

Communication Brief

Understanding Intentions for Safe Fecal Sludge Management in Rural Cambodia



“When your pit is getting full, what do you intend to do?”

Context

Having achieved a marked expansion of basic sanitation coverage over the past decade, rural Cambodia is now faced with the urgent challenge of safe fecal sludge management (FSM). In rural Cambodia, there are currently no economically or environmentally sustainable solutions for offsite treatment of human waste from full latrine pits. Despite some increase in availability of pumps and trucks in Cambodia, fecal sludge is handled and disposed of using unsafe methods in virtually all cases. In addition, professional emptying services such as vacuum pumping are generally too expensive for and/or unavailable to rural latrine-owning households.¹

¹ Household Pit Emptying and Sludge Reuse Practices in Rural Cambodia. Phnom Penh: Long D; PSI/World Bank; 2018. <http://documents1.worldbank.org/curated/en/433061582867007115/pdf/Household-Pit-Emptying-and-Reuse-Practices-in-Rural-Cambodia.pdf>, accessed 13 Aug 2020.

For an average rural household in Cambodia, a single pit latrine will take between two and five years to fill.² Once the pit is full, latrine owners, faced with the lack of safe FSM solutions, tend to practice unsafe FSM methods, including self-emptying, releasing fecal sludge into the open environment (e.g., piercing the pit, opening the pit lid during a flood), or stopping latrine use and reverting to open defecation.³

Background

Since 2009, iDE's Sanitation Marketing Scale-Up (SMSU) program has played a vital role in increasing Cambodia's rural sanitation coverage, reducing health issues associated with open defecation.⁴ However, the program recognizes that despite high sanitation coverage, many areas still face imminent health risks from exposure to fecal sludge due to unsafe FSM practices.

In 2017, iDE introduced a new FSM product-service combination to the Cambodian sanitation market: The Alternating Dual Pit (ADP). By installing an additional pit in parallel, the ADP allows sludge contained within one pit to rest and stabilize while allowing continuous latrine usage via the second pit, effectively doubling the latrine pit's capacity. Each ADP installation also comes with a service that treats the fecal sludge in the existing full pit using hydrated lime. Each installation also fits a Pit Gauge onto the second pit's lid that enables households to see when their latrine pit is nearly full. To date, iDE has facilitated the sale, delivery, and safe installation of over 9,600 ADPs at rural households. As iDE works to increase demand for the ADP, the program is gathering and applying data to learn how to best motivate households to invest in FSM in general.

FSM Intentions Study

On a continual basis, iDE Cambodia administers a Customer Survey to a randomized subset of its customers to learn about the population it serves, including demographic information on poverty level, household size, etc. The survey also collects data on customer satisfaction, whether or not households have modified or upgraded their products, and what their intentions are for future purchases or additions. Between 2015 and 2017, a 67-question Customer Survey was administered to 3,715 rural latrine owners that purchased a latrine six to 12 months before taking the survey. The customers' responses were then analyzed and tested for associations with contextual factors, such as location, month that the survey was administered, and poverty level.



² National Faecal Sludge Management Guidelines for Rural Households. Ministry of Rural Development, Cambodia. March 2020.
<https://snv.org/cms/sites/default/files/explore/download/cambodia-national-fsm-guidelines-eng-21032020.pdf>, accessed 13 Aug 2020.

³ Context and intentions: practical associations for fecal sludge management in rural low-income Cambodia. Harper, et. al., Journal of Water, Sanitation & Hygiene for Development (2020) 10 (2): 191-201.
<https://doi.org/10.2166/washdev.2020.103>, accessed 13 Aug 2020.

⁴ "Sanitation Marketing Improving Health Outcomes," iDE, 2018.
https://s3.amazonaws.com/www.ideglobal.org/files/public/iDE-PB_KH_WASH_SanitationMarketingImprovingHealthOutcomes.pdf, accessed 14 Aug 2020.

To describe the FSM intentions of rural latrine owners, iDE partnered with the University of Colorado Boulder to investigate how households responded to a particular question in the Customer Survey: “When your pit is getting full, what do you intend to do?” The responses to this question were categorized as either “desirable” or “undesirable” FSM intentions. Desirable FSM intentions were deemed to be those held by latrine owners who intend to manage their fecal sludge safely by either paying for professional emptying or by installing a new pit. Other intentions, including self-emptying, stopping latrine use, and being undecided, were defined as undesirable. Within this study, desirable FSM intentions provide an *opportunity* for safe FSM but do not necessarily lead to a safe FSM practice being performed. For example, paying for professional emptying was categorized as desirable because it provides the opportunity for safe FSM, as regulating FSM services could be achieved. Self-emptying however was classified as undesirable because it does not provide an opportunity for safe FSM, considering that regulating how every household empties their own pit is highly unlikely to be achievable in this context.

