Cambodia Sanitation Consumer Demand Behavior Qualitative Study

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A consumer-preference analysis of the defecation practices of Rural Cambodians, their Motivations to build household sanitation facilities, and knowledge of existing latrine technologies
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Study Overview and Purpose

An in-depth qualitative analysis was undertaken across three Provinces in rural Cambodia to investigate what consumers living in mostly rural areas believe, feel, value and think about both their current defecation practice and about investing in and using household latrines, including about different existing latrine designs, features, and types of technology. Interviews were conducted with both latrine adopters i.e. respondents who already have invested in and are using household latrines, and non-adopters i.e. respondents who defecated openly outdoors, in order to build an understanding of benefits and motivations driving uptake and constraints and facilitators affecting decisions to install household latrines, ascertaining what different consumers liked and disliked about different home toilet latrine designs and why, as well as investigating how best to communicate to this target population the benefits of home sanitation and the choices available to them. These households, as consumers and daily users of sanitation facilities, are at the center of developing a sanitation marketing program which aims to promote increased latrine uptake and usage in this target population by developing desirable latrine designs and targeting promotional material and messages, as well as providing appropriate technologies and support systems in order to facilitate adoption and maintenance of sanitation behavior change.

Description of Respondents

Fifty six interviews were conducted in total across three rural provinces in Cambodia: Kampong Spue (24), Svay Reing (18), and Kampong Chom (14). The following table breaks down the broad demographic information for each province in question and across provinces.

Table 1: Demographic breakdown of respondents across the three study provinces, and overall.

Province	Defecation Practices				Latrine Type				Gender				Income Level of Respondent						Education Level				CLTS Status				TOTAL	
	Adopter		Non		Dry Pit		Pour Flush		Male		Female		Low		Med		High		None		Some		CLTS		Non-CLTS			
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Kampong Spue	12	50	12	48	3	12.5	9	37.5	11	42	13	43	5	38	14	48	5	36	8	47	16	41	7	47	17	41.463	**24**	**42.9**
Svay Reing	11	61.1	7	28	2	11.11	9	37.5	9	35	9	30	4	31	9	31	5	36	5	29	13	33	5	33	13	31.707	**18**	**32.1**
Kampong Chom	8	57.1	6	24	2	14.29	6	25	6	23	8	27	4	31	6	21	4	29	4	24	10	26	3	20	11	26.829	**14**	**25**
Total	**31**	55.4	**25**	44.6	**7**	22.58*	**24**	77.42*	**26**	46	**30**	54	**13**	23	**29**	52	**14**	25	**17**	30	**39**	70	**15**	27	**41**	73.214	**56**	**100**

* Percentage taken from # of Adopters i.e. 31, not total # of interviewees.

[A more detailed spreadsheet detailing demographic information of each individual interviewee can be found in **Appendix A**]

Overview of Questions / Coding

Transcripts were analyzed using AtlasTi software, which involved loading all 56 transcripts into the program and creating specific range of codes which applied to the range to content covered in these particular transcripts. Codes were broadly grouped into the following categories [See **Appendix B** for complete list of individual codes and categories]:

a) M1: Motivations to Adopt: Perceived advantages and/or benefits of having a fixed sanitation facility to defecate over traditional or current open defecation practices
b) M2: Motivations to Upgrade: benefits of a particular technology of another technology; discussing negative aspects of a particular technology in the context of explaining why the person wants to build a superior - perceived technology over an inferior-perceived technology; why they changed from one technology to another
c) T: Technology: this was categorized into Broad Types of Technology, Specific attributes, and Materials
d) UP: Usage Practices: These included usage practices of adopters and non-adopters, and specific usage practices for children, which dealt with age and ability to use latrines independently;

e) MO: Operation and Maintenance: The different processes involved in working and maintaining the latrine with regard to general cleaning and daily maintenance as well as specific codes for pit emptying practices and costs;
f) CONSTRUCTION: Latrine Construction Codes: Related to cost, the advantages and disadvantages of hiring skilled help or self building, land issues and time taken to build latrines;
g) CDA, FDA: Constraints and Facilitators for Adoption: Perceived constraints and facilitators in respondents in ability or success in adopting to create some sort of indoor latrine facilities
h) CDU: Constraints and Facilitators for Upgrading latrine facilities
i) D: Decision Making within household and Trigger events directly causing the respondent to adopt
j) C: Communication with regards to how to persuade individuals to adopt, and existing means of communication within villages and social networks.

RESULTS

Results were generally consistent across the three provinces and there were only a few differences with regard to open defecation practices (the use of hanging latrines in the Svay Rieng Province) but this did not considerably change attitudes towards latrines or motivations to adopt.

