Faecal Sludge Management and Latrine Pit Sludge Levels in Rural Households in Prey Veng Province, Cambodia (3 of 4)

Phalla Chem, IV Bunthoeun, Soon Sekheng, Kim Hor, James Harper

The full report on this study is available at https://drive.google.com/file/d/1x3rAwRib7E_Rx8svig22D4C_ph7uSj8h/view?usp=sharing.

Purpose

This study investigated how rural households in Prey Veng province, Cambodia, have experienced and perceive different aspects of faecal sludge management (FSM). The results of this study are intended to inform future FSM product and service development, and ultimately improve rural FSM safety and public health.

Methods

The third of four qualitative studies of rural faecal sludge management (FSM) was performed by the East Meets West Foundation (EMWF) Team in collaboration with officials from MRD-DRHC and PDRD Prey Veng / DORD Kampong Trabek in the same two villages as the first and second studies in Kampong Trabek district, Prey Veng province, Cambodia. On 24 and 25 September 2020, the following occurred:

- The same five households were interviewed about various aspects of FSM to understand how they have used and maintained their latrines since the last studies in this series in March and June 2020. Specifically, households were asked about their intentions to upgrade their single-pit latrines to alternating dual-pit latrines, problems with their sanitation systems in the last year, and the effects of culture and seasonality on FSM.
- Pit sludge levels within each household's pit were measured.

The remaining study of rural FSM in this series will occur in December 2020.

Results: Household Interviews

FSM Aspirations

During the second study three months prior, two households planned to upgrade their single-pit latrines to alternating dual-pit latrines. Since then, one household unfortunately had to pay unexpected healthcare costs related to their daughter's serious illness and could not upgrade their pit; however, this household still hopes to upgrade their pit by December 2020. The other household spent their available money on agricultural inputs for wet rice farming; however, with support from their children, they upgraded their single-pit latrine to an alternating dual-pit latrine for 150,000 Riel, as documented below. A third household also reported intentions to upgrade when they have sufficient money.

Figure 1: Interviewing a household about FSM

Upgrading to an Alternating Dual-pit Latrine

One household's existing single-pit latrine was upgraded to an alternating dual-pit latrine while the EMWF team was on-site. The household agreed to pay the mason 150,000 Riel to upgrade their latrine. The masons first removed the slab pan, chamber box, back wall, and door, and then dug a new pit 0.80 m deep and 0.60 m away from the old pit. Two concrete rings (0.50 m high, 0.80 m inner diameter) were then placed in the new pit, and the chamber box was then cleaned with water. The upgrade required two hours, and the EMWF team recorded the upgrade on video (available upon request). All

Figure 2: Upgrading a single-pit latrine to an alternating dual-pit latrine

household members reported feeling satisfied with the upgrade and cost, and were also relieved to no longer have to worry about unsafe sludge emptying, which they experienced 12 days prior (discussed below).

The masons that were on site also noted that one household's latrine appeared difficult to upgrade due to 1) insufficient space around the existing pit, and 2) the latrine shelter and floor being made of brick, making them difficult to move. The masons thus recommended building a new alternating dual-pit latrine in a different location near the house.

Figure 3: Measuring if a second pit can fit next to the existing pit to create an alternating dual-pit latrine

Problems with Latrines

Households were also asked about problems with their sanitation system over the past year. Four households reported that they had difficulty with flushing and used more water than before, especially during the wet season. These households also reported bad smells from their latrine pits in the wet season. The household that had only three full-time residents did not report any problems.

Due to flooding, one household's members could not access or use their latrine. While their latrine was flooded, they used a relative's latrine that is approximately 70 meters away. All members typically use their own latrine when it is not flooded. Flooding typically occurs at this household from early September to late November. During the next study in December, the EMWF team and masons will explain and discuss options with this household regarding upgrading and improving the location of their latrine to ensure that it would be accessible and usable year round.

