WASH Marketing Project

Kampong Speu Baseline Survey

Final Report

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Executive Summary

This baseline report was prepared as part of the Water, Sanitation and Hygiene (WASH) Marketing Project, a joint initiative of Lien Aid and the World Toilet Organization. Field research was conducted in late July 2009 and aimed to collect information on the current situation in the WASH Marketing (WASH-M) project target area in Kampong Speu. The research had two primary objectives:

- To understand the perceptions, desires, practices, motivations and constraints of households in the target area with respect to sanitation, hygiene and water in order to inform the development of marketing strategies; and
- To establish baseline levels of latrine coverage and behavioural indicators of household consumer demand[1] for WASH products prior to launching project activities.

Given the high prevalence of Community Led Total Sanitation (CLTS) villages in the target area, a third objective was also explored, namely:

- To understand village and household sanitation situations in villages that have experienced a CLTS intervention compared to those that have not.

The survey involved a village-level investigation of sanitation and water coverage rates for a randomly selected sample of villages in the WASH-M target area, as well as a household-level investigation of demand behaviour, practices and preferences for a choice-stratified random sample of 'latrine owner' and 'non-owner' households within the sample villages.[2] A total of 398 household surveys were conducted in 36 villages in the WASH-M project target area, including 149 latrine owners and 249 non-owners.

The household survey investigated current sanitation, hygiene and water technologies and practices; perceptions, preferences and awareness of latrines and water products; motivations and drivers of latrine and water product purchase; decision making, purchase and construction process for latrine and water products; upgrading and maintenance of latrine products; and channels of communication for finding out about sanitation and water issues. The household survey was complemented by qualitative in-depth interviews conducted by WaterSHED Asia[3] to develop a more nuanced understanding of consumer demand. Quantitative and qualitative demand-side research was conducted alongside supply-side analysis of enterprises active in the supply chain for WASH products and services.[4]

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[1] The survey explored a range of behavioural indicators of demand for sanitation (see Jenkins and Scott 2007) in order to measure and evaluate changes in baseline sanitation and WASH product demand levels over time.
[2] Households within each village were stratified into latrine owner and non-owner groups and then randomly selected from each group.
[3] Qualitative interviews with latrine owners and non-owners were conducted by WaterSHED Asia with xx households, including xx households within the WASH-M Kampong Speu target area (Jenkins, ??? Citation, forthcoming).
[4] Lien Aid and WTO commissioned a supply chain assessment in which 96 one-on-one interviews and 7 focus group discussions were conducted with masons, retailers, wholesalers and other businesses to gain in-depth insight into the WASH supply chain in Kampong Speu (Lien Aid and WTO, 2009 (change citation?), forthcoming).

Village-Level Results

Approximately 24.8% of households in the target area own a functioning household latrine. Coverage rates vary widely from village to village, from highs of 70% to 85% (in 4 villages) to 0% coverage (in 2 villages).

Latrine coverage rate in the CLTS villages were on average about 12% higher than in non-CLTS villages (32.9% in CLTS villages, compared to 20.6% in non-CLTS villages), although sanitation coverage varied greatly between CLTS villages. Exposure to CLTS impacted substantially on the types of latrines in a village: dry pit latrines comprise almost 42% of all household latrines in CLTS villages, while in non-CLTS villages, dry pit latrines were just 4% of all household latrines. Exposure to CLTS also correlated to the presence of non-functioning latrines in villages: of a total of 142 broken/not functioning household latrines identified in the 36 sample villages, 130 (91.5%) were in CLTS villages.

The survey data and field observations suggest that exposure to previous WASH interventions (in particular CLTS); distance to main towns, roads and markets; population density; environmental conditions; economic status and presence of non-agricultural sources of income in villages are all factors that seemed to impact on latrine coverage.

Household-Level Results

Latrine owners tend to be among the better-off in the community, with higher educational attainment, more non-agricultural sources of income and generally higher income and asset levels. The majority of latrines are 'high-end' designs, typically a flush/pour-flush pan to a lined off-set pit with concrete/brick walls and a galvanized steel roof. The median cost to the household for a latrine is USD 250, including USD 150 for materials. Nearly 78% of functioning latrines are self-financed (e.g. without externally-provided free or subsidised materials) and privately installed.

The flush/pour-flush latrine is clearly the most preferred latrine technology amongst latrine owners and non-owners. People want a latrine looks good/is comfortable, is easy to clean and does not smell. The findings suggest that respondents are most concerned with having a latrine that meets perceived standards of comfort, aesthetics and perceived cleanliness. The main perceived advantages of latrine ownership are improved hygiene/cleanliness/health[5], greater comfort, more convenience and the use of latrine by guests.

While perceived benefits of latrines offer insights into key motivating factors for latrine ownership and use, the actual triggers of latrine construction (e.g. the reasons why latrine owners built their latrines when they did) included: a visitor was coming from outside the village; a child in the household was becoming physically mature; social pressure; a neighbour got one; and a program was offering a hardware subsidy. There were some differences in reported triggers in CLTS and non-CLTS villages, with latrine owners in CLTS villages stated the number one reason for installing a

[5] The WaterSHED sanitation in-depth qualitative interviews attempted to unpack terms like 'cleaniliness' and 'hygiene' in the context of open defacation vs. latrine ownership to better understand what people really mean when they use these terms. The qualitative interviews reveal that when people talked about 'cleanliness' as an advantage of a latrine they usually referred to the ability of pour-flush latrines to allow for anal cleansing with water after defecation. The qualitative research reveals that terms like 'cleanliness', 'health', and 'hygiene' are more connected to culturally-based beliefs and notions of health (e.g. the importance of water for purification), and have little or nothing to do with 'health' or 'hygiene' in a medical sense (e.g. transmission of fecal-oral diseases) (WaterSHED Citation xxx).

latrine was 'someone told me I had to'. These insights into demand triggers have important implications for the design of marketing messages.

In general, compared to pour-flush latrine owners, dry pit latrine owners are less satisfied with their latrines and more likely to continue the practice open defecation, particularly in the dry season. Consistent latrine usage amongst adults in dry pit latrine owning households seems to drop off significantly in the dry season (from 79.3% in the wet season to just 55.2% in the dry season). Dry pit latrine owners express a preference for pour-flush latrine technologies (86.2% of dry pit owners prefer the pour-flush latrine). These dry pit latrine owners are a market segment that could be targeted for more durable and low-cost pour-flush latrines.

Children in all latrine owning households do not seem to consistently use their latrine in the wet or dry season and are more likely than adults to defecate in the open despite having access to a household latrine. As with adults, lack of consistent use is much more pronounced amongst children with dry pit latrines compared to those with flush/pour-flush latrines. Only 61% of children with dry pit latrines use them consistently in the wet season, and this drops to just 52% in the dry season.

Those without a latrine usually practice open defecation in fields or forests. Over 85% of these non-owners have thought about or discussed building a latrine with their family. However, only 5% reported a high likelihood of actually building a latrine in the next 12 months, indicating low levels of current demand. Compared to non-CLTS villages, non-owner households in CLTS villages expressed much higher levels of demand: Over 11% of CLTS non-owners reported a 'high likelihood' of building a latrine in the next 12 months, compared to just over 2% of non-owners in non-CLTS villages. When coupled with the potential demand for latrine 'upgrades' (e.g. from self-built to more durable products) suggested by the strong preference of dry pit owners for pour-flush products, CLTS villages clearly present a market segment with significant potential for sanitation enterprises.

Very few non-owners (only 4.8% of all non-owners) would consider taking a microfinance loan for a latrine. The WASH-M project may thus need to consider alternative financing options.

Of 149 latrine owners, only 25 (16.8%) have ever emptied their latrine pit. The most common pit emptying practice is to spread the pit contents on the field as fertilizer. Nearly 89% of those who have emptied their pit waited less than one month to do so, with the majority emptying their pit as soon as it was full. These findings raise serious concerns about safe excreta management and pit emptying practices that should be further explored. At a minimum, the WASH-M project will need to consider how it develops and integrates user education on operation and maintenance of new latrine products into its marketing activities.

There is some knowledge of good behaviors related to sanitation, hygiene and water, with latrine owners generally having a greater awareness than those without a latrine. Reported frequency of hand washing with soap is low for all respondents, with nearly one-third of all respondents washing hands with soap once a day or less. Latrine owners reported washing their hands with soap slightly more often than non-owners. There appears to be low knowledge of critical times for hand washing. The most common times for hand washing are before eating, when they are dirty, after eating, before preparing food and after defecation (in that order). Only 40% of latrine owners reported washing their hands after defecation, while amongst non-owners an even lower proportion (15%) wash hands after defecation. Very few households have a designated place for handwashing. Latrine owners were much more likely than non-owners to have a fixed place for hand washing.

Most people rely on rainwater collection as their main wet season drinking water source, and revert to surface water sources or tubewells/boreholes in the dry season. The most common drinking

water treatment method is boiling; however, people do not consistently practice boiling drinking water all of the time.

Over 90% of respondents were 'satisfied' or 'very satisfied' with the quality of their drinking water in the wet season. Since most households rely on rainwater collection in the wet season, this suggests a high level of satisfaction with rainwater. There is less satisfaction with drinking water quality in the dry season, when many households revert to tubewells/boreholes and surface water sources.

In terms of most favorable attributes of drinking water sources, people value convenience, clear/good color, and good taste for both wet season and dry season water sources. Other characteristics that people favor include a short collection time, no smell and personal safety/security. Few respondents mentioned health as a characteristic they like about their water source, suggesting that health issues are less important than convenience, aesthetics, and time-saving values.[6]

People identified rainwater ring tanks, rope pumps and ceramic filters (in that order) as 'most preferered' water products. However, only 12.6% of households have actually purchased a water product. Amongst the purchased products, 5.3% of households have bought ceramic water filters, about 3% have bought bio-sand filters and about 3% have purchased rainwater ring tanks. Of the 12.6% of respondents purchasing these products, roughly half had received assistance from an external agency to do so.

Water product purchase intention, as measured by the reported likelihood of purchasing a water product in the next year, is quite low. Over 50% of the 187 respondents who have thought about purchase indicated there was 'no chance' that they would buy a water product in the next year. An additional 32% indicated a 'low likelihood' of purchase. Only 5% reported a high likelihood of water product purchase in the next 12 months, suggesting low rates of demand.

People generally have a low awareness of costs of different types of latrine models and water products, usually making cost estimates that are far higher than the actual costs for these products. When presented with a picture of the new low-cost latrine to be marketed through the WASH-M project, respondents estimated a median cost of USD 100, three times the suggested retail price. Similarly, cost estimates for the ceramic water filter were almost double the actual retail price. While perceived high cost does seem to be a barrier to latrine and water product purchase, it is not the only one. Product awareness, accessibility of affordable technologies and easy of purchase are all factors that contribute to household demand.

[6] As with sanitation, the use of terms like 'health' and 'cleanliness' require further exploration in the context of water access and demand behaviours. WaterSHED plans to conduct in-depth water qualitative interviews to better understand household demand for water products in 2010.

1.Background

This baseline report was prepared as part of the Water, Sanitation and Hygiene (WASH) Marketing Project, a joint initiative of Lien Aid and the World Toilet Organization. The project is supported by the Water, Sanitation and Hygiene Enterprise Development (WaterSHED) program, a regional program led by the University of North Carolina at Chapel Hill and supported by the United States Agency for International Development (USAID).

Field research was conducted in late July 2009 and aimed to establish the current situation with respect to WASH knowledge, attitudes and practices, as well as baseline levels of coverage and behavioural indicators of household demand for WASH products in the project target area. This report presents the objectives, methodology and findings of the study as well as some preliminary analysis and recommendations.

1.1 Context

Rural water and sanitation coverage in Cambodia is low. According to the General Population Census of Cambodia 2008, an estimated 23% of rural Cambodians have access to improved sanitation (NIS 2009). Although sanitation coverage is increasing, currently over 11 million Cambodians lack access to improved sanitation. An estimated 47% of rural Cambodians currently have access to improved drinking water sources. Typically, this is from protected community water points such as protected hand dug wells and hand pump wells. Despite the efforts of the government and external agencies, approximately 6.5 million people are still without access to potable water each day.

The impact of poor water, sanitation and hygiene on health and quality of life are well known. Diarrheal diseases are the number one cause of sickness and death amongst Cambodian children, with 20% of children under 5 years old suffering from diarrhoea. The health impact due to poor sanitation and hygiene resulted in an estimated 10,000 deaths in 2005, and economic losses due to poor sanitation are estimated at a staggering USD 448 million annually, over 7% of Cambodia's Gross Domestic Product in that year (Kov et al. 2008).

Past efforts to address the sanitary conditions in rural Cambodia have had limited success. As in many other countries, conventional supply-side projects that provide free or subsidized latrine hardware have met with significant problems: persistent practice of open defecation despite access to facilities; lack of maintenance and use of free latrines; inability of households to invest in expensive latrine options; preference to wait for the free latrine; and elite capture of benefits of latrine subsidy. Similarly, a focus on externally-financed community water systems has often resulted in a lack of maintenance and resultant failure of these systems, as well as non-usage due to inattention to user preferences.

The problems associated with implementation and sustainability of WASH interventions often stem from a lack of understanding of the needs, desires and aspirations of end users.

1.2 WASH Marketing Project

In contrast to approaches that provide subsidized hardware, the Lien Aid/ WTO WASH Marketing Project attempts to better understand the needs and desires of potential consumers in order to generate household demand for water and sanitation. The project aims to support the local private sector to service this demand through the provision of affordable and desirable products and services that are easily accessible to rural consumers.

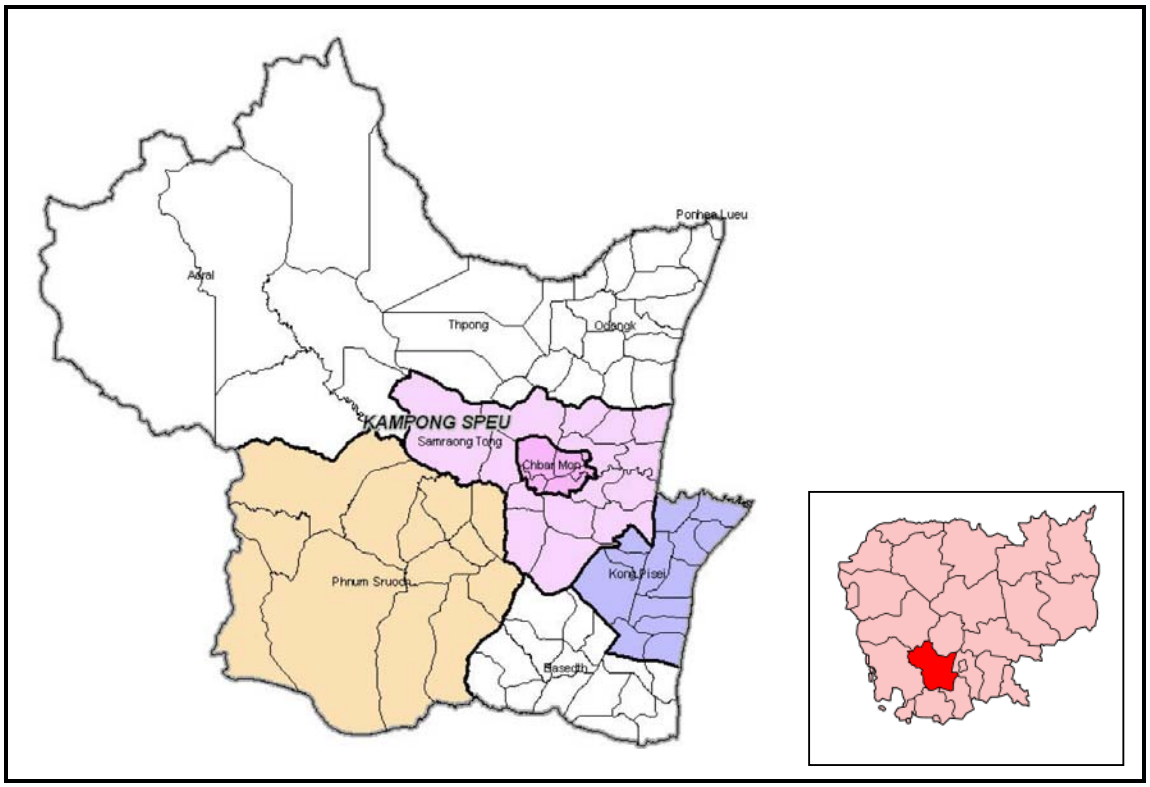
The objectives of the WASH-M Project are to:

- **Motivate** and sustain changes in sanitation, water and hygiene behaviors;
- **Create consumer demand** by addressing barriers to consumption and increasing knowledge of water and sanitation products & services; and
- **Improve supply** by increasing access to safe, sustainable, affordable and desired water and sanitation products & services.

WASH-M project activities will be undertaken in Kampong Speu Province. Based on 2008 Census data, provincial sanitation coverage in Kampong Speu had increased from 3.9% in 1998 to 17.5% in 2008 (NIS 2009). According to the 2004 Cambodia Inter-censal Population Survey data, sanitation coverage in Kampong Speu was 8.3% in 2004 (NIS 2004). These figures indicate an increase in coverage of 4.4% from 1998 to 2004 (average annual increase of 0.7%), and an increase of 9.2% from 2004 to 2008 (average annual increase of 2.3%). This background trend line shows a significant acceleration in sanitation coverage in recent years, possibly attributable to CLTS activities in the province. Further review of provincial data sets is recommended to more accurately establish annual background trend line in provincial sanitation coverage, which will be important to acknowledge in future evaluations of project activities.

The project target area includes 4 districts in Kampong Speu Province: Samrong Tong, Chbar Mon, Phnom Sruoch and Kong Pisei (see Figure 1). Within these 4 districts, an area encompassing 31 communes within 20 km of National Road #4 was selected due to its proximity to natural supply chain routes and major markets. There are 537 villages within the target area along the designated supply chain route, with a total of approximately 55,100 households and 295,000 people.

Figure 1: WASH-M Project target districts, Kampong Speu Province (inset, Kampong Speu Province in Cambodia)



1.3 Baseline Study Objectives

The objectives of the baseline study were to:

- To understand the perceptions, desires, practices, motivations and constraints of households in the target area with respect to sanitation, hygiene and water in order to inform the development of marketing strategies; and
- To establish baseline levels of latrine coverage and behavioural indicators of household consumer demand[7] for WASH products prior to launching project activities.

Given the high prevalence of Community Led Total Sanitation (CLTS) villages in the target area, a third objective was also explored, namely:

- To understand village and household sanitation situations in villages that have experienced a CLTS intervention compared to those that have not.

In order to achieve these objectives, data was gathered at the village level to establish baseline coverage levels and at the household level from randomly selected latrine owner and non-owner households on:

- Current sanitation, hygiene and water technologies and practices;
- Perceptions, preferences and awareness of latrines and water products;
- Motivations and drivers of latrine and water product purchase and intentions;
- Decision making, purchase and construction process for latrine and water products;
- Upgrading and maintenance of latrine products; and
- Channels of communication for finding out about sanitation and water issues.

2. Methodology

2.1 Field data collection

Two surveys were developed for field data collection:

- The *village survey questionnaire* was designed to capture baseline sanitation and water coverage data at the village level for a randomly selected sample of villages within the target area. Village-level data was collected on latrine coverage rates, including number of functioning pour-flush and dry pit latrines and number of non-functioning/broken latrines; number of wells in the village; distance to nearest roads and markets; and presence of NGO activity in water and sanitation, including hardware subsidy for water and sanitation products and history of CLTS. The village survey questionnaires in English and Khmer are included as Appendices 2 and 3 of this report.
- The *household survey questionnaire* was designed to gather information about household demand behaviour for a choice-stratified random sample of 'latrine owner' and 'non-owner' households within the sample villages.[8] Where possible, efforts were made to align questions in the survey with the national *2007 WSP/IDE Demand Assessment for Sanitary Latrines in Rural and Urban Areas of Cambodia* survey (Roberts and Long 2007, hereafter, the '2007 Demand

[7] The survey explored a range of behavioural indicators of demand for sanitation (see Jenkins and Scott 2007) in order to measure and evaluate changes in baseline sanitation and WASH product demand levels over time.
[8] The household survey tool was developed in consultation with key water and sanitation practitioners in Cambodia, and with substantial input and guidance from Dr. Marion Jenkins, WaterSHED's external sanitation marketing expert.

Assessment') to allow for comparisons with this national-level data.[9] The household survey questionnaires in English and Khmer are included as Appendices 4 and 5 of this report.

The survey questionnaires were pre-tested in the field and revised by the survey team, which was comprised primarily of researchers from the Sociology Department of the Royal University of Phnom Penh. An enumerator training for field surveyors was conducted in the week prior to field implementation.

Field surveys were conducted over 11 days from 21 to 31 July 2009. Household survey interviews were conducted by two field teams, each supervised by a Team Leader (RUPP Senior Lecturer) and supported by the Lien Aid Baseline Survey Coordinator and Kampong Speu Provincial Department of Rural Development (PDRD) field officer. A list of survey team members is included as Appendix 8.

Data from completed surveys were double-entered into a Statistical Package for Social Sciences (SPSS) database by four RUPP data entry personnel. Raw data were cleaned, verified and corrected by the RUPP Data Entry Supervisor and further cleaned by the Lien Aid Baseline Survey Coordinator.

2.2 Sample village and respondent selection

The following steps were undertaken to select a random sample of villages:

- A list of all communes and their populations was compiled for the 31 communes in the target area. Of the 31 communes, 17 were selected for the survey using a probability proportional to size (PPS) sampling technique. The PPS method ensures that the probability of a commune being selected is proportional to the commune population size.
- A list of villages and their populations was compiled for all villages in the 17 selected communes. A total of 36 villages were then randomly selected as sample villages for the baseline survey using PPS sampling[10]. No distinction was made between villages that had had a CLTS intervention (CLTS villages) and those that had not (non-CLTS villages) in the selection of a sample villages from the target area.

In each of the 36 randomly selected villages, the following steps were undertaken to select the sample households:

- For the purposes of sample selection, the survey team defined a 'latrine owner' as a household with a functioning (e.g. structurally still useable/ not broken) latrine. A 'non-owner' was defined as a household without a latrine or with a non-functioning/broken latrine. Due to the relatively high level of latrine owners with non-functioning/broken/abandoned latrines within the study population (primarily in CLTS villages), this distinction was a significant one.
- The survey team obtained comprehensive lists of all latrine owners and all non-owners from the village chief and the Provincial Department of Rural Development.
- From these lists, 5 households with a latrine ('latrine owners') and 6 households without a latrine ('non-owners') were randomly selected.

[9] To allow for easy comparison, a column (IDE #) is included in the survey, indicating the survey question number to which the question in the survey corresponds. For questions common to both surveys, the same translation was used.

[10] Communes and villages were selected using the formula [n = NZ2 x p (1-p) / Nd2 + Z2 x p (1-p)]. Level of confidence is 80% (standard error between ± 0.10 of a two-tailed normal distribution curve).

- In villages with 5 or fewer latrine owners, all were included in the survey. The survey team randomly selected four additional households from villages with larger populations to reach the desired sample size of 400 respondents.

A total of 398 surveys from the 36 sample villages, including 149 latrine owners and 249 non-latrine owners, were included in the data analysis.[11]

2.3 Data Analysis

Data from the village surveys were analyzed to establish baseline rates of sanitation coverage and to understand key village characteristics impacting on sanitation and water coverage and hygiene awareness. Data provided on latrines and wells in the village was not verified through systematic evaluation or observation of household latrines.

Data from the household surveys were analyzed to understand current sanitation, hygiene and water practice; awareness, perceptions and preferences for sanitation and water products; intentions, motivations and drivers of purchase; decision making and latrine construction process; and communication channels by which villagers learn about sanitation, hygiene and water issues. Data were used to compare key characteristics of latrine owners (defined as those with a functioning latrine) and non-owners (defined as those without a latrine or with a non-functional latrine) and, to a lesser extent, to capture differences between latrine owners and non-owners in CLTS and non-CLTS villages. Results were disaggregated by technology type and gender where relevant. Results from this survey were compared with the 2007 Demand Assessment and other key national surveys to understand how findings from the target area compare with national-level data.

The statistics are presented mainly as percentages and simple averages and are provided in the tables and figures of this report. Statistical significance of results was not calculated. This report presents a preliminary analysis; the project team plans to conduct further analysis of raw data with technical support from WaterSHED's sanitation marketing expert.

[11] Two surveys were not included as they contained a high number of incomplete responses.

3. Results: Village-level survey

The target population includes 537 villages with approximately 55,100 households and 295,000 people in the four target districts of Kong Pisei, Chbar Mon, Samrong Tong and Phnom Srouch. From the target population of 537 villages, 36 villages were randomly selected for village surveys. The total sample of 36 villages included 3369 households and 17,243 people.

At the time of the survey, approximately 24.8% of households in the target area owned a functioning household latrine. Coverage rates varied widely from village to village, from highs of 70% to 85% (in 4 villages) to 0% coverage (in 2 villages). The large majority (79%) of existing functioning latrines are pour-flush latrines (see Tables 20 and 21 for Household Survey results on technology type).

The survey data and field observations suggest that distance to main towns, roads and markets correlates with latrine coverage (e.g. villages near the provincial town in Chbar Mon district tended to have higher latrine coverage rates). Population density, environmental conditions, economic status and presence of non-agricultural sources of income in villages were also factors that seemed to impact on latrine coverage.

A total of 12 of the 36 sample villages had exposure to a CLTS intervention.[12] The functioning latrine coverage rates in the CLTS villages was on average about 12% higher than in non-CLTS villages (32.9% in CLTS villages, compared to 20.6% in non-CLTS villages), however sanitation coverage varied greatly between CLTS villages. Exposure to CLTS impacted substantially on the types of latrines in a village: dry pit latrines comprise almost 42% of all functioning household latrines in CLTS villages, while in non-CLTS villages dry pit latrines were just 4% of all household latrines. Exposure to CLTS also correlated to the presence of non-functioning latrines in villages: of a total of 142 broken/not functioning household latrines identified in the 36 sample villages, 130 (91.5%) were in CLTS villages. Key differences between CLTS and non-CLTS villages are discussed in Section 9 of this report.

Ten of the 36 villages had had exposure to an external (usually NGO) program offering latrine hardware subsidy at some time in the past (2 villages had exposure to both CLTS and a subsidy program).

A summary of village-level survey data is included in Appendix 1.

[12] As noted above, no differentiation was made between CLTS and non-CLTS villages in the random selection of sample villages. Over 100 of the 537 villages in the target area have been exposed to a CLTS intervention or will be exposed to CLTS by the end of 2010. Thus, CLTS villages are somewhat 'over-represented' in the sample.

4. Results: Household Profile

From the sample of 36 villages, 398 respondents were randomly selected. Amongst the total respondents, 149 (37.4%) were from latrine owning households and 249 (62.6%) were from households that did not own a latrine. A greater proportion of respondents (55.3%) were female. The majority of respondents were the head of their household (57.3%) or the household head's spouse (30.9%).

Table 1: Respondent information

Description		Latrine Owner N = 149*	Non-owner N = 249*	Total N = 398*
Gender	Male	51.7%	40.6%	44.7%
	Female	48.3%	59.4%	55.3%
Relationship to household head	Self	20.4%	36.9%	57.3%
	Spouse	11.6%	19.3%	30.9%
	Son/Daughter	4.0%	4.8%	8.8%
	Parent	1.0%	1.0%	2.0%
	Brother/sister (in-law)	0.3%	0.5%	0.8%
	Total	37.4%	62.6%	100.0%

* Unless otherwise noted, these are total number of respondents

Table 2: Household Profile

Description		Latrine Owner	Non-owner	Total
Gender of HH head	Male	81.2%	72.3%	75.6%
	Female	18.8%	27.7%	24.4%
Occupation of HH head	Agricultural	67.8%	83.9%	77.9%
	Civil service	16.8%	2.8%	8.0%
	Service/Sales/Commercial	7.4%	6.8%	7.0%
	Unemployed	3.4%	2.4%	2.8%
	Professional/Technical	2.0%	2.0%	2.0%
	Day laborer	2.0%	1.6%	1.8%
	Factory worker	0.7%	0.4%	0.5%
Educational attainment of HH head	None	7.4%	21.3%	16.1%
	Pre-school/ Kindergarten	2.7%	1.6%	2.0%
	Some Primary	28.9%	39.8%	35.7%
	Finished Primary	10.7%	10.0%	10.3%
	Some Secondary	23.5%	18.9%	20.6%
	Finished Secondary	14.8%	5.6%	9.0%
	Higher	12.1%	2.8%	6.3%
Average number of people living in household		5.7	5.1	5.4
Percentage of HH with one or more family members working or living in Phnom Penh		(30.9%)	(19.7%)	(23.6%)
Average number of people working or living in Phnom Penh		1.5	1.5	1.5

Compared with non-latrine owners, latrine owners tend to have more education, more non-agricultural income sources, a greater diversity of occupations, and include more male-headed households. Significantly, 31% of latrine owning households have a family member living or working

in Phnom Penh, compared to 20% of non-owners. This suggests that latrine owning households may be more likely to receive information and advice from family members exposed to latrines in the city. It is also possible that remittances from wage-earning family members in Phnom Penh are being put towards latrine purchase.

Table 3: Household agricultural land ownership			
Percentage of respondents owning agricultural land	**Latrine Owner**	**Non-owner**	**Total**
	86.6%	91.2%	89.4%
Average Agricultural land area under cultivation, acres*	115.9	84.0	95.6
Rice crop yield in last 12 months*	1938.4 kg	1400.4 kg	1596.2 kg

* Percentage of respondents answering this question: Latrine owner, N = 131; Non-owner, N = 229

Consistent with their greater reliance on agriculture as an income source, more non-latrine owners owned agricultural land. However, they tended to have smaller land holdings and lower rice crop yields than latrine owners, which suggests that they are not as well-off as latrine owners.

Table 4: Annual household cash income, USD*			
	Latrine Owner N = 142	**Non-owner N = 245**	**Total N =387**
Median annual household cash income	$500	$320	$375
Median annual cash income per capita	$88	$63	$69

* 1 USD = 4000 riel

The median annual cash income for latrine owner households is 56% higher than that of non-owner households. On a per capita basis, annual cash incomes are roughly 40% higher for latrine owners. In the 2007 Demand assessment, median cash income for rural latrine owner households was estimated at USD 702 (USD 125 per capita) and 355 USD(67 USD per capita) for non latrine owners (Roberts and Long 2007). Compared to these national averages, latrine owners in Kampong Speu have lower cash incomes and the difference in cash incomes between latrine owners and non-owners is slightly less pronounced. As noted in the 2007 Demand Assessment, per capita income estimates of respondents are lower than the Cambodian Gross National Income (GNI) per capita (USD 350 per annum in 2004, World Bank statistics website) because only cash income was counted (the surveys did not count production consumed in the home).

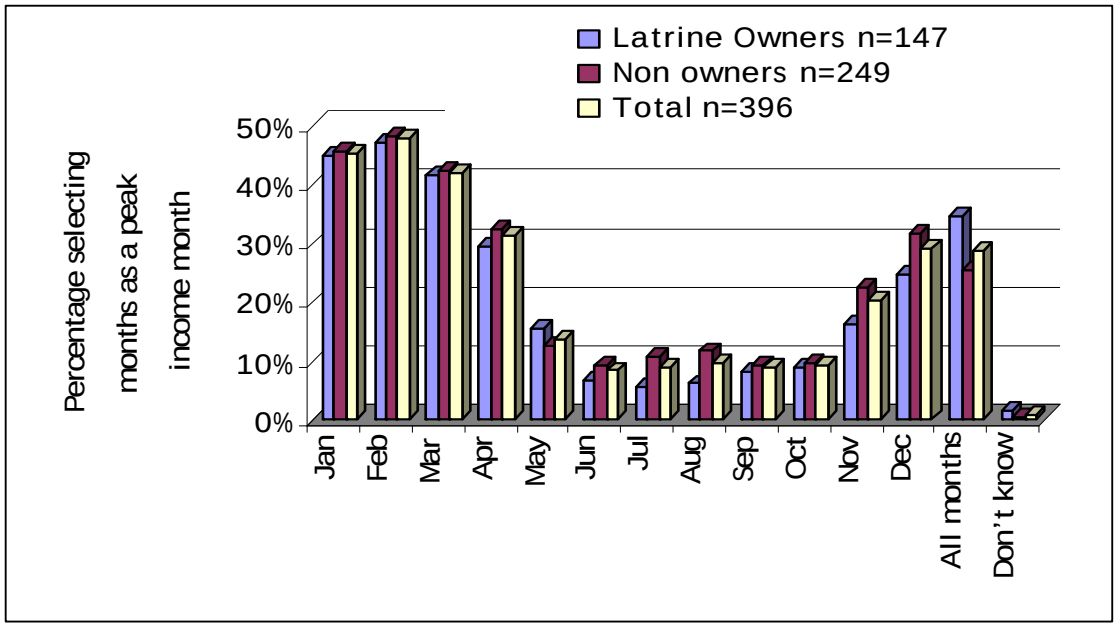
When disaggregated by latrine type, pour-flush latrine owners demonstrate higher household incomes: pour-flush owners have a median household income of 538 USD, compared to 375 USD for dry pit latrine owners.