Lessons Learned

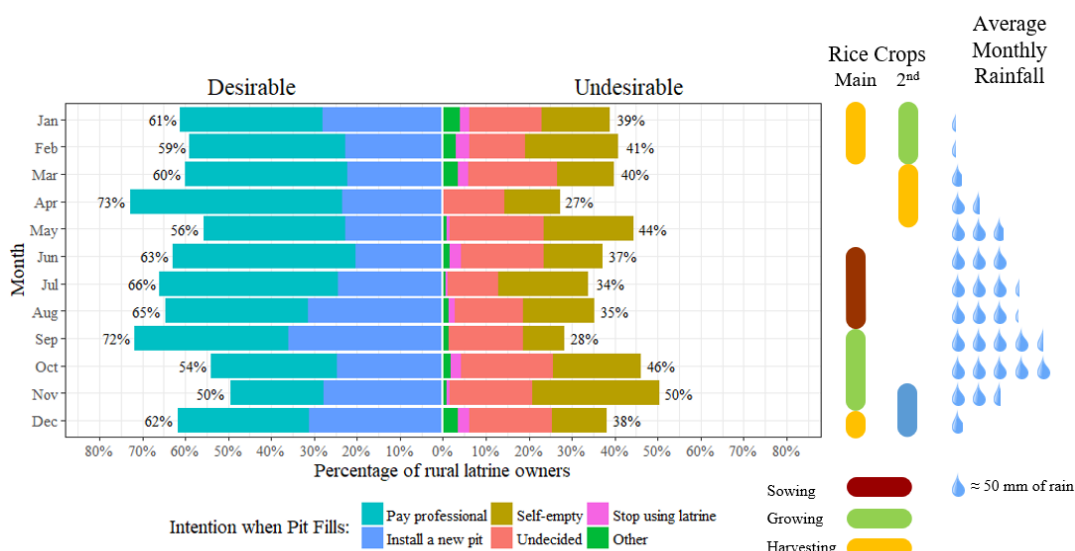
Overall, the results of this analysis point to the urgent need for safe FSM solutions. A significant proportion of the rural population in Cambodia reported undesirable FSM intentions and lacked knowledge or resources to safely manage their fecal sludge. Key findings from the survey include:

- Four in ten rural latrine owners showed undesirable intentions to manage their fecal sludge (41%), and one in six did not have a plan for when their pit fills (16%).
- Proportions of desirable FSM intentions can vary strongly across provinces in Cambodia, even between neighboring ones like Banteay Meanchey (76%) and Siem Reap (33%).
- Customer preferences for FSM solutions are likely to shift over time, sometimes rapidly. Between 2015 and 2017, households’ intentions to install a new pit over self-emptying doubled while intentions to pay for professional emptying remained constant (35%).

This analysis can be used to help predict FSM behaviors and improve FSM service delivery, behavior change campaigns, and product design; thus, we recommend the following to development practitioners:

Timing is key for sales and financing

- Increase sales and behavior change efforts in the harvest season when farmers are more financially and food secure. During harvest season (months preceding and including April), demand for



sanitation tends to increase substantially. As shown in the figure below, desirable FSM intentions peaked in April (73%) and September (72%), and dipped in November (50%), following the rice crop calendar and likely linked to farmer financial and food security.

- Promote alternative payment and other cost-offsetting methods more strongly in months outside of harvest season to stabilize demand.

Customer satisfaction can drive safely managed sanitation

- Consider developing and promoting sanitation upgrade products to continue to keep customers satisfied and prioritizing their latrines. Latrine owners who were satisfied with their product or supplier reported desirable FSM intentions more often (60% vs. 46%) and tended to favor installing a new pit (26% vs. 20%). Similarly, latrine owners that recommended installing a latrine or referred their latrine's installer to a friend reported desirable FSM intentions more often (19% and 21%, respectively) than non-recommenders.
- Continue aiming to eradicate open defecation as prior latrine ownership is a positive driver for desirable FSM intentions. Households that owned a toilet before their current iDE toilet product (as opposed to open defecating) reported positive FSM intentions more often (67% vs. 57%).

Know your market and adapt your approach accordingly

- Focus on demand generation through sales where intentions to install a new pit or hire an emptying service are already high (e.g., Svay Rieng and Banteay Meanchey, respectively). In areas where intentions to install a new pit or pay for pit emptying are low (e.g., Siem Reap), more behavior change and public awareness efforts may be necessary.
- Make sanitation products aspirational and affordable to both poor and non-poor households in order to reach and ensure safe FSM for all. IDPoor⁵ households intended to self-empty more often (23% vs. 20%) and intended to install a new pit less often (21% vs. 25%) than non-IDPoor households.

As latrine pits fill, the WASH sector must apply evidence-based implementations to improve rural FSM safety and ensure the sustainability of Cambodia's expansion of basic sanitation coverage.

Research into household decision-making about rural sanitation systems must also continue to deepen our understanding of behavior, socio-economic vulnerability, and climate change impacts on rural sanitation.

iDE Cambodia

Phone: (+855) 23 223 541

Email: cambodia@ideglobal.org

Produced by Tyler Kozole, James Harper, & Rana Abdel-Sattar

iDE Global WASH Initiative

Read more: <https://washmarkets.ideglobal.org>

E-mail: wash@ideglobal.org

Photos: iDE / 2016-2019. All photo reproduced with permission.



⁵ The IDPoor System is an initiative administered by the Cambodian government that identifies poor households, assesses their level of poverty (IDPoor 2 is poor, IDPoor 1 is poorest), and distributes identification cards for these households.