Latrine Preference

Respondents clearly expressed a desire to have improved latrine facilities, and that water-supply for such facilities was extraordinarily important. The respondents categorically expressed their strong dislike for the Dry Pit latrine, which was in many cases considered worse than open defecation, particularly because of the issues with smell combined with the repulsion factor associated with being able to see the accumulated feces. In contrast, respondents overwhelmingly expressed preference for the pour-flush latrines which would wash away the feces, and the water supply also ensured the ability to perform anal cleansing with water (often referred to as "taking a bath"), which was a priority for these respondents. The interviews indicate that Dry Pit latrines are inappropriate for the Rural Cambodian context; even though they are cheap to construct, they do not mitigate the factors most strongly associated with a dislike of open defecation i.e. smell and flies (and their implications on health, which are well understood and strongly undesired) and that latrine facilities which utilize water supply are the only natural choice for rural Cambodians when they consider adoption. Access to water to operate water-based facilities was not considered a problem, even in the dry season, for the majority of respondents.

Constraints for Adoption

Their seemed to be a fairly good understanding of the dangers of open defecation and the dangers associated with it in terms of hygiene and health. However the broader question seemed to be one of priorities: the number one constraint for all respondents was money – translating in an inability to purchase materials, hire skilled help and ultimately become an adopter. Many respondents were already in debt over money borrowed for other things such as to pay for food, weddings, or machinery for the farm. When respondents aimed to save money, it was very often used to pay unexpected medical bills, or to support grown-up children. There was a reluctance to borrow more money because of a fear of not being able to pay it back, though there seemed to be standard institutions easily accessible which could facilitate credit. The most effective system of credit for adopters seemed to have been money borrowed from family members, or freely given by family members, particularly grown up children living in Phnom Penh or away from home, often working in the garment industries.

Implications

Overall, the consistency of results particularly in terms of the motivations to adopt, and the constraints and facilitators which helped or hindered adoption is a positive factor when aiming to create a program to promote behavior change, because such a single set of strategies within such a program could therefore work effectively at large scale from almost all segments of the population across many different places within Cambodia in the rural context.

DEFECATION PRACTICES OF RESPONDENTS

As Table 2 indicates, the majority of respondents were adopters, having some sort of latrine facility at their homes located outside but near the house. Most of these households had the pour flush, with a small proportion having the dry pit latrine.

Table 2: Defecation practices of Respondents, Latrine Types used by adopters across three provinces and overall.

Province	Defecation Practices				Latrine Type of Adopters				TOTAL	
	Adopter		Non Adopter		Dry Pit		Pour Flush			
	#	%	#	%	#	%	#	%	#	%
Kampong Spue	12	50	12	50	3	12.5	9	37.5	**24**	**42.8571**
Svay Reing	11	61.1111	7	38.8889	2	11.1111	9	50	**18**	**32.1429**

Kampong Chom	8	57.1429	6	42.8571	2	14.2857	6	42.8571	**14**	**25**
Total	**31**	**55.3571**	**25**	**44.6429**	**7**	**12.5**	**24**	**100**	**56**	**100**

Non-adopters

For those individuals who did not have latrines on their properties, across provinces open defecation practices were fairly consistent in terms of heading off to the bushes or rice fields for this purpose. In Svay Reing only, respondents utilized "hanging latrines" i.e. defecation facilities over a body of water, which are considered for these purposes as another form of open defecation. Defecating openly in the rice fields was the most common area for non-adopter adults to defecate, with variations with regard to this location for open defecation depending on a person's age, and the time of day.

