Getting Water Right

Kandall, Romeat and Char Villages, Slaeng Spean Commune,

Srei Snam District, Siem Reap Province, Cambodia



Interim Report

Feb – Aug 2018

Introduction

It is estimated that about 4 million people out of the total population in Cambodia lack access to safe drinking water and 6 million lack access to improved sanitation.

Without safe drinking water and adequate sanitation and hygiene, children (41 per cent of the population) are especially vulnerable to water-borne diseases.

This costs lives and money. Diarrhoea is second leading cause of death for children under the age of five in Cambodia, while vitamin and mineral deficiencies due to diarrhea results in an annual loss of US$146 million to Cambodia's GDP (UNICEF, 2014)

The "Getting Water Right" project takes places in Srey Snam district, Siem Reap province, Cambodia where the 3 villages of Kandal, Romiet and Char were identified as the most vulnerable villages in the district.

People living in these villages depend mainly on contaminated surface water for drinking, most of them has no access to latrine and sanitation and hygiene practices are poor. The project main objective is to improve the health and living condition of these people.

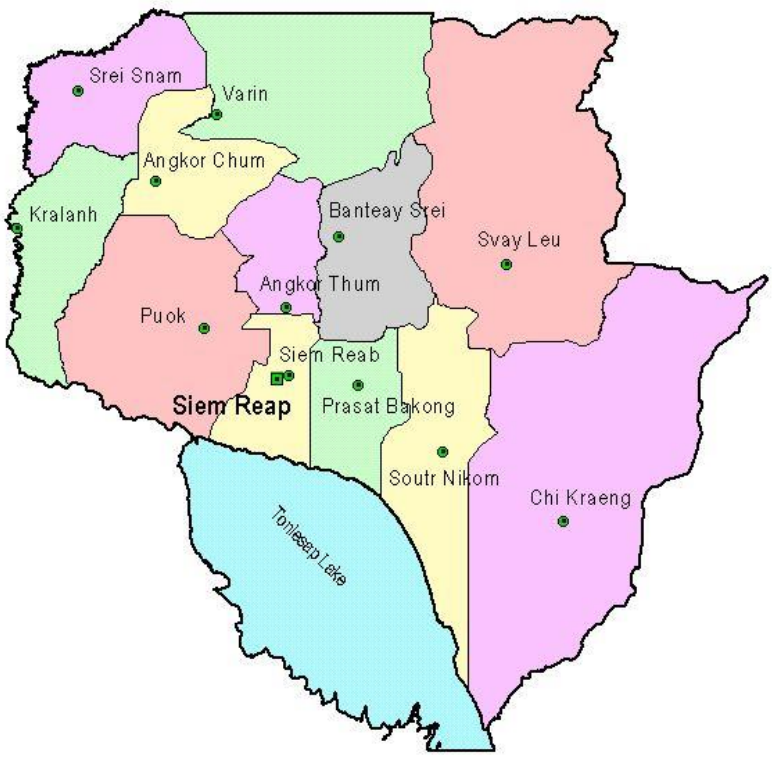


Figure 1 Map of Siem REap Province

The project

Getting Water Right is a project implemented by the Cambodian NGO Water for Cambodia with funds provided by Bath Rotary Club and a private American Foundation.

It aims to prevent and reduce water related diseases by improving access to safe drinking water and sanitation as well as enhance hygiene conditions. The use of a community participation approaches will strengthen the self-help capacities. By adopting a holistic approach, it intends to break the cycle of poverty as if a villager is missing work or a student is missing school due to illness there is a long-lasting effect, if a poor family is spending fifty cents a day for bottled water, that is half the average dollar a day wage that a rural person earns.

Project started in February 2018 and will end in January 2019. It foresees in the implementation of the following activities:

- Provision of 17 water wells (ring wells) and rehabilitation of 2 water wells capable to provide water all year round;
- Provision of 268 biosand filters (BSF) to provide safe drinking water;
- Provision of 100 latrines to selected households
- Multiple WASH (Water, Sanitation and Hygiene) training session in target villages

The table below shows the amount of activities currently implemented in each target village":

Village	Water Wells	Biosand filters	Latrines	WASH training
Kandal	5	80	33	Yes
Romeat	8	114	25	Yes
Char	5 + 1	74	34	Yes
Total	**19**	**268**	92	



Figure 2 Biosand filter beneficiary household

Water Wells

Location	Water Wells in budget	Water Wells completed	Remarks
Kandall	5	5	
Romeat	8	8	
Char	5+1	5+1	1 rehabilitated
Total	**19**	**19**	

During the needs assessment carried prior to write the project proposal, it came out that among the different kind of water wells the local communities preferred the hand dug, “Rovei” pump type of well.

These wells are hand dug to a 7 to 10 meter depths, lined up with concrete rings and equipped with a Rovai (rope) pump.



Figure 3 Lining up dug well with concrete rings

The rope pump is a flexible method for lifting water. It can be easily adapted for use on all wells with a diameter greater than 10 centimeters and a max depth of 50 meters. The materials required to make the rope pumps are available locally, which makes them easy to maintain and solved the spare-part supply chain even before we started. Other advantages of the rope pump are its repairability (it has a simple design so that after training, users can do maintenance, spares as plastic pistons and rope are easily obtained locally), lower cost and, higher pump volume with less physical effort compared to piston pumps.



Figure 4 Installing the Rovai pump

The top part of the well extends above the ground and is fully closed by a concrete cover which greatly helps to protect the water inside from external contamination (i.e. during seasonal flooding).

Due to difficult access to villages (very bad road conditions) all the required concrete rings were built locally in Romeat village rather than purchased farer away and delivered to selected areas. This choice allowed the construction of the wells within the time allocated and allowed an overall saving of USD 3,640 on a budget of USD 17,000.

