In Suanmone, women in the handicrafts group said that their contribution from sale of weaving did help husbands to agree with their wives. Although women are in charge of household finances, husbands have the right to 'withdraw' money when necessary. None of the women surveyed keep records of household expenses or income

What are the benefits of a toilet?

All people agreed that there were more benefits than disadvantages. They tended to list convenience first – more convenient during the rainy season, don't have to look for a place to defecate, safe from dogs and pigs who follow people into the forest to eat the feces once the person is finished were the main reasons. When asked about health benefits, everyone mentioned less diarrhea, better health in general, less malaria (because not bitten by mosquitoes in the forest).

What are the benefits of open defecation?

No one offered any benefits of open defecation.

What are the disadvantages of a toilet?

People answered that there were problems cleaning the toilet during the dry season. Otherwise, there were no disadvantages to having a toilet.

What are the disadvantages of open defecation?

People answered that it creates a dirty environment, attracts flies and causes illness. They offered that diarrhea is caused by poor sanitation and hygiene.

Are children's feces dangerous? How do people dispose of children's feces?

Previously, people had not felt that children's feces could cause disease like adults' feces, as children are more pure and they are drinking mother's milk. However, women did say that they learned that children can explore the environment by putting dirty things in their mouths, so children's feces are actually worse than adult feces.

In the past, women threw children's feces into the bushes or leave them for the dogs or pigs. Now that animals are required to be penned outside the village, one method of disposal is not available. Mothers said that they now will scoop up children's feces and throw in the toilet or bury children's feces if they are not near a toilet. For younger children, mother's scrap feces from their diapers and dispose in the toilet; after washing, they throw the wash water into the toilet rather than dirty the communal water tap.

While the participants in the men's groups did guess about how to dispose of children's feces, most of the men responded, "Ask our wives."

What would they do when toilets became full?

Half of the men replied that they would try to find a company to empty the pit; otherwise, they would build new pit next to the previous pit. All the women replied that they would like a new toilet, and indicated that they would like to have a larger room, with even tiled floors.

Satisfaction with toilet design:

All respondents replied that they were satisfied with the basic design of the toilet, feeling that it is appropriate to their needs.

Ordering of supplies:

The cost of transportation was a major expense in building toilets, particularly with the two villages in Kham District which are further from Kham District town. However, only small groups of households ordered their toilet supplies together at one time. All respondents indicated that many people had to 'save up' for the supplies and were not ready at the same time. For the two villages in Paek district, the village of Nong Pet had all the supplies they

needed so they combined their purchases of toilet construction material at the same time they went for clinic visits or other outings.

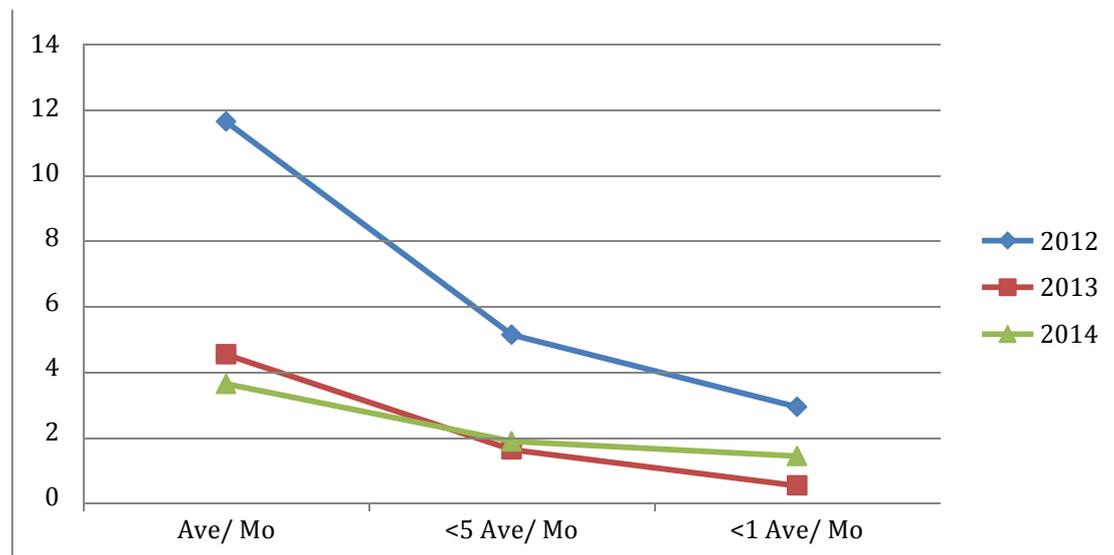
Costs and labor of toilet construction:

Most participants responded that toilet construction – including the bricks for the pit, housing, roofing, metal rebar⁷, and cement ran from 800,000 kip to 1.5 million kip (between \$100 - \$200). The actual costs for the essentials – porcelain pan, concrete for the slab, PVC pipe, and bricks to line the pit would run about \$50 US. Many villagers did reduce costs by using local materials such as bamboo and wood for the housing and stones to line the septic pit.