Table 3: Open Defecation Practices of Non-Adopters

Open Defecation Location	People	Method
On house property	• Children ranging up to about 7 or 8 years old who could not defecate themselves • Elderly Adults	Often children defecate in a container, a "chamber pot" and the contents then get thrown out, because children cannot defecate by themselves/ are too afraid or not permitted to venture into the fields alone/ are too young to be able to use available latrines alone; there is a fear that the youngest children may fall into the latrines. In cases where chamber pots are not used, adults bury the feces into the ground, or dispose of it in the latrine if available; For the elderly, some defecate in chamber pots or dig their feces into the ground; it seems they are unable to defecate in the fields because they are too frail to walk such distances and squat;
Behind or Near House	• Young Children • Adults (particularly women) at night • Elderly	The main issue here is distance. Very young children and elderly adults are described as defecating in these areas for the same reasons as they do "on house property" (which is sometimes interchangeable with "behind or near house". Many adults, particularly women are afraid to go to the bushes or fields at night so defecate close to the home at this time. The majority of the time, feces are buried into the ground;
In the rice field	• Older Children • Adults of the house • Some elderly members who are able to walk	"The rice field" was by far the most common location for open defecation locations; some individuals had to travel considerable distances to get to these places – and in some cases respondents specified that this took up the whole morning to walk, defecate and return; The rice fields were preferred because of a certain amount of privacy, particularly for the adults; in many cases – particularly in villages where the majority of residents were not adopters, finding place for open defecation was becoming increasingly difficult;
Bush or Forest	• Older Children • Adults of the house • Some elderly members who are able to walk	In most cases, Bush, Forest and Field were interchangeable words, but there were instances where respondents made it clear that the physical structures of the bushes and the trees in the forest were essential for providing privacy;
Urban Areas	• Adults of the house	This location was mentioned generally very rarely;
Over bodies of water	• Older children • Adults of the House	This occurred exclusively in the Svay Reign province.

[See **Appendix K** for Coding outputs related to Usage Practices]

There was a very clear distinction drawn between the practice of digging and burying feces into the ground when open defectation occurred at home versus not doing this, i.e. leaving the feces on the ground, exposed. Respondents felt a sense of anger at others – or recounted stories of others anger toward them - when feces were not buried, especially when very young children or the elderly defecated near a neighbor's property, or at night when adults had to do the same. The main reason for this was the unpleasant smell, and that animals were more likely to have contact with the feces if it was exposed or not properly buried which would spread disease.

Adopters

As Table 2 indicates, 55% of all respondents were adopters, with the majority of those, 24 of 31 utilizing the Pour Flush latrine, only a small proportion, 12.5% utilizing the dry pit latrine, with zero usage of the western flushing toilet. There were a number of different ages ranging from 0-7 years about the ability of children to use latrines independently. Almost all

respondents said children had the use of school latrines during the day when at school, regardless of whether they were adopters or not. In some rare cases, due to cultural preferences, elderly individuals did not utilize the latrine facility.

Motivations to Adopt

The Motivations to become adopters of indoor latrine facilities i.e. the perceived advantages and/or benefits of having a fixed place to defecate over traditional or current open defecation practices were very consistent across provinces and are detailed in Table 4. They are divided into three broad themes: (1) *Personal Amenities and Convenience,* (2) *Social Interactions* and (3) *Health.* These reflect motivations for adoption with regard to the physical act of having to walk to a foreign exposed space to defecate. This act takes time - often valuable time that could be spent working in the fields – and involves a considerable amount of risk taking with regard to personal safety and privacy; there are significant fears of being embarrassed and even ridiculed by others who see respondents defecating, the risk of theft, attack (specifically rape, in the case of women), encountering unpleasant insects and being at the mercy of the often unforgiving Cambodian weather; all these concerns are exacerbated at night which creates an added element of fear to this predicament. Adoption – the crux of which involves a pour-flush latrine with a significant superstructure – provides privacy, comfort and convenience, and an implied protection from many of the safety concerns discussed especially at night because it can be located very close to the house without smelling, to allow safe nightime use. This latter aspect and benefit it not possible to achieve with dry sanitation because their strong smell requires locating them considerably farther from the house.. On top of these motivations are those which reflect respondent's significant understanding of their own health risks, and an awareness of the consequences of the actions of non-adoption.

[See **Appendix B** for a complete list of codes. See **Appendix C** for the Motivations to Adopt outputs i.e. all text highlighted and coded with the motivation codes.]

