

Faecal Sludge Management and Latrine Pit Sludge Levels in Rural Households in Prey Veng Province, Cambodia (1 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/1UvvPVQuusqryl4QvA-mTx_hkIlgkTB/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 first 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 two villages in two communes of Kampong Trabek district, Prey Veng province, Cambodia. On 25 and 26 March 2020, the following occurred:

- Five households were interviewed about various aspects of FSM to describe how they use and maintain their latrines. The households were also presented with specific recommendations about how to improve FSM safety at their households.
- Pit sludge levels within each household's pit were measured.
- Five government officials were interviewed about rural FSM.

The three remaining studies of rural FSM in this series will occur in June, September and December 2020.

RESULTS: HOUSEHOLD INTERVIEWS

Demographics

Households interviewed for this study were similar to others in their community: each had 5 to 9 members, most of whom (79%) were over 18 years old with approximately equal numbers of each gender; all were IDPoor; and educational achievement ranged from only primary up to tertiary. Most households earned incomes of



Figure 1: Interviewing a household about FSM

between 200,000 and 400,000 Riel per month on average by working in construction or as vendors.

Latrine Construction, Design and Expectations

After deciding to end their practice of open defecation, all five households built their latrines in 2015 for 176,000 Riel, which they perceived as cheap. All latrines have only one pit constructed with three 0.5-m-deep concrete rings that have an inner diameter of 0.80 m. All pits were easy to access, had space around them to install a second pit, and had sealed lids.

Latrine materials and design were chosen based on recommendations provided by masons and village chiefs, or the example of neighbors. Masons were generally easy to find either locally or in a nearby village with the help of the village chief. All households purchased their latrines themselves with help from EMWF.

Households chose to construct latrines to make defecation easier, improve their environment, and improve comfort. These desires have been met: households report that their latrines have made defecation easier and faster; made guests more comfortable at their homes; reduced shame; and increased safety and convenience. All households reported being satisfied with their latrine, particularly their low cost and easy maintenance.

Latrine Use and Functionality

All households have used their latrines every day since building them, and all latrines and shelters were in working order; however, one slab had begun to settle, requiring more water to flush the latrine. One household also reported their latrine not flushing during most of the rainy season, and one household reported having a pierced pit (an overflow pit installed in the top pit ring that allows liquid FS to drain out of the pit when the pit fills up) due to their pit filling up in the wet season.

Most households only used their latrine for defecation, but two also used their latrine for bathing, washing clothes, and storing items. Neighbors used the latrines of two households one day per week on average. One household reported a household member with a disability that required a short, easy walk to the latrine and lighting around and inside the latrine shelter.

FSM Experiences and Perceptions

Despite being in operation for approximately five years, only two of the five pits had filled up before: 1) the household with the pierced pit reported one fill since 2015; and 2) the household that reported their latrine not flushing during most of the rainy season reported two fills since 2015. However, no pit had been emptied before.

Knowledge about how to empty a pit was lacking: two households could describe how a household could empty their own pit using a bucket and shovel (self-empty), and burying the emptied FS nearby; and one household mentioned hiring a vacuum truck service. Two households mentioned using clothing that prevented contact with FS when emptying a pit, and households generally but incorrectly agreed that only gloves were needed to empty a pit safely. When maintaining a latrine, safety was important to all households, and complete emptying and cost were important to approximately half of the households.

WASH-related workshops had a strong effect on how the households perceived and made decisions about sanitation. Four of five households had attended many of these workshops provided by either the government or NGOs and had shared what they had learned at those workshops with others.

All households reported that since learning about WASH, neighbors use their latrines more, wash their hands with soap more, and typically drink safe water more. All households believe that latrines have improved the health of their household and community, reduced health costs, and improved their community's environment by eliminating FS and its associated smells.

FSM Aspirations

Looking to the future, most households would like to upgrade to an alternating dual-pit latrine to keep their single pit from filling and allow for easy on-site FS treatment. However, no households currently plan to upgrade in the near future due to the high cost of installing a new pit and the associated piping. One household cited having few household members (and thus a slow pit fill rate) as justification for having only a single pit; however, this situation only delays the need for emptying but does not eliminate the need for *safe* emptying provided by an alternating dual-pit latrine.

All households were also interested in learning more about WASH-related topics.

RESULTS: PIT SLUDGE LEVELS

Pit sludge depths ranged from 0.54 to 1.35 m, leaving empty depths ranging from 0.19 to 0.96 m. These variations in sludge depths were likely due to households having different numbers of members and hosting events with varying numbers of guests. Changes in these depths will be measured in later studies to describe how quickly pits fill.



Figure 2: Measuring the sludge level within a pit

RESULTS: STAKEHOLDER INTERVIEWS

Government officials interviewed for this study generally lacked knowledge of and experience with rural sanitation: three of five defined FSM accurately; three of five had been involved in activities related to sanitation and hand-washing;

and none had observed or participated in the opening of a pit lid to check sludge levels. However, four stakeholders were interested in learning more about sanitation, specifically FSM.

All officials were excited by the alternating dual-pit latrine design after learning that it could address the problem of pits filling and provide on-site treatment. They noted that rural households would enjoy longer durations between emptying and reduced worry about a pit filling, but would dislike the increased cost and space requirements of alternating dual-pit latrines. Rural households' lack of awareness and acceptance of alternating dual-pit latrines will also likely pose challenges to constructing double-pit latrines in rural Cambodia.

RECOMMENDATIONS

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

1. Develop and disseminate a clear and concise FSM protocol that explains how to empty a pit safely and how to dispose of FS safely in rural Cambodia.
2. Accelerate the design, testing, marketing and construction of alternating dual-pit latrines across rural Cambodia because on-site treatment is likely the best path forward to achieving safe rural FSM in Cambodia.
3. Improve awareness among latrine installers and provide training about the high-quality design and construction of alternating dual-pit latrines, including the accurate costs of materials and labor of installing an alternating dual-pit latrine and of upgrading an existing single-pit latrine to an alternating dual-pit latrine, and suggested margins.
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.