Construction generally took about 1 week. Women helped their husbands or male relatives with the construction.

4. Additional results

In the reporting period of June through December 2013, the consultant noticed that the number of cases of diarrhea had decreased, particularly in children and infants. This is reflected in the following graph:



When she asked the villagers, they gave the following replies:

- *Women are more careful with hygiene around their infants. They have learned to wash their hands before breast feeding and before preparing food.*
- *Women are exclusively breastfeeding for six months. They have learned from the visits of the health center staff about the importance of breastfeeding. They also said that they do not engage in early feeding, which is traditional in Lao culture. Many elders believe the children are not getting enough nutrition, so they will chew sticky rice or protein foods and feed to infants as young as 3 days old.*
- *Women have also learned that they should feed their infants colostrum (nom noy, or 'little milk') during the first 3 days of life. They have learned that this practice helps to protect their children against disease. Traditionally, mothers tended to discard the milk during the first three days*

⁷ Metal support bars for concrete reinforcement

- *Women also feel that after having better access to sanitation, that their health is better because they have not been affected by as much diarrhea. They have also increased the number of visits for prenatal care. This is now a program sponsored by the Ministry of Health, where four prenatal visits and deliveries at health centers and district hospitals are free.*
- *Prior to the start of the project, the immunization rate in all the villages was low. In line with the MHV requirements, all children have to be immunized and all mothers have two tetanus shots during pregnancy. Mothers felt that their children are healthier as a result and not as prone to diarrhea.*

The consultant also noted that the number of visits to health centers and the district hospitals has increased. In 2012, out of 69 patients, 60 (87%) received treatment in the villages and 13% in a health facility. During the past six months, 14 out of 25 (56%) people received treatment in a health facility. Previously, people believed that home treatment was the best. People answered that:

- *Increased visits by district and health center staff to the village, through monitoring activities, has helped people to feel more comfortable around these health staff.*
- *People have realized the consequences of lack of treatment of diarrhea. They consult with the VHV who advises them to go to the health center or district hospital when necessary.*
- *Villages which are within ten kilometers of health centers generally do not receive support for maintaining village drug funds. Several of the VHVs do not even have oral rehydration solution (a solution of salt, sugar and potassium to replace fluid losses from diarrhea) for sale.*
- *Villagers have tended to be satisfied with the improved services offered by the health centers and the district hospitals in general.*

Attitudes about OD in the villages:

Villages identified common open defecation sites around the villages. At the beginning of the project, people found no problems with open defecation, saying that it was 'more natural,' and that it provided food for pigs and dogs. In general, while people acknowledged that poor sanitation could contribute to diarrhea and other health problems, they thought that the main cause of diarrhea was eating certain foods, such as squash. In Suanmone village, the water is hard, containing minerals and silt, which when boiled, leaves a white precipitate in the pot; people believed that boiling drinking water caused diarrhea because of this precipitate.

Village	Site
Keolerk	N. Village: Site for grazing buffalos in the N. Village, along the road between the two halves of the village; S. Village: flat area behind school, along road between the villages
Suanmone	Hill above water source, in gardens, behind school
Phousan	Behind school, path leading to corn fields, edges of open common area where children play football, around edge of village. Some people rode bicycles west of village (also used when collecting water from source there)
Pakhom	Around edge of village, behind school yard

Village Health Committee responses:

The evaluation team also met with Village Health Committee members. Generally, the team would arrive in the village in the evening and review the schedule for the following day. Meetings with the VHC started off early in the mornings, followed by individual interviews and focus group discussions before villagers went to their fields.

Roles and Responsibilities of the VHC:

While the village administration oversaw all health related activities prior to the project, only the representative of the Women's Union had specific responsibilities related to mother and child health and the Village Health Volunteer had the responsibility for coordinating vaccination campaigns and to report on health issues. While villagers had volunteered for the posts of water and sanitation, they had received no training on how to manage these positions. The people managing the water users' groups only collected annual dues for fixing water taps.

During the group interviews, the VHC focused mainly on their responsibilities in relation to the project. The DoH and project staff trained the VHC on the roles and responsibilities related to both water and training in CLTS, but also general health knowledge about diarrhea, health and how to manage activity implementation. They learned the principles of CLTS and participated in activities by organizing villagers and taking responsibility for being CLTS co-trainers.