Table 4: Motivations to Adopt

Category	Themes	Associated Beliefs and Attitudes
Personal Amenities and Convenience		
Children	Independence	• Children are not dependent on adults to help them defecate;
	Safety	• Children do not have to travel far away alone for defecation, which had restricted the age they are able to defecate independently as opposed to defecated near the property which has less privacy; • Children may encounter a thorn or injure themselves in another way and this was a concern for the parents
Women	Safety	• A fear of women being attacked and raped – both in the day and at night; Incidents in villages of rape when women went to defecate have created a particular fear towards this; • Women particularly fearful of insects, snakes, worms that could bit them or injure them at night; • Women fearful of ghosts at night
	Privacy	• Women are embarrassed of others seeing them defecate, need much more privacy than men • Women particularly need the latrine superstructure for added privacy during menstruation
Elderly	Difficulties with squatting	• The elderly in particular have difficulties with their knees when they have to squat when they go for open defecation – which created the desire for a chair-pan latrine;
	Loss of agility	• It takes a longer time for the elderly to reach the fields, often the distance is too far for many older family members; • Difficulties arise when the elderly walk to the fields for open defecation and get caught in bad weather etc, because they cannot move as fast and get caught in the bad weather; • When elderly persons have diarrhea, they cannot move fast enough to get to the field in time, so have a latrine makes it particularly easy for elderly people when they are unwell • Inability to fetch water for anal cleansing because of frailty
	Privacy	• The elderly often cannot walk to the fields by themselves and so have to defecate closer to home with an accompanying loss of privacy; get embarrassed when others see them defecating;
Household members in General	Time & money	• Walking to the fields for open defecation can take a very long time, in some instances a full morning; this detracts from time away from working and earning; • Money is often spent on paying for medical expenses of household members, which respondents feel would be mitigated if they had an indoor latrine, which would lead to the overall improvement of their health • Ability to use feces as fertilizer for crops leading to perception of improved crops [not a direct link to money expressed, but that is certainly the obvious implication and perceived advantage]
	Distance	• The distance walked for open defecation can often take a lot of time which results in fatigue, and time wastage; • Difficult during illness – diarrhea in particular– for individuals to rush to fields – uncomfortable to have diarrhea and go to the fields as opposed to have one's own latrine;

Personal Amenities and Convenience		
Household members in General (continued)	Safety	• Difficult at night time because of fear of being attacked and / or robbed; • Difficulty leaving house unattended while going off to defecate in the fields because belongings can be stolen; • Fear of encountering ghosts • Fear of being bitten by snakes and insects;
	Comfort, privacy and ease of use	• Difficulties walking in to the fields in the mud, especially during the rainy season • Difficulties with open defecation during rainy season, respondents get wet – unpleasant • Unpleasant exposure to heat when defecating • Embarrassment at others seeing them defecate • Latrine superstructure would provide a private place to change and wash one's body • Anal Cleansing with water was a significant concern for respondents, whose motivation to adopt would be to adopt to a latrine with adequate water supply, and an appropriate superstructure;
Social Interactions		
Visitors / Guests	Embarrassment	• Embarrassment at not having a latrine for use by visitors or guests • Embarrassment that visitors or guests have to walk considerable distances to be able to defecate; • Difficulty when there is a wedding or a Buddhist ceremony and guests have no latrine to use; • Particular embarrassment when respondents' friends and relatives arrive from urban areas (Phnom Penh in particular) and have been used to having latrines;
	Health	• Afraid that guests will get disease as a result of their open defecation practices
	Family Recommendations	• Often respondents are urged by their children or other relatives– particularly those living in urban areas with readily available latrine facilities such as Phnom Penh - or relatives living in the city to adopt;
Neighbors / Friends who live nearby	Embarrassment	• Questioned by neighbors and friends about why respondent's house smells badly • Smell spreading to neighbors resulting in respondents feeling very embarrassed;
	Anger / Arguments	• Unpleasantness with neighbors who dislike smell from open defecation next to their property; instances of being reproached by neighbors; • Arguments with individuals accusing their neighbors' children of defecating in front of their property; • Unpleasantness toward neighbors who defecate openly • Unpleasantness directed at those who have defecated openly when they have had diarrhea – which creates particular repulsion and unpleasantness;
	Health	• Instances of neighbors getting fever and vomiting because of smell from respondents' defecating on their own property next door
	Peer practices exposure	• Seeing and trying out neighbor's latrines motivated respondents to want to build latrines of their owns; • Wave of building in villages where one family adopted which made others adopt through exposure
Residents in Local Community	Personal failings	• Lack of morals for those who defecated openly • Defecating openly considered as bad behavior by some • Sense of shame about others thinking they were unclean and did not value hygiene • Some Non-adopters feel themselves that they have "narrow minds" • Considered improper to see partial nudity of others when they are defecating; non-adopters are ridiculed for this;
	Polluting Environment	• General concern that if respondents defecate openly, that they leave the environment "polluted" and "messy" for the public at large, for people walking by; • Lack of places for open defecation – every potentially workable place full of feces from other non-adopters;
Health		
Smell	Spreading Disease	• Significant fear that smell of fecal matter spreads disease which can make respondents unwell;
	Repulsion	• Dislike of unpleasant smell of feces;
Flies	Spreading Disease	• Awareness of the dangers of flies having contact with feces and then landing on food to be consumed by respondent's household;
Animals	Fecal-Oral route	• Awareness of the dangers of animals digging up feces, having contact with them, and then having contact with food to be consumed by respondents' household – particular concern about the spread of disease in this manner;
Environmental Contamination	Water sources being contaminated	• Concerns that individuals are defecating into body of water, or near body of water, which is then consumed for drinking, spreading disease;
Disease		• Fear of the spread of Bacteria, microbes – leading to sickness