Table 4: Sources of cash income				
Main sources of HH cash income in last 12 months (expressed as percentage of respondents)*		**Latrine Owner N = 149**	**Non-owner N = 248**	**Total N = 397**
Agricultural sources	Selling rice	54.4%	53.2%	53.7%
	Selling animal products	25.5%	14.5%	18.6%
	Selling non-rice crop	6.7%	11.7%	9.8%
	Farm labor	4.7%	3.6%	4.0%
	Fishing	0.0%	0.4%	0.3%
Non-agricultural sources	Salary	47.0%	27.8%	35.0%
	Business/trading	28.9%	24.2%	25.9%
	Day labor	17.4%	30.6%	25.7%
	Gift from others	5.4%	8.9%	7.6%

* Options not read to respondents; respondents could choose more than one option

The majority of both latrine owners and non-owners sell rice as their main source of cash income. Latrine owning households are more likely to have a family member earning a salary, while households without a latrine indicated a greater reliance on day labor for cash income.

Figure 2: Income Seasonality



For both latrine owners and non-latrine owners, peak months for income availability are during and after the harvest time in the dry season months of November to April, with less income available during the wet season months of May to October. More latrine owners than non-owners reported having a steady income throughout the year.

Table 5: Household Assets				
Description		**Latrine Owner N =149**	**Non-owner N =245**	**Total N =394**
Asset Ownership	Cow/ buffalo	79.2%	82.0%	81.0%
	Television	90.6%	62.9%	73.4%
	Bicycle	77.9%	67.8%	71.6%
	Battery	73.2%	61.6%	66.0%
	Motorbike	77.9%	46.5%	58.4%
	Mobile phone	78.5%	40.4%	54.8%
	Radio	65.8%	41.6%	50.8%
	Ox cart	52.3%	42.4%	46.2%
	Pig	22.8%	20.0%	21.1%
	Electric pump for irrigation	26.2%	8.6%	15.2%
	Rice mill	12.8%	3.7%	7.1%
	Semi-tractor	8.1%	4.1%	5.6%
	Generator	12.8%	0.0%	4.8%
	Rainwater tank of sealed concrete	8.1%	0.4%	3.3%

* Options read to respondents; respondents could choose more than one option

A significant proportion all respondents own cows or buffalo, televisions, bicycles and batteries. Compared with non-latrine owners, latrine owners tend to be better-off, as indicated by their ownership of more expensive 'luxury' items such as televisions, mobile phones, motorbikes, radios and generators. Latrine owners are also more likely to own agricultural assets including irrigation pumps, rice mills and semi-tractors (productive assets that would contribute to their higher rice crop yield). Although they have fewer assets than their latrine-owning counterparts, it is interesting to note the significant proportions of non-latrine owners who have prioritized ownership of other assets (televisions, bicycles) over a latrine.

Table 6: Housing materials				
		Latrine Owner	**Non-owner**	**Total**
Wall material on main living floor of house	Wood	82.6%	76.3%	78.6%
	Palm/Bamboo/Thatch	4.7%	20.5%	14.6%
	Concrete/brick	10.1%	0.8%	4.3%
	Galvanized steel	2.7%	1.2%	1.8%
	Bamboo/straw with mud	0.0%	0.8%	0.5%
	Fibrous cement	0.0%	0.4%	0.3%
Roofing material	Galvanized steel	33.6%	45.8%	41.2%
	Tiles	46.3%	21.7%	30.9%
	Fibrous cement	16.8%	19.3%	18.3%
	Palm/Bamboo/Thatch	1.3%	11.6%	7.8%
	Wood	0.7%	1.6%	1.3%
	Concrete/brick	1.3%	0.0%	0.5%

Latrine owners tend to have more permanent/durable roofing and wall material, further suggesting their better economic status relative to non-latrine owners.

Table 7: Household savings habits				
		Latrine Owner	Non-owner	Total
Frequency of putting aside money for savings	Each week	5.4%	2.4%	3.5%
	Each month	19.5%	9.2%	13.1%
	2-3 times per year	7.4%	2.8%	4.5%
	Once per year	9.4%	4.4%	6.3%
	Rarely	31.5%	33.3%	32.7%
	Never	26.8%	47.8%	39.9%

Table 8: Access to microfinance				
		Latrine Owner	Non-owner	Total
Percentage of households that have ever taken a microfinance loan		37.6%	41.4%	39.9%
Utilization of last (most recent) loan*	Animal raising	19.6%	20.4%	20.1%
	Farming/agricultural tools/production	16.1%	20.4%	18.9%
	Business/trading	21.4%	14.6%	17.0%
	Building house	8.9%	15.5%	13.2%
	Household equipment/Car/motorbike	19.6%	9.7%	13.2%
	Social activities marriage/funeral/ceremonies	7.1%	2.9%	4.4%
	Basic needs for living – food	3.6%	7.8%	6.3%
	Helping relatives	1.8%	1.0%	1.3%
	Medical treatment	1.8%	7.8%	5.7%
Average loan size of last (most recent) loan, USD		$458.43	$336.14	$378.71

* Respondents were not read any options, could specify any one primary loan usage. Open responses were coded during analysis.

The majority of respondents – both latrine owners and non-owners - indicated that they rarely or never save cash income. Latrine owners tend to put money aside for savings with greater frequency than non-latrine owners. Nearly half of all non-latrine owners stated that they never put money aside for savings, while an additional one-third indicated they rarely save money.

Nearly 40% of all respondents have taken a microfinance loan at some time in the past, indicating a fair degree of access to micro-financial services. Many of the major Microfinance Institutions (MFIs) have branch offices in Kampong Speu and loan officers active throughout the province.

Roughly 56% of current loans are being utilized for animal raising, agricultural production and business/trading. Housing loans comprised about 13% of all loan types; this may be important to pursue as latrine construction would seem to fit best with this category of home building/improvement lending. Interestingly, respondents indicated taking microfinance loans for a variety of non-productive uses including home medical treatment, food/basic needs and social activities including marriage, funeral and other ceremonies.

Latrine owners tend to have a higher average loan size corresponding to their generally higher income and asset levels, which would enable them to provide required collateral. Nearly 60% of all borrowers could pay back their loans in one year or less, with the remaining 40% on repayment schedules of more than one year.

5. Results: Sanitation

5.1 Current Defecation Practice

Table 9: Current defecation place of adults and children				
		Latrine Owner	**Non-owner**	**Total**
Place where adults in HH usually go to defecate	Household latrine	98.7%	.0%	36.9%
	Other latrine	.0%	5.6%	3.5%
	Open defecation- near house	.0%	16.1%	10.1%
	Open defecation- field/forest	1.3%	76.3%	48.2%
	Buried defecation- near house	.0%	2.0%	1.3%
Place where children in HH usually go to defecate*	Household latrine	94.2%	.0%	35.1%
	Other latrine	.0%	2.5%	1.6%
	Open defecation- near house	4.2%	40.6%	27.0%
	Open defecation- field/forest	1.7%	52.0%	33.2%
	Buried defecation- near house	.0%	5.0%	3.1%

* Percentage of all households with children: Latrine Owners, N = 120; Non-Owner, N = 202

Table 10: Average distance to defecation place			
	Latrine owner	**Non-owner**	**Total**
Average distance from housed to defecation place, meters	6.74 m	76.95 m	50.67 m

Nearly all latrine owners reported that adults and children usually use the household latrine for defecation, although children are slightly more likely to continue the practice of open defecation.[13] Almost 95% of latrine owners indicated that they would defecate in the field or forest if they did not have a household latrine.

The majority of adults and children in non-latrine owning households usually defecate in the open, with children much more likely than adults to defecate near the house. In households without a latrine, 76.3% of adults usually practice open defecation in a field or forest, while 16.1% defecate near the house. Among children, 52% defecate in a field or forest, while 40.6% practice open defecation near the house. Young children may be unable to walk long distances away from the home, and perhaps are less concerned than adults about finding a private place in the bush to relieve themselves.

Only 5.6% of adult non-owners reported usually using another latrine (e.g. a public or shared latrine). Shared latrines do not appear to be common practice, with only 26% of all latrine owners reporting that their latrine is used by people from neighboring households.

For latrine owners, the average distance from the house to the defecation place (usually their latrine) is 7 meters. Non-latrine owners defecate an average of 77 meters from their home.

[13] The survey did not ask respondents to clarify the ages of the children in their household. This would be useful to investigate further to gain insight into the age at which a child switches from open defecation to latrine use.

Table 11: Current practice for disposal of babies' faeces				
		Latrine Owner	Non-owner	Total
Place where babies' faeces are usually disposed	Put into latrine	48.6%	4.3%	19.2%
	Buried	40.0%	76.8%	64.4%
	Thrown in garbage	5.7%	1.4%	2.9%
	Left in open	2.9%	15.9%	11.5%
	Burned	2.9%	1.4%	1.9%

* Percentage of all households with babies: Latrine Owners, N = 35; Non-Owner, N = 69

In households that own a latrine and have infants in the household, respondents indicated that babies' faeces are usually placed in the latrine (48.6%) or buried (40.0%). In households without a latrine, nearly 77% of respondents indicated that babies' faeces are buried, while 16% reported that the faeces are usually left in the open. It is unclear how well self-reported practice of burying babies' faeces corresponds to actual practice, and whether people understand that babies' faeces are in fact harmful. Further research into beliefs and practices around disposal of babies faeces is required in order to ensure that behaviors associated with safe disposal of babies' faeces are specifically targeted in social marketing messages.

Table 12: Seasonal latrine usage amongst latrine owners by latrine type*							
		Dry Season			Wet Season		
		Flush/Pour flush	Dry	Total	Flush/ Pour flush	Dry	Total
Frequency of latrine usage of adults	Always	92.5%	55.2%	85.2%	94.2%	79.3%	91.3%
	Sometimes	7.5%	41.4%	14.1%	5.8%	17.2%	8.1%
	Never#	.0%	3.4%	.7%	.0%	3.4%	.7%
Frequency of latrine usage of children**	Always	79.4%	52.2%	74.2%	82.5%	60.9%	78.3%
	Sometimes	18.6%	43.5%	23.3%	16.5%	34.8%	20.0%
	Never	2.1%	4.3%	2.5%	1.0%	4.3%	1.7%

* Tables 20 and 21 provide details of latrine technology types. 'Dry' sanitation includes VIP latrines, pit latrines and composting latrines. Pour flush, N = 120; Dry = 29; Total, N = 149
** Percentage of all HHs with children, Pour flush N = 97; Dry N = 23; Total, N = 120
# One respondent very recently constructed latrine and had not yet begun to use it at time of visit.

Although the large majority of adult pour-flush latrine owners reported that they always use a latrine for defecation, seasonal differences in latrine usage amongst dry pit latrine owners emerged. Consistent latrine usage amongst adults in dry pit latrine owning households seems to drop off significantly in the dry season (from 79.3% in the wet season to just 55.2% in the dry season). Dry pit latrine owners may be less likely to use their latrine in the dry season, when many good sites for open defecation are available and when there are no rains or flooding to make walking to OD sites problematic.

Children in all latrine owning households do not seem to consistently use their latrine in the wet or dry season and are more likely than adults to defecate in the open despite having access to a household latrine. As with adults, lack of consistent use is much more pronounced amongst children with dry pit latrines compared to those with flush/pour-flush latrines. Only 61% of children with dry pits use them consistently in the wet season, and this drops to just 52% in the dry season.

5.2 Satisfaction with Current Practice

Table 13: Satisfaction with current defecation place				
		Latrine Owner	**Non-owner**	**Total**
Reported satisfaction with current defecation place	Very satisfied	62.4%	4.8%	26.4%
	Satisfied	29.5%	19.7%	23.4%
	Unsatisfied	6.7%	39.8%	27.4%
	Very unsatisfied	1.3%	35.7%	22.9%

More than 90% of latrine owners indicate they are very satisfied or satisfied with their defecation place. By contrast, over 75% of non-latrine owners are unsatisfied or very unsatisfied with their current defecation place. Females tended to show stronger feelings than males: amongst latrine owners a greater percentage (72.2%) of females indicated they were very satisfied with current practice while 37.2% of female non-latrine owners indicated they were very unsatisfied.

The high level of dissatisfaction with current practice amongst non-owners suggests ample opportunity to move people from current open defecation practice to latrine purchase and use.

Table 14: Latrine owner satisfaction with current defecation place by latrine type*				
		Pour-flush	**Dry**	**Total**
Reported satisfaction with current defecation place	Very satisfied	70.0%	31.0%	62.4%
	Satisfied	25.8%	44.8%	29.5%
	Unsatisfied	3.3%	20.7%	6.7%
	Very unsatisfied	.8%	3.4%	1.3%

* Tables 20 and 21 provide details of latrine technology types. 'Dry' sanitation includes VIP latrines, pit latrines and composting latrines. Pour flush, N = 120; Dry = 29; Total, N = 149

Amongst latrine owners, levels of satisfaction are much higher amongst owners of flush/pour-flush latrines. Nearly 96% of flush/pour-flush owners are very satisfied or satisfied with their latrine, compared to 76% of dry pit latrine owners. This finding corresponds with above data on seasonal usage (Table 13) as well as finding indicating a strong preference for pour-flush technologies amongst dry pit latrine owners (Table 17). In general, dry pit latrine owners are less satisfied with their latrines, more likely to continue the practice open defecation (particularly in the dry season) and express a preference for pour-flush latrine technologies. These dry pit latrine owners are a market segment that could be targeted for new low-cost and aspirational pour-flush latrines.

5.3 Awareness of latrine products and purchase points

Table 15: Known latrine technologies				
		Latrine Owner	**Non-owner**	**Total**
Known Latrines (expressed as percentage of respondents)*	Flush/pour-flush	96.6%	92.4%	94.0%
	Ventilated Improved Pit (VIP) latrine	37.6%	30.1%	32.9%
	Pit latrine with slab	26.8%	15.7%	19.8%
	Western latrine	6.0%	2.8%	4.0%
	Don't know	0.0%	2.8%	1.8%

* Options not read to respondents; respondents could choose more than one option

The flush/pour-flush latrine seems to be the most commonly known latrine technology, with well over 90% of all respondents indicating they were aware of this technology. Dry pit latrine options including the Ventilated Improved Pit (VIP) latrine and pit latrine with slab were identified by far fewer respondents (33% and 20% respectively) as technologies they had heard of or seen before. Latrine owners are generally more aware of different technology options than non-owners.

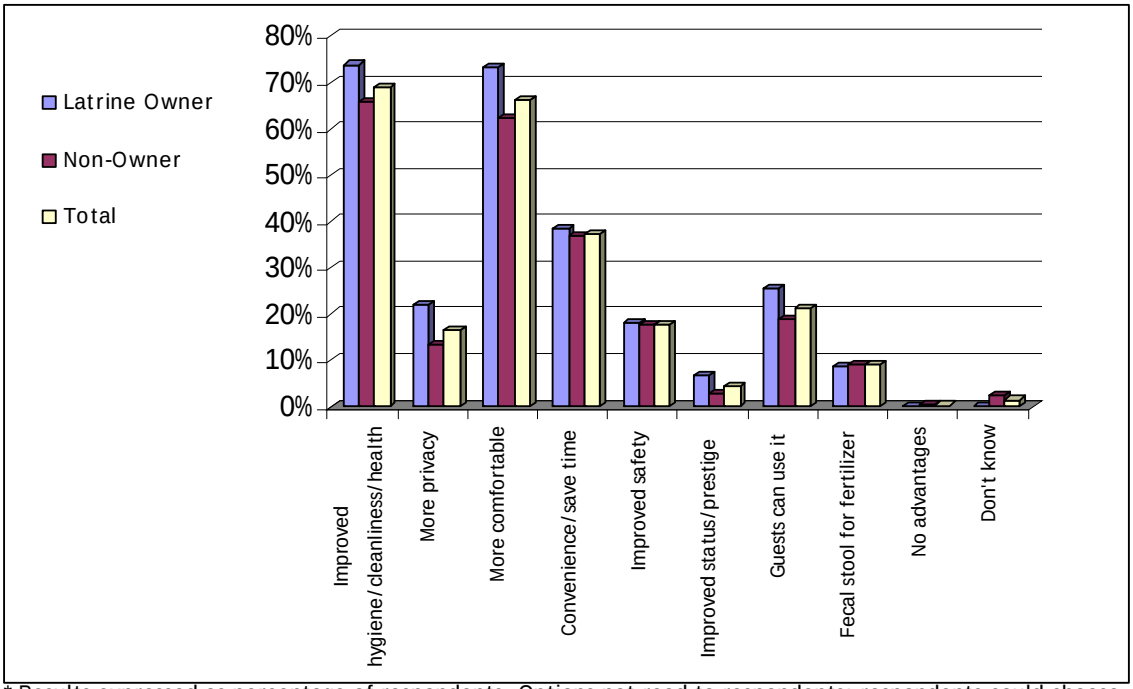
Table 16: Purchase point for latrine materials

		Latrine Owner	Non-owner
Nearest place where HH purchased, or in the case of non latrine owner, would purchase materials for latrine construction	In my village	6.9%	2.8%
	In my commune	11.0%	14.5%
	In my district	23.4%	20.5%
	In my province	44.8%	47.4%
	In another province	5.5%	6.8%
	In Phnom Penh	.7%	.4%
	No purchase/collect materials	3.4%	1.6%
	Don't know	3.4%	6.0%

Close to half of all respondents indicated that latrine materials were, or in the case of non-owners, could be purchased in Kampong Speu Province. Respondents were also asked to give the name and location of purchasing points. Roughly 50% of all respondents indicated they had purchased or could purchase materials at the main market at Kampong Speu town, Chbar Mon district. Some larger district markets, for example Wat Ang market in Samrong Tong district, were also mentioned as purchase points. Fewer respondents were aware of local purchase points at commune or village level.

5.4 Latrine perceptions and preferences

Figure 3: Perceived advantages of latrine ownership



* Results expressed as percentage of respondents. Options not read to respondents; respondents could choose more than one option.

All households indicated improved hygiene/cleanliness/health, greater comfort, more convenience and the use of latrine by guests (in that order) as the main advantages of latrine ownership. There

was little difference between latrine owners and non-owners or between male and female respondents in terms of perceived benefits. In addition to identifying latrine benefits, over 90% of both latrine owners and non-owners indicated that it was 'very important' or 'quite important' to spend money on a good latrine for their family's health.

Interestingly, 8.7% (N=13) of latrine owners and 9.2% (N =23) of non-owners cited the use of human fertilizer as an advantage, pointing to potential problems with unsafe emptying and disposal practices of fecal sludges from pour flush latrines and the need to investigate and address safe reuse (see also Table 30: Pit emptying practice below).

Table 17: Perceived advantages of owning a latrine by latrine type

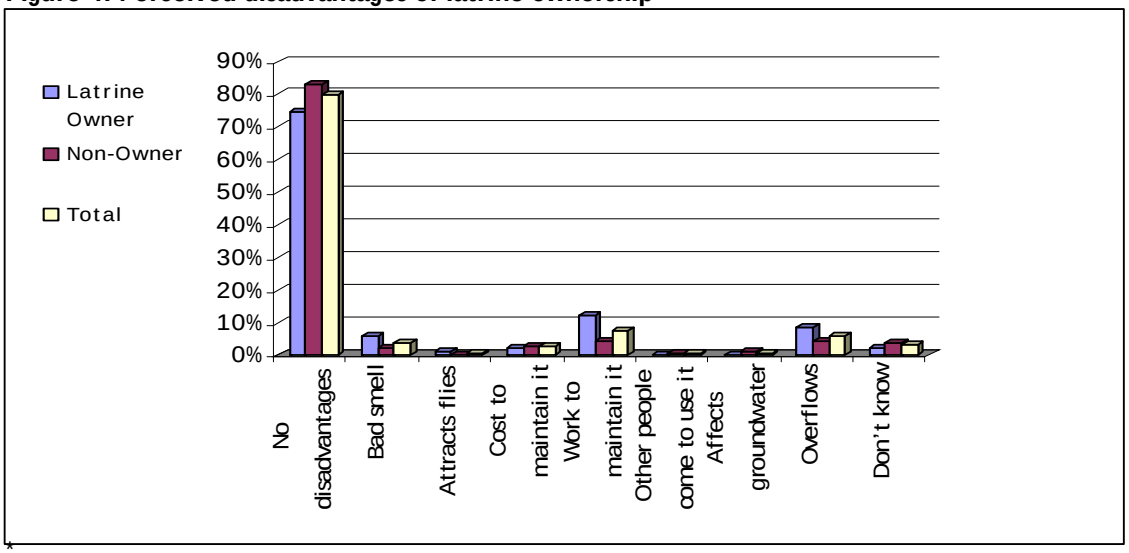
		Pour-flush	Dry Pit
Perceived Latrine Advantages (expressed as percentage of respondents) *	Improved hygiene/cleanliness/health	75.0%	69.0%
	More comfortable	75.8%	62.1%
	Convenience/save time	41.7%	24.1%
	Guests can use it	28.3%	13.8%
	More privacy	22.5%	20.7%
	Improved safety	19.2%	13.8%
	Fecal stool for fertilizer	8.3%	10.3%
	Improved status/prestige	8.3%	.0%
	No advantages	.0%	.0%
	Don't know	.0%	.0%

* Options not read to respondents; respondents could choose more than one option.

Pour-flush owners are more likely to mention advantages of latrine ownership, reporting all advantages with greater frequency than dry pit owners. Interestingly, while 8.3% of all pour-flush owners cited 'improved status/prestige'as an advantage, no dry pit latrine owners cited this benefit.

Care should be taken in interpreting the above survey findings in the design of marketing messages. The WaterSHED in-depth qualitative interviews reveal that terms like 'cleanliness' seem to relate to benefits of a pour-flush latrine in particular, and are often used describe the lack of smell and sight of faeces, as well as availability of water for anal cleansing. Furthemore, 'health' and 'hygiene' seem linked to culturally-based beliefs (e.g. of water for purification) rather than to medical notions of fecal-oral disease transmission. In fact, understanding of germs or fecal-oral transmission was rarely indicated as a motivator or driver for latrine demand in the qualitative interviews (WaterSHED citation). The above household survey findings (and similar findings in other surveys in Cambodia) relating to hygiene and health as motivators should be understood within the Cambodian cultural context, and not interpreted as a need for more messages on fecal-oral transmission, diarrhea and germs.

Figure 4: Perceived disadvantages of latrine ownership



* Results expressed as percentage of respondents. Options not read to respondents; respondents could choose more than one option.

The majority of households do not believe that latrines pose any disadvantages. Latrine owners are generally more likely to identify disadvantages, presumably because they are able to speak from actual experience with a latrine.

Table 18: Perceived disadvantages of owning a latrine by latrine type

		Pour-flush	Dry Pit
Perceived Latrine Disdvantages (expressed as percentage of respondents) *	No disadvantages	76.7%	65.5%
	Bad smell	2.5%	20.7%
	Work to maintain it	13.3%	6.9%
	Overflows	8.3%	10.3%
	Attracts flies	.0%	6.9%
	Cost to maintain it	2.5%	.0%
	Don't know	2.5%	.0%

* Options not read to respondents; respondents could choose more than one option.

When responses are analyzed by latrine technology type, significant differences between pour-flush and dry pit latrine owners emerge. Dry pit latrine owners are more likely to report disadvantages, particularly bad smell. Nearly 77% of pour-flush latrine owners mentioned no disadvantages, compared to 66% of dry-pit owners. Pour-flush owners ranked the main disadvantages of latrine ownership as the work to maintain it (13.3%) and problems with overflow (8.3%). For dry pit latrine owners, the main disadvantages mentioned were bad smell (20.7%), problems with overflow (10.3%), flies (6.9%), and the work to maintain it (6.9%). It is clear that the two types of latrine owners have quite different user experiences.

Table 19: Preferred latrine technologies				
		Latrine Owner	**Non-owner**	**Total**
Type of latrine respondent most prefer for his/her household *	Flush/pour-flush	94.6%	97.6%	96.5%
	Dry pit latrine	4.0%	1.2%	2.3%
	Open defecation -field/forest	.0%	.4%	.3%
	Western toilet	.7%	.4%	.5%
	Don't know	.7%	.4%	.5%
Percentage of respondents who know someone who can build preferred latrine type		83.2%	48.6%	61.6%

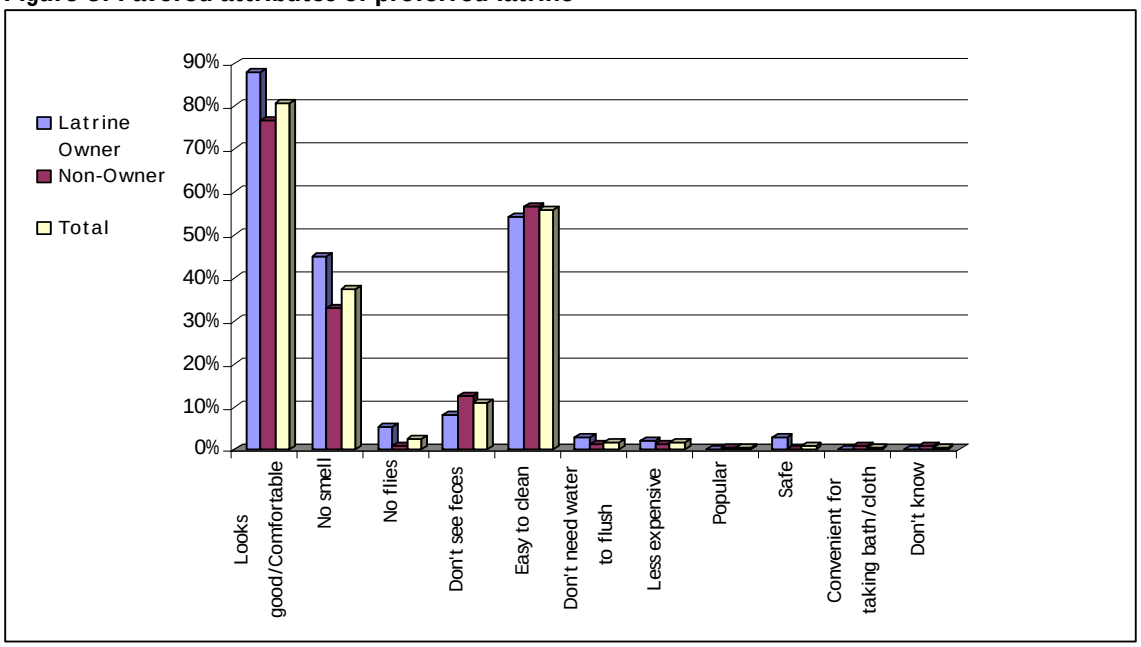
* Options read to respondents; respondents could choose only one option.

The flush/pour-flush latrine is clearly the most preferred latrine technology amongst latrine owners and non-owners. This corresponds with preferences found in focus group discussions during the project's latrine research and development work, and also with findings from similar surveys in Cambodia.

Approximately 83% of latrine owners knew someone who could build their preferred latrine type, while only 49% of non-latrine owners were able to identify such a person. This indicates a potentially important need for local mason training in latrine installation and advertising of skilled or perhaps certified mason installation services.

Twenty- five of the 29 dry pit latrine owners (or 86.2% of all dry pit latrine owners) stated a preference for the flush/pour-flush latrine. This is consistent with findings above regards lower levels of satisfaction and inconsistency in latrine usage amongst dry pit latrine owners (see Tables 13 and 14 above). Nearly all pour-flush latrine owners (96.7%) prefer the pour-flush.

Figure 5: Favored attributes of preferred latrine



* Results expressed as percentage of respondents. Options not read to respondents; respondents could choose more than one option.

Both male and female latrine owners and non-owners favor a latrine that looks good/is comfortable, is easy to clean[14] and does not smell (in that order). The flush/pour-flush latrine is perceived to have these attributes. Eight percent of latrine owners and 13% of non-latrine owners also felt that not seeing faeces was an important attribute of the preferred flush/pour-flush latrine. The findings suggest that having an inexpensive latrine is much less important than having a latrine that meets perceived standards of comfort, aesthetics and perceived cleanliness.

Table 20: Favored attributes of preferred latrine by latrine type

		Pour-flush	Dry Pit
Particular features of preferred latrine (expressed as percentage of respondents) *	Looks good/comfortable	90.0%	79.3%
	Easy to clean	55.0%	51.7%
	No smell	49.2%	27.6%
	Don't see faeces	9.2%	3.4%
	Don't need water to flush	1.7%	6.9%
	Less expensive	.0%	10.3%
	No flies	5.8%	3.4%
	Safe	2.5%	3.4%

* Options not read to respondents; respondents could choose more than one option.

[14] When probed in WaterSHED in-depth interviews, respondents who mentioned 'easy to clean' usually meant 'easy for anal cleansing with water after defecating' rather than 'easy to keep the facility clean' (WaterSHED citation).

As noted above, roughly 98% of pour-flush owners and 86% of dry pit owners stated a preference for the flush/pour-flush latrine. Pour-flush owners were more likely to mention looks good/comfortable, easy to clean, no smell, don't see faeces and no flies. Dry pit latrine owners cited these attributes, but also mentioned the cost-saving and water-saving attributes.

Table 21: Latrine cost perceptions

		Latrine Owner		Non-owner	
		Average	Median	Average	Median
Amount respondents would expect to pay for four types of latrines (pictured in Appendix 4), USD	Latrine A (low end)	$46	$25	$54	$25
	Latrine B (medium)	$113	$75	$136	$75
	Latrine C (high end)	$361	$300	$371	$300
	Latrine D (new low-cost 'latrine core')	$187	$100	$264	$100

Respondents were asked to estimate the cost of three sample latrines A, B and C (pictured in Appendix 4). Latrine A featured a simple unlined dry pit pit with wooden slab and thatch shelter; Latrine B featured a dry pit pit with concrete-lined pit, concrete slab and thatch shelter; and Latrine C featured a single concrete-lined pit with off-set pour-flush slab and ceramic pan, tiles and a water basin with concrete shelter.

Non-latrine owners and latrine owners generally made similar cost estimates, and these were generally slightly higher than what are known to be actual costs for these latrine models. These results contradict findings from the 2007 Demand Assessment, which found that latrine owners consistently made much higher estimates than non-latrine owners when shown the same pictures.

The survey also included a fourth option, Latrine D, a picture of the latrine that has been developed for promotion and retail sale through the project (see Appendix 6). Latrine D featured a single concrete-lined pit with off-set pour-flush slab and ceramic pan but no shelter. Cost estimates for this redesigned 'latrine core' were particularly significant: both latrine owners and non-owners estimated a median cost of USD 100 for this latrine. Non-owners where far more likely to overestimate the price of this option as seen in the much higher average cost estimate by non-owners for Latrine D. This finding is encouraging as the project plans to promote this new latrine design at a suggested retail price of USD 30 – 40.

5.5 Technologies currently in use by latrine owners

Table 22: Technologies currently in use by latrine owners (N = 149)

		Frequency	Percent
Latrine types currently in use	Flush/pour-flush to:		
	Piped sewer system	2	1.3%
	Septic tank	0	.0%
	Pit latrine	116	77.9%
	Elsewhere	2	1.3%
	Don't know	0	.0%
	Subtotal flush/pour-flush	*120*	*80.5%*
	Ventilated Improved Pit (VIP) latrine	8	5.4%
	Pit latrine with slab	9	6.0%
	Pit latrine without slab/open pit	12	8.1%
	Composting toilet	0	.0%
	Other	0	.0%
	Subtotal dry pit/waterless sanitation	*29*	*19.5%*

Table 23: Technology description				
		Pour flush N=120	**Dry N=29**	**Total N=149**
Below ground	Lined pit – offset	59.2%	0.0%	47.7%
	Lined pit - beneath latrine	39.2%	31.0%	37.6%
	Unlined pit	.0%	69.0%	13.4%
	Piped sewerage	1.7%	0.0%	1.3%
Slab type	Pour flush	100.0%	0.0%	80.5%
	Open hole – concrete slab	0.0%	48.3%	9.4%
	Open hole – wooden slab	0.0%	51.7%	10.1%
Wall material	Concrete/brick	80.8%	6.9%	66.4%
	Thatch	3.3%	62.1%	14.8%
	Wood	7.5%	6.9%	7.4%
	Galvanized steel	5.8%	0.0%	4.7%
	No walls	0.0%	13.8%	2.7%
	Fibrous cement	2.5%	0.0%	2.0%
	Plastic sheet	0.0%	6.9%	1.3%
	Salvaged material	0.0%	3.4%	.7%
Roof material	Galvanized steel	83.3%	6.9%	68.5%
	Thatch	3.3%	55.2%	13.4%
	No roof	.8%	31.0%	6.7%
	Fibrous cement	6.7%	3.4%	6.0%
	Concrete	2.5%	0.0%	2.0%
	Tiles	2.5%	0.0%	2.0%
	Plastic sheet	.8%	0.0%	.7%
	Salvaged material	0.0%	3.4%	.7%
Latrine owners using their latrine for bathing		74.2%	6.9%	61.1%

Amongst those households with a latrine, the most common latrine type is a flush/pour-flush to a lined off-set pit with concrete/brick walls and a galvanized steel roof. The majority of latrines in the target area are 'high-end' designs, a finding corresponding with the 2007 Demand Assessment. Most pour-flush latrine owners tend to have this type of 'high-end' design: pour-flush latrines are usually built with concrete shelters and galvanized steel roof. Amongst dry pit latrine owners, however, the most common design is an unlined pit directly beneath a wooden or concrete slab,

and these technologies are usually built with shelters and roofs of thatch. Nearly a third of all dry pit latrine owners have no roof on their latrine.