The VHCs could not list all the following roles and responsibilities, instead focusing on the CLTS activities, monitoring sanitation and the 25 MHV indicators. However, they had fulfilled the overall responsibilities of VHC, which includes:

1. **Have a system for promoting and displaying health information, such as a village information board or loudspeaker** – the villages now have loudspeakers and plan to broadcast health information. They also bring up health and sanitation issues in village meetings
2. **Have organization to maintain clean water and clean environment in the village** – The monitoring system set up by project staff and the DoH provides a model for the VHCs to continue to follow-up on their own in the future. The VHCs say that they will continue.
3. **Establish a system for maintaining the three cleans in the village** – The VHCs have gotten experience in monitoring the 3 Cleans through the monitoring required by the MHV indicators
4. **Have a VHV who has passed training in health promotion, prevention of illness and has the ability to provide basic care for common diseases in the community** – Each village has a VHV, who was also recruited as one of the CHTs. The VHVs were able to receive additional training through the project, which stimulated their interest in providing basic health service to the communities. Patients would seek out the VHV who would identify who needed care at health center or could continue self-care at home.
5. **Promotion over 90% immunization rates for children and reproductive aged women** – In order to attain MHV status, a village needs to have 90% - 100% immunization rate, which was achieved during the project.
6. **Have a system to promote prenatal care and safe delivery by encouraging women to get at least 4 prenatal visits at a health center** – while the VHCs did not mention this directly, the LWU representative has been making sure that women receive

prenatal care. There is also information about the current government support and incentives for women to receive prenatal care.

7. **Implement plan to promote the treatment of children and promoting good nutrition** – the VHCs did not mention this directly, but the project has helped people to understand the impact of poor sanitation, nutrition and effect on health.
8. **Have a village revolving drug cabinet where the village is far from the health center** – All the villages were within 10 kms from health centers and considered not to need drug cabinets in the village.
9. **Has a system to send emergency patients to a health center or treatment site in a timely manner** – the VHCs did not mention this as usually families transport sick people
10. **Have a village health committee which keeps records of their activities and records births and deaths in the village** – the VHC does keep records of activities and registers children so they can receive birth certificates. This is independent of the project.

VHC members did not receive copies of VHC operation guidelines. The DoH staff would write out the principles on pieces of flipchart paper, which the VHC saved in the village chief's house or the village administration office.

Each VHC set up guidelines for following the 25 MHV indicators and ODF principles. In particular, they set up a system of fines for people caught open defecating near the village. If people did not follow the health regulations, the VHC members also said that they would provide more severe sanctions, such as not writing letters of reference if someone needed this document for a job or schooling. In fact, the regulations have not been enforced.

The VHCs continue to monitor people who have not completed their toilets. In Phousan, the village administration is trying to help the four families with adverse social situations. In Suanmone, they followed the six new families who have plans to built toilets but have not been able to do so.

The VHCs felt that the financial assistance to the most vulnerable families was a key factor in helping to achieve nearly 100% toilet access. They felt that this gave people an incentive to complete their toilets, which required enlisting other villagers to help them. The VHCs did not feel that an incentive, provided to the village after receiving 100% access, would have helped very much. While this is a policy recommended by other organizations, incentives for achieving ODF status tend to benefit the whole community rather than individuals who may have to struggle to save the funds. The VHCs felt that a system to provide credit to families would be more useful.

5. Lessons Learned

CLTS and toilet construction and use:

- **Slow but sure:** All staff who participated in the CLTS activities agreed that the process of CLTS is more effective in promoting understanding about health and instigating lasting change in communities. This process takes longer and depends on the decision-making of the villagers.
- **WASH governance:** The DoH was very active in monitoring activities on a monthly/ bimonthly basis. This was also made possible through active VHC participation. Triggering cannot be seen as a one-off activity but requires follow-up and problem solving through good governance. Developing village regulations about OD were

important, although they have not yet been enforced.

- **Health change in CLTS activities requires governance:** The VHC learned their roles through the framework established by the Model Healthy Village program. They still require mentoring to learn how to fulfill these roles.
- **Post-triggering planning in toilet construction:** Families generally built toilets when they had the time and funds. Generally, individual households bought the supplies and transported them to the village when it was convenient. However, in the two most remote villages, transportation costs were very expensive. Helping the villagers to organize into larger procurement groups would help to reduce the costs of transportation. CHTs in each village could be the focal points for organizing groups to buy their supplies together.
- **Sanitation Marketing:** Helping people to understand the true costs of toilet construction, as well as different models and their costs is a factor in their decision making. The project did circulate estimates of several types of toilet styles. Another aspect of marketing is to get agreement from suppliers about costs. Again, CHTs could be liaison between village and supplies- providing estimates of needs so that suppliers can order stock.
- **Supply Chain Creation and Financing:** Working with villages to determine the best way to finance toilets for the poorest would be important in future project expansion. The DoH, WEL and QLA did a survey of the most poor and people with disabilities in the villagers and provided subsidies to 29 families. If these families had access to credit, either through village funds or through suppliers, it's possible that they may be able to fund their own toilet construction.
- **CLTS is important for School Children:** As children will be important consumers of WASH and health services in the future, learning about these topics in school sets up a foundation for life. CLTS activities have to be adapted for the age of children, as some activities require calculation which is more appropriate for grades 4 & 5 in primary school, as games and picture cards are more accessing for younger children. A curriculum, with lessons plans, materials and evaluation methods would be very useful for school teachers to keep the material alive during the school year.