		• Concern about microbes in the feces spreading and causing illness • Concern about falling unwell – diarrhea most commonly, stomach aches, and fever the most common diseases mentioned

[For a quantitative analysis of the frequency of these themes across the transcripts, see **Appendix L** for Frequency Tables Overall, Sheet (1) Motivations to adopt; and **Appendix M**: Frequency Tables by Province, Sheet (1) Motivations to adopt]

Motivations to Upgrade existing

Across transcripts, the motivations for upgrading refer to respondent's perceived benefits of a particular technology over another technology, or discussing negative aspects of a particular technology in the context of explaining why the person wants to build a superior - perceived technology. The broad themes are outlined in Table 5, below. Many of these themes focussed on upgrading from the dry pit latrine – which caused a great deal of repulsion with regards to the smell, and being able to see the faeces – and a desire to have a water-based toilet which washed away the faeces from sight and smell.

[See **Appendix B** for a complete list of codes. See **Appendix D** for the Motivations to Upgrade outputs i.e. all text highlighted and coded with the motivation codes with regards to upgrading. For a quantitative analysis of the frequency of these themes across the transcripts, see **Appendix L**, Excel Spreadsheet, Frequency Tables Overall, Sheet (2) Motivations to upgrade and **Appendix M**: Frequency Tables by Province, Sheet (2) Motivations to upgrade].

Table 5: Motivations to Upgrade

Theme	Associated Beliefs and Attitudes
Personal Comfort / Amenities	
Anal cleansing	• Water supply important for most respondents so they are able to perform anal cleansing with water, a priority for them; • Dry Pit latrines disliked because of a lack of water supply to perform anal cleansing.
Aesthetics	• Repulsion towards seeing the feces, particularly in the context of the dry pit latrine; pour flushes were considered superior because of the ability to wash away the feces; • Having a beautiful bathroom is linked to cleanliness and prioritized;
Ease of use	• Additional toilets resulting in increased convenience – can use the downstairs one when one is downstairs, can use the upstairs one when one is upstairs • Certain features more comfortable - chair "western" pan particularly desirous by older adults as it is easier on the knees • Upgrading results in increased shelter and protection from the weather; • Overall greater comfort for defecation in a pour-flush with solid superstructure
Visitors / Guests	• Only mentioned once, regarding a desire to have a water tank or water storage / supply near toilet
Privacy	• Desire to increase privacy with upgrades to current latrine through walls etc.
Ease of maintenance	• Certain types of materials are easier to maintain than others – cement slab surface disliked as it's hard to clean; Tiles easier to clean and do not absorb the smell of the urine and feces as cement does. • Water important and preferred feature as it helps with cleanliness;
Health	
Disease	• Flies lead to disease – mitigated by water supply feature of certain latrines
Health And Sanitation	• Emphasis placed on "hygienic latrine" which was often synonymous with pour flush and ability to anal cleanse with water; • Cleanliness related to Sanitation with water
Flies	• Flies are associated with the dry pit latrine, especially in spreading disease because the exposed feces attracts them • Flies associated with Dry pit Latrine
Smell	• Exposed feces in dry latrine smelled very bad • Smell associated with disease

Constraints and Facilitators for becoming adopters

Respondents were questioned regarding the major constraints in their ability to become adopters. Throughout each transcript and universally across all transcripts, the major theme was money – an inability to acquire it, save it, and spend it on latrine construction. For non-adopters, a fairly typical narrative involved respondents being unable to save because they earned very little and had to prioritize feeding their families; for those who had been saving for latrines, they were often side tracked by having to use the money to pay unexpected medical fees of family members. The majority of respondents across transcripts were aware of credit borrowing agencies and groups within the villages and had significant access to those groups – but were reluctant to borrow money due to existing debt, or a fear of being unable to repay the money for latrine costs which generates no income to repay – and ranged in their estimation from $75 up to $1500 – indicating sometimes very poor cost information

and that the majority of respondents were considering building some sort of water based system (as opposed to the dry pit latrine which can be free to build). Familial financial support and materials-support from organizations was important for helping some individuals become adopters. Once the money was in place, there were no signficiant problems with regards to finding skilled labour or access to materials for building.

[See **Appendix B** for a complete list of codes. See **Appendix E** for the Constraints and Facilitators for Adoption outputs i.e. all text highlighted and coded with these code. See **Appendix F** for Credit options. For a quantitative analysis of the frequency of these themes across the transcripts, see Appendix L: Frequency Tables Overall, Sheet (3) Constraints and Facilitators and **Appendix G:** Frequency Tables by Province, Sheet (3) Constraints and Facilitators].