Over 60% of all latrine owners also use their latrine as a bathing area, including the majority (74%) of pour-flush latrine owners but only 6.9% dry pit latrine owners.

Table 24: Amount household spent on latrine, USD

		Pour flush	Dry Pit	Total
Total (material and labour)	Average	$303	$36	**$253**
	Median	$275	$5	**$250**
Materials only	Average	$314	$26	**$260**
	Median	$200	$4	**$150**

* 1 USD = 4000 riel

The median cost to the household for a latrine is USD 250, including a median cost of USD 150 for materials. Unsurprisingly, there is a substantial difference in cost between pour-flush and dry pit latrines: The median cost of a pour-flush latrine is $275, including $200 for materials. The median cost for a dry pit latrine is $5, including $4 for materials.

Median latrine costs are substantially higher than costs cited in the 2007 Demand Assessment, which found the median cost for a rural latrine was $115. This is most likely due to significant increases in the cost of fuel and inputs such as sand and cement since 2007.

Table 25: External assistance with latrine construction

Percentage of latrine owners receiving assistance from an organization (NGO, agency, government) to build their latrine*		29.5% N = 44
Type of assistance received #	Free/subsidized materials	89.2%
	Technical advice	16.2%
	Encouragement	8.1%
	Free/subsidized labour	5.4%
	Design provided	2.7%

* Percentage of all latrine owners, N = 149
# Expressed as a percentage of latrine owners receiving assistance. Options not read to respondents; respondents could choose more than one option.

Nearly 30% of all latrine owners received assistance from an external organization in the construction of their latrine, with almost 90% of those receiving assistance obtaining free or subsidized latrine materials. Thus, over 22% of all latrine owners received free or subsidized latrines. The level of subsidization in the target area is slightly higher than that found in the national 2007 Demand Assessment (which reports an average of 17% rural latrine subsidy). However, results confirm a high level of household investment, with nearly 78% of latrines fully self-financed and privately installed.

Table 26: Latrine subsidy by household income, USD*					
	Study population income quintiles[#]				
	Q1 $7.50-150	Q2 $151-250	Q3 $251-500	Q4 $501-775	Q5 $775-6000
Percentage of households with a latrine	16.2%	14.8%	23.2%	15.5%	30.3%
Percentage of latrine owners receiving free/subsidized materials (N = 33)	21.9%	12.5%	34.4%	21.9%	9.4%

* 1 USD = 4000 riel
[#] Quintile ranges based on study population only.

Although latrine owners have a higher median household income, and are over-represented in the higher income quintiles, they benefit from latrine hardware subsidy. Latrine owner households receiving a latrine hardware subsidy came from all income levels, suggesting that external organizations are reaching not only the poorest, but also those with perhaps some ability to pay. Only 22% of households receiving a hardware subsidy came from the poorest quintile, while almost 10% came from the richest quintile.

5.6 Triggers of latrine adoption

Table 27: Triggers of latrine adoption amongst latrine owners (N = 149)		
Percentage of latrine owners who gave the following responses when asked the question 'What made you decide to build your first latrine at the time you did?' (expressed as percentage of respondents) *	Had visitors coming from outside village	28.2%
	Children became physically mature	26.2%
	Social pressure	23.5%
	Neighbour got one	21.5%
	Program was offering subsidy	19.5%
	Personal awareness of the importance of having a toilet	19.5%
	Sick/old relative	16.1%
	Someone told me I had to	14.8%
	Construction of new house	14.8%
	Had enough money to buy	6.7%
	Event (wedding/funeral/New Year)	5.4%

* Options not read to respondents; respondents could choose more than one option

Latrine owners were asked what made them buy their latrine when they did, e.g. what was the event or situation that finally moved them from considering a latrine to actual purchase and construction. The most common responses included: a visitor was coming from outside the village; a child in the household was becoming physically mature; social pressure; a neighbour got one; and a program was offering a latrine subsidy (in that order). This finding has strong implications for sanitation marketing strategy development: while the motivation for latrine construction may be perceived benefits such as convenience or health, the trigger for actual purchase and construction is often a more immediate reason.[15]

[15] See Jenkins and Scott (2007) for further discussion of the role of motivating benefits vs. triggers for purchase of improved sanitation.

5.7 Latrine purchase and construction process

Table 28: Final decision maker determining latrine purchase			
		Latrine Owner	**Non-owner**
Percentage of respondents who said following people made or, in the case of non-owners, would make the final decision to build a household latrine	Head of household	40.3	41.0
	Head of household and spouse of HH head jointly	22.1	14.9
	Spouse of HH head	8.1	26.1
	Family together	21.5	15.7
	Brother/sister(in-law)	5.4	.4
	Grandparents	1.3	2.0

Over 40% of respondents indicated that the final decision to build their first latrine was or, in the case of non-owners, would be made solely by the household head. Some latrine owners indicated that the decision was taken jointly by the household head and spouse (22.1%) or by the family as a whole (21.5%). These results suggest that other members of the household, in particularly the (usually female) spouse of the (usually male) head of household have some influence over purchase decisions at the household level. Further analysis of household decision making based on who is the main income earner (e.g. the male, the female) might be useful to shed more light on decision making dynamics.

Table 29: Latrine construction process by latrine type*				
		Pour Flush	**Dry**	**Total**
Length of time it took to construct latrine	Less than 2 weeks	74.2%	93.1%	77.9%
	3 weeks – 1 month	20.0%	.0%	16.1%
	1-6 months	4.2%	6.9%	4.7%
	7-12 months	1.7%	.0%	1.3%
Percentage of latrine owners building their latrine all at once or in stages	All at once	91.7%	89.7%	91.3%
	In stages	8.3%	10.3%	8.7%

* Tables 20 and 21 provide details of latrine technology types. 'Dry' sanitation includes VIP latrines, pit latrines and composting latrines. Pour flush, N = 120; Dry = 29; Total, N = 149

Latrine owners indicate that actual latrine construction usually takes less than a month and that latrines are most commonly built all at once, rather than in stages. Over 93% of dry pit latrine owners construct their latrine in two weeks or less, while the majority of pour-flush owners construct their latrine within one month.

Table 30: Assistance with latrine construction		
		Latrine Owner
Percentage of latrine owners who hired someone to build their latrine		60.4% 72.5% of pour-flush latrine owners 10.3% of dry latrine owners
Location of hired person *	Masons hired from the village	57.1%
	Masons hired from outside the village	42.9%
Reason for hiring this particular mason * #	Relative/friend	54.9%
	Has good reputation	35.2%
	Saw and liked a latrine they had built	29.7%
	Had hired before	11.0%
	Least expensive	5.5%
Purchase arranger *	Household	84.4%
	Hired person	7.8%
	Both	7.8%

*Expressed as percentage of respondents who hired a mason, N = 90
Options read to respondents; respondents could choose more than one option

Roughly 60% of all latrine owners hired someone to build their latrine. When disaggregated by latrine technology type, it is clear that pour-flush latrine owners are much more likely to hire a mason than dry pit latrine owners (73% of pour-flush latrine owners hired someone, compared to only 10% of dry pit latrine owners). Longer construction processes and a need for hired assistance are not surprising with the more sophisticated 'higher-end' pour-flush latrine types.

Masons were as likely to come from one's own village as from outside the village, but were usually hired because they were a relative or friend of the household. Masons were also hired because they had a good reputation; because the household had seen and liked a latrine the mason had built; and because the household had used that mason in the past.

Although masons are commonly hired to do the construction, nearly 85% of respondents indicated that the household was responsible for purchasing the materials. Focus group discussions with masons reveal that they will often provide the household head with a bill of quantity for the materials required. The household is then responsible to buy required materials from the material supply shop and arrange for transport of materials to the home.

5.8 Latrine upgrading, operation and maintenance

Of the 149 latrine owners, 14% (21 respondents) have made some improvement to their household latrine, while 59.7% (89 respondents) of latrine owners claimed that they planned to make changes or improvements to their latrine in the future. The most common upgrades or planned upgrades were improvements to the shelter roof and walls, improvements to the latrine slab and the construction of a bathing area inside the latrine. Some respondents indicated that they had lined or planned to line their pit and had 'upgraded' from a dry pit to a pour-flush latrine.

Table 31: Types of latrine upgrades made or planned by latrine owners

		Latrine owners previous upgrades (N = 21)	Latrine owners planned upgrades (N = 89)
Types of upgrades (expressed as percentage of respondents)	Improve walls	52.4%	44.3%
	Improve slab	57.1%	28.4%
	Improve the Roof	47.6%	42.0%
	Build bathing area	33.3%	33.0%
	Build water storage tank(s)	0%	35.2%
	Line pit	23.8%	25.0%
	Get pour-flush pan	28.6%	20.5%
	Build hand washing area	9.5%	22.7%
	Move to inside the house	0%	19.3%
	Build door	4.8%	14.8%
	Add ventilation pipe to pit	14.3%	6.8%
Percentage of latrine owners using their first latrine		85.9%	
Average age of latrine		6.4 years	

* Options read to respondents; respondents could choose more than one option

The large majority of latrine owners are still using their first latrine and the average age of existing latrines was 6.4 years. Of the 21 respondents who had built another latrine, 18 were using their second latrine and 3 were using their third or fourth latrine. When these 21 respondents were asked how their current latrine differs from previous latrines, the most common responses were that improvements had been made to the wall, roof and slab of the latrine. Some respondents had also changed to a pour-flush system or added a bathing area.

Table 32: Water usage for latrine flushing

Percentage of latrine owners using water to flush latrine		80.5%
Amount of water used for flushing per day, litres	Less than 5 litres	.8%
	6 to 15 litres	15.0%
	16 to 25 litres	24.2%
	More than 25 litres	60.0%
Pour-flush owners with enough water to flush the latrine in the dry season		94.2%

*Expressed as percentage of respondents who use water for flushing, N = 120

As noted above, the majority of latrine owners have a flush/pour-flush latrine and thus require water for flushing. Although latrine owners indicated they used more than 25 litres of water per

day for flushing, nearly 95% stated that they had adequate water supply for flushing in the dry season.

Table 33: Pit emptying practice		
Percentage of latrine owners who have ever emptied their pit		16.8%
Percentage of pit emptying done by a hired person/service *		22.2%
Approximate time household waited before emptying pit once it became full *	None(emptied right away)	69.2%
	Less than one month	19.2%
	1-6 months	3.8%
	7-12 months	3.8%
	More than 12 months	3.8%
Household practice of disposal of pit contents *	Spread on field as fertilizer	64.0%
	Pumping car service	12.0%
	Buried near house	12.0%
	Dumped in river/pond/canal	8.0%
	Emptied pit into new hole	8.0%
	Dumped in forest	4.0%

*Expressed as percentage of respondents who have emptied their pit, N = 25

Of 149 latrine owners, only 25 (16.8%) have emptied their latrine pit. Of these, 6 households hired someone to empty the pit for them, while the rest emptied the pit themselves. The most common pit emptying practice was to spread the pit contents on the field as fertilizer. Twenty-three of the 25 pit emptying households (88.5%) waited less than one month before emptying their pit, with the majority emptying their pit as soon as it was full.

These results raise serious concerns about safe excreta management and pit emptying practices. Further research is needed to understand behaviours and attitudes related to pit emptying. At a minimum, the WASH-M project will need to consider how it develops user education on operation and maintenance of the new products, particularly safe handling and re-use of human excreta, into its marketing activities.

5.9 Latrine purchase intention by non-owners

Table 34: Household consideration of latrine construction		
		Non-owner
Percentage of non-latrine owners that have discussed or thought about building a household latrine		85.5%
Last time household discussed building a latrine*	Less than 1 month ago	7.0%
	1-6 months ago	18.8%
	7-12 months ago	18.3%
	More than 1 year ago	55.9%

*Expressed as percentage of respondents who thought about or discussed building latrine, N = 213

One way to measure demand and segment the market of potential latrine purchasers is to consider where a household is in the 'latrine adoption process' (Jenkins and Scott, 2007). Amongst those respondents without a latrine, over 85% indicated that they had thought about or discussed building a household latrine with their family, indicating a potentially high preference for building a latrine. However, the majority (56%) had not discussed building a latrine in the last year.

Table 35: Mason and site identification		
		Non-owner
Identification of mason to assist with latrine construction	Yes, have identified mason for job	33.6%
	No/Not yet identified	58.3%
	Will build my own latrine	6.9%
	Don't know	1.2%
Location of person to be hired *	Masons from the village	78.3%
	Masons from outside the village	21.7%
Reason for wanting to hire this particular mason * #	Relative/friend	49.4%
	Has good reputation	31.3%
	Saw and liked a latrine they had built	38.6%
	Had hired before	4.8%
	Least expensive	12.0%
	Neighbor	2.4%
Percentage of non-latrine owners who have chosen a site for a latrine		67.9%

*Expressed as percentage of respondents who indicated they would hired a mason, N = 83
Options read to respondents; respondents could choose more than one option

Table 36: Savings towards latrine purchase	
	Non-owner
Percentage of non-latrine owners who currently have money saved towards building a latrine	8.0%
Respondents who would consider taking a microfinance loan to purchase a latrine	4.8%
Average perceived minimum amount HH would need to spend to build an acceptable latrine for family	178 USD

A movement from 'preference' to 'intention' stage in the latrine adoption process may be indicated by the identification of a mason or site for the latrine, or savings towards a latrine purchase. In the case of non-owners in the target area, the findings suggest that intention is low: although 68% of non-owners have chosen a site for their future latrine, only one-third have identified a mason who could construct it, and less than 10% are currently saving towards a latrine purchase. Non-owners believe they will need to save a minimum amount of USD 180 to build an acceptable latrine for their family, a cost that is prohibitive for most households. Very few non-owners (only 4.8% of all non-owners) would consider taking a microfinance loan for a latrine.

Table 37: Likelihood of latrine construction		
		Non-owner
Responses to the question 'If I return to your house one year from today, what is the likelihood you will have built a latrine?'	No chance	16.1%
	Low likelihood	61.0%
	Medium likelihood	17.7%
	High likelihood	5.2%
	Total	100.0

Intention can also be measured by the reported likelihood of building a latrine in the next year. While 84% of the 249 non-owners indicated there was some likelihood of latrine construction in the next year, only 5% reported a high likelihood of building in the next 12 months. The majority of non-owners indicated that there was a low likelihood (61%) or no chance (16%) of latrine construction in the next year. These findings suggest low rates of new demand. These aggregate findings mask significant differences between CLTS and non-CLTS villages: non- owners in CLTS villages exhibit much higher rates of demand than non-owners in non-CLTS villages (see Table xx).

6. Results: Hygiene

6.1 Current Hand Washing Practice

Table 38: Frequency of hand washing with soap				
Description		**Latrine Owner**	**Non-owner**	**Total**
Hand washing with soap frequency	More than three times per day	10.7%	8.0%	9.0%
	Two to three times per day	63.1%	51.4%	55.8%
	Once per day	16.1%	26.1%	22.4%
	Once every 2-3 days	6.7%	9.2%	8.3%
	Less than once per week	0.0%	2.8%	1.8%
	Almost never	3.4%	2.4%	2.8%

Table 39: Hand washing with soap practice				
		Latrine Owner	**Non-owner**	**Total**
Times respondents indicated that they usually wash their hands with soap (expressed as percentage of respondents)*	Before eating	73.6%	59.3%	64.7%
	When they are dirty	56.9%	67.6%	63.6%
	After eating	25.0%	23.7%	24.2%
	Before preparing food	26.4%	22.8%	24.2%
	After defecation	38.9%	14.9%	23.9%
	When returning to the household	13.2%	14.9%	14.3%
	Before going to sleep	13.2%	10.8%	11.7%
	After waking up	5.6%	6.6%	6.2%
	Before washing baby	2.1%	1.7%	1.8%
	After washing baby	0.7%	0.8%	0.8%

* Options not read to respondents; respondents could choose more than one option

Reported frequency of hand washing with soap is low for all respondents, with nearly one-third of all respondents washing hands with soap once a day or less. Latrine owners reported washing their hands with soap slightly more often than non-owners.

There appears to be low knowledge of critical times for hand washing. The most common times for hand washing are before eating, when they are dirty, after eating, before preparing food and after defecation (in that order). Only 40% of latrine owners reported washing their hands after defecation, while amongst non-owners an even lower proportion (15%) wash hands after defecation.

Table 40: Reasons for washing hands with soap				
		Latrine Owners	**Non-owner**	**Total**
Reasons identified for washing with soap (expressed as percentage of respondents) *	Remove dirt/make clean	79.2%	82.8%	81.4%
	Remove microbes/bacteria	41.0%	35.2%	37.4%
	Personal appearance/to look good	37.5%	33.2%	34.8%
	Prevent disease	33.3%	28.3%	30.2%
	Make hands smell good	10.4%	9.0%	9.5%

* Options not read to respondents; respondents could choose more than one option.

The most common reason for washing hands was to remove dirt/make hands clean. More latrine owner than non-owners wash their hands with soap to remove microbes/bacteria or to prevent disease, suggesting a slightly more informed understanding of the health benefits of hand washing.

Table 41: Hand washing location				
		Latrine Owner	Non-owner	Total
Percentage of respondents who wash their hands in a designated hand washing place		11.4%	2.4%	5.8%
Usual hand washing place for respondents without a designated hand washing place *	Near water jar	48.5%	67.6%	60.9%
	In kitchen area	16.7%	21.2%	19.6%
	At water source	10.6%	10.8%	10.7%
	In latrine	20.5%	0.0%	7.2%
	Near latrine	3.8%	0.4%	1.6%

*Expressed as percentage of respondents who answered this question: Latrine owners, N = 133; Non-owners, N = 241

Only 24 respondents (5.8% of the sample) reported having a designated location for hand washing. Amongst those without a fixed hand washing place, the majority of latrine owners and non-owners washed their hands near the water jar.

Latrine owners were much more likely than non-owners to have a fixed place for hand washing. Amongst latrine owners, there was no major difference between pour-flush and dry pit latrine owners, with 11.7% of pour-flush and 10.3% of dry pit latrine owners designating a fixed place for hand washing. Recent research into handwashing practices in Kampong Speu suggests that households with a fixed place for hand washing are more likely to wash hands after defecation (WaterSHED 2009). There seems to be a correlation between latrine ownership, designation of a fixed hand washing place, and reported practice of hand washing with soap. The WASH-M project may want to explore opportunities to 'bundle' low-cost hand-washing devices and soap with low-cost latrine products.

6.2 Diarrhea prevention practice

Table 42: Diarrhoea prevention practices				
		Latrine Owner	Non-owner	Total
Reported practices to prevent diarrhoea (expressed as percentage of respondents) * #	Boil drinking water	81.2%	72.3%	75.6%
	Wash hands with soap before preparing food/eating	39.6%	35.7%	37.2%
	Be careful about what kinds of food you eat	28.2%	21.7%	24.1%
	Wash hands with soap after defecation	28.2%	20.5%	23.4%
	Cook food properly/eat soon after cooking	28.2%	16.9%	21.1%
	Don't know	6.0%	14.5%	11.3%
	Wash hands with soap after cleaning a child's anus	6.0%	11.2%	9.3%
	Clean cooking and eating utensils	11.4%	5.6%	7.8%
	Wash vegetables with clean water	8.7%	5.6%	6.8%
	Make formula with clean water	5.4%	5.2%	5.3%

* Options not read to respondents; respondents could choose more than one option
# Only practices reported by 5% or more of respondents are given here

Latrine owners seem to have slightly better practice related to diarrhea prevention than non-owners. The most common practices for preventing diarrhea for all respondents was boiling drinking water. Other common practices included washing hands with soap before preparing

food/eating, being careful about what kinds of food you eat, washing hands with soap after defecation, and cooking food properly/eating soon after cooking.

7. Results: Water Supply

7.1 Drinking water sources

Table 43: Drinking water sources

		Dry season		Wet season	
		Main	Secondary	Main	Secondary
Drinking water sources*	Tubewell/borehole	52.0%	51.0%	14.6%	43.7%
	Surface water (river, dam, lake, pond, stream, canal, irrigation channels)	23.1%	24.1%	2.0%	17.1%
	Cart with small tank/drum	6.0%	7.3%	0.8%	4.0%
	Public tap/standpipe	3.5%	2.8%	1.0%	2.5%
	Tanker-truck	3.5%	6.0%	0.3%	1.5%
	Unprotected dug well	2.5%	2.3%	1.3%	2.5%
	Piped water to yard/plot	2.3%	2.5%	0.8%	2.0%
	Protected dug well	2.3%	2.0%	0.5%	2.0%
	Rainwater collection	2.3%	0.8%	77.9%	23.6%
	Improved rainwater collection	2.0%	1.0%	0.8%	0.8%
	Piped water into dwelling	0.3%	0.3%	0.3%	0.3%
	Bottled water	0.3%	0.0%	0.0%	0.0%
Location of drinking water source	On site	20.4%	18.3%	85.4%	40.7%
	Delivered to home	14.6%	18.1%	1.0%	8.0%
	Off-site	65.1%	63.3%	13.6%	51.3%
For 'off-site' water sources, average amount of time to go to water source, fetch water and return (minutes)		10.0 min	10.2 min	1.5 min	7.7 min
Average amount of drinking water (liters per day)		9.5	9.3	8.8	9.3
Average cost of drinking water (riel per day)		133.75	119.00	66.92	112.82
Percentage of those respondents who pay for drinking water		22.6%	26.6%	3.0%	13.3%

* Respondents could choose only one option.

During the wet season, there is clearly a reliance on rainwater collection as a key source of water for drinking. Roughly 78% of respondents reported rainwater collection as their main drinking water source in the wet season, while 24% reported rainwater as their secondary source. Tubewells/boreholes were also cited as a source of drinking water in the wet season (15% as the main source, 44% as the secondary source).

In the dry season, tubewells/boreholes and surface water are the key sources of drinking water. Approximately half of all respondents cited tubewells/boreholes as a primary and secondary dry season source. A further one-quarter reported surface water as a primary source and secondary dry season source. A third source of dry season drinking water is carts with small tanks or drums that sell (usually untreated) water. Six percent of respondents reported these carts a main source and over 7% reported them as a secondary source. Over 20% of respondents reported buying water for drinking in the dry season, paying an average of about 120-130 riel per day.

On average, respondents reported using about 9 liters of drinking water per day in both the wet and the dry seasons. As the main drinking water source in the wet season is rainwater, respondents spend less than two minutes each time they collect water. In the dry season, they spend an average of about ten minutes to make a return trip to their drinking water source (usually an off-site tubewell/borehole or surface water source).

As there were no significant differences between latrine owners and non-owners with respect to drinking water sources, only aggregate data is shown here.

Table 44: Water Collection

		Latrine Owner	Non-owner	Total
Person in household who usually goes to collect water	Adult man	51.7%	59.4%	56.5%
	Adult woman	12.8%	24.1%	19.8%
	Tanker-truck /water service	28.9%	12.4%	18.6%
	Male child (under 15 years)	0.7%	2.8%	2.0%
	Don't know	2.7%	0.8%	1.5%
	Female child (under 15 years)	2.7%	0.4%	1.3%
	Public tap/standpipe	0.7%	0.0%	0.3%

About 56% of all respondents reported that adult males usually collect water for the household. In households without a latrine, women are more likely to be the primary water collector (roughly 24% of women, compared with only 13% in latrine owning households). Unlike rural households in Africa and other parts of Asia, this data suggests that Cambodian rural households do not task girls and women with primary water collection responsibilities.[16]

Compared with non-latrine owners, significantly more latrine owning households make use of tanker-trucks or water services (such as carts with small tanks, as noted above) which provide home delivery. As latrine owners are slightly 'better off' than non-owners, they appear to have a greater ability to pay for such services.

7.2 Satisfaction with drinking water sources

Table 45: Satisfaction with drinking water quality

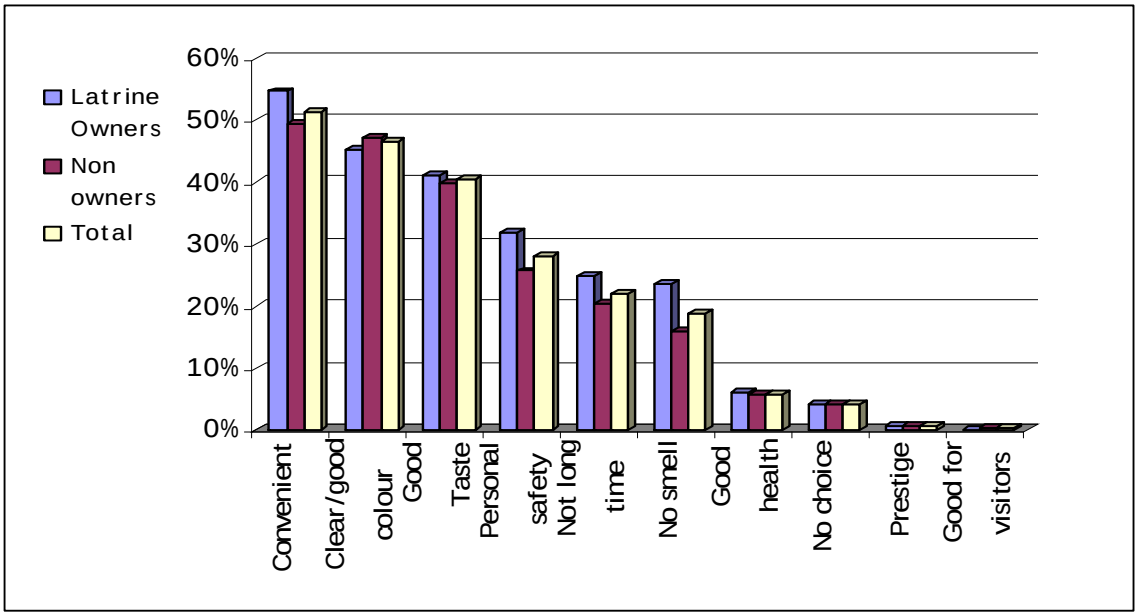
Respondent's levels of satisfaction with drinking water quality	Dry season			Wet season		
	Latrine Owner	Non-owner	Total	Latrine Owner	Non-owner	Total
Very satisfied	22.1%	20.1%	20.9%	46.3%	38.2%	41.2%
Satisfied	46.3%	47.4%	47.0%	46.3%	52.2%	50.0%
Unsatisfied	26.8%	28.9%	28.1%	7.4%	8.8%	8.3%
Very unsatisfied	4.7%	3.6%	4.0%	0.0%	0.8%	0.5%

Over 90% of respondents were 'satisfied' or 'very satisfied' with the quality of their drinking water in the wet season. As most households rely on rainwater collection in the wet season, this suggests

[16] Finding should be viewed with caution. When results are disaggregated by gender, a slightly different picture emerges. Although the majority of both male and female respondents report that adult men are the primary water collectors, female non-latrine owners do so with less frequency. There may be some bias in self-reporting.

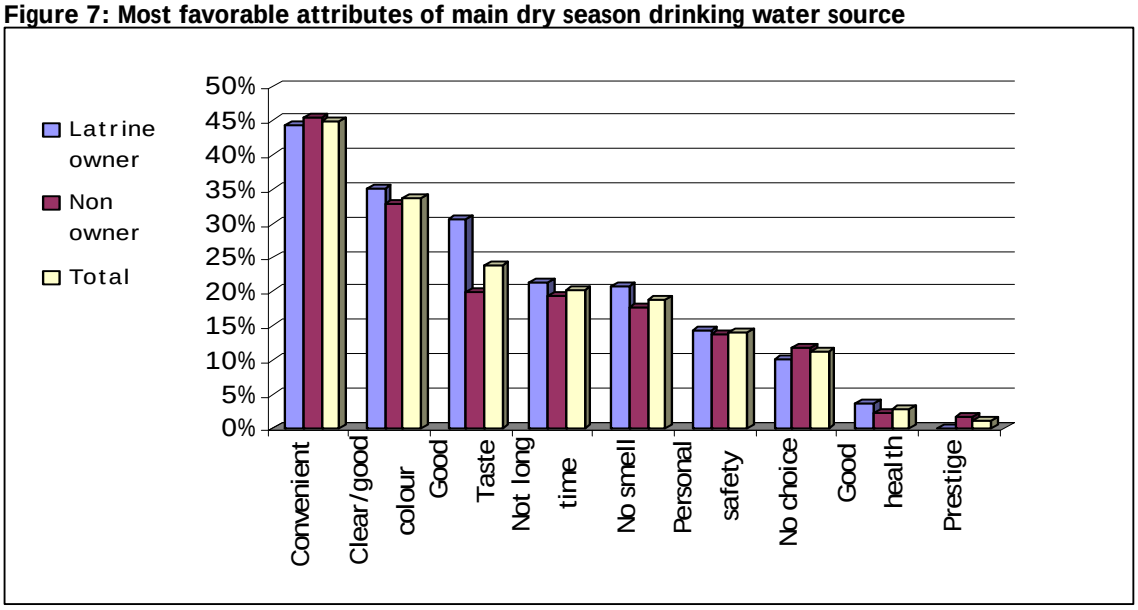
a high level of satisfaction with rainwater. There is less satisfaction with drinking water quality in the dry season, when many households revert to tubewells/boreholes and surface water sources. This finding corresponds with the findings of a previous national study on groundwater, which found that rainwater was generally preferred to groundwater due to taste and smell (related to iron content and salinity levels) and the convenience of collection and storage at home (JICA 2002).

Figure 6: Most favorable attributes of main wet season drinking water source



* Results expressed as percentage of respondents. Options not read to respondents; respondents could choose more than one option.

Figure 7: Most favorable attributes of main dry season drinking water source

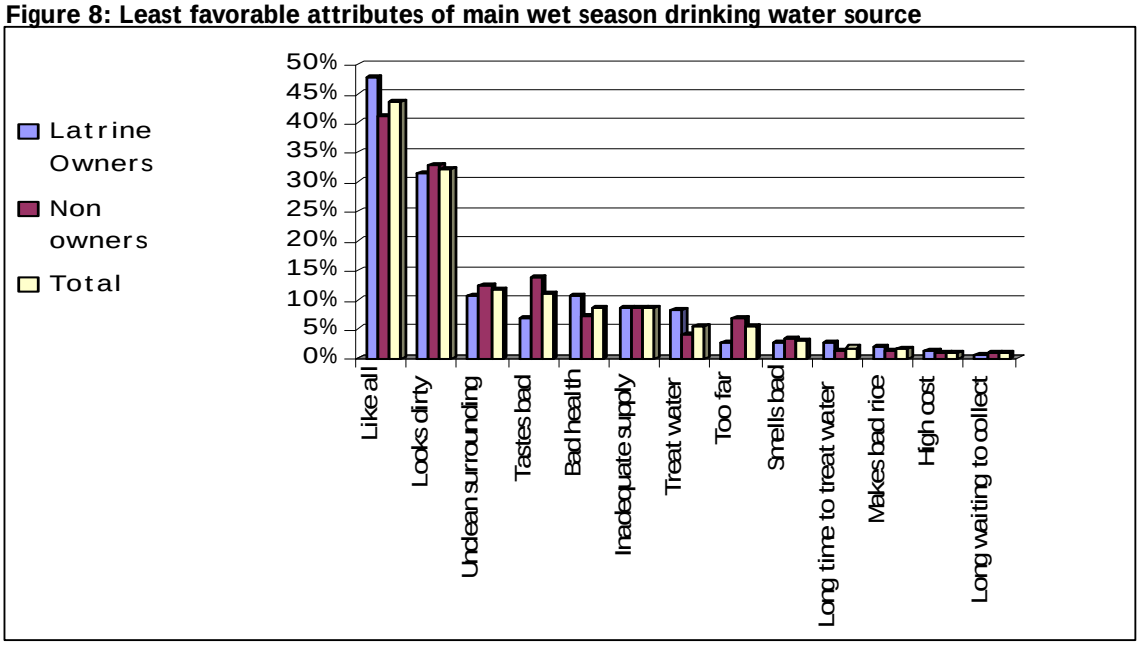


* Results expressed as percentage of respondents. Options not read to respondents; respondents could choose more than one option.

In terms of favorable attributes of drinking water sources, respondents value convenience, clear/good color, and good taste (in that order) for both wet season and dry season water sources.