The project provided some funds to build a toilet at the primary school in Suanmone Village and provided funds donated by Engineers without Borders to build a toilet in Pakhom. CLTS activities in the schools are important as children learn life-long health-related and other behaviors from school. In addition, students also advised their parents to build toilets after the in-school CLTS activities.

While there is interest in construction and use of new toilets, there is not discussion on what to do when toilets become full. The design that all villagers favored was offset drainage, with the pit to the side of the toilet rather than below the pan. This allows for diverting the drainage to a new pit, which could be built to the side of the original pit; however, this may not be feasible in some villages where there is a high population density. Some countries have experimented with suction extractors and composting the waste, although this has not yet been tried in Laos.⁸

⁸ Black and Fawcett, pp. 63 - 64

Continued Open Defecation in the Fields:

- While behaviors have changed in the villages, people still OD in the fields when they are working. Although health workers have advised villagers to build dry latrines for the fields, farmers have not done this, as they move their fields every few years and they don't find dry latrines to be acceptable. In addition, farmers believe that feces are fertilizer for their fields.
- Villagers do tend to drink only boiled water while they are working in the fields. However, they tend to bring water from home because of their concern about the chemicals which they used when planting corn, which includes herbicides and pesticides, rather than the effect of contaminated water.

SMS reporting

- **Village level people can learn how to use SMS reporting, but it requires patience and mentoring:** At the start of the project, CHTs required frequent mentoring and support while learning how to send the SMS reports in the proper format. In 2013, additional information on the location of houses, was added and which required additional training in reading the village maps, determining house reference numbers, and supplying the new information in the SMS reports.
- The **InSTEDD platform was easy to use** and presented results in a timely manner. It did require good communication between WEL and the InSTEDD managers as sometimes there were problems with the mapping platform.
- **DoH staffs require more training to feel at ease in using the internet**, as well as to access the mapping platform. A simple handbook, which will be translated to Lao, will be ready by the end of the project.

Water:

- While water was **not a focus of activities for this project**, this is an important issue in communities. Collecting water for basic needs, and for keeping toilets clean, consumes a good deal of time.
- **Communities which already have year-round water sources generally have attracted project funding sanitation activities.**
- Future action in **CLTS should include some method to help villager's access funds for water supplies.**

Assessment:

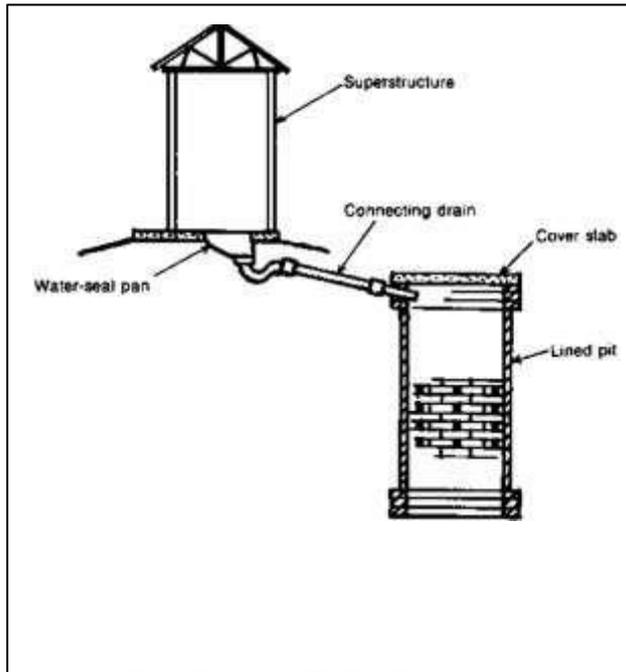
The project was evaluated using the following six factors:

1. Appropriateness:

All staff felt that the project inputs, language used, and activities promoted during the project were appropriate. Through the use of local materials, the cost of building the toilets was reduced and more affordable to villagers.

2. Effectiveness:

All the activities were effective and produced the intended results.



Design of an offset pour/flush toilet
<http://helid.digicollection.org/en/d/Jh0210e/3.2.6.html>

3. Cost-Effectiveness:

While the costs appeared high compared to the number of villages, most of the activities involved training and monitoring, which required both time and funds to set up. Since the project did not provide toilet supplies to most of the villagers (with the exception of the limited subsidies for the poorest and PWD), the cost savings were very high.

4. Sustainability:

All participants believe that they will be able to maintain project activities. DoH and CHTs also want to continue using the DRM and SMS reports as they can receive the diarrhea reports more quickly; the CHTs already have a role as volunteers in their communities and SMS makes their work more effective.

5. Participation:

CLTS requires a high degree of participation, and engaging villagers to make their own decisions. The participation for this project has been high, with the Village Health Committee providing the training alongside trainers from the province. Through monthly monitoring, they also provide motivation to the villagers to build their toilets.