Figure 4: Flooding at one household that prevented its members from accessing or using their latrine

Households that reported problems did not know how to fix these problems and complained that they could not find anyone to help them, whether within or outside their villages.

Availability and Perceptions of FSM Services

No trained FSM service providers were available to the households. Three out of five households responded that emptying was too expensive, and that it was difficult to find someone to perform such work.

Experiences with FSM

Although no household had emptied their pit during the last study, one household reported emptying their pit 12 days prior to this study. This household reported self-emptying using a bucket, mask, and string to remove sludge water from the pit, and a stick for carrying the sludge water. However, they could not find a safe disposal site and so disposed of the sludge water into rice paddy fields near their house.

Factors affecting FSM

Various people affected how the households made decisions about FSM. Households noted that two village chiefs and assistants visited their households and discussed the sanitation project supported by EMWF CHOBA1 and 2. These interactions taught rural households in their communities about the benefits of sanitation and eventually lead them to build pit latrines. Two households in Chhvang village of Pratheat commune, reported that the Pratheat Commune Council and CCWC raised awareness about the importance of sanitation and hygienic latrines via events in the Thmart Kang pagoda, including the Dead Festival, Khmer Happy New Year, Holy Days, and other special days. No households in Dang Tong

village of Prasat commune reported such activities. No households reported hearing any political, social media, or marketing messages about sanitation within the last month.

Financial stability and income have been shown in past studies to affect a household's willingness to pay for sanitation products and services. However, households in this study did not agree on which month they felt the most financially stable or which month they preferred to empty a pit.

Latrine Functionality

All latrines and shelters were still functional; however, the slab of the household that required more water to flush their latrine in the first study had still not been repaired yet. Also, three households had a problem with flushing because their pits were almost full, and four households had the same problem with flushing in the wet season because their pits were full of rainwater.

Results: Pit Sludge Levels

Pit sludge depths ranged from 0.35 to 1.45 m, leaving emptying capacities ranging from 0.05 to 1.15 m. These variations in sludge levels were likely due to households having different numbers of members and hosting events with varying numbers of guests.

Over the three months since the last study, pit sludge depths increased between 0.01 and 0.30 m at three households and remained constant at one household. The pit that showed the smallest increase in sludge depth (0.01 m) had been partially emptied 12 days prior to this study.

Figure 5: Measuring the sludge level within a pit

One pit's sludge depth increased by only 0.13 m since June; however, two of the five adults that live at this household regularly travel to work in Phnom Penh, leaving only three adults to regularly use the latrine at the household.

No pit sludge depth was measured at one pit due to flooding caused by heavy rainfall across the pit lid (15 cm deep), the slab pan (3 cm deep), and the area surrounding the latrine.

The sludge depth of the single-pit latrine that was upgraded to an alternating dual-pit latrine was measured before the upgrade was performed.

Recommendations

Based on the results of this study, we recommend the following to Cambodia's RuSH sector:

1. Encourage latrine installers to strongly consider the effects of site selection when constructing a new latrine or upgrading a single-pit latrine to an alternating dual-pit latrine. Flooding can be present only in specific areas on a given property; thus, latrines should be placed on areas of high ground when possible.
2. Finalize the suggested cost of upgrading a single-pit latrine to an alternating dual-pit latrine. We estimate that upgrading should cost 150,000 - 200,000 Riel based on a latrine's location, distance, and other factors. Based on this study, the final cost will be negotiated by each household and the mason(s) that perform the upgrade.
3. Demonstrate upgrading a single-pit latrine to an alternating dual-pit latrine by inviting interested villagers, village chiefs, and other local leaders in rural communities across Cambodia.
4. Consider the results of this study during the development of rural FSM guidelines.

These recommendations must be coordinated and performed collaboratively by MRD; PDRDs; local leaders; development organizations and practitioners; latrine installers; and trained FSM service providers to ensure effective and wide-spread implementation with the goal of improving rural FSM safety across Cambodia.