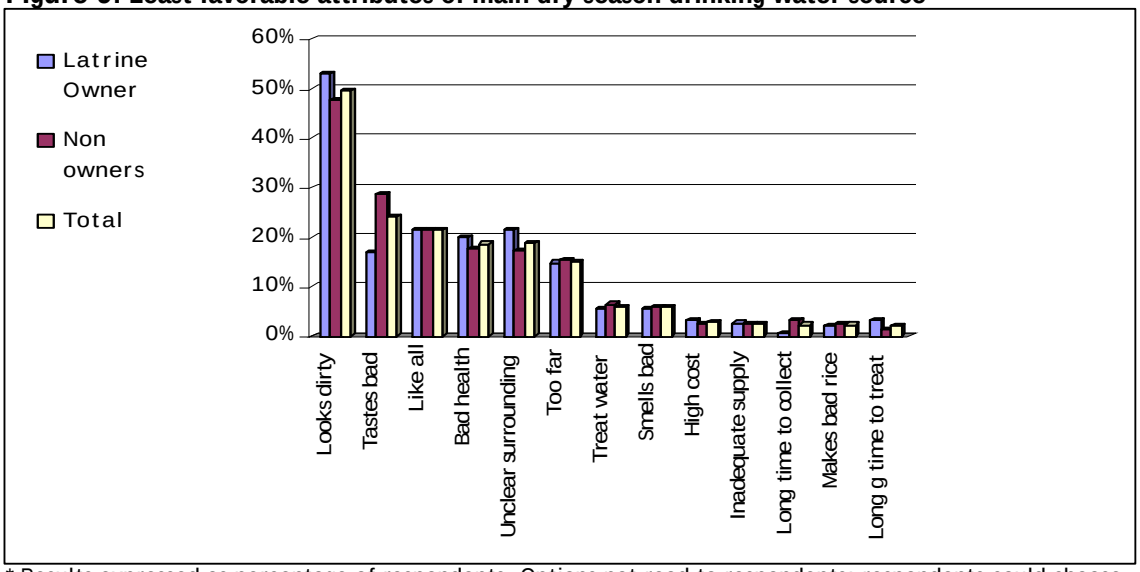
Other characteristics that respondents favor include a short collection time, no smell and personal safety/security (presumably when collecting the water). Few respondents mentioned health as a characteristic they like about their water source, suggesting that health issues are less important than convenience, aesthetics, and time-saving values.

Figure 8: Least favorable attributes of main wet season drinking water source



* Results expressed as percentage of respondents. Options not read to respondents; respondents could choose more than one option.

Figure 9: Least favorable attributes of main dry season drinking water source



* Results expressed as percentage of respondents. Options not read to respondents; respondents could choose more than one option.

When asked to name the least preferred characteristics of their wet season drinking water source, 43% of respondents claimed that they liked everything about their wet season source. Again, this suggests a high level of satisfaction with rainwater as the main wet season water source. About 30%

of all respondents mentioned dirty looking water as something they disliked about their wet season source. Other unfavorable characteristics included unclean surroundings, bad taste, bad for health and inadequate supply, although these were mentioned by fewer respondents.

As noted above, the primary water sources in the dry season are tubewells/boreholes and surface water sources such as river, streams, ponds and lakes. The least favorable attribute of these dry season sources was dirty looking water (mentioned by almost 50% of respondents). Other unfavorable characteristics were bad taste, bad for health, unclean surroundings and too far away. About 20% of respondents claimed they liked everything about their dry season source. Once again, these findings suggest that aesthetic and convenience values are most important to households in determining what they like and don't like about their water source.

7.3 Water treatment practice

Table 46: Drinking water treatment practices

		Latrine Owner	Non-owner	Total
Percentage of HH that treat water in any way to make it safer to drink		76.5%	68.3%	71.4%
Frequency of household treatment of drinking water*	Always	81.4%	78.1%	79.4%
	Usually	9.7%	11.8%	11.0%
	Sometimes	8.8%	10.1%	9.6%
Methods of drinking water treatment (expressed as percentage of respondents)*#	Boil	94.7%	97.1%	96.1%
	Add bleach/chlorine	2.6%	2.4%	2.5%
	Use a ceramic water filter	7.9%	1.8%	4.2%
	Use a sand filter	5.3%	1.8%	3.2%
	Let it stand and settle	6.1%	8.2%	7.4%
Reasons for treating drinking water (expressed as percentage of respondents)* %	Contaminated with dirt	57.9%	62.4%	60.6%
	Good for health/appearance	50.9%	45.9%	47.9%
	So I don't get sick	31.6%	28.8%	29.9%
	Contaminated with faeces/human/animal waste	22.8%	28.2%	26.1%
	Insects in it	22.8%	18.2%	20.1%
	Looks bad	13.2%	11.2%	12.0%
	Contaminated with germs, bacteria, viruses	10.5%	10.0%	10.2%
	Smells bad	1.8%	2.4%	2.1%
	Animals use the water	0.9%	0.6%	0.7%

*Expressed as percentage of respondents who treat their water, N=284
Options read to respondents; respondents could choose more than one option.
% Options not read to respondents; respondents could choose more than one option.

Almost 72% of respondents reported that they treat their water to make it safer to drink. A greater percentage of latrine owners treat their drinking water (77% of latrine owners compared to 68% of non-owners). Among those who treat their water, latrine owners report to do so with greater frequency than non-owners.

The findings suggest that water treatment is a cause for some concern: almost 30% of households indicated that they are not treating their water in any way, and among those that are treating their

drinking water, almost 20% are not doing so consistently (e.g. always/every time). As the survey relies on self-reported data, these results are probably inflated: it is likely that actual practice is even lower than reported practice.

By far the most common method of drinking water treatment is boiling (mentioned by 96% of respondents). Almost 13% of latrine owners reported using ceramic or sand water filters for water treatment, compared to less than 4% of non-owners.

Eight-four percent of households who treat their water reported that treating water is 'very important' to them. The main reasons people treat their drinking water is because it is contaminated by dirt. Other reasons include that it is good for appearance/health, it will prevent sickness, and it is contaminated with human/animal faeces or waste (in that order). Although mentioned by fewer respondents, health and disease prevention do seem to be motivators for water treatment.

Of those households that treat their water, most respondents (83%) indicated that they treat water only for drinking, although about 14% claim to treat water for cooking as well.

7.4 Bottled water purchase

Around 36% of all households buy treated bottled water for drinking at an average cost of almost 1,000 riel per liter. Forty-one percent of latrine owners pay for treated bottled water compared to only 33% of non-owners.

Surprisingly, 18% of all respondents buy *untreated* bottled water for drinking at an average cost of around 50 riel per liter. Although similar percentages of both latrine owners and non-owners buy untreated bottled water, non-owners pay more than double the amount for this type of product (an average of 30 riel per liter for latrine owners, compared to 61 riel per liter for non-owners). This could be due to the proximity of latrine owning households to main roads and markets, where the cost of transport is lower than the more remote households without a latrine.

Table 47: Willingness to pay for treated bottled water

	Latrine Owner N=88	**Non-owner** N=167	**Total** N=255
Percentage of non-purchasers of bottled water who stated they would be willing to pay for treated bottled water for drinking	14.8%	19.8%	18.0%
Average amount that respondents would be willing to pay for treated bottled water, riel per litre	392.3	466.6	445.5

The majority of respondents report that they do not buy treated bottle drinking water because they don't have money or because treated bottled water is too expensive.

Amongst the 255 respondents who do not pay for bottled water, 18% stated they would be willing to pay for treated bottled water at an average amount of 400 to 500 riel per liter.

7.5 Water product knowledge, awareness and preferences

Table 48: Water Product Knowledge

Type of water product (pictured in Appendix 5)	Percentage of respondents who have seen or heard of this product	Amount respondents would expect to pay, USD		Percentage of respondents who chose this product as their 'most preferred'*	Percentage of respondents who have seen the water products locally#
		Average	Median		
Rope pump	7.3%	$311.12	$200.00	22.4%	4.3%
Ceramic water filter	58.8%	$30.45	$20.00	18.6%	48.5%
Bio-sand filter	30.2%	$49.54	$20.00	3.0%	24.7%
Siphon filter	3.3%	$49.85	$25.00	0.5%	2.6%
Rainwater - Ring tanks	74.9%	$64.13	$46.00	27.6%	65.1%
Rainwater - Jumbo jar	73.1%	$60.25	$37.50	11.8%	58.1%
Rainwater - Ferro-cement tank	30.7%	$114.78	$75.00	2.5%	19.7%
Chlorine tablets/solution	5.5%	$5.26	$0.13	0.8%	3.7%
Solar lamp	1.5%	$157.24	$100.00	12.1%	0.5%

* Respondents asked to choose only one 'most preferred' product from the pictures shown.
# Total percentage of respondents who know where to buy or have seen these products in their village, commune, district or province.

Respondents were shown sample pictures of nine water products (pictured in Appendix 5) and asked if they were aware of the products and where they could be bought. Nearly 75% of respondents were aware of both rainwater ring tanks and jumbo jars, and 60% had seen or heard of ceramic water filters. Most people knew where to buy these products locally (e.g. in their village, commune, district or province).

There was some awareness of bio-sand filters and ferro-cement rainwater tanks and where these products could be purchased locally. Very few people (less than 10%) had seen or heard of rope pumps, siphon filters, chlorine tablets/solution or solar lamps.

Survey enumerators noted that respondents had difficulty estimating the costs of many of the water products. Non-latrine owners and latrine owners generally made similar cost estimates, and in most cases these were much higher than actual costs. Respondents could not accurately estimate the costs of most products, even those that they had seen or heard of before (for instance, the ceramic water filter was estimated at a median cost of USD 20.00 although the actual product retails at USD 12-14).

When asked to select one product from the nine sample products as their 'most preferred' water product, 28% of peole chose the rainwater ring tanks, 22% chose the rope pump and 19% chose the ceramic water filter as the top three preferred water products.

Very few people (12.6% of the total sample) have actually purchased any of the nine water products. Amongst the purchased products, 5.3% of the all households had bought ceramic water

filters, about 3% had bought bio-sand filters and about 3% had purchased rainwater ring tanks. Of the 12.6% of households purchasing these products, about half (6.3%) had received assistance from an external agency to do so. The large majority had received assistance in the form of free or subsidized materials.

Table 49: Water Product Subsidy		
Percentage of respondents who receiving assistance from an organization (NGO, agency, government) to build or purchase a household water product		6.3%
Type of assistance received *	Free/subsidized materials	83.3%
	Technical advice	8.3%
	Encouragement	8.3%
	Free/subsidized labour	16.7%

* Percentage of respondents receiving assistance. Options not read to respondents; respondents could choose more than one option.

7.6 Water product purchase intention of non-owners

Table 50: Household consideration of water product purchase		
Percentage of non-owners of water products who have thought about or discussed purchasing any household water products with their family		53.7%
Last time household discussed purchasing water products *	Less than 1 month ago	7.6%
	1-6 months ago	19.6%
	7-12 months ago	12.0%
	More than 1 year ago	60.9%

*Expressed as percentage of respondents who thought about or discussed purchasing any water products (N=187)

Amongst households that have never purchased a water product (non-owners), over 53% have thought about or discussed buying a water product with their family. However, 60% of households that have discussed water product purchase have not done so in the last year. The final decision maker for a water product purchase is usually the household head alone (39.7%) or the household head and spouse jointly (34.8%).

Table 51: Likelihood of water product purchase		
Responses to the question 'If I return to your house one year from today, what is the likelihood you will have purchased a new water product for your household?'	No chance	51.1%
	Low likelihood	32.1%
	Medium likelihood	12.0%
	High likelihood	4.9%

*Expressed as percentage of respondents who thought about or discussed purchasing any water products (N=187)

Water product purchase intention, as measured by the reported likelihood of purchasing a water product in the next year, is quite low. Over 50% of the 187 respondents who have thought about purchase indicated there was 'no chance' that they would buy a water product in the next year. An additional 32% indicated a 'low likelihood' of purchase. Only 5% reported a high likelihood of water product purchase in the next 12 months, suggesting low rates of new demand.

8. Results: Communication Channels

8.1 Sources of information

Table 52: Sources of information about latrines				
Information source (expressed as percentage of respondents) *		**Latrine Owner**	**Non-owner**	**Total**
	Neighbour	37.8%	42.9%	41.0%
	Relative	42.6%	38.4%	39.9%
	Personal awareness	32.4%	40.8%	37.7%
	NGO/agency worker	29.7%	7.8%	16.0%
	Village chief	11.5%	9.4%	10.2%
	Community meeting	10.8%	8.2%	9.2%
	Television advertisement	10.1%	3.3%	5.9%
	Mason	4.1%	1.6%	2.5%
	Radio	4.1%	.8%	2.0%
	Government representative	4.7%	.0%	1.8%
	Poster/Picture	2.0%	.4%	1.0%
	Don't know	.0%	1.6%	1.0%
	Billboard advertisement	1.4%	.4%	.8%

* Options read to respondents; respondents could choose more than one option

Most people learn about latrines through direct 'word of mouth' communication with relatives or neighbors. NGOs, village chiefs and community meetings are other sources of latrine information. Many respondents claimed they had a 'personal awareness' of latrines but could not identify the source of that information. Latrine owners were over twice as likely as non-latrine owners to hear about latrines through television advertisements (91% of latrine owners own a television, compared to 63% of non-latrine owners).

Table 53: Types of sanitation and hygiene advice				
		Latrine Owner	**Non-owner**	**Total**
Types of hygiene advice respondents have heard in the past (expressed as percentage of respondents)	Wash hands with soap	53.0%	44.8%	47.9%
	Wash hands	41.6%	31.0%	35.0%
	Use a latrine	36.9%	27.4%	31.0%
	Good food hygiene	32.9%	25.8%	28.5%
	Drink safe water	30.2%	24.2%	26.4%
	None	16.8%	23.0%	20.7%
	Store water safely	24.2%	16.5%	19.4%
	Sanitation around house	6.0%	4.4%	5.0%
	Wastewater/stagnant water management	2.0%	1.2%	1.5%
	Safe disposal of babies' faeces	1.3%	1.2%	1.3%

* Options not read to respondents; respondents could choose more than one option

Awareness of sanitation messages seems to be low amongst both latrine owners and non-owners. Approximately 50% of all respondents had heard of the need to wash hands with soap. Using a latrine, good food hygiene and drinking safe water were known by only 25% to 35% of all respondents. These results contrast sharply with findings of the national 2007 Demand Assessment, which found that over 80% of all respondents knew about the need to drink safe water, while latrine use, washing and food hygiene was known by about 50% to 65% of all respondents. Latrine owners seem to have a slightly greater awareness of different types of hygiene advice.

Table 54: Communication channels for sanitation and hygiene advice				
		Latrine Owner	Non- owner	Total
Sources respondents have heard hygiene advice from in the past year (expressed as percentage of respondents)	Television advertisement	57.1%	45.4%	50.0%
	NGO/agency worker	39.7%	44.3%	42.5%
	Village chief	28.6%	36.1%	33.1%
	Community meeting	26.2%	24.2%	25.0%
	Radio	33.3%	19.6%	25.0%
	Health Worker	22.2%	16.5%	18.8%
	Health Center	15.1%	14.4%	14.7%
	Personal awareness	6.3%	5.7%	5.9%
	Government representative	5.6%	4.6%	5.0%
	Neighbor	3.2%	4.6%	4.1%
	Schools/teachers	5.6%	2.1%	3.4%
	Relative	3.2%	3.1%	3.1%

The most common source of information for hygiene advice was television, particularly for latrine owners. Other sources of information were NGO/agency workers, village chiefs, community meetings, radio and health workers and health centers (in that order).

Table 55: Trustworthiness of information sources for building or purchasing sanitation and water products						
		Mason	Concrete ring producer	Shop/ seller	Govern-ment officer	NGO worker
Respondents' opinion of who would be able to give trustworthy information about building or purchasing sanitation or water products	Very good information source	44.7%	34.9%	35.2%	72.4%	76.1%
	Acceptable/Average information source	34.2%	39.9%	41.2%	20.9%	17.8%
	Not a good information source	11.8%	15.6%	16.6%	4.0%	4.3%
	Don't know	9.3%	9.5%	7.0%	2.8%	1.8%

Most people trust government officers and NGO workers as very good sources of information about building or purchasing sanitation or water products. Masons, concrete ring producers and shops/sellers seem to be perceived as fairly good or acceptable sources of information.

8.2 Community involvement and outside travel

Table 56: Household members involving in a community group				
		Latrine Owner	Non-owner	Total
Number of household members involved in a community group	None	74.5%	84.3%	80.7%
	One	20.8%	12.4%	15.6%
	Two	.0%	2.4%	1.5%
	Three	.7%	.4%	.5%
	Four or more	4.0%	.4%	1.8%

Table 57: Outside travel				
Description		**Latrine Owner**	**Non-owner**	**Total**
Frequency of respondents traveling outside their village	More than once per week	38.3%	20.5%	27.1%
	Once per week	18.1%	20.1%	19.3%
	1-2 times per month	14.8%	18.1%	16.8%
	Less than once per month	10.7%	16.5%	14.3%
	Less than once per year	1.3%	3.2%	2.5%
	Rarely	12.8%	18.1%	16.1%
	Never	4.0%	3.6%	3.8%

The survey investigated how people get access to new information, including involvement in community groups and travel outside of the community which can increase exposure to new ideas and practices.

The majority of respondents reported that no one in their household was involved in a community group. Households with a latrine were more likely than households without a latrine to be involved in community group activities.

There seems to be a fair amount of outside travel, with over 60% of respondents traveling outside their village at least once a month. Latrine owners were almost twice as likely as their non-owner counterparts to travel outside of the village more than once a week. Nearly 29% of latrine owners travel outside of their village less than once per month, compared to 41.4% of non-owners. This finding may point to marketing strategies and channels that involve direct (or possibly door-to-door) promotion to reach non-owners in the target villages.

9. CTLS and Non-CLTS villages: preliminary analysis

The WASH-M project hypothesizes that exposure to Community Led Total Sanitation (CLTS) influences household knowledge, attitude and practice in such a way as to increase the likelihood of latrine purchase. Over 100 of the 537 villages in the Kampong Speu target area have had a CLTS invention. Provincial and national governments have indicated plans to continue rolling out CLTS in villages throughout Kampong Speu and the country. It is therefore important to understand how to leverage respective strengths of CLTS and sanitation marketing. The WASH-M project plans to monitor latrine sales and changes in latrine coverage rates in both CLTS and non-CLTS villages to better understand how sanitation marketing interventions can build on and synergize with CLTS efforts.

The following presents a preliminary analysis of key characteristics of households in CLTS and non-CLTS villages. This section is not meant to be an exhaustive investigation into CLTS in the target area, but rather highlights relevant data and key information that can help better understand the role that CLTS currently plays in influencing awareness, preferences and practices.

9.1 Village-level data

As noted above, the total sample of 36 villages included 3,369 households and 17,243 people. In the sample selection, no distinction was made between CLTS and non-CLTS villages. Twelve of the 36 randomly selected villages in the sample had been exposed to a previous CLTS intervention. These 12 CLTS sample villages included 1,152 households and 6,102 people (34% of the total sample). The 24 non-CLTS villages included 2,217 households and 11,141 people (66% of the total sample).

Latrine coverage rate in the CLTS villages were on average about 12% higher than in non-CLTS villages: 32.9% of households in CLTS villages have a household latrine, compared to 20.6% in non-CLTS villages. The 2009 MRD national *Community-Led Total Sanitation (CLTS) in Cambodia Formative Evaluation Report* (Sok and Catella 2009, hereafter, the '2009 CLTS Formative Evaluation') found an average sanitation coverage rate of 43 % to 49% for CLTS villages across the country; thus, coverage rates for CLTS villages in the target area are much lower than the national average.

The percentage of households with a latrine in CLTS villages varied widely, from as low as 2% to 4% of households to over 70% of households. At the time of the survey, only 2 of the 12 CLTS village in the sample was 'Open Defecation Free' (ODF).[17] These villages had latrine coverage rates of 85.7% and 77.9%, suggesting the practice of sharing latrines and/or other practices such as dig and bury.

Households in CLTS villages were much more likely to have dry pit latrines, which comprised 42% of all functioning household latrines in CLTS villages and just 4% of all functioning household latrines in non-CLTS villages. A high percentage of dry pit latrines in CLTS villages was expected, as the CLTS 'triggering' process encourages the construction of inexpensive, self-built latrines.

There were large numbers of broken latrines in the CLTS villages. Of a total of 142 broken/not functioning household latrines in the 36 sample villages, 130 (91.5%) were in CLTS villages.[18] Four CLTS villages in particular had very high numbers of latrines which were no longer functioning. Self-built latrines with unlined pits and natural shelters often collapse and break in the wet season. The 2009 CLTS Formative Evaluation notes that latrine breakage and collapse contributed to a reversion to open defecation and drop-off in coverage rates from 67% in 2006 to 46% in 2008 in CLTS villages across the country and this study would suggest continued declines in 2010 to 33%.

[17] Open Defecation Free (ODF) status is declared in a village when all people in the village have stopped the practice of open defecation and use a latrine. In practice, this means most households will have constructed their own household latrine, although latrines shared by more than one household are also acceptable.
[18] During random selection for the household survey, the village population was segregated into those with a functioning latrine (latrine owners) and those without a functioning latrine (non-owners). Households with broken/non-functioning latrines were therefore treated as 'non-owners.'

9.2 CLTS and Non-CLTS household profile

Survey interviews in CLTS villages were conducted with a total of 132 households, including 54 latrine owners and 78 non-owners.

Table 58: Household profile, CLTS and non-CLTS

		CLTS* N = 132		Non-CLTS* N = 266	
		Latrine Owner N = 54	Non-Owner N = 78	Latrine Owner N = 95	Non-Owner N = 171
Gender of HH head	Male	79.6%	73.1%	82.1%	71.9%
	Female	20.4%	26.9%	17.9%	28.1%
Occupation of HH head	Agricultural	77.8%	82.1%	62.1%	84.8%
	Civil service	11.1%	3.8%	20.0%	2.3%
	Service/Sales/ Commercial	5.6%	6.4%	8.4%	7.0%
	Unemployed	3.7%	2.6%	3.2%	2.3%
	Professional/ Technical	.0%	2.6%	3.2%	1.8%
	Day labourer	1.9%	2.6%	2.1%	1.2%
	Factory worker	.0%	.0%	1.1%	.6%
Educational Attainment of HH head	None	11.1%	17.9%	5.3%	22.8%
	Pre-school/ Kindergarten	3.7%	2.6%	2.1%	1.2%
	Some Primary	33.3%	35.9%	26.3%	41.5%
	Finished Primary	11.1%	9.0%	10.5%	10.5%
	Some Secondary	24.1%	24.4%	23.2%	16.4%
	Finished Secondary	9.3%	7.7%	17.9%	4.7%
	Higher	7.4%	2.6%	14.7%	2.9%

* Unless otherwise noted, these are total numbers of respondents.

Table 59: Annual household cash income, CLTS and non-CLTS (USD)*

	CLTS			Non-CLTS		
	Latrine Owner	Non-owner	Total	Latrine Owner	Non-owner	Total
Median annual household cash income	$500	$388	$450	$500	$250	$375

* 1 USD = 4000 riel

Households with latrines in CLTS villages are marginally more likely to have a household head who is female, and much more likely to have a household head who has an agriculture-based occupation and who has had no schooling. Compared to latrine owners in CLTS villages, latrine owning households in non-CLTS villages are more than twice as likely to have a household head who has finished secondary school or higher.

Although latrine owners in both types of villages have the same median household income (USD 500), non-owners in CLTS villages have a higher median income (USD 388) than non-owners in non-

CLTS villages (USD 250). Further research would need to be done to understand the criteria used by the provincial government for selecting villages for a CLTS intervention.

When disaggregated by latrine type, both pour-flush and dry pit owners in non-CLTS villages have a median income of USD 500. However, there is a large difference between pour-flush and dry pit latrine owners in CLTS villages: CLTS pour-flush households have a median income of USD 712, while CLTS dry pit latrine households have a median income of just USD 250.

The findings suggest that households in CLTS villages with lower incomes and standards of living have greater access to latrines compared to similar households in non-CLTS villages, and furthermore that these 'worse off' households in CLTS villages are generally constructing dry pit latrines. This is consistent with the CLTS emphasis on community empowerment, awareness raising and active encouragement of the poorest and most marginalized, as well as introduction to do-it-yourself latrine models build with free local materials.

9.3 CLTS and Non-CLTS defecation practice

Table 60: Current defecation place, CLTS and non-CLTS					
		CLTS		Non-CLTS	
		Latrine Owner	Non-owner	Latrine Owner	Non-owner
Place where adults in HH usually go to defecate	Household latrine	96.3%	.0%	100.0%	.0%
	Other latrine	.0%	9.0%	.0%	4.1%
	Open defecation- near house	.0%	15.4%	.0%	16.4%
	Open defecation- field/forest	3.7%	73.1%	.0%	77.8%
	Buried defecation- near house	.0%	2.6%	.0%	1.8%
Place where children in HH usually go to defecate*	Household latrine	92.1%	.0%	95.1%	.0%
	Other latrine	.0%	6.8%	.0%	.7%
	Open defecation- near house	5.3%	47.5%	3.7%	37.8%
	Open defecation- field/forest	2.6%	40.7%	1.2%	56.6%
	Buried defecation- near house	.0%	5.1%	.0%	4.9%

* Percentage of all HH answering this question: CLTS latrine owners = 37, Non-owners = 59; Non-CLTS latrine owners = 82, Non-owners = 143

Table 61: Current practice for disposal of babies' faeces, CLTS and non-CLTS					
		CLTS		Non-CLTS	
		Latrine Owner	Non-Owner	Latrine Owner	Non-Owner
Place where babies' faeces are usually disposed	Put into latrine	50.0%	8.0%	48.0%	2.3%
	Buried	40.0%	80.0%	40.0%	75.0%
	Thrown in garbage	.0%	.0%	8.0%	2.3%
	Left in open	.0%	12.0%	4.0%	18.2%
	Burned	10.0%	.0%	.0%	2.3%

* Percentage of all HH answering this question: CLTS latrine owners = 10, non-owners = 25; Non-CLTS latrine owners = 25, non-owners = 44

Adults and children in households without a latrine in CLTS villages are more likely to defecate in a latrine (commonly a shared/neighbor's latrine). At the same time, adults and children with a latrine in CLTS villages are more likely to continue the practice of open defecation, although this can be explained by the high prevalence of dry pit latrines in CLTS villages (see discussion below). Apart from these notable differences, defecation practice and disposal of babies' faeces is broadly similar across CLTS and non-CLTS villages, with the exception of the practice of burning babies' faeces unique to CLTS villages.

Table 62: Seasonal latrine usage amongst latrine owners by latrine type, CLTS villages*							
		Dry Season			Wet Season		
		Flush/Pour flush	Dry	Total	Flush/ Pour flush	Dry	Total
Frequency of latrine usage of adults	Always	91.2%	50.0%	75.9%	97.1%	75.0%	88.9%
	Sometimes	8.8%	45.0%	22.2%	2.9%	20.0%	9.3%
	Never#	.0%	5.0%	1.9%	.0%	5.0%	1.9%
Frequency of latrine usage of children**	Always	79.2%	42.9%	65.8%	83.3%	50.0%	71.1%
	Sometimes	20.8%	50.0%	31.6%	16.7%	42.9%	26.3%
	Never	.0%	7.1%	2.6%	.0%	7.1%	2.6%

* CLTS latrine owners: Flush/pour flush, N = 34; Dry pit, N = 20, Total, N = 54
**Percentage of all CLTS HHs with children, N = 38

Table 63: Seasonal latrine usage amongst latrine owners by latrine type, non-CLTS villages*							
		Dry Season			Wet Season		
		Flush/Pour flush	Dry	Total	Flush/ Pour flush	Dry	Total
Frequency of latrine usage of adults	Always	93.0%	66.7%	90.5%	93.0%	88.9%	92.6%
	Sometimes	7.0%	33.3%	9.5%	7.0%	11.1%	7.4%
	Never#	.0%	.0%	.0%	.0%	.0%	.0%
Frequency of latrine usage of children**	Always	79.5%	66.7%	78.0%	82.2%	77.8%	81.7%
	Sometimes	17.8%	33.3%	19.5%	16.4%	22.2%	17.1%
	Never	2.7%	.0%	2.4%	1.4%	.0%	1.2%

* Non-CLTS latrine owners: Flush/pour flush, N = 86; Dry pit, N = 9, Total, N = 95
**Percentage of all non-CLTS HHs with children, N = 82

In non-CLTS villages the majority (over 90%) of adult latrine owners always use their latrine. By contrast, adult latrine usage in CLTS villages drops off from almost 90% in the wet season to 76% in the dry season. As noted in the general sanitation results, seasonal differences are largely attributable to latrine type. Adult pour flush latrine owners in CLTS and non-CLTS villages generally report always using their latrine. CLTS adult dry pit latrine owners use their latrines less consistently than non-CLTS adult dry pit latrine owners in both the dry and the wet seasons. In the wet season, consistent usage amongst adults is 75% in CLTS villages compared to 89% in non-CLTS villages. In the dry season, dry pit latrine usage drops off significantly in both types of villages, to just 50% in CLTS villages and 67% in non-CLTS villages.

Regardless of village type, children in all latrine owning households do not consistently use their latrine in the wet or dry season. Children from dry pit households in CLTS villages use their latrine with less frequency than children from dry pit households in non-CLTS villages. In the wet season, consistent dry pit usage amongst children is just 50% in CLTS villages compared to 78% in non-CLTS

villages. In the dry season, dry pit latrine usage drops off significantly in both types of villages, to just 43% in CLTS villages and 67% in non-CLTS villages.

Although CLTS interventions seem to inspire the construction of simple self-made dry pit latrines, actual usage of these latrines, particularly in the dry season, is quite low.

9.4 CLTS and Non-CLTS latrine preferences and perceptions

Perceived benefits and disadvantages of latrine ownership were broadly similar across both village types. Differences between latrine owners in different village types are explained by the higher prevalence of dry-pit latrines in CLTS villages, e.g. latrine perceptions are attributable to latrine type rather than to CLTS/non-CLTS status per se.

9.5 CLTS and Non-CLTS technologies currently in use by latrine owners

Table 64: Technologies currently in use by latrine owners, CLTS and non-CLTS			
		CLTS N=54	**Non-CLTS N=95**
Latrine types currently in use	Flush/pour-flush to:		
	Piped sewer system	.0%	2.1%
	Septic tank	.0%	.0%
	Pit latrine	59.3%	88.4%
	Elsewhere	3.7%	.0%
	Don't know	.0%	.0%
	Subtotal flush/pour-flush	*63.0%*	*90.5%*
	Ventilated Improved Pit (VIP) latrine	11.1%	2.1%
	Pit latrine with slab	9.3%	4.2%
	Pit latrine without slab/open pit	16.7%	3.2%
	Composting toilet	.0%	.0%
	Other	.0%	.0%
	Subtotal dry pit/waterless sanitation	*37.0%*	*9.5%*

Table 65: Amount household spent on latrine, CLTS and non-CLTS (USD)						
	CLTS			**Non-CLTS**		
	Flush/Pour flush	**Dry Pit**	**Total**	**Flush/Pour flush**	**Dry Pit**	**Total**
Median cost (materials & labour)	$300	$3	$170	$250	$5	$250
Median cost (materials only)	$225	$3	$113	$200	$5	$188

As discussed above, a larger proportion of latrine owners in CLTS villages have dry pit latrines: 37% of latrine owners in CLTS villages have dry pit latrines, compared to just 9.5% of latrine owners in non-CLTS villages. Latrine owners in CLTS villages are much more likely to have an unlined pit with open-holed wooden or concrete slab and thatched walls and roof. However, even in the CLTS villages, the most common design is the 'high-end' flush/pour-flush pan to lined off-set pit with concrete walls and galvanized steel roof.

Lower end, less expensive latrines are more common in CLTS villages, thus the median cost for a latrine in the CLTS villages was just USD 170, compared to USD 250 in non-CLTS villages. Pour-flush latrine owners in CLTS villages tended to pay more for their latrines than pour-flush owners in non-CLTS villages. Conversely, dry-pit latrine owners paid slightly less in CLTS villages. It is interesting

to note that significant resources have been invested in latrines in the CLTS villages despite the presence of simpler and 'lower-end' latrine models.

On average, latrines in the CLTS villages were newer than in non-CLTS villages, 5 years compared to 7.2 years. This may explain the higher median cost, as the cost of sand, cement and other inputs has increased substantially since 2008. Eighty-three percent of latrine owners in CLTS villages are using their first latrine, compared to 87% of latrine owners in non-CLTS villages.

The median cost to the household for a latrine is USD 250, including a median cost of USD 150 for materials. Unsurprisingly, there is a substantial difference in cost between pour-flush and dry pit latrines: The median cost of a pour-flush latrine is $275, including $200 for materials. The median cost for a dry pit latrine is $5, including $4 for materials.

Median latrine costs are substantially higher than costs cited in the 2007 Demand Assessment, which found the median cost for a rural latrine was $115. This is most likely due to significant increases in the cost of fuel and inputs such as sand and cement since 2007.