6. Equity:

The most poor in the villages had difficulty to provide funds; this project surveyed the most vulnerable to provide 'smart subsidies', which CLTS practitioners have admitted might be necessary for communities to achieve ODF. However, in the future, other avenues should be explored, such as credit/ financing with village revolving funds or with suppliers.

Equity also included the younger members of the communities. Through CLTS in the schools, students learned about hygiene, which will help them to become better informed consumers of sanitation products in the future. They also can help to motivate parents to build toilets.

6. Recommendations

In order to scale up activities, potential future activities would build on the resources developed during this project phase. The human resources include the staff already trained at the province and district levels, as well as the CHTs themselves. Additional funding sources need to be investigated and accessed. Some of the actions would be:

- **Develop an action plan**, including with the Departments of Health, which would include the needs for training of staff, developing work plans for monitoring of VHC/ CHTs, CLTS triggering activities themselves, etc. This would be the basis for proposals to other organizations.

- **Explore opportunities for partnership**, as there are other funders in the province who are providing toilets without using CLTS methodology, meet with them to determine if they have funds for this action plan.
- **Develop a training package (WEL) and training teams** which could work with other organizations in delivering CLTS/ SMS training.
- **Develop a curriculum** for in-school CLTS, which might be of interest to UNICEF.
- **Development of a set of materials** to expand to funders about the success of the program, and the value of CLTS/ SMS in their activities.
- **Identify potential funders:** could include other INGOs, UNICEF, and companies with corporate social responsibility policies.
- **Revisit the villages** in one or two years' time to determine if villagers are still using toilets, and whether CHTs are still sending in diarrhea reports, and review the factors contributing to those results.

While, ideally, villages should have year-round access to water in order to encourage better hygiene and keeping toilets clean, the reality is that most villages have problems with water. Some of these issues can be addressed through better management of water users' groups, which has been one of the successes of the project. In some villages, the best solution would be to help expand current water systems or look for other sources of water, as well as education in protecting water sources through regulating logging and environmental preservation around water sources. Funding for these issues should be sought in any future project.

CLTS in the schools proved to be very important. As the activities included school teachers and students, knowledge about sanitation and hygiene started at younger ages in the schools. In order to become more effective, these lessons should be presented, with development of new activities to make the content interesting.

While the RCD project was able to attach itself to the WEL project for helping UXO survivors, the ending dates for the two projects were different, which created problems in getting permission for some project activities. In future projects, it would be advisable to work with the DoH to develop a separate MOU.

Annex 1: TOR and Evaluation Schedule

Internal Evaluation of the Reducing Childhood Diarrhea Project

Introduction:

This TOR is for a final participatory and internal evaluation of the two years of implementation of the RCD project. This evaluation is expected to be conducted during the first two weeks of May, with the results available for the final project meeting in June 2014.

Background:

Lao PDR still ranks low on access to sanitation and clean water, which impacts the health of communities and particularly in children under 5. The rate of stunting, which stands at 40%, is now being understood as due to both malnutrition as well as chronic exposure to environmental pathogens which cause chronic mal-absorption of nutrients. The incidence of diarrhea tends to be under-reported, as most people tend to treat themselves at home and the traditional paper reporting system from village to province level is slow and collected is incomplete.

The most recent country-wide sampling of households, the "Lao Social Indicator Survey" indicates that in Xieng Khouang Province, the percentage of access to improved water sources is 76%⁹ and to improved sanitation is 56% of households¹⁰. While access to toilets is important, proving toilets does not guarantee that a village is 'open defecation free' (ODF), as members of household may not use them. 'Community-Led Total Sanitation' is proving to be an important community mobilization strategy for helping villagers to understand the effects on sanitation on health, so that common obstacles to toilet use are addressed and solved.

Description of the project:

The goal of the Reducing Childhood Diarrhea in Laos project was to combine community mobilization, education, and simple technologies to reduce the impact of diarrhea on children's health. The two objectives involve Community Led Total Sanitation to stimulate toilet construction in villages, and monitoring of diarrhea cases in the village.

The project started data gathering in March 2012 with discussions and community visits to identify target villages and community health technicians. After selection of four UXO-affected villages with 10% or less toilet coverage and identification of eight CHTs, WEL and the Department of Health organized the first training in use of SMS monitoring in June 2012. Collection of SMS information started immediately after the training. During August 2012, project staff were able to identify a diarrhea outbreak in Suan Mone village in July/ August. This information informed the subsequent CLTS activities in the village and helped villagers understand the relationship between open defecation and diarrhea.

By April, 2014, 100% toilet construction has been achieved in two of the four villages, along with the accomplishment of the indicators establishing them as Model Healthy Villages. This progress has been possible through:

- Establishment of village health committees which have:
 - Established regulations under the Model Healthy Village program

⁹ Lao Social Indicator Survey, December 2012, p

¹⁰ Lao Social Indicator Survey, December 2012, p 32

- Organized CLTS activities and health day programs in their villages
 - Set up monthly monitoring of the village compliance with MHV
 - Promoted the building of toilets, particularly with households which have not yet built toilets.
- Training key people in the province and district Departments of Health in organizing CLTS activities
 - Training and mentoring CHTs in sending SMS reports of diarrhea
 - Collection of real-time data using a web-based platform for monitoring SMS reports
 - Collection of data on the impact of the project on WASH, particularly in the reduction of diarrhea cases, particularly in the under 5 and under 1 age groups.