Table 6: Constraints in ability to adopt

Constraints	Comments / Attitudes
Credit, borrowing money	• Most interviewees knew of credit options – agencies, and relatives • Agencies available in every village across all transcripts; • Reluctance to borrow, fear of being in debt and a strong fear of being unable to repay • Borrowing money from relatives far more successful than credit agencies, due to personal relationship; many more instances of respondents borrowing from relatives;
Money	• Money was the universal major constraint • Interviewees and in village-trends on adoption depended on ability to have money • Savings often diverted or allocated for other things – ceremonies, daily living needs, medical expenses, education, etc; • Constraints on hiring skilled help and being able to purchase materials rested largely on interviewees access to money. • Financial support from relatives was a great facilitator – those who had financial support from their grown up children living in the city were universally able to adopt, because there was no need to repay to their relatives, and they shared common interests and goals;
Savings	• The ability to save seemed very difficult for many respondents • Often money is re-directed for medical expenses, daily living etc. • Pressure to spend savings on other things considered a priority – Buddhist ceremonies, weddings etc;
NGO or Governmental Support	• Support from NGOs and other organizations is desired in order to build – though this is linked to money i.e. respondents were able to adopt if the NGOs or government provided half the materials, or some financial assistance; • In several instances of adopters, they were able to build because of assistance from NGOs in terms of the provision of pit rings, pans etc;
Access to material for building	• Interviewees are able to have access to materials very easily if they have money; • Most materials purchased from near by market, transported by Moto of interviewee, in some cases by moto of shop; materials were readily available in shops or at markets and the only restriction to access was money, in general; • In some cases, materials found from other construction projects of respondents or freely available in village – such as leaves, and wood.
Finding Skilled help	• Access to skilled labour generally not difficult, through word of mouth, recommendations, and seeing built latrines and contacting the builders; • Difficulty with gender when negotiating with skilled labour • Money is a prohibitive factor in hiring masons, masons prices usually not predicable or known
Education	• Though not personally reported by any respondent, their impression of others, in particular those with money who were not adopters was a lack of education or knowledge of hygiene;
Land Weather issues	• A lack of land available prevented adoption • Destruction of existing latrines because of landslides and heavy rain prevented re-adoption;
Water Access	• This was not a particularly great constraint – individuals overwhelmingly said that even though water access may be difficult in the dry season, they would find a way of supplying their pour flushes with water or carrying it;
Customs / Habit	• In some cases, individuals were simply used to defecating openly and through habit, did not want to adopt change;

Operation and Maintenance Practices of Latrines

Table 7: Operation and Maintenance Practices of Latrines

Activity	Details
Cleaning	• Adopters said they cleaned their latrine up to three times a day, using cleaning liquids and water, and scrubbing the pan; the smell of the latrine was important; • Cleaning the latrine in this manner was by and large considered a matter for the women and daughters of

	the house because it was not man's work. • Non adopters were very sure they would clean their latrines often
General Maintenance	• Respondents said that when there was a problem with the latrines (clogging, etc.) that the men of the home were the ones to take care of these issues; • Men were also responsible for supplying water for latrines; • No significant reported problems with running of latrines • Finding ash for dry pit latrines sometimes proved difficult – it was difficult to find enough materials to burn to create the ash to diffuse the smell; • Some pits contained taps for drainage during the wet season which helped with general maintance
Full Pit	• Some respondents emptied the pit themselves using buckets • Some respondents hired workers with specialized machinery to go into the pits for emptying feces which were taken away • Some respondents use the feces as fertilizer for their crops • Some respondents closed the pit and dug a new pit – in the case of dry pit Latrine

Pit Emptying costs

Eight of 56 respondents specified pit-emptying costs, which are listed below in Table 8. Costs were depended on the size of the hole and the amount of feces being removed. The average of these responses placed the figure at approximately $29 US in order to empty the latrine pit.

Table 8: Pit Emptying Costs

#	Cost in Riel	Cost in $US*
1	200,000	47.6
2	150,000 – 200,000	47.6
3	100,000	23.8
4	10,000	2.4
5	Only specified in $	50-60
6	Only specified in $	25
7	100,000 – 150,000	29.8
8	4000	<1
	Average	**$29**

*Exchange Rate of 1 US D to R4200

[See **Appendix B** for a complete list of codes. See **Appendix F** for the Maintenance and Operation Code Outputs]

Construction

Interviewees were asked in a fair amount of detail about their choices and decision making around latrine construction, specifically the advantages or disadvantages or choosing to self-build vs. hiring skilled help. These mainly focused around the issue of money.