9.6 CLTS and Non-CLTS triggers of adoption

Table 66: Triggers of latrine adoption amongst latrine owners, CLTS and non-CLTS

		CLTS	Non-CLTS
Percentage of latrine owners who gave the following responses when asked the question 'What made you decide to build your first latrine at the time you did?' (expressed as percentage of respondents) *	Had visitors coming from outside village	22.2%	31.6%
	Children became physically mature	20.4%	29.5%
	Social pressure	22.2%	24.2%
	Neighbour got one	24.1%	20.0%
	Program was offering subsidy	16.7%	21.1%
	Personal awareness of the importance of having a toilet	11.1%	24.2%
	Sick/old relative	20.4%	13.7%
	Someone told me I had to	27.8%	7.4%
	Construction of new house	11.1%	16.8%
	Had enough money to buy	5.6%	7.4%
	Event (wedding/funeral/New Year)	7.4%	4.2%

* Options not read to respondents; respondents could choose more than one option

In CLTS villages, the most common trigger for building the latrine was because 'someone told me I had to' (this reason was cited by 28% of CLTS latrine owners, compared to only 7% of non-CLTS latrine owners). Pressure is often used by CLTS facilitators to convince people to build a latrine, and there may be a perception that someone (often the village chief or other official) is demanding that everyone construct a latrine. More research would be needed to further explore the dynamics driving people to construct a latrine during and after the CLTS triggering process.

Other common triggers of latrine adoption in CLTS villages were broadly similar to those in non-CLTS villages, with the exception of more frequent mention of having visitors coming from outside the village and personal awareness of the importance of having a latrine in non-CLTS villages. Social pressure and keeping up with changes seems to be similar in both types of villages, representing a significant contribution to the trigger for purchase.

9.7 CLTS and Non-CLTS latrine purchase intention by non-owners

Compared to CLTS villages, non-latrine owners in CLTS villages were somewhat more likely to have thought about or discussed building a latrine, but much more likely to have done so recently. Nearly 17% had discussed building a latrine in the last month in CLTS villages compared to just 2% in non-CLTS villages.

Table 67: Household consideration of latrine construction, CLTS and non-CLTS

		CLTS	Non-CLTS
Percentage of non-latrine owners answering 'yes' to the question: 'Has your household ever thought about or discussed building a latrine for your family?'		92.3%	82.5%
Last time household discussed building a latrine*	Less than 1 month ago	16.7%	2.1%
	1-6 months ago	23.6%	16.3%
	7-12 months ago	23.6%	15.6%
	More than 1 year ago	36.1%	66.0%

*Expressed as percentage of respondents who thought about or discussed building latrine, CLTS = 72, Non-CLTS = 141

Table 68: Likelihood of latrine construction

		CLTS	Non-CLTS
Responses to the question 'If I return to your house one year from today, what is the likelihood you will have built a latrine?'	No chance	9.0%	19.3%
	Low likelihood	56.4%	63.2%
	Medium likelihood	23.1%	15.2%
	High likelihood	11.5%	2.3%

Likelihood of latrine construction was also much higher amongst non-owners in CLTS villages. Over 11% of CLTS non-owners reported a 'high likelihood' of building a latrine in the next 12 months, compared to just over 2% of non-owners in non-CLTS villages (and 5% of the sample as a whole). This suggests much higher rates of new demand in CLTS villages. When coupled with the demand for latrine upgrades (e.g. from self-built to more durable products) that could exist in these villages, CLTS villages clearly present a market segment with significant potential for sanitation enterprises.

10. Conclusion

The survey investigated the current situation with respect to people's current knowledge and practice related to sanitation, hygiene and water. Based on the survey data and field observations, the following general statements can be made:

- Latrine owners are among the better-off in communities; however, this is not always the case: many households in lower income quintiles have managed to construct and use a household latrine, while many of the richer households remain without a latrine.
- There is a very strong preference for the flush/pour-flush latrine model. The notion of an 'ideal' pour-flush latrine with concrete shelter is strong and most existing latrines conform to this notion. Most latrine designs in the target area are 'high-end' models with a median cost of USD 250.
- People most desire a latrine that looks good/is comfortable, is easy to clean and does not smell, e.g. that meets perceived standards of comfort, aesthetics and cleanliness. While health/hygiene is an important perceived benefit, these terms may have very little to do with medical notions of disease and fecal-transmission, which are not likely to be key drivers of actual latrine construction (WaterSHED citation).
- In general, compared to pour-flush latrine owners, dry pit latrine owners are less satisfied with their latrines and more likely to continue the practice open defecation (particularly in the dry season). Dry pit latrine owners express a strong preference for pour-flush latrine technologies.
- Overall demand for sanitation, as measured by the likelihood of latrine construction in the next 12 months, is quite low in the target area. Demand for a latrine among non-latrine owners in CLTS villages is much higher than in non-CLTS villages. CLTS seems to have a strong impact on communities and may help to make lower-end, less costly latrine options more acceptable to consumers. However, even in CLTS villages, people aspire to an ideal pour-flush latrine.
- Latrine owners tend to have better water and hygiene practices. Although there is a good degree of knowledge, reported good hygiene practice is generally poor.
- Few people consistently have access to safe water. Awareness of different water products and their purchase points and prices is low.
- Water product purchase intention, as measured by the reported likelihood of purchasing a water product in the next year, is quite low.

The WASH-M project plans to review the quantitative results presented in this report alongside results from the WaterSHED qualitative in-depth interviews to help inform marketing strategy development and program design.

As the project progresses, the WASH-M project team plans further analysis and exploration into relative benefits of CLTS and sanitation marketing. Areas for further research, including knowledge, behaviours and practices related to pit emptying and disposal of babies' faeces, will also be explored.

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WaterSHED, forthcoming. sanitation in-depth interviews

WaterSHED, forthcoming. water in-depth interviews

WaterSHED, forthcoming. handwashing study

Appendix 1: Village-Level Survey Data

No	District	Commune	Village	CLTS	ODF	Population	# HH	# latrines	% Latrine	# pour-flush latrines	# dry pit latrines	# broken latrines	Latrine Owner	Non Owner
1	Kong Pesei	Angk Popel	Angk Popel	No	-	252	52	8	15.4	8	0	0	5	6
2			Tram Roneab	No	-	503	102	19	18.6	19	0	0	4	6
3		Veal	Prey Toteunglech	No	-	595	104	40	38.5	30	10	0	5	6
4			Trapang Veng	No	-	467	91	3	3.3	3	0	1	4	7
5		Pich Moni	Trapang Snuol	No	-	542	106	2	1.9	2	0	0	2	9
6			Pich Muni	No	-	263	57	0	0	0	0	0	0	11
7	Phnom Sruoch	Moha Sang	Krang Chre	No	-	139	27	0	0	0	0	0	0	11
8			Chrok Trach	Yes	No	271	51	1	2	1	0	49	5	6
9			Toul Tmey	No	-	108	23	7	30.4	7	0	1	5	6
10			Krang Lahong	No	-	849	177	51	28.8	51	0	0	5	7
11		Tang Sya	Chheu Neangkhapos	No	-	262	77	3	3.9	1	2	6	4	6
12			Tang Sya	Yes	No	541	106	5	4.7	1	4	23	5	6
13		Prey Romduol	Kab Touk	No	-	428	85	3	3.5	2	1	0	3	8
14	Chbar Mon	Kandal Dom	Kandal Dom	No	-	662	123	32	26	30	2	0	5	8
15		Svay Kravan	Toul Kork	No	-	651	121	85	70.2	85	0	0	5	5
16		Roka Thum	Muk Kheth	No	-	597	108	79	73.1	79	0	2	9	1
17			Khob	No	-	798	153	20	13.1	15	5	0	5	7
18	Samroang Tong	Tumpoar Meas	Babor Baysra	Yes	No	678	132	36	27.3	1	35	0	2	10
19		Tang Krouch	Anlong Thorm	Yes	Yes	337	70	60	85.7	16	44	0	5	6
20			Tnalbot	Yes	Yes	378	77	60	77.9	24	36	0	5	6
21		Khtum Krang	Kahon	No	-	411	95	3	3.2	3	0	0	2	9
22			Orata Rath	No	-	103	19	2	10.5	2	0	0	1	10
23		Sen Dei	Prey Sya	No	-	987	202	7	3.5	7	0	0	5	7
24			Sen Dei	Yes	No	1070	185	30	16.2	20	10	23	4	6
25			Trauk Veng	Yes	No	504	98	35	35.7	11	24	35	5	6
26		Skus	Krang	Yes	No	146	28	6	21.4	6	0	0	4	7
27			Ang	Yes	No	478	85	17	20	13	4	0	4	6
28			Krang Ampel	Yes	No	434	71	23	32.4	23	0	0	5	7
29		Thommodar	Trapang Leap	No	-	702	147	15	10.2	15	0	0	5	6

30			Morn	No	-	340	69	1	1.4	1	0	0	1	10
31			Sretreng	No	-	340	59	5	8.5	5	0	0	4	7
32		Kahaeng	Preah Khe	Yes	No	593	128	43	33.6	42	1	0	5	6
33			Lor	Yes	No	672	121	63	52.1	62	1	0	5	6
34		Vorsa	Kork Pnov	No	-	519	94	40	42.6	40	0	0	5	6
35			Rokabanh	No	-	244	52	9	17.3	9	0	0	5	6
36			Trapang Sangke	No	-	379	74	22	29.7	22	0	2	6	6
Total	**4**	**17**	**36**	**12**	**2**	**17243**	**3369**	**835**	**24.8**	**656**	**179**	**142**	**149**	**249**

Appendix 2: Village survey questionnaire (English)

Appendix 3: Village survey questionnaire (Khmer)

Appendix 4: Household survey questionnaire (English)

Market-based approaches to water, sanitation and hygiene project
Questionnaire for individual household survey

[Respondent must be an adult member of the household, ideally the head of the household or their spouse. Interviewers should spend a few minutes building rapport with the respondent.]

My name is _____ and I am working with an international NGO called Lien Aid. We are gathering information about people's knowledge and experience with household sanitation, water and hygiene. We do not plan to build any toilets or wells but we want people that build and sell latrines and water products to provide better and less expensive products in your area.

You will understand more about our work during our discussion. You can ask me to explain anything you don't understand at any time during our conversation, and you are free to end the conversation at any time. All information you provide will be kept confidential, that is, your name or other identification will not be reported along with your answers to the questions.

Are you able to answer a few questions for us? It will take about 1 hour.

A. Interview Identification

No	Question	Coding	Skip
1	Questionnaire number		
2	District name		
3	Commune name		
4	Village name		
5	Date of Interview	5.1 dd ___ ___, mm ___ ___, 2009 5.2. Start time: …… End time: …….	
6	Interviewer name		
7	Supervisor		
8	Checked by		

B. Respondent Information

No	IDE #	Question	Coding	Skip
9	2.1	What is your name?	……..	
10	2.2	What is your relationship to the head of the household?	1. Self ☐ 2. Spouse ☐ 3. Son/daughter ☐ 4. Other ☐ specify _____	
11	2.3	What is the respondent's sex? *[answer this question by observation only]*	1. Male ☐ 2. Female ☐	

12	2.4	What is the sex of the household head? *[Enter sex even if the respondent is the head of household]*	1. Male ☐ 2. Female ☐	
13		What is the occupation of the head of the household?	1. Professional/Technical ☐ 2. Factory worker ☐ 3. Day labourer ☐ 4. Civil service ☐ 5. Service/Sales/Commercial ☐ 6. Agricultural ☐ 7. Student ☐ 8. Other ☐ specify _____	
14	2.5	How many people usually live in this house?	1. Male_____ people 2. Female_____ people	
15	2.7	How many family members usually live and work in Phnom Penh?	1. Male_____ people 2. Female_____ people	
16		What level of schooling did the head of household achieve?	1. None ☐ 2. Pre-school/ Kindergarten ☐ 3. Some Primary ☐ 4. Finished Primary ☐ 5. Some Secondary ☐ 6. Finished Secondary ☐ 7. Higher ☐	

C. Socio-economic

No	IDE #	Question	Coding	Skip
17		Does your household own agriculture land?	1. Yes ☐ 2. No ☐ 3. Work other's land ☐	If No ➔Q20
18		If yes, how much agricultural land are you able to cultivate?	_____ acres (100 = 1 hectares)	
19		Last year, what was the rice crop yield?	_____	
20		What kind of <u>shelter walls</u> does your house have on the main living floor? *[Determine by direct observation if possible]* *[Check one. If more than one wall material is used, choose the material that covers the largest area]*	1. Concrete/brick☐ 2. Fibrous cement☐ 3. Galvanized steel☐ 4. Wood☐ 5. Palm/Bamboo/Thatch☐ 6. Bamboo/straw with mud☐ 7. Stone with mud/cement☐ 8. Salvaged material☐ 9. No walls☐ 10. Other ☐ specify _____	
21	3.2	What kind of <u>roof</u> does your house have? *[Determine by direct observation if possible]* *[Check one. If more than one wall material is used, choose material that covers the largest area]*	1. Concrete☐ 2. Fibrous cement☐ 3. Galvanized steel☐ 4. Wood☐ 5. Tiles☐ 6. Palm/Bamboo/Thatch☐ 7. Plastic sheet☐ 8. Salvaged material☐ 9. No roof☐ 10. Other ☐ specify _____	

22		Which of the following does your household own? *[Read all options* *Check all that apply]*	1. Motorbike ☐ 2. Bicycle ☐ 3. Television ☐ 4. Radio ☐ 5. Mobile phone ☐ 6. Cow(s)buffalo ☐ 7. Pig(s) ☐ 8. Ox cart ☐ 9. Semi-tractor ☐ 10. Rice mill ☐ 11. Generator ☐ 12. Battery ☐ 13. Electric pump for irrigation ☐ 14. Rainwater tank of sealed concrete 15. rings/jumbo jar ☐ 16. Other ☐ specify _____	
23		What were the main sources of your cash income of all your family members in the last 12 months? *[Read all options* *Check only one]*	1. Selling rice ☐ 2. Selling non-rice crop ☐ 3. Selling animal product ☐ 4. Fishing ☐ 5. Farm labour ☐ 6. Business/trading ☐ 7. Salary ☐ 8. Gift from others ☐ 9. Other ☐ specify _____	
24		How much was the household's total income for the last 12 months?	_____ Riel 99. Don't know ☐	
25		In what months do you have the highest income? *[Check all that apply]* *[Should have Buddhist calendar]*	1. January ☐ 2. February ☐ 3. March ☐ 4. April ☐ 5. May ☐ 6. June ☐ 7. July ☐ 8. August ☐ 9. September ☐ 10. October ☐ 11. November ☐ 12. December ☐ 13. All months same income ☐ 14. Don't know ☐	
26		In the household, how often is money put aside for savings?	1. Each week ☐ 2. Each month ☐ 3. 2-3 times per year ☐ 4. Once per year ☐ 5. Rarely ☐ 6. Never ☐	
27		Have you ever had a microfinance loan?	1. Yes ☐ 2. No ☐	If No ➔ Part D
28		If Yes, when was your most recent loan?	1. Less than 6 months ago ☐ 2. 6 month – 1 year ago ☐ 3. More than 1 year ago ☐	
29		What is/was the loan used for?	(specify) ……	

30		How much is/was the loan?	_____R	

D. Latrine knowledge and perceptions

No	IDE #	Question	Coding	Skip
31		Where do adults in your household usually go to defecate?	1. Household latrine ☐ 2. Other latrine ☐ 3. Open defecation - near house ☐ 4. Open defecation - field/forest ☐ 5. Other ☐ specify _____	
32		How many meters is this place from your house?	_____m	
33		How satisfied are you with your current defecation place?	1. Very satisfied ☐ 2. Satisfied ☐ 3. Unsatisfied ☐ 4. Very unsatisfied ☐ 5. Don't know ☐	
34		Where do children in your household usually go to defecate?	1. Household latrine ☐ 2. Other latrine ☐ 3. Open defecation - near house ☐ 4. Open defecation - field/forest ☐ 5. No children ☐ 6. Other ☐ specify _____	
35		In your household, how are babies' faeces usually disposed of? *[Check only one which is very often]*	1. Put into latrine ☐ 2. Put into drain/ditch ☐ 3. Thrown in garbage ☐ 4. Buried ☐ 5. Left in open ☐ 6. No baby ☐ 7. Other ☐ specify _____	
36		What types of latrines do you know about? *[DO NOT read options, check all that apply]*	1. Flush/pour-flush ☐ 2. Ventilated Improved Pit (VIP) latrine ☐ 3. Pit latrine with slab ☐ 4. Composting toilet ☐ 5. Other ☐ specify _____	
37		Which of these types of latrines have you learned about for the first time in the past year? *[Read all options* *Check all that apply]*	1. Flush/pour-flush ☐ 2. Ventilated Improved Pit (VIP) latrine ☐ 3. Pit latrine with slab ☐ 4. Composting toilet ☐ 5. None ☐ 6. Other ☐ specify _____	
38		Where/how do you learn about latrines? *[Read all options, check all that apply]*	1. Community meeting ☐ 2. Village chief ☐ 3. Neighbour ☐ 4. Relative ☐ 5. Mason ☐ 6. Radio ☐ 7. Poster/Picture ☐ 8. Billboard advertisement ☐ 9. Television advertisement ☐ 10. NGO/agency worker ☐ 11. Government representative ☐ 12..... ther ☐ specify _____	

39		What kind of latrine would you most prefer for your household? *[Read all options, check only one]*	1. Flush/pour-flush ☐ 2. Dry pit latrine ☐ 3. Other ☐ specify_____	
40		What particular features do you like the most about your preferred latrine? *[DO NOT read options, check all that apply]*	1. Looks good/Comfortable ☐ 2. No smell ☐ 3. No flies ☐ 4. Don't see faeces ☐ 5. Easy to clean ☐ 6. Don't need water to flush ☐ 7. Less expensive ☐ 8. Other ☐ specify _____	
41		Do you know anyone who can build this type of latrine?	1. Yes ☐ 2. No ☐ 3. Don't know ☐	
42	6.2	What are the <u>disadvantages</u> of owning a latrine? *[DO NOT read options; check all that apply]*	1. bad smell ☐ 2. attracts flies ☐ 3. cost to maintain it ☐ 4. work to maintain it ☐ 5. other people come to use it ☐ 6. affects groundwater quality ☐ 7. overflows ☐ 8. no disadvantages ☐ 9. don't know ☐ 10. other (specify) _____	
43	6.1	What are the <u>advantages</u> of owning a latrine? *[DO NOT read options; check all that apply]*	1. Improved hygiene/ health/ cleanliness ☐ 2. more privacy ☐ 3. more comfortable ☐ 4. convenience/save time ☐ 5. Improved safety ☐ 6. Improved status/prestige ☐ 7. guests can use it ☐ 8. no advantages ☐ 9. don't know ☐ 10. other (specify) _____	
44	6.3	How much would you expect to pay for these latrines? *[Show respondent picture of four types of latrines]*	1. Latrine type A _____R 2. Latrine type B _____R 3. Latrine type C _____R 4. Latrine type D _____R	
45		How important is spending money for a good latrine to your family's health? *[Read all options; check only one]*	1. very important ☐ 2. quite important ☐ 3. no so important ☐ 4. not important at all ☐ 5. Don't know ☐	

E. Latrine owners

No	IDE #	Question	Coding		Skip
46	4.1	Do you own a latrine?	1. Yes ☐ 2. No ☐		If no, ➔ Part F
47		If yes, is the latrine functioning now?	1. Yes ☐ 2. No ☐		If yes, ➔Q50
48		If no, why not? *[DO NOT read options; check all that apply]*	1. Dirty ☐ 2. Full ☐ 3. No water to flush ☐ 4. Slab broken ☐ 5. Superstructure broken/missing ☐ 6. Not finished building ☐ 7. Used as storage ☐ 8. Smells bad ☐ 9. Prefer the field/forest ☐ 10. Other ☐ specify_____		
49		If no, why did you build this latrine in the first place? *[Do not read,* *Check all that apply]*	1. Program was offering subsidy ☐ 2. Someone told me I had to ☐ 3. Had enough money to buy ☐ 4. Sick/old relative ☐ 5. Construction of new house ☐ 6. Neighbour got one ☐ 7. Event (wedding/funeral/New Year) ☐ 8. Had visitors from outside village coming ☐ 9. Don't know ☐ 10. Other ☐ specify_____		Now go to ➔ Part F
50/ 51	4.2	Do <u>adults</u> in your household use the latrine for defecation? *[Read options; select one]*	50. DRY SEASON 1. Always☐ 2. Sometimes☐ 3. Never☐ 4. Don't know☐	51. RAINY SEASON 1.Always☐ 2.Sometimes☐ 3.Never☐ 4.Don't know☐	
52/ 53		Do <u>children</u> in your household use the latrine for defecation? *[Read options; select one]*	52. DRY SEASON 1. Always☐ 2. Sometimes☐ 3. Never☐ 4. Don't know☐	53. RAINY SEASON 1.Always☐ 2.Sometimes☐ 3.Never☐ 4.Don't know☐	
54		Does anybody from neighboring household use your latrine?	1. Yes ☐ 2. No ☐		

55		If you didn't have this latrine to use, where would you go to defecate? *[Don't read options* *Check all that apply]*	1. Public latrine ☐ 2. Neighbour's latrine ☐ 3. Relative's latrine ☐ 4. Field/forest ☐ 5. Other ☐ specify_____	
56		What kind of latrine do you have?	Pour flush latrine to 1. Piped sewer system ☐ 2. Septic tank ☐ 3. Pit latrine ☐ 4. Elsewhere ☐ 5. Don't know ☐ 6. Ventilated Improved Pit (VIP) latrine ☐ 7. Pit latrine with slab ☐ 8. Pit latrine without slab/open pit ☐ 9. Composting toilet ☐ 10. Other ☐ specify_____	
57	4.4	What kind of <u>below ground</u> structure does your latrine have? *[Check one]*	1. Unlined pit ☐ 2. Lined pit – beneath latrine ☐ 3. Lined pit – offset ☐ 4. Piped sewerage ☐ 5. Other ☐ _____ 6. Don't know ☐	
58	4.5	What kind of <u>slab</u> does your latrine have? *[Observe]* *[Check one]*	1. Wooden slab ☐ 2. Concrete slab ☐ 3. Pour flush ☐ 4. Western toilet bowl ☐ 5. Other ☐ specify_____	
59	4.6	What kind of <u>shelter walls</u> does your latrine have? *[Observe if possible]* *[Check one. If more than one wall material is used, choose material that covers the largest area]*	1. Concrete/brick ☐ 2. Fibrous cement ☐ 3. Galvanized steel ☐ 4. Wood ☐ 5. Thatch ☐ 6. Plastic sheet ☐ 7. Salvaged material ☐ 8. No walls ☐ 9. Other ☐ specify_____	
60	4.7	What kind of <u>shelter roof</u> does your latrine have? *[Observe if possible]* *[Check one. If more than one roof material is used, choose material that covers the largest area]*	1. Concrete ☐ 2. Fibrous cement ☐ 3. Galvanized steel ☐ 4. Tiles ☐ 5. Thatch ☐ 6. Plastic sheet ☐ 7. Salvaged material ☐ 8. No roof ☐ 9. Other ☐ specify_____	
61		Do you use your latrine for bathing?	1. Yes ☐ 2. No ☐	
62		Do you use water to flush your latrine?	1. Yes ☐ 2. No ☐	If no, ➔Q65
63		How much water per day does your household usually need to flush the latrine?	1. Less than 5 litres ☐ 2. 6 to 15 litres ☐ 3. 16 to 25 litres ☐ 4. More than 26 litres ☐	

64		Do you have enough water to flush the latrine in the dry season?	1.Yes ☐ 2.No ☐	

65		Is the latrine you are using now your first latrine?	1. Yes ☐ 2. No ☐ 3. Don't know ☐	If Yes, ➔Q68
66		If No, how many other latrines before this one have you built?	_____	
67		In what ways is your current latrine <u>different from your old latrine</u>? *[Check all that apply]*	1. Pit is now lined ☐ 2. walls are improved ☐ 3. roof is improved ☐ 4. slab is improved ☐ 5. has a pan ☐ 6. pan is now pour-flush ☐ 7. has ventilation ☐ 8. has bathing area ☐ 9. has hand washing area ☐ 10. has door ☐ 11. Other ☐ specify_____	
68	5.1	What year was your first latrine built? *[best estimate]*	year: _____	
69		Who made the final decision to build your first latrine? *[Check only one]*	1. Head of household ☐ 2. Head of household and spouse jointly ☐ 3. Spouse ☐ 4. Family together ☐ 5. Other ☐ specify _____	
70		What made you decide to build your first latrine at the time that you did? *[probe; check all that apply]*	1. Program was offering subsidy ☐ 2. Someone told me I had to ☐ 3. Had enough money to buy ☐ 4. Sick/old relative ☐ 5. Children become physically mature ☐ 6. Social pressure ☐ 7. Construction of new house ☐ 8. Neighbour got one ☐ 9. Event (wedding/funeral/New Year) ☐ 10. Had visitors from outside village coming ☐ 11. Other ☐ specify_____ 12. Don't know ☐	
71	5.2	Did you receive assistance from any organization to build your latrine? *E.g., free/subsidized materials or labour, technical advice, loan, etc.*	1. Yes ☐ 2. No ☐ 3. Don't know ☐	If No / Don't know ➔Q73
72		What assistance did you receive from the organization? *[Read options and check all that apply]*	1. Free/subsidized materials ☐ 2. Free/subsidized labour ☐ 3. Loan ☐ 4. Technical advice ☐ 5. Design provided ☐ 6. Encouragement ☐ 7. Other ☐ specify_____	
73	5.3	How much did <u>you</u> pay for your latrine? *[If possible, enter material and labour costs separately]*	1. Total _____Riel / 99. don't know ☐ 2. Materials _____Riel / 99. don't know ☐ 3. Labour _____Riel / 99. don't know ☐ 4. In kind contribution, value unknown ☐	

74	5.4	Did you build your latrine all at one time or in stages?	1. All at once ☐ 2. In stages ☐ 3. Don't know ☐	

75		How long did it take to complete your latrine?	1. Less than 2 weeks ☐ 2. 3 – 4 weeks ☐ 3. 1-6 months ☐ 4. 7-12 months ☐ 5. More than 13 months ☐ 6. Not yet completed ☐	
76	5.5	In the future, do you plan to make changes/improvements to your latrine?	1. Yes ☐ 2. No ☐ 3. Don't know ☐	If No ➔ Q78
77		What changes/improvements do you plan to make? [Read options, check all that apply]	1. Line the pit ☐ 2. improve the walls ☐ 3. improve the Roof ☐ 4. improve the Slab ☐ 5. get pan ☐ 6. get pour-flush pan ☐ 7. add ventilation pipe to pit ☐ 8. build water storage tank(s) ☐ 9. build bathing area ☐ 10. build handwashing area ☐ 11. build door ☐ 12. move to inside the house ☐ 13. Other ☐ specify_____	
78		Has your latrine pit ever been emptied?	1. Yes ☐ 2. No ☐ 3. Don't know ☐	If No/ Don't know ➔Q82
79		If yes, what do you do with the contents? [read options, check all that apply]	1. Spread on field as fertilizer ☐ 2. Dumped in the forest ☐ 3. Dumped in the river/pond/canal ☐ 4. Empty pit contents into new hole ☐ 5. Other ☐ specify _____	
80		When the pit fills up, how long do you wait before emptying it? *[check only one option]*	1. None(emptied right away) ☐ 2. Less than one month ☐ 3. 1-6 months ☐ 4. 7-12 months ☐ 5. More than 12 months ☐ 6. Don't know ☐	
81		Have you ever <u>hired</u> someone to empty your pit?	1. Yes ☐ 2. No ☐ 3. Don't know ☐	
82	5.6	Did you <u>hire</u> anybody to build or help build your latrine?	1. Yes ☐ 2. No ☐	If no ➔ Q87
83		If yes, were they from your village or from outside your village?	1. From village ☐ 2. From outside village ☐ 3. Don't know ☐	
84		Why did you pick this person? *[Don't read the options, check all that apply]*	1. Relative/friend ☐ 2. Had hired before ☐ 3. Has good reputation ☐ 4. Saw and liked a latrine they had built ☐ 5. Least expensive ☐ 6. Other ☐ specify _____	

85		How did you learn about this person? *[Don't read options, check all that apply]*	1. Community meeting ☐ 2. Recommended by family ☐ 3. Relative/friend ☐ 4. Recommended by latrine owner ☐ 5. Recommended by village chief ☐ 6. Recommended by someone in village ☐ 7. Recommended by material supplier ☐ 8. Recommended by ring producer ☐ 9. Recommended by NGO/agency ☐ 10. Poster/Advertisement ☐ 11. Radio ☐ 12. Other ☐ specify_____	
86	5.7	Who arranged the purchase of the materials: the hired person, the household, or both?	1. Hired person☐ 2. Household ☐ 3. Both ☐	
87	5.8	Where did you buy the materials for building your latrine? *[Read choices; select one choice]*	1. In your village ☐ 2. In your commune ☐ 3. In your district ☐ 4. In the province ☐ 5. In another province ☐ 6. In Phnom Penh ☐ 7. Other ☐ specify _____ 8. Don't know ☐	
88		What are the name and location of the market where you purchased the materials?	1. Name:_____ 2. Location: _____ 3. Don't know ☐	
	[For respondents that own a latrine, go to Part G]			➔Go to Q103

F. Non-latrine owners

No	IDE #	Question	Coding	Skip
89	5.11	Has your household ever thought about or discussed building a latrine for your family?	1. Yes ☐ 2. No ☐	If No ➔ Q91
90		If yes, when was the last time you discussed this?	1. Less than 1 month ago ☐ 2. 1-6 months ago ☐ 3. 7-12 months ago ☐ 4. More than 1 year ago ☐	
91		Who in your household would make the final decision to build a latrine?	1. Head ☐ 2. Spouse ☐ 3. Husband and wife jointly ☐ 4. All (joint decision) ☐ 5. Other ☐ _____	
92		If you are interested in having a person/mason build your latrine, have you identified the mason for the job?	1. Yes ☐ 2. No/Not yet identified ☐ 3. Will build my own latrine ☐ 4. Don't know ☐	If Not the answer yes ➔96
93		If yes, are they from your village or from outside your village?	1. From village ☐ 2. From outside village ☐ 3. Don't know ☐	

94		Why did you pick this person? *[read options, check all that apply]*	1. Had hired before ☐ 2. Relative/friend ☐ 3. Has good reputation ☐ 4. Saw and liked a latrine they had built ☐ 5. Least expensive ☐ 6. Other ☐ specify _____	
95		How did you learn about this person? *[read options, check all that apply]*	1. Community meeting ☐ 2. Recommended by family ☐ 3. Relative/friend ☐ 4. Recommended by latrine owner ☐ 5. Recommended by village chief ☐ 6. Recommended by someone in village ☐ 7. Recommended by material supplier ☐ 8. Recommended by ring producer ☐ 9. Recommended by NGO/agency ☐ 10. Poster/Advertisement ☐ 11. Radio ☐ 12. Other ☐ specify_____	
96	5.15	If you built a latrine, where would you buy the materials from? *[Read options; select one]*	1. In my village ☐ 2. In my commune ☐ 3. In my district ☐ 4. In my province ☐ 5. In other provinces ☐ 6. In Phnom Penh ☐ 7. Other ☐ specify _____ 8. Don't know ☐	
97		What are the name and location of the market where you would purchase the materials?	1. Name:_____ 2. Location: _____ 3. Don't know ☐	
98		Have you chosen a site for the latrine?	1. Yes ☐ 2. No ☐ 3. Don't know ☐	
99		For example, If I return to your house one year from today, how likely is it that you will have built a latrine at your house?	1. No chance ☐ 2. Low likelihood ☐ 3. Medium likelihood ☐ 4. High likelihood ☐	
100	5.13	What is the lowest amount that you would need to spend to build an acceptable latrine for your family?	_____ Riel	
101		Do you currently have any money saved towards buying a latrine?	1. Yes ☐ 2. No ☐	
102		Would you consider taking a microfinance loan to purchase a latrine?	1. Yes ☐ 2. No ☐ 3. Don't know ☐	

G. Drinking Water Sources

103. What is the main **dry** season source of drinking water used for members of your household?	104. How long does it take to go to the main source, get water, and come back?	105. How much drinking water do you use per day from the main source?	106. How much do you pay for drinking water from the main source?
1=Piped water into dwelling ☐ 2=Piped water to yard/plot ☐ 3=Public tap/standpipe ☐ 4=Tubewell/borehole ☐ 5=Protected dug well ☐ 6=Unprotected dug well ☐ 7=Protected spring ☐ 8=Unprotected spring ☐ 9=Rainwater collection ☐ 10=Improved rainwater collection ☐ 11=Bottled water ☐ 12=Cart with small tank/drum ☐ 13=Tanker-truck ☐ 14=Surface water (river, dam, lake, pond, stream, canal, irrigation channels) ☐ 15=Other ☐ specify _____	1. on site ☐ 2. delivered to home ☐ 3. offsite ☐ _____minutes 4. Don't' know ☐	In liters per day _____L /d 99. Don't' know ☐	In amount paid per day in Riel _____ R / d 98. Don't pay for drinking water ☐ 99. Don't' know ☐
107. What is the secondary **dry** season source of drinking water used for members of your household?	108. How long does it take to go to the secondary source, get water, and come back?	109. How much drinking water do you use per day from the secondary source?	110. How much do you pay for drinking water from the secondary source?
1=Piped water into dwelling ☐ 2=Piped water to yard/plot ☐ 3=Public tap/standpipe ☐ 4=Tubewell/borehole ☐ 5=Protected dug well ☐ 6=Unprotected dug well ☐ 7=Protected spring ☐ 8=Unprotected spring ☐ 9=Rainwater collection ☐ 10=Improved rainwater collection ☐ 11=Bottled water ☐ 12=Cart with small tank/drum ☐ 13=Tanker-truck ☐ 14=Surface water (river, dam, lake, pond, stream, canal, irrigation channels) ☐ 15=Other ☐ specify	1. on site ☐ 2. delivered to home ☐ 3. offsite ☐ _____minutes 4. Don't' know ☐	In liters per day _____L /d 99. Don't' know ☐	In amount paid per day in Riel _____ R / d 98. Don't pay for drinking water ☐ 99. Don't' know ☐