Purpose of this evaluation:

Overall, the evaluation aims to:

- Assess progress in achieving the objectives:
 - To implement a Community Led Total Sanitation (CLTS) process in each of the target villages.
 - To gather information about where diarrhea occurs in the village and using GPS enabled phones to transmit this information and other structural and demographic data to district and provincial health authorities.
 - Document 'unexpected results' from both SMS and CLTS use.
- Provide specific recommendations to guide potential project design in scaling up activities in both use of SMS monitoring and CLTS
- Provide specific recommendations on potential partnerships and funding sources for scaling up the project model.

In addition, the following questions should be addressed:

1. **Appropriateness** of the interventions –
 - a) Were the project activities appropriate to the needs of the communities? How did the organizational development of the village health communities contribute to better health understanding in the villages? How did these organization activities contribute to toilet construction?
 - b) Did the information from SMS messages contribute to understanding of diarrhea problems in the villages?

2. **Effectiveness** of the interventions – Were CLTS activities/ development of the VHCs effective in increased toilet construction? How has knowledge about improved sanitation impacted attitudes and practices in improving general health?
 - a) How did CLTS activities contribute to toilet construction?
 - b) What has been the link between activities and behavior?
 - c) How did VHC development contribute to shared understanding of health?
 - d) How did CLTS activities in the schools contribute to children's better health understanding?
 - e) Aside from the CLTS activities, what other interventions improved the effectiveness of toilet construction and use?
 - f) What has the change been in rate of diarrhea in children under five years and under one year old? What are the factors involved and how can they be linked to improved sanitation?
 - g) What are the factors in health seeking behavior, such as going to health centers versus treatment at home?

- h) In two villages, toilet construction rate is still lower than expected. What are the attitudes of people who have not completed their toilet construction?
 - i) How does teaching CLTS in the schools affect children's understanding of toilet use and effect on motivating parents in using toilets?
- 3. Efficiency and cost effectiveness**
- a) What are the costs of each of the interventions versus the benefit of the intervention?
- 4. Sustainability**
- a) Will VHC continue to work to promote health?
 - b) What factors/ lessons learned will contribute to sustainability?
 - c) Will CHTs still continue to send in SMS reports?
 - d) How will the DoH involve CLTS in its strategy for WASH, especially with the model healthy village program?
 - e) How can the DoH, increased coordination and partnerships scale up CLTS activities?
- 5. Participation:** Partnership and participation – how have partners – the DoH, WEL and villages – worked together in achieving goals?
- 6. Equity:** How has the project impacted the health and inclusion of vulnerable groups?
- 7.** What would each group – village, district health department and province health department – recommend for future activities?
- a) How can SMS provide information to improve information gathering for the DoH to both monitor health and to plan activities?
 - b) To what extent can SMS or smart phone applications be used for village monitoring of MHV indicators?
 - c) How can CLTS activities be scaled up in the province?
 - d) How can a common approach to CLTS be adopted by the DoH, community groups, companies providing funds under 'Corporate Social Responsibility', and NGOs?

Methodology:

Desk review:

The consultant will review the data obtained already by the DoH and project to share with the DoH. This will include:

- Information and analysis of the Department of Health weekly public health reports for 2012 - 2014
- SMS reports, information on diarrhea from target villages
- Follow-up action based on standard operating procedure adopted in May 2013
- Results of health day and parasite testing from 2013 and 2014

Field visit schedule:

- The TOR will be reviewed and schedule finalized in the DoH RCD meeting on 30 April. It would be good for the village chiefs to attend the meeting so they can make appointments with villagers.
- The field work will run from 5 - 9 May:
 - 5 May: Orientation to the purposes of the evaluation, review how to conduct

focus group and individual interviews, review evaluation questions.

- 6 May: Keolerk Village
- 7 May: Suanmone Village
- 8 May: Phousan Village
- 9 May: Pakhom Village
- 12 May: Summarize findings with all people involved in the evaluation
- 13 – 14 May: Report writing and final presentation to the DoH
- 15 – 16 May: Final report writing by consultant

Evaluation teams and working methods:

- Each team will include one WEL staff, one district staff (Staff from Paek will be on the team for Kham for example) or one sub-district health staff, and one province staff. Each team will have one person asking the questions, one observer and one note-taker.
- Individual interviews with both people who have constructed toilets and those who did not constructed or used toilets:
 - One team will interview 5 families who use toilets
 - One team will interview people who have not constructed/ used toilets
 - The teams will also inspect toilets to determine if they are being used
- School visit to determine student knowledge and attitudes about toilet use, use of toilets at school and home.
- The teams will work in each village for one day. At the end of the day, the teams will meet to review results.
- In addition, the teams will interview members of the DoH during the two weeks on the additional questions above.