Table 9: Major themes related to Latrine Construction

Construction Issue	Comments / Attitudes towards this issue
Cost	• Pour flush latrines were reported to cost upwards of US $75, ranging up to $1500 in some cases; Dry pit latrines were mostly free with little costs related to getting some of the materials
Design Idea	• Design was limited to finances of interviewee • Construction workers influenced design and often when individuals had off-set latrines etc, this was mostly due to decision making by construction workers; • Exposure to and use of other people's latrines often informed what they wanted, indicating limited exposure to designs
Hiring Skilled help	• Advantages of hiring skilled help were technical expertise • Disadvantages were mostly monetary • Sometimes builders were unreliable and did not do the work on time, which was a frustrating experience
Self Building	• Advantages were monetary (saving money) • Advantages were the effort in ensuring everything was perfect that respondents said was missing when masons were hired because they didn't care as much because it was a toilet for someone else; • Disadvantages were interviewees did not have the technical expertise nor the physical ability to built toilets themselves

[See **Appendix B** for a complete list of codes. See **Appendix G** for the Construction Code Outputs]

Knowledge of Latrine Technology

Universally, all respondents had heard of the pour-flush latrine, which transcripts seem to indicate would be the most suited for this context in terms of cost and meeting needs. The much cheaper dry-pit latrines was not something that respondents were universally aware of; in some instances the latrine had been built but was not sufficient and some family members refused to use it; in a few interviews, respondents openly said they preferred open defecation to the dry pit latrine. Water supply was important to them with regards to washing away the feces and being able to perform anal cleansing. A solid superstructure that provided adequate privacy and protection from the weather was also important to respondents, especially for female family members to use it.

Table 10: Latrine Technologies Respondents are aware of :

Technology	Awareness	Attitudes towards this technology
LATRINES		
Dry Pit Latrine	Generally a large amount of awareness for this technology	• Distinction between dry pit and "hygienic toilet", the latter being pour-flush water-based sanitation • More appropriate for rural setting • Difficulty with finding ashes • Bad smell from fecal matter
Pour Flush Latrine	Most popular form of technology	• Water supply is essential for "hygiene", so this toilet is the most popular
Western Toilet	While western /Chair pans were mentioned often, the western toilet with plumbing was mentioned on very few occasions	• Concerns of water usage in urban flush toilet designs • Concerns about cost • Very much liked the western pan for the pour flush (especially seating, for elderly individuals, and general ease of use)
Superstructure		
General References	• Concrete specified • In some cases wood	• The concept of a superstructure is liked a great deal • Provides privacy and protection from the weather; • Respondents also want to use this space for other uses – bathing, brushing their teeth;
Door	• Mentioned rarely	• Lock mechanism preferred
Roof	• Metal roofs most popular • Straw and leaves also used	• Roof was important to respondents, particularly in providing shelter from the weather;
Walls	• Cement very common • Brick • Inside lined with tiles most preferred	• Essential part of superstructure • Leaves disliked as they do not provide sufficient privacy – material preferred would be something solid that provides complete privacy from visual and sound • Cement tiles most aesthetically pleasing for respondents;
Floor of Latrine		
Floor surrounding pit	• Tiles • Cement disliked	• Having a nice floor was important to interviewees • Desire not to have a wet toilet (i.e. water on the floor) • Cement criticized for absorbing fecal & urine smell and creating unpleasantness; tiles easiest to clean, and smell nice;
High "western" / "chair" pan	• Not discussed	• Some interviewees consider it difficult to use • Others find ease of use especially for elderly • Not common in villages, but some people are aware of it
Squat Pan	• Ceramic	• Mentioned frequently • Less expensive than chair-pan
Hole Cover	• Wood	• Helpful with smell particularly for dry pit

Table 11: Latrine Pit

Attributes	Comments / Attitudes towards this technology
Multiple Pits	• Very popular; prevented frequent emptying • Lined with concrete generally - "pit rings"
Off-set pit design	• Preferred though less explanation for why, but linked to ease of empyting and reduced smell in cabin • If there is space, this is preferred;
Not off-set	• Generally disliked – smell of feces very apparent and difficulty emptying
Pit depth	• Pit depth often the decision of construction workers as part of standard practice (1.5-2m) • Concern about not hitting water table, and flooded areas