111. What is the main **wet** season source of drinking water used for members of your household?	112. How long does it take to go to the main source, get water, and come back?	113. How much drinking water do you use per day from the main source?	114. How much do you pay for drinking water from the main source?
1=Piped water into dwelling ☐ 2=Piped water to yard/plot ☐ 3=Public tap/standpipe ☐ 4=Tubewell/borehole ☐ 5=Protected dug well ☐ 6=Unprotected dug well ☐ 7=Protected spring ☐ 8=Unprotected spring ☐ 9=Rainwater collection ☐ 10=Improved rainwater collection ☐ 11=Bottled water ☐ 12=Cart with small tank/drum ☐ 13=Tanker-truck ☐ 14=Surface water (river, dam, lake, pond, stream, canal, irrigation channels) ☐ 15=Other ☐ specify	1. on site ☐ 2. delivered to home ☐ 3. offsite ☐ _____minutes 4. Don't' know ☐	In liters per day _____L /d 99. Don't' know ☐	In amount paid per day in Riel _____ R / d 98. Don't pay for drinking water ☐ 99. Don't' know ☐
115. What is the secondary **wet** season source of drinking water used for members of your household?	116. How long does it take to go to the secondary source, get water, and come back?	117. How much drinking water do you use per day from the secondary source?	118. How much do you pay for drinking water from the secondary source?
1=Piped water into dwelling ☐ 2=Piped water to yard/plot ☐ 3=Public tap/standpipe ☐ 4=Tubewell/borehole ☐ 5=Protected dug well ☐ 6=Unprotected dug well ☐ 7=Protected spring ☐ 8=Unprotected spring ☐ 9=Rainwater collection ☐ 10=Improved rainwater collection ☐ 11=Bottled water ☐ 12=Cart with small tank/drum ☐ 13=Tanker-truck ☐ 14=Surface water (river, dam, lake, pond, stream, canal, irrigation channels) ☐ 15=Other ☐ specify	1. on site ☐ 2. delivered to home ☐ 3. offsite ☐ _____minutes 4. Don't' know ☐	In liters per day _____L /d 99. Don't' know ☐	In amount paid per day in Riel _____ R / d 98. Don't pay for drinking water ☐ 99. Don't' know ☐

119/ 120		What do you dislike the most about your main drinking water supply source? [Do not read options, check all that apply]	119. DRY SEASON 1. Too far ☐ 2. Not enough supply ☐ 3. Long waiting time to collect ☐ 4. Have to treat water ☐ 5. Long waiting time to treat water ☐ 6. Makes bad rice ☐ 7. Tastes bad ☐ 8. High cost ☐ 9. Smells bad ☐ 10. Looks dirty ☐ 11. Bad for health ☐ 12. The area surrounding the source is not clean ☐ 13. Other ☐ specify	120. RAINY SEASON 1. Too far ☐ 2. Not enough supply ☐ 3. Long waiting time to collect ☐ 4. Have to treat water ☐ 5. Long waiting time to treat water ☐ 6. Makes bad rice ☐ 7. Tastes bad ☐ 8. High cost ☐ 9. Smells bad ☐ 10. Looks dirty ☐ 11. Bad for health ☐ 12. The area surrounding the source is not clean ☐ 13. Other ☐ specify	
121/ 122		What do you like the most about your main drinking water source? [Do not read options, check all that apply]	121. DRY SEASON 1. Doesn't take a long time ☐ 2. Good health ☐ 3. Personal safety/security ☐ 4. Good Taste ☐ 5. Convenient ☐ 6. No smell ☐ 7. Clear/good colour ☐ 8. Prestige ☐ 9. Good for visitors ☐ 10. Other ☐ specify_____	122. RAINY SEASON 1. Doesn't take a long time ☐ 2. Good health ☐ 3. Personal safety/security ☐ 4. Good taste ☐ 5. Convenient ☐ 6. No smell ☐ 7. Clear/good colour ☐ 8. Prestige ☐ 9. Good for visitors ☐ 10. Other ☐ specify_____	
123/ 124		How satisfied are you with your drinking water quality?	123. DRY SEASON 1. Very satisfied ☐ 2. Satisfied ☐ 3. Unsatisfied ☐ 4. Very unsatisfied ☐	124. RAINY SEASON 1. Very satisfied ☐ 2. Satisfied ☐ 3. Unsatisfied ☐ 4. Very unsatisfied ☐	
125		Who in your household <u>usually</u> goes to collect water? *[DO NOT read options. Check one only]*	1. Adult woman ☐ 2. Adult man ☐ 3. Female child (under 15 years) ☐ 4. Male child (under 15 years) ☐ 5. Don't know ☐ 6. Other ☐ specify_____		
126		Do you treat your water in any way to make it safer to drink?	1. Yes ☐ 2. No ☐ 3. Don't know ☐		If No, →Q132
127		Why do you treat your water before drinking it? *[DO NOT read options. Check all that apply]*	1. Contaminated with dirt ☐ 2. Contaminated with faeces/human/animal waste ☐ 3. Contaminated with germs, bacteria, viruses ☐ 4. Good for health/appearance ☐ 5. Animals use the water ☐ 6. Smells bad ☐ 7. Looks bad ☐ 8. Insects in it ☐ 9. So I don't get sick ☐ 10. Don't know ☐ 11. Other ☐ specify_____		

128		How do you treat your water? [Read all options, check all that apply]	1. Boil ☐ 2. Add bleach/chlorine ☐ 3. Strain it through a cloth ☐ 4. Use a ceramic water filter ☐ 5. Use a sand filter ☐ 6. Solar disinfection ☐ 7. Let it stand and settle ☐ 8. Don't know ☐ 9. Other ☐ specify _____	
129		How often do you treat your water before drinking? *[read all options. Check one only]*	1. always ☐ 2. usually ☐ 3. sometimes ☐ 4. never ☐ 5. don't know ☐	
130		Apart from drinking, what do you use the treated water for?	1. To prepare infant formula or infant food ☐ 2. To cook ☐ 3. To wash/prepare food ☐ 4. To wash dishes ☐ 5. To wash clothes ☐ 6. To wash hands ☐ 7. To bathe ☐ 8. Other ☐ specify_____	
131		How important to you is treating your water for drinking?	1. Very important☐ 2. quite important ☐ 3. not so important ☐ 4. not important at all ☐ 5. Don't know ☐	
132		Do you ever buy treated bottled water for drinking?	1. Yes ☐ 2. No ☐	If no, skip to ➔ Q134
133		How much do you pay per bottle of treated water?	_____R/L	Skip to➔ Q137
134		Have you ever considered buying treated bottled water for drinking?	1. Yes ☐ 2. No ☐	If no, skip to➔ Q137
135		If you have considered buying treated bottled water, why don't you buy it?	1. Treated water is too expensive ☐ 2. No money ☐ 3. Treated water is not available ☐ 4. Too far to point-of-sale ☐ 5. Don't like taste/smell ☐ 6. Other ☐ specify _____	
136		How much would you be willing to pay for treated bottled water?	_____R/L	
137		Do you ever buy untreated water for drinking?	1. Yes ☐ 2. No ☐	If no, skip to ➔ Part H
138		How much do you pay per litre of untreated drinking water?	_____R/L	

H. Water components purchase

No	IDE #	Question	Coding	Skip
139		Which of the following water products have you seen or heard of <u>in the past year?</u> *[Show all options. Check all that apply.* *Ask: Any others not shown here?]*	1. Rope pump ☐ 2. Ceramic water filter ☐ 3. Bio-sand filter ☐ 4. Siphon filter ☐ 5. Rainwater tank - Ring tanks ☐ 6. Rainwater - Jumbo jar ☐ 7. Rainwater - Ferro-cement tank ☐ 8. Chlorine tablets/solution ☐ 9. Solar lamp ☐ 10. Other ☐ specify _____	
140		How much do you think each one of these water products costs? *[Show all options.]*	1. Rope pump 2. Ceramic water filter 3. Bio-sand filter 4. Siphon filter 5. Rainwater tank - Ring tanks 6. Rainwater - Jumbo jar 7. Rainwater - Ferro-cement tank 8. Chlorine tablets/solution 9. Solar lamp Cost (R) _____ _____ _____ _____ _____ _____ _____ _____ _____	
141		Which of these water products would you most prefer for your household? *[Show all options. Check ONLY one option].*	1. Rope pump ☐ 2. Ceramic water filter ☐ 3. Bio-sand filter ☐ 4. Siphon filter ☐ 5. Rainwater tank - Ring tanks ☐ 6. Rainwater - Jumbo jar ☐ 7. Rainwater - Ferro-cement tank ☐ 8. Chlorine tablets/solution ☐ 9. Solar lamp ☐ 10. Other ☐ specify _____	
142		Where/how do you learn about new water products? *[Read all options, check all that apply]*	1. Community meeting ☐ 2. Village chief ☐ 3. Neighbour ☐ 4. Relative ☐ 5. Mason ☐ 6. Radio ☐ 7. Poster/Picture ☐ 8. Billboard advertisement ☐ 9. Television advertisement ☐ 10. NGO/agency worker ☐ 11. Government representative ☐ 12. Other ☐ specify _____	

143		Where have you seen these water products being sold? *[Show all options. Circle the closest location. Circle ONE option only for each product.]* 0= In my village ☐ 1=In my commune ☐ 2=In my district ☐ 3=In my province ☐ 4=In Phnom Penh ☐ 5=Other ☐ 6=Don't know ☐	1. Rope pump 2. Ceramic water filter 3. Bio-sand filter 4. Siphon filter 5. Rainwater tank - Ring tanks 6. Rainwater - Jumbo jar 7. Rainwater - Ferro-cement tank 8. Chlorine tablets/solution 9. Solar lamp	Location 0 1 2 3 4 5 6 0 1 2 3 4 5 6 0 1 2 3 4 5 6 0 1 2 3 4 5 6 0 1 2 3 4 5 6 0 1 2 3 4 5 6 0 1 2 3 4 5 6 0 1 2 3 4 5 6 0 1 2 3 4 5 6	
144		Did you receive assistance from any organization to build or purchase any of these products? *[Show all options. Check all that apply.* *Ask: any others not shown here?]*	1. No, I have not ☐ 2. Rope pump ☐ 3. Ceramic water filter ☐ 4. Bio-sand filter ☐ 5. Siphon filter ☐ 6. Rainwater tank - Ring tanks ☐ 7. Rainwater - Jumbo jar ☐ 8. Rainwater - Ferro-cement tank ☐ 9. Chlorine tablets/solution ☐ 10. Solar lamp ☐ 11. Other ☐ specify _____		If no, skip to ➔ 146
145		What assistance did you receive from the organization? *[Read options and check all that apply]*	1. Free/subsidized materials ☐ 2. Free/subsidized labour ☐ 3. Loan ☐ 4. Technical advice ☐ 5. Design provided ☐ 6. Encouragement ☐ 7. Other ☐ specify _____		
146		Have you ever purchased any of these products? *[Show all options. Check all that apply.* *Ask: any others not shown here?]*	1. No, I have not ☐ 2. Rope pump ☐ 3. Ceramic water filter ☐ 4. Bio-sand filter ☐ 5. Siphon filter ☐ 6. Rainwater tank - Ring tanks ☐ 7. Rainwater - Jumbo jar ☐ 8. Rainwater - Ferro-cement tank ☐ 9. Chlorine tablets/solution ☐ 10. Solar lamp ☐ 11. Other ☐ _____		If yes, skip to ➔ Q151
147		Has your household ever thought about or discussed purchasing any water products?	1. Yes ☐ 2. No ☐		If no, skip to ➔ Q151
148		When was the last time you discussed purchasing water products?	1. Less than 1 month ago ☐ 2. 1-6 months ago ☐ 3. 6-12 months ago ☐ 4. More than 1 year ago ☐		
149		Who in your household would make the final decision to purchase water products? *[check all that apply]*	1. Head ☐ 2. Spouse ☐ 3. Husband and wife jointly ☐ 4. All (joint decision) ☐ 5. Other ☐ _____		

150		If I return to your house one year from today, how likely is it that you will have purchased a new water product for your house?	1. No chance ☐ 2. Low likelihood ☐ 3. Medium likelihood ☐ 4. High likelihood ☐	

I. Hygiene

No	IDE #	Question	Coding	Skip
151		How often do you wash your hands with soap? *[Check only one option]*	1. More than three times per day ☐ 2. Two to three times per day ☐ 3. Once per day ☐ 4. Once every 2-3 days ☐ 5. Less than once per week ☐ 6. Almost never ☐	
152		Why do you wash your hands with soap? *[DO NOT read options; check all that apply]*	1. To remove dirt/make clean ☐ 2. Personal appearance/to look good ☐ 3. To make them smell good ☐ 4. To prevent disease ☐ 5. To remove microbes/bacteria ☐ 6. Other ☐ specify_____	
153		When do you usually wash your hands with soap? *[DO NOT read options; check all that apply]*	1. When they are dirty ☐ 2. When returning to the household ☐ 3. Before eating ☐ 4. After eating ☐ 5. After defecation ☐ 6. Before going to sleep ☐ 7. After waking up ☐ 8. Before preparing food ☐ 9. Before washing baby ☐ 10. After washing baby ☐ 11. Other ☐ specify_____	
154		Do you wash your hands with soap in a designated hand-washing place?	1. Yes ☐ 2. No ☐	If yes, skip to ➔ Q156
155		If no, where do you usually wash your hands with soap?	1. At the water source ☐ 2. In the latrine ☐ 3. Near the latrine ☐ 4. In the kitchen area ☐ 5. Other ☐ specify _____	
156		What do you do in your household to prevent children from getting diarrhoea? *[Do NOT read options; check all that apply]*	1. Pray to spirits/ancestors ☐ 2. Cook food properly/eat soon after cooking ☐ 3. Be careful about what kinds of food you eat ☐ 4. Boil drinking water ☐ 5. Wash vegetables with clean water ☐ 6. Make formula with clean water ☐ 7. Wash hands with soap after defecation ☐ 8. Wash hands with soap before preparing food/eating ☐ 9. Wash hands with soap after cleaning a child's anus ☐ 10. Clean cooking and eating utensils ☐ 11. Don't know ☐ 12. Other ☐ specify _____	

157	6.4	What hygiene advice have you heard before? *[DO NOT read options; check all that apply]*	1. None ☐ 2. Use a latrine ☐ 3. Drink safe water ☐ 4. Store water safely ☐ 5. Wash hands ☐ 6. Wash hands with soap ☐ 7. Good food hygiene ☐ 8. Wastewater/stagnant water management ☐ 9. Safe disposal of babies' faeces ☐ 10. other (specify) _____	
158	6.5	From which of the following sources have you heard hygiene advice <u>in the past year</u>? *[DO NOT read options; check all that apply]*	1. Community meeting ☐ 2. Village chief ☐ 3. Neighbour ☐ 4. Relative ☐ 5. Radio ☐ 6. Poster/Picture ☐ 7. Billboard advertisement ☐ 8. Television advertisement ☐ 9. NGO/agency worker ☐ 10. Government representative ☐ 11. Health Center ☐ 12. Health Worker ☐ 13. Schools/teachers ☐ 14. Wat/religious leaders ☐ 15. Don't know ☐ 16. Other (specify) _____	

J. Communication

No	IDE #	Question	Coding	Skip
159		How many people in the household are member of a community group?	1. 0 ☐ 2. 1 ☐ 3. 2 ☐ 4. 3 ☐ 5. Other (specify) _____	
160		How often do you travel outside the village?	1. More than once per week ☐ 2. Once per week ☐ 3. 1-2 times per month ☐ 4. Less than once per month ☐ 5. Less than once per year ☐ 6. Rarely ☐ 7. Never ☐	
	5.16	In your opinion, which of the following would be able to give trustworthy information about building or purchasing sanitation and water products?		
161		Mason *[Read options; select one]*	1. Very good information source ☐ 2. Acceptable/Average information source ☐ 3. Not a good information source ☐ 4. Don't know ☐	
162		Concrete ring producer *[Read options; select one]*	1. Very good information source ☐ 2. Acceptable/Average information source ☐ 3. Not a good information source ☐ 4. Don't know ☐	
163		Shop/seller *[Read options; select one]*	1. Very good information source ☐ 2. Acceptable/Average information source ☐ 3. Not a good information source ☐ 4. Don't know ☐	
164		Government officer *[Read options; select one]*	1. Very good information source ☐ 2. Acceptable/Average information source ☐ 3. Not a good information source ☐ 4. Don't know ☐	
165		NGO worker *[Read options; select one]*	1. Very good information source ☐ 2. Acceptable/Average information source ☐ 3. Not a good information source ☐ 4. Don't know ☐	

Appendix 5: Household survey questionnaire (Khmer)

គម្រោងសម្រួលនីតិវិធីសំរាប់ទីកស្អាត អនាម័យទូទៅ និង អនាម័យផ្ទាល់ខ្លួន

សំណួរស្ទាបស្ទង់មតិតាមគ្រួសារ

អ្នកឆ្លើយសំនួរត្រូវតែជាមេគ្រួសារ ប្រសិនបើមិនមែនជាមេគ្រួសារគឺត្រូវតែជាមនុស្សពេញវ័យ(១៨ឆ្នាំ ឡើង)នៃ សមាជិកគ្រួសារនោះ។ អ្នកធ្វើសម្ភាសន៍គួរតែចំណាយពេល ពី ២ ទៅ ៣នាទី ដើម្បីបង្កើតទំនាក់ទំនងជាមួយ អ្នកតបសំណួរ។

ជំរាបសួរ! ខ្ញុំឈ្មោះ:.....។ ខ្ញុំធ្វើការជាមួយអង្គការអន្តរជាតិមួយឈ្មោះ **ល្បែន អេដ**។ យើងខ្ញុំប្រមូលព័ត៌មានទាក់ទងទៅនឹង ការយល់ដឹង និង បទពិសោធន៍របស់អ្នកភូមិអំពី ទីកស្អាត អនាម័យនៅផ្ទះ និង អនាម័យផ្ទាល់ខ្លួន។ **យើងខ្ញុំពុំមានគំរោងសាងសង់ បង្គន់អនាម័យ ឬ អណ្តូងទឹកជូនអ្នកភូមិទេ ប៉ុន្តែអង្គការនេះចង់អោយអ្នកភូមិអាចធ្វើបង្គន់អនាម័យនិង ឧបករណ៍ផ្គុំទឹកសំរាប់ប្រើប្រាស់បានដោយខ្លួនឯង ប្រកបដោយគុណភាពខ្ពស់ តែចំណាយថវិកាតិច**។

អ្នកនឹងយល់អំពីការងាររបស់យើងច្បាស់ជាងនេះ នៅពេលយើងពិភាក្សាគ្នា។ អ្នកអាចសួរខ្ញុំដើម្បីពន្យល់ អ្នកគ្រប់យ៉ាង បើសិនជាអ្នកមិនយល់នៅក្នុងអំឡុងពេលយើងពិភាក្សាគ្នា ហើយអ្នកក៏អាចបញ្ចប់កាសន្ទារបស់យើងពេលណាក៏បានដែរ។ រាល់ពត៌មានដែលអ្នកបានផ្តល់ នឹងត្រូវរក្សាជាការសម្ងាត់បាននយ័ថា ឈ្មោះរបស់អ្នក ហើយនឹងអត្តសញ្ញាណរបស់អ្នក នឹងមិនត្រូវបញ្ចេញជារបាយការណ៍ ដែលមានចំលើយ របស់អ្នកឡើយ។

តើអ្នកអាចផ្តល់ចំលើយអោយពួកយើងបានទេ? ការសួរនឹងត្រូវចំណាយរយៈពេលប្រហែល ១ម៉ោង។ខ្ញុំសូមកត់ត្រាពត៌មាននេះ ដោយក្រដាស់ផ្សេងទៀតដោយមានភ្ជាប់ ឈ្មោះនិងលេខសំរាប់ទាក់ទង ក្នុងករណី នរណាម្នាក់មានបំណងចង់សួរសំណួរ ផ្សេងៗទៀត (គោលបំណងគឺចង់អោយគេអាចមានពត៌មានខ្លះដើម្បីចែក រំលែកពត៌មានជាមួយអ្នកដទៃទៀតនៅក្នុងគ្រួសារ ឬក៏នរណាដែលមិនមានវត្តមាន នៅពេលធ្វើការសម្ភាសន៍)។

ក. កំនត់សំគាល់សំរាប់ការសម្ភាសន៍

ល.រ	សំណួរ	លេខកូដ	រំលង
១	លេខសំណួរ		
២	ស្រុក ឈ្មោះ		
៣	ឃុំ ឈ្មោះ		
៤	ភូមិ ឈ្មោះ		
៥	ថ្ងៃខែឆ្នាំ ធ្វើសម្ភាសន៍	៥.១. ថ្ងៃទី..... ខែ កក្កដា ឆ្នាំ ២០០៩ ៥.២. ចាប់ផ្តើម:..... ៥.៣ បញ្ចប់:	
៦	អ្នកធ្វើសម្ភាសន៍		
៧	ប្រធានក្រុម		
៨	ត្រួតពិនិត្យបញ្ជីសំណួរដោយ		

ខ. ព័ត៌មានរបស់អ្នកឆ្លើយតប

ល.រ	កូដ IDE	សំណួរ	លេខកូដ		រំលង
៩	2.1	តើអ្នកឈ្មោះអ្វី?	.....		
១០	2.2	តើអ្នកត្រូវជាអ្វីនឹងមេគ្រួសារ?	១. ជាមេគ្រួសារ	☐	
			២. ប្តី/ប្រពន្ធ	☐	
			៣. កូនប្រុស / កូនស្រី	☐	
			៤. ផ្សេងៗ (បញ្ជាក់):		
១១	2.3	តើភេទរបស់អ្នកតបសម្ភាសន៍ជាអ្វី? *(អង្កេត)*	១. ប្រុស	☐	
			២. ស្រី	☐	
១២	2.4	តើមេគ្រួសារមានភេទអ្វី? *(ត្រូវតែគូសចម្លើយទោះបីជាអ្នកឆ្លើយជាមេគ្រួសារក៏ដោយ)*	១. ប្រុស	☐	
			២. ស្រី	☐	
១៣		តើមេគ្រួសារប្រកបមុខរបរអ្វី?	១. អ្នកឯកទេស/អ្នកបច្ចេកទេស	☐	
			២. កម្មកររោងចក្រ	☐	
			៣. កម្មករទទួលកម្រៃតាមថ្ងៃ	☐	
			៤. មន្ត្រីរាជការ	☐	
			៥. អ្នកផ្តល់សេវាកម្ម /អ្នកលក់ដូរ/ពាណិជ្ជករ	☐	
			៦. កសិករ	☐	
			៧. សិស្ស ឬ និស្សិត	☐	
			៨. ផ្សេងៗ(បញ្ជាក់)		
១៤	2.5	តើជាធម្មតាមានមនុស្សរស់នៅផ្ទះនេះប៉ុន្មាននាក់?	១. ប្រុស:.....នាក់		
			២. ស្រី:.....នាក់		
១៥	2.7	ចំនួនសមាជិកដែលទៅធ្វើការ និងរស់នៅឯភ្នំពេញ?	១. ប្រុស:.....នាក់		
			២. ស្រី:.....នាក់		
១៦		តើមេគ្រួសារបានរៀនដល់ថ្នាក់ណាដែរ?	១. អត់បានរៀន	☐	
			២. មត្តេយ្យ	☐	
			៣.បានរៀននៅបឋមសិក្សាខ្លះ	☐	
			៤. រៀនចប់បឋមសិក្សា	☐	
			៥. បានរៀននៅអនុវិទ្យាល័យខ្លះ	☐	
			៦. រៀនចប់អនុវិទ្យាល័យ	☐	
			៧. ខ្ពស់ជាងនេះ	☐	

គ. សេដ្ឋកិច្ចសង្គម

ល.រ	កូដ IDE	សំណួរ	លេខកូដ		រំលង
១៧		តើគ្រួសាររបស់អ្នកមានដីសំរាប់ធ្វើកសិកម្មដែរឬទេ?	១. មាន	☐	បើអត់មាន ➔សំនួរ ២0
			២. អត់មាន	☐	
			៣. ធ្វើស្រែលើដីគេ	☐	
១៨		ប្រសិនបើមាន តើដីមានលទ្ធភាពធ្វើកសិកម្មប៉ុន្មាន អារ?	ចំនួន: ..... អារ		
១៩		តើផលិតផលស្រូវកាលពីឆ្នាំមុនបានផលប៉ុន្មាន?	ចំនួន: ..... គ.ក		
២0		តើជញ្ជាំងផ្ទះរបស់អ្នកប្រភេទអ្វី? *(សូមអង្កេតផ្ទាល់ បើអាចធ្វើបាន។ គួសតែមួយចម្លើយ។ បើសិនជញ្ជាំងមានច្រើនប្រភេទ សូមជ្រើសរើសប្រភេទដែលមានទំហំធំជាងគេ។)*	១. ថ្ម/ឥដ្ឋ	☐	
			២. ហ្វីប្រូស៊ីម៉ងត៍	☐	
			៣. ស័ង្កសី	☐	
			៤. ឈើ	☐	
			៥. ស្លឹកត្នោត/ឫស្សី/ស្បូវ	☐	
			៦. ឫស្សី/ដីឡាយចំបើង	☐	
			៧. ដីឡាយថ្ម/ស៊ីម៉ង់ត៍	☐	
			៨. សំភារៈប្រើហើយ	☐	
			៩. គ្មានជញ្ជាំង	☐	
			១0. ផ្សេងៗ(បញ្ជាក់)		
២១	៣.២	តើដំបូលផ្ទះរបស់អ្នកប្រភេទអ្វី? *(អង្កេតផ្ទាល់ បើអាចធ្វើបាន។ គួសតែមួយចម្លើយ។ បើសិនដំបូលមានច្រើនប្រភេទ សូមជ្រើសរើសប្រភេទដែលមានទំហំធំជាងគេ។)*	១. បេតុង	☐	
			២. ហ្វីប្រូស៊ីម៉ងត៍	☐	
			៣. ស័ង្កសី	☐	
			៤. ឈើ	☐	
			៥. ក្បឿង	☐	
			៦. ស្លឹកត្នោត/ឫស្សី/ស្បូវ	☐	
			៧. កៅស៊ូតង់	☐	
			៨. សំភារៈប្រើហើយ	☐	
			៩. គ្មានដំបូល	☐	
			១0. ផ្សេងៗ(បញ្ជាក់)		

២២		តើគ្រួសាររបស់អ្នកមានទ្រព្យសម្បត្តិអ្វីខ្លះ? *(សូមអានជំរើសទាំងអស់)* *(អាចគូសចម្លើយបានច្រើនតាមការឆ្លើយ)*	១. មានម៉ូតូ	☐	
			២. មានកង់	☐	
			៣. មានទូរទស្សន៍	☐	
			៤. មានវិទ្យុ	☐	
			៥. មានទូរស័ព្ទ	☐	
			៦. មានគោ/ក្របី	☐	
			៧. មានជ្រូក	☐	
			៨. មានរទេះគោ	☐	
			៩. មានគោយន្ត	☐	
			១០. មានម៉ាស៊ីនកិនស្រូវ	☐	
			១១. មានម៉ាស៊ីនភ្ជើង	☐	
			១២. មានអាគុយ	☐	
			១៣. មានម៉ាស៊ីនបូបទឹកសំរាប់កសិកម្ម	☐	
			១៤. មានអាងត្រងទឹកភ្លៀងដែលមានគ្រប	☐	
			១៥. មានពាងយក្ស/កង់លូដាក់ទឹក	☐	
			១៦. ផ្សេងៗ(បញ្ជាក់).....		
២៣		តើកាលពី១២ខែមុន ប្រភពប្រាក់ចំណូលសំខាន់២របស់សមាជិកគ្រួសារអ្នកបានមកពីណា? *(សូមអានជំរើសទាំងអស់)* *(អាចគូសចម្លើយបានច្រើនបំផុតពីរគត់)*	១. លក់ស្រូវ/អង្ករ	☐	
			២. លក់ផលិតផលកសិកម្មក្រៅពីស្រូវ/អង្ករ	☐	
			៣. លក់សត្វចិញ្ចឹម	☐	
			៤. នេសាទ	☐	
			៥. ធ្វើការឱ្យគេនៅកសិដ្ឋាន	☐	
			៦. លក់ដូរ	☐	
			៧. ប្រាក់ខែ	☐	
			៨. ទទួលអំណោយជាលុយពីអ្នកផ្សេង	☐	
			៩. ផ្សេងៗ(បញ្ជាក់).....		
២៤		តើប្រាក់ចំណូលសរុបរបស់គ្រួសារអ្នកកាលពី១២ខែមុនមានចំនួនប៉ុន្មាន?	ចំនួន:.....រៀល		
			៩៩. មិនដឹង	☐	

២៥		ចាប់ពីខែមករា ដល់ខែធ្នូ តើខែណាខ្លះដែលគ្រួសាររបស់អ្នករកប្រាក់ចំណូលបានច្រើន? *(អាចគូសចម្លើយបានច្រើនតាមការឆ្លើយ)* *[ត្រូវការប្រតិទិន]*	១. មករា	☐	
			២. កុម្ភៈ	☐	
			៣. មិនា	☐	
			៤. មេសា	☐	
			៥. ឧសភា	☐	
			៦. មិថុនា	☐	
			៧. កក្កដា	☐	
			៨. សីហា	☐	
			៩. កញ្ញា	☐	
			១០. តុលា	☐	
			១១. វិច្ឆិកា	☐	
			១២. ធ្នូ	☐	
			១៣. គ្រប់ខែទាំងអស់ប្រាក់ចំណូលបានដូចគ្នា	☐	
			១៤. មិនដឹង	☐	
២៦		ជារឿយៗតើគ្រួសាររបស់អ្នកដកលុយទុកសន្សំនៅពេលណាខ្លះ?	១. រៀងរាល់សប្តាហ៍	☐	
			២. រៀងរាល់ខែ	☐	
			៣. ២-៣ ដងក្នុង ១ឆ្នាំ	☐	
			៤. ម្តងក្នុង ១ឆ្នាំ	☐	
			៥. មិនសូវបានសន្សំ (កម្រ)	☐	
			៦. មិនដែលសោះ	☐	
២៧		តើអ្នកធ្លាប់ខ្ចីឥណទានខ្នាតតូចដែរឬទេ?	១. ធ្លាប់	☐	បើមិនធ្លាប់ ➔ផ្នែក **ឃ**(សំណួរ ៣១)
			២. មិនធ្លាប់	☐	
២៨		បើធ្លាប់តើខ្ចីចុងក្រោយបំផុតនៅពេលណា?	១. តិចជាង៦ខែមុន	☐	
			២. ៦ខែ-១ឆ្នាំមុន	☐	
			៣. ច្រើនជាង១ឆ្នាំមុន	☐	
២៩		តើកម្ចីនោះយកទៅធ្វើអ្វីដែរ?	សូមបញ្ជាក់		
៣0		តើកម្ចីនោះប៉ុន្មាន?	ចំនួន:..... រៀល		

ឃ. ចំណេះដឹង និង ការយល់ដឹងអំពីបង្គន់

ល.រ	កូដ IDE	សំណួរ	លេខកូដ		វិលង
៣១		តើជាធម្មតាមនុស្សពេញវ័យនៅក្នុងគ្រួសាររបស់អ្នកទៅបន្ទោរបង់នៅឯណា?	១. បង្គន់ខ្លួនឯង	☐	
			២. បង្គន់អ្នកដទៃ	☐	
			៣. បន្ទោរបង់ពាលវាលពាលកាល-ក្បែរផ្ទះ	☐	
			៤. បន្ទោរបង់ពាលវាលពាលកាល-តាមវាល/ព្រៃ	☐	
			៥. ផ្សេងៗ (បញ្ជាក់):.....		
៣២		តើមានចំងាយប៉ុន្មានម៉ែត្រពីផ្ទះរបស់អ្នកទៅកន្លែងបន្ទោរបង់?	ចំនួន:.....ម៉ែត្រ		
៣៣		តើអ្នកមានការពេញចិត្តយ៉ាងដូចម្តេចដែរអំពីកន្លែងបន្ទោរបង់បច្ចុប្បន្នរបស់អ្នក?	១. ពេញចិត្តខ្លាំង	☐	
			២. មិនសូវពេញចិត្តខ្លាំង	☐	
			៣. មិនពេញចិត្ត	☐	
			៤. មិនពេញចិត្តសោះ	☐	
			៥. មិនដឹង	☐	
៣៤		តើជាធម្មតាក្មេងៗក្នុងគ្រួសាររបស់អ្នកទៅបន្ទោរបង់នៅឯណា?	១. បង្គន់ខ្លួនឯង	☐	
			២. បង្គន់អ្នកដទៃ	☐	
			៣. បន្ទោរបង់ពាលវាលពាលកាល-ក្បែរផ្ទះ	☐	
			៤. បន្ទោរបង់ពាលវាលពាលកាល-តាមវាល/ព្រៃ	☐	
			៥. គ្មានក្មេងទេ	☐	
			៦. ផ្សេងៗ (បញ្ជាក់):.....		
៣៥		តើក្នុងគ្រួសារអ្នកយកលាមកទារកបោះចោលនៅឯណា? *(ចម្លើយតែមួយ ដែលញឹកញាប់ជាងគេ)*	១. បោះចោលក្នុងបង្គន់	☐	
			២. បោះចោលក្នុងលូ/ប្រលាយទឹកស្មួយ	☐	
			៣. បោះចោលក្នុងគំនរសំរាម	☐	
			៤. កប់ចោល	☐	
			៥. ទុកចោលហាលវាល	☐	
			៦. គ្មានទារក	☐	
			៧. ផ្សេងៗ (បញ្ជាក់):.....		