Deliverables:

1. Completed questionnaires and evaluation tools in English and Lao
2. Evaluation report in English
3. PowerPoint presentation in English

World Education will arrange the translation of the evaluation report and PowerPoint presentation.

Annex 2: Methodology and Questions

Quantitative data came from the following sources:

- Reports on the toilets built during the project
- Information on households where diarrhea occurred, from SMS reporting – this included the name
- Basic information of the villages

Development of questionnaire:

The consultant developed a draft list of questions with RCD staff, which were translated into Lao and placed in a grid. The questions included major questions and a set of 'prompts' for stimulating additional discussion and explanation of viewpoints. The RCD staff and consultant met with the members of the Center for Medical Rehabilitation coordinators, Departments of Health at the province and district levels to review the questions and make recommendations on content and language of the questionnaires.

Focus group discussions: The team met with the village administration and village health committees in the evenings when possible. Because the rainy season had started and most people left early in the mornings to work in their fields, the team requested assistance from the village chief to contact potential participants for group and individual interviews in the early mornings. The focus group discussions were further divided into men's and women's groups.

Content of Questionnaires:

Village Administration/ Village Health Committee:

Village administration and MHV management

1. What are the roles and responsibilities of the village health committee?
2. Are there village regulations about open defecation? If so, are there fines for someone who open defecates? Are these rules enforced? Are there still people who OD in the village?
3. How does the village follow the guidelines of the model healthy village? How will the VHC monitor the MHV guidelines in the future?
4. In general village meetings, does the village administration bring up sanitation issues?
5. What do you think about the CLTS activities? Were the activities easy to understand? Do the members of the VHC feel they can deliver CLTS themselves in the future? What other things would the VHC have to learn in order to do CLTS
6. There are still some people in the village who do not have toilets?
7. In April, the RCD project staff and the DoH made a survey of UXO survivors, PWD and most poor in the village in order to determine people who should receive assistance to build their toilets. How did you think about this process? Did this have a good or bad impact in achieving 100% access to toilets?

Water availability:

8. Is there enough water year round for the villagers' needs (cooking, bathing, cleaning the toilets)? If there is not enough water, what does the VHC/ village administration do to insure there is adequate water?
9. During the time when there is not enough water, where do villagers get their water? How long does it take to make one round trip to get water (there and back).

Open defecation:

10. Before building toilets, where did people go for open defecation?
11. Are there still people who open defecate? What does the VHC or other villagers do when they see someone open defecating?
12. Do people use toilets when they are working in their fields? Is open defecation in the fields as serious a problem as OD in the village?

Health issues:

13. How has the number of cases of diarrhea changed from two years ago until now?
14. From the last report on diarrhea cases, it seems that more people are going directly to the sub-district health center or the district hospital for treatment? Why do you think that people are going outside the villages?
15. What other health problems are there in the village? Colds, not too much malaria any more
16. What other health education would be useful in the village?

Questions for school director and teachers:

17. How many toilets are there in the school? Are all the toilets functioning? If the toilets are not working, what is the problem? What would the school do to fix the problem?
18. Are the toilets locked during the school day?
19. Are students able to use the toilets during the school day? If students can not use the toilets, what are the reasons?
20. If students can not use the toilet, where do they go to relieve themselves?
21. Is there a system with the students to clean the toilets?
22. Has the school director (teachers) noticed other benefits of the CLTS activities with student hygiene?

Group Interview Questions:

Water source and water collection	Prompt
Where are the water sources for the village during the rainy season and during the dry season?	
In this village/your household, which family members usually carry water for use in the household?	If there are people who do not care water, why do they not carry water? Who carries water when the main water carrier is sick, or does not have time? Do pregnant women carry water throughout their pregnancy?
What do you do to your water before you drink it?	Boil? Don't do anything? Filter? Buy bottled water?
Is there enough water to drink, cook, bathe and clean the toilets?	If there is not enough water, how do you make a plan about using water?

If there is not enough water to clean the toilets, what do you do?	
Has there been a change in water access since the project started?	Has the development of VHC helped to direct villagers to fix water stands and broken water taps?
Is there a water users fee?	How much? How is it used?
Questions about toilet decision and use	Prompt
Who decided whether or not to build a toilet? Who decided where the toilet would be located?	leu nd and wife decide together. If IDE wants and husband doesn't want, then doesn't happen, women are in charge of the funds
What are the advantages of having a toilet? What are the disadvantages of having a toilet	Convenience of having a toilet Health benefits Cleaning the toilet too close to house?
What have you noticed about your health since having a toilet?	
Does everyone in the family always use the toilet?	
How do you dispose of children's feces?	Are children's feces a problem for health of your family? Why or why not?
When your toilet becomes full, what do you plan to do?	Return to OD? Build a dry latrine? Build a P/F toilet? Hire someone to empty the toilet?
How much money did you spend to build your toilet?	
Are you satisfied with the construction of the toilet?	What problems do you have with the current toilet construction? Smell? Size, location, outer building?
How much time did you spend to build the toilet?	If you were to rebuild your toilet, how much would you plan to spend? What would you change?