Each well was built by the beneficiaries themselves (owner of land where the well was located and members of other households which benefit from the well). Under the guidance and supervision of WFC Water Expert. The different phases of construction were as follows:

- Digging of well
- Insertion of concrete rings
- Installation of Rovai pump
- Construction of well platform

Delivery of materials and construction of well occurred during the period March – May and no major obstacles were encountered.



Figure 5 Building of the cement platform around the well



Figure 6 Loading of Biosand filters at WFC premises for delivering to target villages

Biosand Filters

Location	BSFs in budget	BSFs completed
Kandall	80	80
Romeat	114	114
Char	74	74
Total	**268**	**268**

Interventions to improve the quality of water are extremely effective at the household level. Biosand filters are one particular innovation that has been proven successful in water filtration and diarrheal disease reduction. The fact that biosand filters effectively eliminate microbial contamination, as well as produce sufficient amounts of treated water (unlike other household water treatment methods) makes the filters an appealing and efficient mechanism to distribute in rural Cambodia.

A total of 268 BSFs were built, delivered and installed by Water for Cambodia (WFC) staff by the end of August 2018.



Figure 7 Beneficiaries of BSFs

Beneficiaries received training on how to use, maintain and troubleshoot the filters as well as general hygiene and sanitation practices (WASH) . The training sessions occurred at different levels and times. Initially, prior to BSFs distribution, all beneficiaries were gathered in the village and provided generic training on hygiene and sanitation issues as well as a first explanation on how the BSF works and its benefits. A second training session occurred when the filters were delivered to the villages and the beneficiaries came to collect them. A third training session, this time mainly focused on how to use, maintain and troubleshoot the BSF, was then provided directly to the household members when WFC staff went to install the filters at the beneficiaries' house. Those households (30%) where water samples were collected to be tested in WFC Water testing Lab, also received a further training session when visited by project staff.



Figure 8 Beneficiary collected the BSF and bring it home for installation

Moreover, WFC staff regularly visit target villages to monitor and evaluate the activities and troubleshoot the filters when required.

BSFs installation went smoothly and no particular adjustments were required.



Figure 9 Beneficiary household with upon BSF installation

Latrines

Location	Latrines in budget	Latrines completed	Remarks
Kandall	33	33	
Romeat	42	35	7 still under construction
Char	25	24	1 still under construction
Total	**100**	**92**	

Among the designs available for latrine construction the so called “Easy Latrine” was the one chosen. Simple in concept, the Easy Latrine consists of a squat pan embedded in a concrete slab which sits atop a precast concrete catchment basin. A plastic pipe drains the basin into an offset pit lined with concrete rings. The waste is isolated on-site, in the ground, and after a couple of years it can be safely dug out and used as compost.

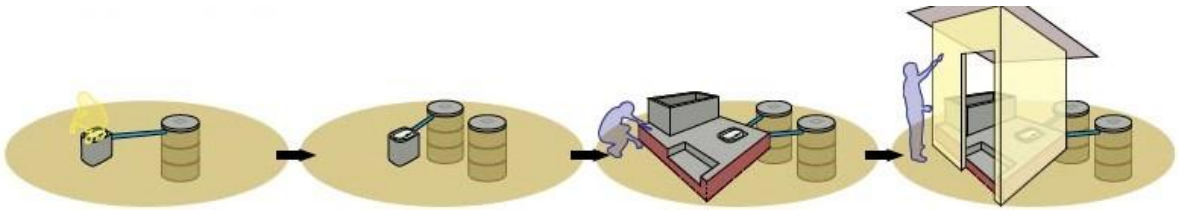


Figure 10 Illustration of the easy latrine design



Figure 11 Building of a latrine by owner

Beneficiaries were requested to provide labour for digging the septic tank and to provide the materials for the superstructure whereas WFC would provide the other materials required for the toilet construction “below the ground” (concrete rings, pan, pvc pipes, etc.)

The concrete rings required for the septic tanks (4 for each toilet) were built in Romeat by the same villagers who built the rings for the water wells. Whereas the other materials (pans, pvc pipes, etc.) were purchased in February in Khrolan town (around 70 km from project area) and delivered to a collection point in each target village.

Each beneficiary household went to collect the required materials and brought it home where under the guidance, support and supervision of WFC staff they started and completed the latrine construction.



Figure 12 Completed latrine



Figure 13 Completed latrine

Latrines construction went on from March till May 2018. Eight latrines need still to be completed as the owners went to Thailand for seasonal work. They are expected to complete the latrines upon their return in October.



Figure 14 Completed latrine



Figure 15 Completed latrine

Water Samples collection

Water samples collection is carried out to ensure that biosand filters were installed properly and/or beneficiaries are using them correctly.

The following methodology was used:

- Water samples were collected from 80 households (30% of total HHs)
- The spout was never disinfected in order to get the real situation for the people who collect the water and drink it.
- The samples were taken in sterile plastic bags. 100ml was always collected.
- Each filled bag went back into the cooling box straight away and was left there until it reached our Water Testing Lab
- Samples were taken back to the base for testing the same.
- Samples were tested for E. Coli, total Coliforms, PH and Turbidity

Test results are currently being analyzed and prepared to be included in the next report.



Figure 16 Plastic bags with water to be tested



Figure 17 Water well with Rovai pump in action

Conclusions

All main activities have been successfully carried out in these first seven months of project implementation. Good cooperation between WFC staff and village Chiefs, leaders and beneficiaries allowed for a successful implementation of the project actions.

Supervision visits are paid to the area ton regular basis by WFC staff to ensure smooth running of the project.

No major setback was experienced so far and through continuous monitoring by project staff we are confident the whole operation will achieve all expected results.