៣៦		តើបង្គន់ប្រភេទណាខ្លះដែលអ្នកធ្លាប់ស្គាល់? *(សូម **កុំ** អានចម្លើយ)* *(អាចគូសចម្លើយបានច្រើនតាមការឆ្លើយ)*	១. បង្គន់ចាក់ទឹក	☐	
			២. បង្គន់ស្លូត(គ្មានចានទម្រ)មានបំពង់បង្ហុយ	☐	
			៣. បង្គន់ស្លូតមានចានទម្រ	☐	
			៤. ប្រើបង្គន់ជីវសាស្ត្រ(កំប៉ុស្ត)	☐	
			៥. ផ្សេងៗ(បញ្ជាក់):.....		
៣៧		ក្នុងចំណោមប្រភេទបង្គន់ទាំងអស់នេះ តើបង្គន់ណាខ្លះដែលអ្នកធ្លាប់ស្គាល់ ដំបូងកាលពីមុនមក? *(សូមអានជំរើសទាំងអស់)* *(អាចគូសចម្លើយបានច្រើនតាមការឆ្លើយ)*	១. បង្គន់ចាក់ទឹក	☐	
			២. បង្គន់ស្លូត(គ្មានចានទម្រ) មានបំពង់បង្ហុយ	☐	
			៣. បង្គន់ស្លូត មានចានទម្រ	☐	
			៤. ប្រើបង្គន់ជីវសាស្ត្រ(កំប៉ុស្ត)	☐	
			៥. មិនដឹង	☐	
			៦. ផ្សេងៗ(បញ្ជាក់):.....		
៣៨		តើអ្នកបានស្គាល់ប្រភេទបង្គន់នោះតាមរយៈអ្វី? *(សូមអានជំរើសទាំងអស់)* *(អាចគូសចម្លើយបានច្រើនតាមការឆ្លើយ)*	១. ការប្រជុំសហគមន៍	☐	
			២. មេភូមិ	☐	
			៣. អ្នកជិតខាង	☐	
			៤. បងប្អូន/សាច់ញាតិ	☐	
			៥. ជាងសំណង់	☐	
			៦. វិទ្យុ	☐	
			៧. ប័ណ្ណប្រកាស/រូបភាពផ្សព្វផ្សាយ	☐	
			៨. បដាផ្សព្វផ្សាយ	☐	
			៩. ទូរទស្សន៍	☐	
			១0. បុគ្គលិកអង្គការ NGO	☐	
			១១. មន្ត្រីរដ្ឋាភិបាល	☐	
			១២. ផ្សេងៗ(បញ្ជាក់):.....		
៣៩		តើបង្គន់ប្រភេទណាដែលអ្នកពេញចិត្តជាងគេបំផុតសំរាប់គ្រួសារអ្នក? *(សូមអានជំរើសទាំងអស់)* *(គូសចម្លើយតែមួយ)*	១. បង្គន់ចាក់ទឹក	☐	
			២. បង្គន់ស្លូត	☐	
			៣. ផ្សេងៗ(បញ្ជាក់):.....		
៤0		តើវាមានលក្ខណៈពិសេសអ្វីខ្លះបានជាអ្នកពេញចិត្តបង្គន់នោះជាងគេ? *(សូម**កុំ**អានចម្លើយ)* *(អាចគូសចម្លើយបានច្រើនតាមការឆ្លើយ)*	១. មើលទៅល្អ/ភាពងាយស្រួល/មានផាសុកភាព	☐	
			២. គ្មានក្លិន	☐	
			៣. គ្មានរុយ	☐	
			៤. មើលមិនឃើញលាមក	☐	
			៥. ងាយស្រួលសំអាត	☐	

			៦. មិនចាំបាច់ចាក់ទឹក	☐	
			៧. តម្លៃថោក	☐	
			៨. ផ្សេងៗ (បញ្ជាក់)៖.....		
៤១		តើអ្នកស្គាល់ជាងដែលចេះធ្វើបង្គន់ប្រភេទខាងលើនេះដែរឬទេ?	១. ស្គាល់	☐	
			២. អត់ស្គាល់ទេ	☐	
			៣. អត់ដឹង	☐	
៤២		តើការមានបង្គន់ផ្ទាល់ខ្លួនផ្តល់ផលវិបាកអ្វីខ្លះដល់អ្នក? *(សូម**កុំ**អានចម្លើយ)* *(អាចគូសចម្លើយបានច្រើនតាមការឆ្លើយ)*	១. ធុំក្លិនស្អុយ	☐	
			២. មានរុយមកច្រើន	☐	
			៣. ចំណាយថវិកាលើការថែទាំបង្គន់	☐	
			៤. ចំណាយកំលាំងថែទាំបង្គន់	☐	
			៥. អ្នកដទៃមកសុំប្រើប្រាស់ជាមួយ	☐	
			៦. ប៉ះពាល់ដល់គុណភាពទឹកក្រោមដី	☐	
			៧. បង្គន់ស្ទះទឹក/ ពេញហ្បៃរ	☐	
			៨. គ្មានផលវិបាកអ្វីទេ	☐	
			៩. មិនដឹង	☐	
			១០. ផ្សេងៗ (បញ្ជាក់)៖.....		
៤៣		តើការមានបង្គន់ផ្ទាល់ខ្លួន ផ្តល់ផលប្រយោជន៍អ្វីខ្លះដល់អ្នក? *(សូម**កុំ**អានចម្លើយ)* *(អាចគូសចម្លើយបានច្រើនតាមការឆ្លើយ)*	១. លើកកម្ពស់អនាម័យ /ភាពស្អាត /សុខភាពល្អ	☐	
			២. មានលក្ខណៈជាងកជន/ផ្ទាល់ខ្លួនជាង	☐	
			៣. មានផាសុកភាព/ងាយស្រួលជាង	☐	
			៤. ទាន់ចិត្ត/មិនចំណាយពេលវេលាច្រើន	☐	
			៥. បង្កើនសុវត្ថិភាព	☐	
			៦.គ្រួសារមានកិត្តិយស	☐	
			៧. ងាយស្រួលពេលមានភ្ញៀវ	☐	
			៨. គ្មានផលប្រយោជន៍ទេ	☐	
			៩. មិនដឹង	☐	
			១០. ផ្សេងៗ (បញ្ជាក់)៖.....		
៤៤		តើអ្នកគិតថាប្រភេទបង្គន់ទាំងអស់នេះមានតម្លៃប៉ុន្មាន? *(បង្ហាញរូបភាពប្រភេទបង្គន់ទាំងបួន)*	១. បង្គន់ប្រភេទ ក ..... រ		
			២. បង្គន់ប្រភេទ ខ ..... រ		
			៣. បង្គន់ប្រភេទ គ ..... រ		
			៤. បង្គន់ប្រភេទ ឃ..... រ		
៤៥		តើការចំណាយប្រាក់សំរាប់បង្គន់ល្អ ដើម្បីសុខភាពល្អដល់គ្រួសារអ្នកមានសារៈសំខាន់កំរិតណា?	១. សំខាន់ណាស់	☐	
			២. សំខាន់ដែរ	☐	

		(សូមអានជំរើសទាំងអស់) *(គួសចម្លើយតែមួយ)*	៣. មិនសូវសំខាន់ទេ	☐	
			៤. មិនសំខាន់ទាល់តែសោះ	☐	
			៥. មិនដឹង	☐	

ង. សម្រាប់អ្នកមានបង្គន់

ល.រ	**កូដ IDE**	**សំណួរ**	**លេខកូដ**		**រំលង**
៤៦	4.1	តើអ្នកមានបង្គន់ទេ?	១. បាទ/ចាស៎	☐	បើអត់ទេ **→សំណួរ ៨៩**
			២. អត់ទេ	☐	
៤៧		តើឥឡូវនេះបង្គន់នោះនៅប្រើប្រាស់បានឬទេ?	១. ប្រើបាន	☐	បើប្រើបាន **→សំនួរ ៥0-៥១**
			២. អត់ទេ	☐	
៤៨		តើមូលហេតុអ្វីបានជាបង្គន់នោះប្រើមិនបាន? *(សូម**កុំ**អានចម្លើយ)* *(អាចគូសចម្លើយបានច្រើនតាមការឆ្លើយ)*	១. កខ្វក់/កគ្រិច	☐	
			២. ស្អុះ/ពេញ	☐	
			៣. អត់ទឹកចាក់	☐	
			៤. ចានបង្គន់បែក/ខូច	☐	
			៥. ជញ្ជាំង និងដំបូលបង្គន់ខូចធ្ងន់ធ្ងរ	☐	
			៦. បង្គន់សង់មិនទាន់រួចរាល់	☐	
			៧. ប្រើបង្គន់ជាកន្លែងផ្ទុករបស់ផ្សេងៗ	☐	
			៨. មានក្លិនស្អុយ/អាក្រក់	☐	
			៩. ចូលចិត្តបន្ទោរបង់នៅព្រៃ/ទីវាល	☐	
			១0. ផ្សេងៗ (បញ្ជាក់)៖.....		

៤៩		ប្រសិនបើបង្គន់នោះប្រើមិនបាន តើមូលហេតុអ្វីបានជាអ្នកធ្វើបង្គន់នោះ? *(សូម**កុំ**អានចម្លើយ)* *(អាចគូសចម្លើយបានច្រើនតាមការឆ្លើយ)*	១. មានកម្មវិធីផ្តល់បង្គន់	☐	បញ្ចប់សំណួរ ៤៩ សូមរំលង **→សំណួរ ៨៩**
			២. មានគេជម្រុញឱ្យធ្វើ	☐	
			៣. មានលុយច្រើន	☐	
			៤. មានសាច់ញាតិចាស់/ឈឺនៅទីនោះ	☐	
			៥. សង់ផ្ទះថ្មី	☐	
			៦. ចង់មានបង្គន់ដូចអ្នកជិតខាងដែរ	☐	
			៧. មានពិធីផ្សេងៗ(មង្គលការ/បុណ្យសព/ចូលឆ្នាំថ្មី)	☐	
			៨. ងាយស្រួលពេលមានភ្ញៀវ	☐	
			៩. មិនដឹង	☐	
			១0. ផ្សេងៗ(បញ្ជាក់).....		
៥0 និង ៥១		តើមនុស្សពេញវ័យនៅក្នុងគ្រួសាររបស់អ្នកតែងតែប្រើបង្គន់ដើម្បីបន្ទោរបង់ដែរឬទេ? *(សូមអានចម្លើយ)* *(គូសចម្លើយបានតែមួយ)*	**៥0. រដូវប្រាំង**		**៥១. រដូវវស្សា**	
			១. តែងតែ	☐	១. តែងតែ	☐
			២. ពេលខ្លះ	☐	២. ពេលខ្លះ	☐
			៣. មិនដែលសោះ	☐	៣. មិនដែលសោះ	☐
			៤. អត់ដឹង	☐	៤. អត់ដឹង	☐
៥២ និង ៥៣		តើក្មេងៗ នៅក្នុងគ្រួសាររបស់អ្នកតែងតែប្រើបង្គន់ដើម្បីបន្ទោរបង់ដែរឬទេ? *(សូមអានជំរើសទាំងអស់)* *(គូសចម្លើយបានតែមួយ)*	**៥២. រដូវប្រាំង**		**៥៣. រដូវវស្សា**	
			១. តែងតែ	☐	១. តែងតែ	☐
			២. ពេលខ្លះ	☐	២. ពេលខ្លះ	☐
			៣. មិនដែលសោះ	☐	៣. មិនដែលសោះ	☐
			៤. គ្មានកូនក្មេង	☐	៤. គ្មានកូនក្មេង	☐
			៥. អត់ដឹង	☐	៥. អត់ដឹង	☐
៥៤		តើមានអ្នកជិតខាងមកប្រើប្រាស់បង្គន់របស់អ្នកដែរឬទេ?	១. មាន	☐		
			២. គ្មាន	☐		
៥៥		ប្រសិនបើអ្នកគ្មានបង្គន់នេះប្រើទេ តើអ្នកទៅបន្ទោរបង់នៅឯណា? *(សូម**កុំ**អានចម្លើយ)* *(អាចគូសចម្លើយបានច្រើនតាមការឆ្លើយ)*	១. បង្គន់សាធារណៈ	☐		
			២. បង្គន់អ្នកជិតខាង	☐		
			៣. បង្គន់សាច់ញាតិ	☐		
			៤. ទៅទីវាល/ព្រៃ	☐		
			៥. ផ្សេងៗ(បញ្ជាក់)៖.....			
៥៦	4.6	តើអ្នកមានបង្គន់ប្រភេទណា?	**បង្គន់ចាក់ទឹកដែលហូរទៅ៖**			
			១. បង្គន់បង្ហូរទៅប្រពន្ធ័លូសាធារណៈ	☐		
			២. បង្គន់បង្ហូរទៅប្រពន្ធ័អាងចំរោះ	☐		
			៣. បង្គន់បង្ហូរទៅរណ្តៅផ្ទុកលាមក	☐		
			៤. បង្គន់បង្ហូរទៅកន្លែងផ្សេងៗ	☐		

			៥. មិនដឹងទេ	☐	
			៦. បង្គន់ស្លួត(គ្មានចានទម្រ) មានបំពង់បង្ហួយ	☐	
			៧. បង្គន់ស្លួត មានចានទម្រ	☐	
			៨. បង្គន់ស្លួតគ្មានចានទម្រ/បើកចំហរ	☐	
			៩. បង្គន់ជីវសាស្ត្រ (composing)	☐	
			១0. ផ្សេងៗ(បញ្ជាក់)៖.....		
៥៧	4.4	តើបណ្តាញខាងក្រោមបង្គន់របស់អ្នកធ្វើអំពីអ្វី? *(គូសចម្លើយតែមួយ)*	១. រណ្តៅអត់លូ/រណ្តៅដី	☐	
			២. មានលូក្រោមបង្គន់	☐	
			៣. រណ្តៅលាមកមានអាងស្តុក	☐	
			៤. រណ្តៅលាមកមានលូបង្ហូរ	☐	
			៥. ផ្សេងៗ (បញ្ជាក់)៖.....		
			៦. មិនដឹង	☐	
៥៨	4.5	តើបង្គន់របស់អ្នកមានទម្រ/ផែនបែបណា? *(អង្កេតផ្ទាល់)* *(គូសចម្លើយតែមួយ)*	១. បង្គន់ផែនធ្វើពីឈើ	☐	
			២. បង្គន់ផែនធ្វើពីស៊ីម៉ង់ត៍	☐	
			៣. បង្គន់ចាក់ទឹក	☐	
			៤. បង្គន់ទំនើបអង្គុយកាច់/ចុចទឹកបាន	☐	
			៥. ផ្សេងៗ (បញ្ជាក់)៖.....		
៥៩	4.7	តើជញ្ជាំងបង្គន់របស់អ្នកប្រភេទអ្វី? *(អង្កេតផ្ទាល់បើអាចធ្វើបាន ។បើសិនជញ្ជាំងមានច្រើនប្រភេទសូមជ្រើសរើសប្រភេទដែលមានទំហំធំជាងគេ ។)* *(គូសតែមួយចម្លើយ)*	១. ចាក់បេតុង/ឥដ្ឋ	☐	
			២. ហ្វីប្រូស៊ីម៉ងត៍	☐	
			៣. ស័ង្កសី	☐	
			៤. ក្តារ/ឈើ	☐	
			៥. ស្បូវ/ ស្លឹក	☐	
			៦. ផ្ទាំកៅស៊ូតង់/ក្តារជ័រ	☐	
			៧. សំភារៈប្រើហើយ/គ្រឿងអេតចាយ	☐	
			៨. គ្មានជញ្ជាំង	☐	
			៩. ផ្សេងៗ(បញ្ជាក់)៖.....		

៦៧		តើបង្គន់ដែលអ្នកមានឥឡូវនេះខុសពីបង្គន់មុនយ៉ាងដូចម្តេចខ្លះ?	១. ឥឡូវរណ្តៅលាមកមានជញ្ជាំង	☐	
			២. ជញ្ជាំងបង្គន់ល្អជាងមុន	☐	
			៣. ដំបូលបង្គន់ល្អជាងមុន	☐	
			៤. ចាស់បង្គន់ល្អជាងមុន	☐	

		(អាចគូសចម្លើយបានច្រើនតាមការឆ្លើយ)	៥. ឥឡូវមានចានបង្គន់	☐	
			៦. ឥឡូវចានបង្គន់អាចចាក់ទឹកបាន	☐	
			៧. មានហឺយ/បំពង់បង្ហូយ	☐	
			៨. មានកន្លែងមុជទឹក	☐	
			៩. មានកន្លែងលាងដៃ	☐	
			១០. មានទ្វារ	☐	
			១១. ផ្សេងៗ(បញ្ជាក់)៖.....		
៦៨	5.1	តើបង្គន់ដបូងបង្អស់របស់អ្នកធ្វើនៅឆ្នាំណា? *(យកការប៉ាន់ស្មានដែលល្អបំផុត)*	ឆ្នាំ:		
៦៩		តើនរណាជាអ្នកសំរេចចិត្តចុងក្រោយក្នុងការធ្វើបង្គន់ដបូងបង្អស់របស់អ្នក? *(គូសតែមួយចម្លើយ)*	១. មេគ្រួសារ	☐	
			២. មេគ្រួសារ និង ប្តី/ប្រពន្ធ	☐	
			៣. ប្តី/ប្រពន្ធ របស់មេគ្រួសារ	☐	
			៤. សមាជិកគ្រួសារទាំងអស់	☐	
			៥. ផ្សេងៗ(បញ្ជាក់)៖.....		
៧0		តើមានកត្តាអ្វីខ្លះដែលជំរុញអោយអ្នកសំរេចចិត្តធ្វើបង្គន់ដបូងបង្អស់របស់អ្នកនៅពេលនោះ? *(សូមសួរសំណួរដេញ)* *(អាចគូសចម្លើយបានច្រើនតាមការឆ្លើយ)*	១. មានកម្មវិធីផ្តល់បង្គន់	☐	
			២. មានគេជម្រុញឱ្យធ្វើ	☐	
			៣. មានលុយច្រើន	☐	
			៤. មានសាច់ញាតិឈឺ/ចាស់ជរា	☐	
			៥. កូនៗធំហើយត្រូវការបង្គន់	☐	
			៦. សម្ពាធសង្គមជំរុញឱ្យមាន	☐	
			៧. សង់ផ្ទះថ្មី	☐	
			៨. ចង់មានបង្គន់ដូចអ្នកជិតខាងដែរ	☐	
			៩. មានពិធីផ្សេងៗ(មង្គលការ/បុណ្យសព/ចូលឆ្នាំថ្មី)	☐	
			១0. ងាយស្រួលពេលមានភ្ញៀវ	☐	
			១១. ផ្សេងៗ(បញ្ជាក់).....		
			១២. មិនដឹង	☐	

៦០		តើដំបូលបង្គន់របស់អ្នកប្រភេទអ្វី? *(អង្កេតផ្ទាល់បើអាចធ្វើបានបើសិនដំបូលមានច្រើនប្រភេទសូមជ្រើសរើសប្រភេទដែលមានទំហំធំជាងគេ)* *(តួសតែមួយចម្លើយ)*	១. ចាក់បេតុង/ឥដ្ឋ	☐	
			២. ហ្វីប្រូស៊ីម៉ង់ត៍	☐	
			៣. ស័ង្កសី	☐	
			៤. ក្បឿង	☐	
			៥. ស្បូវ/ស្លឹក	☐	
			៦. ផ្ទាំងកៅស៊ូតង់/ក្តារដំរ	☐	
			៧. សំភារៈប្រើហើយ/គ្រឿងអេតចាយ	☐	
			៨. គ្មានដំបូល	☐	
			៩. ផ្សេងៗ(បញ្ជាក់)៖.....		
៦១		តើអ្នកប្រើបង្គន់របស់អ្នក សំរាប់មុជទឹកដៃរឬទេ?	១. ប្រើ	☐	
			២. អត់ទេ	☐	
៦២		តើអ្នកប្រើទឹកសំរាប់ចាក់បង្គន់ដៃរឬទេ?	១. ប្រើ	☐	បើ អត់ទេ
			២. អត់ទេ	☐	➔សំនួរ៦៥
៦៣		តើជាធម្មតាអ្នកត្រូវការប្រើទឹកអស់ប៉ុន្មានលីត្រសំរាប់ចាក់បង្គន់ក្នុង១ថ្ងៃ?	១. តិចជាង ៦លីត្រ	☐	
			២. ពី៦ ទៅ ១៥ លីត្រ	☐	
			៣. ពី១៦ ទៅ ២៥ លីត្រ	☐	
			៤. ច្រើនជាង ២៦ លីត្រ	☐	
៦៤		តើអ្នកមានទឹកគ្រប់គ្រាន់សំរាប់ចាក់បង្គន់នៅរដូវប្រាំងដែរឬទេ?	១. មានគ្រប់គ្រាន់	☐	
			២. អត់ទេ	☐	
៦៥		តើបង្គន់ដែលអ្នកកំពុងប្រើសព្វថ្ងៃជាបង្គន់ដំបូងគេបង្អស់របស់អ្នកមែនឬទេ?	១. មែន	☐	បើ មែន
			២. មិនមែនទេ	☐	➔សំនួរ៦៨
			៣. មិនដឹង	☐	
៦៦		បើមិនមែន តើអ្នកធ្លាប់មានបង្គន់ផ្សេងពីមុននេះប៉ុន្មានមកហើយ?	ចំនួន៖ .....បង្គន់		

៧១	5.2	តើអ្នកមានបានទទួលជំនួយពី អង្គការ ឬ កម្មវិធីណាមួយដើម្បីធ្វើបង្គន់ដែរឬទេ? *(ខ. ជំនួយជាសម្ភារៈ, ជាកំលាំងពលកម្ម, ជាបច្ចេកទេស, ជាប្រាក់កម្ចី ។ល។)*	១. បាន	☐	បើ មិនបាន/មិនដឹង ➔សំណួរ ៧៣
			២. មិនបាន	☐	
			៣. មិនដឹង	☐	
៧២		តើជំនួយអ្វីខ្លះដែលអ្នកបានទទួលពី អង្គការ ឬ កម្មវិធីនោះ? *(សូមអានជំរើសទាំងអស់)* *(អាចគូសចម្លើយបានច្រើនតាមការឆ្លើយ)*	១. កង់លូ	☐	
			២. កំលាំងពលកម្ម	☐	
			៣. ប្រាក់កម្ចី	☐	
			៤. បច្ចេកទេស	☐	
			៥. បួង/គំរូបង្គន់សំរាប់សាងសង់	☐	
			៦. ការលើកទឹកចិត្ត	☐	
			៧. ផ្សេងៗ(បញ្ជាក់)៖.....		
៧៣	5.3	តើអ្នកចំណាយអស់លុយប៉ុន្មានសំរាប់ធ្វើបង្គន់របស់អ្នក? *(បើសិនធ្វើទៅបាន)* *(បញ្ចូលតម្លៃនិមួយៗផ្សេងៗគ្នា)*	១. ថវិកាសរុប ..... ន / ៩៩. មិនដឹង	☐	
			២. ថ្លៃសំភារៈ .....ន / ៩៩. មិនដឹង	☐	
			៣. ថ្លៃកំលាំងពលកម្ម .....ន / ៩៩. មិនដឹង	☐	
			៤. មានការចូលរួមជួយពីអ្នកដ៏ទៃ (មិនដឹងពីតំលៃ)	☐	
៧៤	5.4	តើអ្នកធ្វើបង្គន់របស់អ្នកអោយហើយតែម្តងក្នុងពេលតែមួយ ឬ ជាដំណាក់ៗកាល?	១. ហើយតែម្តងក្នុងពេលតែមួយ	☐	
			២. ជាដំណាក់ការ	☐	
			៣. មិនដឹង	☐	
៧៥		តើបង្គន់របស់អ្នកសង់អស់រយៈពេលប៉ុន្មាន?	១. តិចជាង ២ សប្តាហ៏	☐	
			២. ៣ ទៅ ៤ សប្តាហ៏	☐	
			៣. ពី ១-៦ខែ	☐	
			៤. ពី ៧-១២ខែ	☐	
			៥. ច្រើនជាង ១៣ខែ	☐	
			៦. មិនទាន់សាងសង់ហើយ	☐	
៧៦	5.5	ក្នុងពេលអនាគត តើអ្នកមានគំរោងផ្លាស់ប្តូរ ឬ កែលំអបង្គន់របស់អ្នកដែរឬទេ?	១. បាទ/ចាស៎	☐	បើ ទេ ➔សំនួរ៧៨
			២. ទេ	☐	
			៣. មិនដឹង	☐	

៧៧		តើអ្នកមានគំរោងផ្លាស់ប្តូរ ឬ កែលំអបង្គន់របស់អ្នកត្រង់កន្លែងណាខ្លះ? *(សូមអានជំរើសទាំងអស់)* *(គូសគ្រប់ចម្លើយដែលបានឆ្លើយ)*	១. រណ្តៅលាមកដាក់ជញ្ជាំង	☐	
			២. ជញ្ជាំងបង្គន់ឱ្យល្អជាងមុន	☐	
			៣. ដំបូលបង្គន់ឱ្យល្អជាងមុន	☐	
			៤. ចាស់បង្គន់ឱ្យល្អជាងមុន	☐	
			៥. ដាក់ចានបង្គន់	☐	
			៦. ដាក់ចានបង្គន់អាចចាក់ទឹកបាន	☐	
			៧. ឱ្យមាន ហឺយ/បំពង់បង្ហុយ	☐	
			៨. ធ្វើអាងទឹកខាងក្នុង	☐	
			៩. សាងសង់កន្លែងមុជទឹក	☐	
			១០. ធ្វើកន្លែងលាងដៃ	☐	
			១១. ធ្វើទ្វារ	☐	
			១២. ប្តូរទៅក្នុងផ្ទះ	☐	
			១៣. ផ្សេងៗ (បញ្ជាក់).....		
៧៨		តើរណ្តៅលាមកបង្គន់របស់អ្នកធ្លាប់ស្តាចេញដែរឬទេ?	១. ធ្លាប់	☐	បើអត់ទេ/អត់ដឹង ➔ សំណួរ ៨២
			២. អត់ទេ	☐	
			៣. អត់ដឹង	☐	
៧៩		បើសិនជាធ្លាប់ តើអ្នកធ្វើយ៉ាងដូចម្តេច ចំពោះលាមកនោះ? *(សូមអានជំរើសទាំងអស់)* *(គូសគ្រប់ចម្លើយដែលបានឆ្លើយ)*	១. ចាក់នៅវាលស្រែ/ចំការធ្វើជាជី	☐	
			២. ចាក់ចោលនៅក្នុងព្រៃ	☐	
			៣. ចាក់ចោលទៅក្នុងទន្លេ/ស្រះ/ប្រឡាយ	☐	
			៤. លើកបង្គន់ទៅដាក់លើរណ្តៅថ្មី	☐	
			៥. ផ្សេងៗ (បញ្ជាក់).....		
៨០		នៅពេលដែលរណ្តៅលាមកពេញ តើរយៈពេលប៉ុន្មានដែលអ្នករងចាំដើម្បីស្តារលាមកពីរណ្តៅនោះចេញ? *(គូសតែមួយចម្លើយ)*	១. អត់ចំនាយពេលទេ(ពេលពេញស្តារចេញ)	☐	
			២. តិចជាង ១ ខែ	☐	
			៣. ពី ១-៦ខែ	☐	
			៤. ពី ៧-១២ខែ	☐	
			៥. ច្រើនជាង ១២ខែ	☐	
			៦. អត់ដឹង	☐	
៨១		តើអ្នកធ្លាប់ជួលគេអោយស្តារលាមកពីរណ្តៅចេញដែរឬទេ?	១. ធ្លាប់	☐	
			២. អត់ទេ	☐	

			៣. អត់ដឹង	☐	
៨២	5.6	តើអ្នកបានជួលគេអោយធ្វើ ឬជួយធ្វើបង្គន់របស់អ្នកដែរឬទេ?	១. បាទ/ចាស៎	☐	បើ អត់ទេ ➔សំណួរ៨៧
			២. អត់ទេ	☐	
៨៣		ប្រសិនបើបានជួល តើពួកគេជាអ្នកភូមិរបស់អ្នក ឬមកពីភូមិផ្សេង?	១. អ្នកភូមិរបស់អ្នក	☐	
			២. អ្នកមកពីភូមិផ្សេង	☐	
			៣. មិនដឹង	☐	
៨៤		តើហេតុអ្វីបានជាអ្នកជួលជាងបង្គន់នោះ? *(សូម កុំ អានជំរើស)* *(គូសចម្លើយច្រើនដែលបានឆ្លើយ)*	១. ជាបងប្អូន/មិត្តភក្តិ	☐	
			២. ធ្លាប់ជួលគាត់ពីមុន	☐	
			៣. ជាងល្អ	☐	
			៤. ធ្លាប់ឃើញ ហើយចូលចិត្តបង្គន់គាត់បានសង់	☐	
			៥. គាត់យកតម្លៃថោកជាងគេ	☐	
			៦. ផ្សេងៗ (បញ្ជាក់).....		
៨៥		តើអ្នកស្គាល់ជាងនោះតាមរបៀបណា? *(សូម កុំ អានជំរើស)* *(គូសចម្លើយច្រើនដែលបានឆ្លើយ)*	១. តាមការប្រជុំក្នុងសហគមន៍	☐	
			២. ណែនាំដោយក្រុមគ្រួសារ	☐	
			៣. ជាបងប្អូន/មិត្តភក្តិ	☐	
			៤. ណែនាំដោយអ្នកមានបង្គន់	☐	
			៥. ណែនាំដោយមេភូមិ	☐	
			៦. ណែនាំដោយអ្នកភូមិជាមួយគ្នា	☐	
			៧. ណែនាំដោយអ្នកផ្គត់ផ្គង់/អ្នកលក់សំភារៈសំណង់	☐	
			៨. ណែនាំដោយអ្នកធ្វើកងលួ	☐	
			៩. ណែនាំដោយភ្នាក់ងារ/មន្ត្រី NGO	☐	
			១០. ខិតប័ណ្ណណែនាំ/ផ្សព្វផ្សាយពាណិជ្ជកម្ម	☐	
			១១. វិទ្យុ	☐	
			១២. ផ្សេងៗ (បញ្ជាក់).....		
៨៦	5.7	តើអ្នកណាជាអ្នកទិញសំភារៈ :ជាងបង្គន់អ្នកទិញអ្នកទិញខ្លួនឯង ឬ ក៏ទៅទិញទាំងពីរនាក់?	១. ជាងជាអ្នកទិញ	☐	
			២. ទិញខ្លួនឯង	☐	
			៣. ទាំងពីរ (ជាងផង ខ្លួនឯងផង)	☐	

៨៧	5.8	តើអ្នកទិញសំភារៈធ្វើបង្គន់ពីកន្លែងណា? *(សូមអានជំរើសទាំងអស់)* *(គួសតែចម្លើយមួយគត់)*	១. ក្នុងភូមិរបស់អ្នក	☐	
			២. ក្នុងឃុំរបស់អ្នក	☐	
			៣. ក្នុងស្រុករបស់អ្នក	☐	
			៤. នៅទីរួមខេត្ត	☐	
			៥. មកពីខេត្តផ្សេង	☐	
			៦. ភ្នំពេញ	☐	
			៧. ផ្សេងៗ (បញ្ជាក់).....		
			៨. មិនដឹង	☐	
៨៨		តើកន្លែងអ្នកទិញសំភារៈធ្វើបង្គន់មានឈ្មោះអ្វី? ហើយនៅផ្សារណា?	១. ឈ្មោះ		
			២. ឈ្មោះផ្សារ		
			៣. មិនដឹង	☐	
សំរាប់អ្នកឆ្លើយតបដែលមានបង្គន់ ត្រូវរំលងទៅ សួរនៅផ្នែក ឧ					➔សំណួរ១០៣

ច. ការទិញបង្គន់ សំរាប់អ្នកដែលគ្មានបង្គន់

ល.រ	កូដ IDE	សំណួរ	លេខកូដ		រំលង
៨៩	5.11	តើអ្នកធ្លាប់គិត ឬ ពិភាក្សាអំពីការធ្វើបង្គន់សំរាប់គ្រួសាររបស់អ្នកដែរឬទេ?	១. បាទ/ចាស៎	☐	បើ ទេ
			២. ទេ	☐	➔សំណួរ៩១
៩០		ប្រសិនបើអ្នកធ្លាប់គិត ឬ ពិភាក្សា តើចាប់តាំងពីពេលណាមក?	១. តិចជាង ១ ខែមុន	☐	
			២. ពី ១-៦ខែមុន	☐	
			៣. ពី ៧-១២ខែមុន	☐	
			៤. ច្រើនជាង ១២ខែមុន	☐	
៩១		តើអ្នកណានៅក្នុងគ្រួសាររបស់អ្នកជាអ្នកធ្វើការសំរេចចិត្តដើម្បីធ្វើបង្គន់?	១. មេគ្រួសារ	☐	
			២. ប្តី ឬ ប្រពន្ធ	☐	
			៣. ប្តី និង ប្រពន្ធសំរេចចិត្តជាមួយគ្នា	☐	
			៤. សមាជិកគ្រួសារទាំងអស់សំរេចចិត្តជាមួយគ្នា	☐	
			៥.ផ្សេងៗ (បញ្ជាក់).....		
៩២		ប្រសិនបើអ្នកចង់រកជាងធ្វើបង្គន់ឱ្យ, តើអ្នកធ្លាប់បានគិតថាជាងមួយណាហើយឬនៅ?	១. បាទ/ចាស៎	☐	ក្រៅពីចម្លើយ
			២. ទេ/មិនទាន់កំណត់ទេ	☐	បាទ/ចាស៎
			៣. មិនជួលជាងទេ នឹងធ្វើដោយខ្លួនឯង	☐	➔សំណួរ៩៦

			៤. មិនដឹង	☐	
៥៣		ប្រសិនបើបានគិតជាមុន តើជាងនោះជាអ្នកភូមិ ឬមកពីក្រៅភូមិ?	១. ជាអ្នកភូមិជាមួយគ្នា	☐	
			២. ជាអ្នកមកពីក្រៅភូមិ	☐	
			៣. មិនដឹង	☐	
៥៤		តើហេតុអ្វីបានជាអ្នកជ្រើសរើសជាងបង្គន់នោះ? *(សូមអានជំរើសទាំងអស់)* *(គូសចម្លើយច្រើនដែលបានឆ្លើយ)*	១. ធ្លាប់ជួលគាត់ពីមុន	☐	
			២. ជាបងប្អូន/មិត្តភក្តិ	☐	
			៣. ជាងល្អ	☐	
			៤. ធ្លាប់ឃើញ ហើយចូលចិត្តបង្គន់គាត់បានធ្វើ	☐	
			៥. គាត់យកតម្លៃថោកជាងគេ	☐	
			៦. ផ្សេងៗ (បញ្ជាក់).....		