Individual Interviews

Water source and water collection	Prompt
<p>Where is the water source for your house?</p> <p>How long does it take to collect water?</p> <p>How do you store your water?</p> <p>What do you do to your water before you drink it?</p> <p>When you are in the field, where do you get your drinking water?</p>	<p>Nearest water stand?</p> <p>What time of the day? who collects the water?</p> <p>Do you clean the container for storing water?</p> <p>Boiling water Using a chemical Filter the water (using a commercial or homemade filter)</p> <p>Do you always drink boiled water when you are working in your fields after tap at bottom of the hill</p>
<p>If there is not enough water for your family use what do you do?</p>	<p>Examples: carry water from another source, buy water, get water from tap</p>
Questions about toilet decision and use	Prompt
<p>Why do you decide not to build a toilet?</p>	<p>Do you have a plan to build a toilet? If so when</p> <p>What obstacles that your family has in building a toilet?</p>
<p>What are the advantages of having a toilet? What are the disadvantages of having a toilet?</p>	<p>Convenience of having a toilet Health benefits Cleaning the toilet</p>
<p>What are the advantages of open defecation? What are the disadvantages of open defecation?</p>	
<p>Where does your family go to open defecate?</p>	<p>After you open defecate, what do you do to the feces? Example: let the animals eat them, cover them with dirt, cover them with ash</p>

How do you dispose of children's feces?	Are children's feces a problem for health of your family? Why or why not?
How much money did you think you need to spend to build a toilet?	
Questions about health and CLTS	Prompt
How do you feel about the state of your family's health over the past year	In the past year, how many times have members of your family had diarrhea? Do you think that there are health problems from not having a toilet or poor hygiene?
When did you attend CLTS?	Was the language appropriate? Did you understand the ideas?
How did your family feel about the process of the CLTS activity?	Better idea about relationship of sanitation and health?
How has your family improved hygiene around and in your house	Water storage? Hand washing? Personal hygiene? Disposal of children's feces?

Additional Questions for those who built toilets:

How much money did you spend to build your toilet?	Prompt
Did you ever feel 'pressured' to build a toilet?	By whom? Did it make you feel sad or angry?
Are you satisfied with the construction of the toilet?	What problems do you have with the current toilet construction? Smell? Size, location, outer building?
How much time did you spend to build the toilet?	If you were to rebuild your toilet, how much would you plan to spend? What would you change? crèche ivied assistance so

District Health Staff

Objective #1:

1. What did you learn about CLTS from the project? Where did you learn about CLTS and how did you apply that knowledge?
2. How do you feel about the CLTS process? What are the advantages of using CLTS?
3. What are the disadvantages of using CLTS?
4. How can CLTS be integrated with other activities

Objective #2:

1. How did village mapping help in monitoring toilet construction?
2. How did the large village map help community members understand about the relationship between diarrhea and sanitation?
3. How did the maps in the handbooks help with the monitoring of toilet construction?
4. How did the map of toilet construction, by section, help with monitoring and promoting toilet construction
5. How has monitoring of diarrhea reports through SMS and mapping using InSTEDD map improved understanding of diarrhea and other health problems in the village?

Health questions:

1. What change in health care usage since the project started – such as
 - a. Immunization rates
 - b. Use of health centers and district hospitals
 - c. Pre-natal care
 - d. Attendance of health education sessions in the village
 - e. Coordination between health centers and village level staff

General:

1. Were activities appropriate for the level of knowledge of health department staff and villages?
2. Were the project activities effective?
3. How can the project activities be made sustainable?
4. How can DoH staff continue to use SMS monitoring and CLTS in the future?

Interview questions for CHTs:

Objective #1: CLTS

1. How do you feel about the activities to develop the village health committee?
2. How do you feel about the CLTS triggering activities?
3. If your village received a study tour from another village about CLTS activities and village health activities, what would you tell them about the activities? What lessons learned would you share with them?
4. How do you think the health in the village has improved since the project started?

Objective #2: SMS and mapping

1. What is your general idea about the use of SMS in your work?
2. How would you rate the trainings for SMS? Was the language appropriate? Was the material easy to understand? How would you improve the training?
3. How was data gathering to get information about diarrhea? Were you able to go around the village every week as planned? How did you coordinate with the other CHT about coordinating schedules to get the information and send the SMS?
4. What did you do when you were not in the village to get the information and send the SMS?

5. Some people with diarrhea went directly to the hospital or health center and we did not receive a SMS report. Did you do any follow-up?
6. Do you think the SMS reporting is important? How will you continue to use SMS reporting in the future