Sewage pipe which connect pit to pan	• Connects off-set pits and multiple pits to pans • Concerns about blockage in pipes • Rubber or PVC
Tap attached to pit rings	• Helped drain excess water from pit during rainy season (a sign of pit overflow and a hygienic safely concern)
Water Tank	• Water supply in the pour flush latrine is very important • Necessary for anal cleansing • Easy for maintenance of latrine • Other uses such as bathing
Water supply for flushing	• Water important for flushing • Important for anal cleansing • Perception that water supply during dry season is not a problem

[See **Appendix B** for a complete list of codes. See **Appendix H** for the Latrine Technology Code Outputs]

Decision Making and Trigger Events

Decision making related to adoption and latrine construction overwhelmingly involved financial affairs and the immediate family – particularly the husband-wife who ran the household were the ones who made the decisions to adopt. If the household had grown up children, then decision making would often occur including these individuals, many of whom worked in urban areas such as Phnom Penh or at the garment factories in Kampong Speu and pressurized their parents into adopting. There was a sense that individuals didn't want to discuss with the outside community about their desire to have the latrine in case they couldn't afford to purchase one or it did not become a reality.

Trigger events for latrine building were not commonly covered in the transcripts. The two main categories were an infusion of money – given to the respondents by their grown up children for the latrine – or materials i.e. the government or NGOs providing respondents with a pan or pit rings which prompted them to utilize those materials immediately and construct the latrine. In one case, the interviewee had money and her husband was a mason, and the trigger was time. She forced him to clear his work schedule and build the latrine, in spite of his delays and protestations.

[All highlighted text involving family decision making can be found in **Appendix I**; See **Appendix J** for outputs related to trigger events]

Communication

Existing means of communication in the villages are outlined below in Table 12. There are village meetings fairly often, often about sanitation promotion etc. Villagers sometimes attend but often, men are very busy during the day and it seems the majority of those who attend are women. Opinion is divided on which is the better gender to attend, male respondents often say men are because they make decision; female respondents argue the women are because they listen better and sometimes women make the decisions. Respondents said universally that it would take someone of authority – village chiefs, or NGO workers or other representatives with individual invites to men to entice them to also attend village meetings and participate in the broader health education of the village.

Table 12: Existing Communication Channels in Villages

Category	Comments / Attitudes
General Communication In Village	• Religious gatherings • Word of mouth • Sometimes there is not casual communication in the village • Village meetings, and announcements from village chief
Media (TV, newspapers, radio)	• Radio and TV are popular though not always source of local knowledge • Newspaper very little read
Men	• Men are decision makers in sanitation so opinion is that is it important / better to target them • Men are generally busy in the day with work; • Women should be encouraged to discuss knowledge/information with men if they are busy
Women	• Women participate in village meetings mainly • Women can identify with women issues, but men often bring home money
Place of Congregation	• Often at people's houses – popular villages houses; • Some villages have places of congregation – village halls; • Buddhist halls also available;

When respondents were asked about the best method of communication in the villages to promote sanitation, introduce new designs, and adoption, the responses are outlined below:

Table 13: Summary of Respondents' thought on how to promote adoption in their communities

Category	Comments / Attitudes
Health Education	Provide respondents with information relating to health education – tell them the dangers of OD
Ceremonies	Approach individuals at ceremonies or other gatherings and raise awareness of the issues
Financial Assistances and other Provisions	This was the most common suggestion – that villagers will not be able to adopt unless they are given the materials or other financial assistance in order to build, because the most universally felt constraint for adoption was money;
Media	Promote awareness through the television or radio – not all agreed this was effective, however, as respondents also felt that people only turned to such media for entertainment, and would not tune into to listen to public health broadcasts
Message delivered by someone with authority	Bringing in someone in a position of authority or knowledge would be effective in promotion. Respondents felt that villagers would not listen to one another, it would have to be someone from the commune or the NGO; this also included the village chief and asking to have village meetings;
Face to Face	Respondents felt strongly that communication should occur face to face, otherwise villagers would not listen, or are much more likely to tune out if the message were on a piece of paper or the radio/television;

APPENDIX CONTENTS [Appendices are separate individual documents]

A: Demographic information regarding Villages, and individual households;

B: List of Codes generated in Atlas

C: Outputs for coding "Motivation to Adopt"

D: Outputs for coding "Motivation to Upgrade"

E: Outputs for coding "Constraints and Facilitators"

F: Outputs for Coding "Available Credit Options"

G: Outputs for coding "Construction"

H: Outputs for coding "Latrine Technology"

I: Outputs for coding "Decision Making"

J: Outputs for coding "Trigger Events"

K: Outputs for coding "Usage Practices"

L: Frequency Counts for Motivations and Constraints and Facilitators across all transcripts

M: Frequency Counts for Motivations and Constraints and Facilitators by Province