៥៥		តើអ្នកស្គាល់ជាងនោះ តាមរបៀបណា? *(សូមអានជំរើសទាំងអស់)* *(គូសចម្លើយច្រើនដែលបានឆ្លើយ)*	១. តាមការប្រជុំក្នុងសហគមន៍	☐	
			២. ណែនាំដោយក្រុមគ្រួសារ	☐	
			៣. ជាបងប្អូន/មិត្តភក្តិ	☐	
			៤. ណែនាំដោយអ្នកមានបង្គន់	☐	
			៥. ណែនាំដោយមេភូមិ	☐	
			៦. ណែនាំដោយអ្នកក្នុងភូមិ	☐	
			៧. ណែនាំដោយអ្នកផ្គត់ផ្គង់/អ្នកលក់សំភារៈសំណង់	☐	
			៨. ណែនាំដោយអ្នកធ្វើកងលូ	☐	
			៩. ណែនាំដោយភ្នាក់ងារ/មន្ត្រី NGO	☐	
			១០. ខិតប័ណ្ណណែនាំ/ផ្សព្វផ្សាយពាណិជ្ជកម្ម	☐	
			១១. វិទ្យុ	☐	
			១២. ផ្សេងៗ (បញ្ជាក់).....		
៥៦	5.15	ប្រសិនបើអ្នកធ្វើបង្គន់ តើអ្នកនឹងទិញសំភារៈពីកន្លែងណា? *(សូមអានជំរើសទាំងអស់)* *(គូសចម្លើយតែមួយ)*	១. ក្នុងភូមិ	☐	
			២. ក្នុងឃុំ	☐	
			៣. ក្នុងស្រុក	☐	
			៤. នៅទីរួមខេត្ត	☐	
			៥. ពីខេត្តផ្សេង	☐	
			៦. ភ្នំពេញ	☐	
			៧. ផ្សេងៗ (បញ្ជាក់).....		
			៨. មិនដឹង	☐	
៥៧		តើកន្លែងដែលអ្នកនឹងទិញសំភារៈធ្វើបង្គន់នោះ	១. ឈ្មោះ		

		មានឈ្មោះអ្វី? ហើយនៅផ្សារណា?	២. ផ្សារ....		
			៣. មិនដឹង	☐	
៩៨		តើអ្នកបានជ្រើសរើសកន្លែងដែលនឹងត្រូវសង់បង្គន់ហើយឬនៅ?	១. បាទ/ចាស៎	☐	
			២. ទេ	☐	
			៣. មិនទាន់ដឹង	☐	
៩៩		ឧទាហរណ៍: ប្រសិនបើខ្ញុំត្រលប់មកផ្ទះរបស់អ្នកម្តងទៀតក្នុងរយៈពេល១ឆ្នាំក្រោយ តើអ្នកទំនងនឹងអាចធ្វើបង្គន់ហើយដែរឬទេ?	១. គ្មានឱកាសនឹងធ្វើទេ	☐	
			២. ជីវភាពខ្វះខាតទំនងមិនអាចធ្វើបានទេ	☐	
			៣.ទំនងអាចធ្វើបាន	☐	
			៤. អាចសង់ហើយ	☐	
១០០	5.13	តើតម្លៃថោកបំផុតប៉ុន្មានដែលអ្នកគិតថានឹងត្រូវចំណាយថវិកាដើម្បីធ្វើបង្គន់មួយដែលអាចទទួលយកបានសំរាប់គ្រួសាររបស់អ្នក?	ចំនួន :..... រៀល		
១០១		តើសព្វថ្ងៃអ្នកមានសន្សំលុយទុកមួយចំណែកណាសំរាប់ធ្វើបង្គន់ដែរឬទេ	១. បាទ/ចាស៎	☐	
			២. អត់ទេ	☐	
១០២		តើអ្នកគួរតែខ្ចីលុយពីស្ថាប័នឥណទានខ្នាតតូចណាមួយដើម្បីយកមកធ្វើបង្គន់ដែរឬទេ?	១. បាទ/ចាស៎	☐	
			២. អត់ទេ	☐	
			៣. មិនដឹង	☐	

ឆ. ប្រភពទឹកសំរាប់ហូប (ទឹកផឹក)

១០៣.**ប្រភពទឹកសំរាប់ហូបសំខាន់បំផុត** (ចំបងទី១) របស់គ្រួសារអ្នក **នៅរដូវប្រាំង**		១០៤.រយៈពេលទៅនិងត្រលប់មកពីប្រភពទឹក		១០៥.បរិមាណទឹកដែលប្រើក្នុង ១ថ្ងៃ (គិតជាលីត្រ/១ថ្ងៃ)		១០៦.ការចំណាយសំរាប់ទឹកហូបក្នុង ១ថ្ងៃ (គិតជារៀល/១ថ្ងៃ)		
១. តទុយោទៅក្នុងអណ្តូង	☐	១. នៅបរិវេណផ្ទះ	☐	ចំនួន.....លីត្រ/ថ្ងៃ		ចំនួន.....រៀល/ថ្ងៃ		
២. តទុយោទៅទីធ្លា/ម្តុំណាមួយ	☐	២. ដឹកមកដល់ផ្ទះ	☐	៩៩-មិនដឹង	☐	៩៨-មិនបានចំណាយលើទឹកហូបទេ	☐	
៣. រ៉ុំប៊ីណេរទឹកសាធារណៈ	☐	៣. នៅក្រៅបរិវេណផ្ទះ				៩៩-មិនដឹង	☐	
៤. អណ្តូងស្នប់/អណ្តូងជីក	☐	.....នាទី						
៥. អណ្តូងជីកការពារ	☐	៤. មិនដឹង	☐					
៦. អណ្តូងជីកមិនការពារ	☐							
៧. ទឹកផុសការពារ	☐							
៨. ទឹកផុសមិនការពារ	☐							
៩. ត្រងទឹកភ្លៀង	☐							
១០. ត្រងទឹកភ្លៀងមានការការពារ	☐							
១១. ទឹកដប	☐							
១២. ទឹករុញតាមធុង/រម៉ក	☐							
១៣. ទឹកលក់តាមឡាន	☐							
១៤. ទឹកលើដី (ទន្លេ. ទំនប់.បឹង. ស្រះ.អូរ.ប្រឡាយ.ប្រពន្ធ័ធារាសាស្ត្រ)	☐							

១០៧. **ប្រភពទឹកសំរាប់ហូបសំខាន់បន្ទាប់** (ចំបងទី២)របស់សមាជិកគ្រួសារអ្នក **នៅរដូវប្រាំង**		១០៨.រយៈពេលទៅនិងត្រលប់មកពីប្រភពទឹក		១០៩.បរិមាណទឹកដែលប្រើក្នុង ១ថ្ងៃ (គិតជាលីត្រ/១ថ្ងៃ)		១១០.ការចំណាយសំរាប់ទឹកហូបក្នុង ១ថ្ងៃ (គិតជារៀល/១ថ្ងៃ)		
១. តទុយោទៅក្នុងអណ្តូង	☐	១. នៅបរិវេណផ្ទះ	☐	ចំនួន:.....លីត្រ/ថ្ងៃ		ចំនួន:..... រៀល/ថ្ងៃ		
២. តទុយោទៅទីធ្លា/ម្តុំណាមួយ	☐	២. ដឹកមកដល់ផ្ទះ	☐	៩៩. មិនដឹង	☐	៩៨. មិនបានចំណាយលើទឹកហូបទេ	☐	
៣. រុំបីណេរទឹកសាធារណៈ	☐	៣. នៅក្រៅបរិវេណផ្ទះ .....នាទី	☐			៩៩. មិនដឹង	☐	
៤. អណ្តូងស្នប់/អណ្តូងជីក	☐							
៥. អណ្តូងជីកការពារ	☐	៤. មិនដឹង	☐					
៦. អណ្តូងជីកមិនការពារ	☐							
៧. ទឹកផុសការពារ	☐							
៨. ទឹកផុសមិនការពារ	☐							
៩. ត្រងទឹកភ្លៀង	☐							
១០. ត្រងទឹកភ្លៀងមានការការពារ	☐							
១១. ទឹកដប	☐							
១២. ទឹករុញតាមធុង/រម៉ក	☐							
១៣. ទឹកលក់តាមឡាន	☐							
១៤.ទឹកលើដី (ទន្លេ. ទំនប់.បឹង.ស្រះ.អូរ. ប្រឡាយ.ប្រពន្ធ័ធារាសាស្ត្រ)	☐							
១៥. ផ្សេងៗ (បញ្ជាក់).....								

១១១. **ប្រភពទឹកសំរាប់ហូបសំខាន់បំផុត** (ចំបងទី១) របស់សមាជិកគ្រួសារអ្នក **នៅរដូវវស្សា**		១១២.រយៈពេលទៅនិងត្រលប់មកពីប្រភពទឹក		១១៣.បរិមាណទឹកដែលប្រើក្នុង ១ថ្ងៃ (គិតជាលីត្រ/១ថ្ងៃ)		១១៤.ការចំណាយសំរាប់ទឹកហូបក្នុង ១ថ្ងៃ (គិតជារៀល/១ថ្ងៃ)		
១. តទុយោទៅក្នុងអណ្តូង	☐	១. នៅបរិវេណផ្ទះ	☐	ចំនួន:..... លីត្រ/ថ្ងៃ		ចំនួន:..... រៀល/ថ្ងៃ		
២. តទុយោទៅទីធ្លា/ម្តុំណាមួយ	☐	២. ដឹកមកដល់ផ្ទះ	☐	៩៩. មិនដឹង	☐	៩៨. មិនបានចំណាយលើទឹកហូបទេ	☐	
៣. រ៉ុំប៊ីណេរទឹកសាធារណៈ	☐	៣. នៅក្រៅបរិវេណផ្ទះ	☐	៩៩. មិនដឹង	☐			
៤. អណ្តូងស្តុប/អណ្តូងជីក	☐	.....នាទី				៩៩. មិនដឹង	☐	
៥. អណ្តូងជីកការពារ	☐	៤. មិនដឹង	☐					
៦. អណ្តូងជីកមិនការពារ	☐							
៧. ទឹកផុសការពារ	☐							
៨. ទឹកផុសមិនការពារ	☐							
៩. ត្រងទឹកភ្លៀង	☐							
១០. ត្រងទឹកភ្លៀងមានការការពារ	☐							
១១. ទឹកដប	☐							
១២. ទឹករុញតាមធុង/រម៉ក	☐							
១៣. ទឹកលក់តាមឡាន	☐							
១៤.ទឹកលើដី(ទន្លេ.ទំនប់.បឹង.ស្រះ. អូរ.ប្រឡាយ.ប្រពន្ធ័ធារាសាស្ត្រ)	☐							
១៥.ផ្សេងៗ(បញ្ជាក់)								

១១៥. **ប្រភពទឹកសំរាប់ហូបសំខាន់បន្ទាប់** (ចំបងទី២) របស់សមាជិកគ្រួសារអ្នក **នៅរដូវវស្សា**		១១៦.រយៈពេលទៅ និងត្រលប់មក ពីប្រភពទឹក		១១៧.បរិមាណទឹកដែល ប្រើក្នុង ១ថ្ងៃ (គិតជាលីត្រ/១ថ្ងៃ)		១១៨.ការចំណាយសំរាប់ទឹក ហូបក្នុង ១ថ្ងៃ (គិតជារៀល/១ថ្ងៃ)		
១. តទុយោទៅក្នុងអណ្តូង	☐	១. នៅបរិវេណផ្ទះ	☐	ចំនួន:..... លីត្រ/ថ្ងៃ		ចំនួន:.....រៀល/ថៃ		
២. តទុយោទៅទីធ្លា/ម្តុំណាមួយ	☐	២. ដឹកមកដល់ផ្ទះ	☐	៩៩. មិនដឹង	☐	៩៨. មិនបានចំណាយលើ ទឹកហូបទេ	☐	
៣. រ៉ុំប៊ីណេរទឹកសាធារណៈ	☐	៣. នៅក្រៅបរិវេណផ្ទះ	☐			៤. មិនដឹង	☐	
៤. អណ្តូងស្នប់/អណ្តូងជីក	☐	.....នាទី						
៥. អណ្តូងជីកការពារ	☐	៤. មិនដឹង	☐					
៦. អណ្តូងជីកមិនការពារ	☐							
៧. ទឹកផុសការពារ	☐							
៨. ទឹកផុសមិនការពារ	☐							
៩. ត្រងទឹកភ្លៀង	☐							
១០. ត្រងទឹកភ្លៀងមានការការពារ	☐							
១១. ទឹកដប	☐							
១២. ទឹករុញតាមធុង/រម៉ក	☐							
១៣. ទឹកលក់តាមឡាន	☐							
១៤.ទឹកលើដី(ទន្លេ.ទំនប់.បឹង.ស្រះ. អូរ.ប្រឡាយ.ប្រពន្ធ័ធារាសាស្ត្រ)	☐							
១៥.ផ្សេងៗ(បញ្ជាក់)								

ល.រ	កូដ IDE	សំណួរ	លេខកូដ				រំលង
១១៩ និង ១២0		តើចំនុចអ្វីខ្លះដែលអ្នកមិនចូលចិត្តចំពោះប្រភពទឹកសំរាប់ហូបរបស់អ្នក? *(សូមកុំអានជំរើស)* *(គូសគ្រប់ចម្លើយដែលបានឆ្លើយ)*	១១៩. រដូវប្រាំង		១២0. រដូវវស្សា		
			១-ឆ្ងាយពេក	☐	១-ឆ្ងាយពេក	☐	
			២-ទឹកអត់គ្រប់គ្រាន់	☐	២-ទឹកអត់គ្រប់គ្រាន់	☐	
			៣-ត្រូវរងចាំយកទឹក	☐	៣-ត្រូវរងចាំយកទឹក	☐	
			៤-ត្រូវសំលាប់មេរោគ	☐	៤-ត្រូវសំលាប់មេរោគ	☐	
			៥-ចំនាយពេលដើម្បីសំលាប់មេរោគ	☐	៥-ចំនាយពេលដើម្បីសំលាប់មេរោគ	☐	
			៦-ដាំបាយអត់ល្អ	☐	៦-ដាំបាយអត់ល្អ	☐	
			៧-រស់ជាតិមិនល្អ	☐	៧- រស់ជាតិមិនល្អ	☐	
			៨-ថ្លៃ	☐	៨-ថ្លៃ	☐	
			៩-ក្លិនអាក្រក់	☐	៩-ក្លិនអាក្រក់	☐	
			១0-មើលទៅអត់ស្អាត	☐	១0-មើលទៅអត់ស្អាត	☐	
			១១-អត់ល្អសំរាប់សុខភាព	☐	១១-អត់ល្អសំរាប់សុខភាព	☐	
			១២-បរិវេនពង្ងិជុំវិញអត់ស្អ	☐	១២- បរិវេនពង្ងិជុំវិញអត់ស្អាត	☐	
			១៣-ផ្សេងៗ (បញ្ជាក់)៖.....		១៣-ផ្សេងៗ (បញ្ជាក់)៖.....		
			.....		.....		
១២១ និង ១២២		តើប្រភពទឹកសំរាប់ហូបមានចំនុចអ្វីខ្លះដែលអ្នកចូលចិត្ត? *(សូមកុំអានជំរើស)* *(គូសគ្រប់ចម្លើយដែលបានឆ្លើយ)*	១២១. រដូវប្រាំង		១២២. រដូវវស្សា		
			១-មិនចំណាយពេលយូរទៅកាន់ប្រភពទឹក	☐	១-មិនចំណាយពេលយូរទៅកាន់ប្រភពទឹក	☐	
			២-ធ្វើឱ្យមានសុខភាពល្អ	☐	២-ធ្វើឱ្យមានសុខភាពល្អ	☐	
			៣-ទឹកល្អ/សុវត្ថិភាព	☐	៣-ទឹកល្អ/សុវត្ថិភាព	☐	
			៤-ទឹករស់ជាតិផ្អាញ់	☐	៤-ទឹករស់ជាតិផ្អាញ	☐	
			៥-ងាយស្រួល	☐	៥-ងាយស្រួល	☐	
			៦-អត់ធុំក្លិន	☐	៦-អត់ធុំក្លិន	☐	
			៧-ទឹកថ្លា/គ្មានពណ៌	☐	៧-ទឹកថ្លា/គ្មានពណ៌	☐	
			៨-ល្បី/កេរ្តិ៍ឈ្មោះល្អ	☐	៨-ល្បី/កេរ្តិ៍ឈ្មោះល្អ	☐	
			៩-ល្អសំរាប់ភ្ញៀវ	☐	៩-ល្អសំរាប់ភ្ញៀវ	☐	
			១0- ផ្សេងៗ(បញ្ជាក់).....		១0-ផ្សេងៗ(បញ្ជាក់).....		
			.....		.....		

១២៣ និង ១២៤		តើអ្នកពេញចិត្តគុណភាពទឹកសំរាប់ប្លុបរបស់អ្នកកំរិតណាដែរ?	១២៣. រដូវប្រាំង		១២៤. រដូវវស្សា		
			១-ពេញចិត្តខ្លាំង	☐	១-ពេញចិត្តខ្លាំង	☐	
			២-ពេញចិត្ត	☐	២-ពេញចិត្ត	☐	
			៣-មិនសូវពេញចិត្ត	☐	៣-មិនសូវពេញចិត្ត	☐	
			៤-មិនពេញចិត្ត	☐	៤-មិនពេញចិត្ត	☐	
១២៥		តើជាធម្មតានរណានៅក្នុងផ្ទះរបស់អ្នកទៅយកទឹកមកប្រើ? *(សូមកុំអានជំរើស)* *(គួសចម្លើយតែមួយ)*	១-មនុស្សស្រី ពេញវ័យ				
			២-មនុស្សប្រុស ពេញវ័យ				
			៣-មនុស្សស្រី (អាយុក្រោម ១៥ឆ្នាំ)				
			៤-មនុស្សប្រុស (អាយុក្រោម ១៥ឆ្នាំ)				
			៥-អត់ដឹង				
			៦-ផ្សេងៗ បញ្ជាក់:.....				
១២៦		តើអ្នកមានប្រើវិធីសំលាប់មេរោគក្នុងទឹកដើម្បីឱ្យមានសុវត្ថិភាពអាចផឹកបានឬទេ?	១-បាទ/ចាស៎	☐			បើអត់ទេ/អត់ដឹង ➔សំនួរ ១៣២
			២-អត់ទេ	☐			
			៣-អត់ដឹង	☐			
១២៧		តើហេតុអ្វីបានជាអ្នក សំលាប់មេរោគក្នុងទឹកមុនពេលផឹក? *(សូមកុំអានជំរើស)* *(គួសគ្រប់ចម្លើយដែលបានឆ្លើយ)*	១-មានមេរោគមកពី ដី/កករ	☐			
			២-មានមេរោគមកពី លាមកសត្វ/មនុស្ស/ កាកសំណល់	☐			
			៣-មានផ្ទុកមេរោគ ព្រូន និង ប៉ារ៉ាស៊ិត	☐			
			៤-ល្អសម្រាប់សុខភាព	☐			
			៥-សត្វក៏ប្រើទឹកនោះជាមួយដែរ	☐			
			៦-មានក្លិនអាក្រក់	☐			
			៧-មើលទៅកខ្វក់	☐			
			៨-មានសត្វល្អិតក្នុងទឹក	☐			
			៩-អាចធ្វើឱ្យខ្ទុំឈឺ	☐			
			១០-អត់ដឹង	☐			
			១១-ផ្សេងៗ(បញ្ជាក់):.....				

១២៨		តើជាធម្មតាតើអ្នកធ្វើយ៉ាងដូចម្តេច ដើម្បីអោយទឹកហូបមានសុវត្ថិភាព? *(សូមអានជំរើសទាំងអស់)* *(គូសគ្រប់ចម្លើយដែលបានឆ្លើយ)*	១-ដាំ	☐	
			២-ដាក់ថ្នាំឱ្យថ្លា/ ថ្នាំក្តរីន	☐	
			៣-ត្រងដោយដាក់ត្រណាត់	☐	
			៤-ប្រើធុងចម្រោះសេរ៉ាមិច	☐	
			៥-ប្រើធុងចម្រោះខ្សាច់	☐	
			៦-ប្រើធុងចម្រោះមានអំពូលពន្លឺព្រះអាទិត្យ	☐	
			៧-ទុកវាចោលឱ្យរង	☐	
			៨-អត់ដឹង	☐	
			៩-ផ្សេងៗ(បញ្ជាក់)៖.....		
១២៩		តើអ្នកសំលាប់មេរោគមុនហូបញីកញាប់ដៃរឬទេ? *(សូមអានជំរើសទាំងអស់)* *(គូសចម្លើយតែមួយប៉ុណ្ណោះ)*	១. ជាប្រចាំ	☐	
			២. ញីកញាប់	☐	
			៣. ពេលខ្លះ	☐	
			៤. មិនដែល	☐	
			៥. មិនដឹង	☐	
១៣០		តើអ្នកប្រើទឹកដែលសំលាប់មេរោគហើយធ្វើអ្វីផ្សេងទៀតទេក្រៅពីហូប?	១. លាយទឹកដោះគោម្សៅ/អាហារអោយទារក	☐	
			២. ដាំស្ល	☐	
			៣. សំរាប់លាងបន្លែ/ផ្លែឈើ	☐	
			៤. សំរាប់លាងចាន	☐	
			៥. សំរាប់បោកខោអាវ	☐	
			៦. សំរាប់លាងដៃ	☐	
			៧. សំរាប់មុជ	☐	
			៨. ផ្សេងៗ(បញ្ជាក់)៖.....		
១៣១		តើការសម្លាប់មេរោគក្នុងទឹកហូបរបស់អ្នកមានសារៈសំខាន់យ៉ាងណា?	១-សំខាន់ខ្លាំងណាស់	☐	
			២-សំខាន់ដែរ	☐	
			៣-ធម្មតា	☐	
			៤- មិនសំខាន់សោះ	☐	
			៥-មិនដឹង	☐	
១៣២		តើអ្នកធ្លាប់ទិញទឹកដប/ទឹកសុទ្ធដែលសម្លាប់មេរោគហើយ មកហូបដែរឬទេ?	១-ធ្លាប់/ចាស់	☐	បើ អត់ទេ
			២-អត់ទេ	☐	➔សំណួរ ១៣៤
១៣៣		តើអ្នកទិញទឹកដែលសម្លាប់មេរោគហើយ ១ដបថ្លៃប៉ុន្មាន?	- ចំនួន:.....រៀល.....លីត្រ		➔សំណួរ ១៣៧

១៣៤		បើសិនជាអត់ទេ តើអ្នកធ្លាប់គិតចង់ទិញទឹកដប/ទឹកសុទ្ធមកហូប ឬទេ?	១-បាទ/ចាស៎ ☐ ២-អត់ទេ ☐	បើ អត់ទេ ➔សំណួរ ១៣៧
១៣៥		ប្រសិនបើគិតថាទិញ តើហេតុអ្វីបានជាអ្នកមិនទិញទឹកសម្លាប់មេរោគហើយមកហូប?	១. ទឹកសម្លាប់មេរោគហើយថ្លៃពេក ☐ ២-គ្មានលុយ ☐ ៣-គ្មានទឹកសម្លាប់មេរោគហើយលក់ទេ ☐ ៤-កន្លែងលក់ទឹកសម្លាប់មេរោគនៅឆ្ងាយពេក ☐ ៥-មិនចូលចិត្តរស់ជាតិ/ក្លិន ☐ ៦- ផ្សេងៗ(បញ្ជាក់)	
១៣៦		តើអ្នកចង់ចំណាយលុយប៉ុន្មានដើម្បីបានទឹកដបដែលសំលាប់មេរោគហើយ?	ចំនួន: .....រៀល/.....លីត្រ	
១៣៧		តើអ្នកធ្លាប់ទិញទឹកឆៅ (ដែលមិនបានសម្លាប់ មេរោគ) សំរាប់ហូបដែរឬទេ?	១-បាទ/ចាស៎ ☐ ២-អត់ទេ ☐	បើ អត់ទេ ➔សំនួរ ១៣៩
១៣៨		បើសិនជាធ្លាប់ តើអ្នកចំណាយអស់ប៉ុន្មាន សំរាប់ ១លីត្រ?	ចំនួន: .....រៀល/.....លីត្រ	

ឆ. ការទិញឧបករណ៍បរិក្ខាររបស់ទឹក

ល.រ	កូដ IDE	សំណួរ	លេខកូដ		វិលង
១៣៩		តើក្នុងចំណោមឧបករណ៍ទឹក ផលិតផលផ្គត់ផ្គង់ទឹកទាំងអស់នេះ តើឧបករណ៍ ឬ ផលិតផលណាខ្លះដែលអ្នកធ្លាប់ឃើញ ឬ លឺពីមុន? *(បង្ហាញរូបភាព)* *(គូសត្រប់ចម្លើយដែលបានឆ្លើយ)*	១-ស្នប់ខ្សែពាន	☐	
			២-ធុងចំរោះទឹកសេរ៉ាមិច	☐	
			៣-ធុងចំរោះទឹកខ្សាច់ជីវសាស្ត្រ	☐	
			៤-ធុងចំរោះទឹក ស៊ីហ្វុន	☐	
			៥-អាងកង់លូ/អាងត្រងទឹកភ្លៀង	☐	
			៦-ពាងយក្សត្រងទឹកភ្លៀង	☐	
			៧-អាងកង់ហ៊ីរ៉ូស៊ីម៉ង់ត៍ ត្រងទឹកភ្លៀង	☐	
			៨-ថ្នាំក្លរីនសំរាប់ដាក់ក្នុងទឹក	☐	
			៩-ធុងចម្រោះមានអំពូលពន្លឺព្រះអាទិត្យ	☐	
			១០-ផ្សេងៗ(បញ្ជាក់)៖		
១៤០		តើអ្នកគិតថាឧបករណ៍ទឹក ផលិតផលផ្គត់ផ្គង់ទឹកទាំងនេះមានតម្លៃប៉ុន្មាន? *(សូមបង្ហាញជំរើសទាំងអស់)*		តំលៃជារៀល	
			១. ស្នប់ខ្សែពាន	..... រ	
			២. ធុងចំរោះទឹកសេរ៉ាមិច	..... រ	
			៣. ធុងចំរោះទឹកខ្សាច់ជីវសាស្ត្រ	..... រ	
			៤. ធុងចំរោះទឹក ស៊ីហ្វុន	..... រ	
			៥. អាងកង់លូ/អាងត្រងទឹកភ្លៀង	..... រ	
			៦. ពាងយក្សត្រងទឹកភ្លៀង	..... រ	
			៧. អាងកង់ហ៊ីរ៉ូស៊ីម៉ង់ត៍ ត្រងទឹកភ្លៀង	..... រ	
			៨. ថ្នាំក្លរីនសំរាប់ដាក់ក្នុងទឹក	..... រ	
			៩. ធុងចម្រោះមានអំពូលពន្លឺព្រះអាទិត្យ	..... រ	

១៤១		ក្នុងចំណោមឧបករណ៍ រឺ ផលិតផលផ្គត់ផ្គង់ទឹកទាំងអស់នេះ តើឧបករណ៍ ឬ ផលិតផលណាមួយដែលចង់បានជាងគេបំផុត? *(សូមអានជំរើសទាំងអស់)* *(គូសចម្លើយតែមួយ)*	១. ស្នប់ខ្សែពាន	☐	
			២. ធុងចំរោះទឹកសេរ៉ាមិច	☐	
			៣. ធុងចំរោះទឹកខ្សាច់ជីវសាស្ត្រ	☐	
			៤. ធុងចំរោះទឹក ស៊ីហ្វុន	☐	
			៥. អាងកងលូ/អាងត្រងទឹកភ្លៀង	☐	
			៦. ពាងយក្សត្រងទឹកភ្លៀង	☐	
			៧. អាងកង់ហ្ស៊ីរ៉ូស៊ីម៉ង់ត៍ ត្រងទឹកភ្លៀង	☐	
			៨. ថ្នាំក្លរីនសំរាប់ដាក់ក្នុងទឹក	☐	
			៩. ធុងចម្រោះមានអំពូលពន្លឺព្រះអាទិត្យ	☐	
			១០. ផ្សេងៗ(បញ្ជាក់).....		
១៤២		តើអ្នកស្គាលឧបករណ៍ ឬ ផលិតផលផ្គត់ផ្គង់ទឹកទាំងនេះនៅកន្លែងណា? យ៉ាងដូចម្តេច? *(សូមអានជំរើសទាំងអស់)* *(គូសគ្រប់ចម្លើយដែលបានឆ្លើយ)*	១-ការប្រជុំក្នុងសហគមន៍	☐	
			២-មេភូមិ	☐	
			៣-អ្នកជិតខាង	☐	
			៤-បងប្អូន/សាច់ញាតិ	☐	
			៥-ជាងកំបោរ	☐	
			៦-វិទ្យុ	☐	
			៧-ប័ណ្ណណែនាំ/រូបភាពណែនាំ	☐	
			៨-បដាផ្សព្វផ្សាយពាណិជ្ជកម្ម	☐	
			-ទូរទស្សន៍	☐	
			១០-ភ្នាក់ងារ/មន្ត្រី NGO	☐	
			១១-មន្ត្រីរដ្ឋាភិបាល	☐	
			១២-ផ្សេងៗ(បញ្ជាក់).....		

១៤៣		តើអ្នកធ្លាប់បានឃើញឧបករណ៍ រឺ ផលិតផល ផ្គត់ផ្គង់ទឹក ទាំងនេះដាក់លក់ នៅកន្លែងណាខ្លះ? *(បង្ហាញជំរើសទាំងអស់ ។ គួសរង្វង់ជុំវិញកន្លែងដែលជិតបំផុតតែ១គត់ សរាប់ឧបករណ៍និមួយៗ)* 0=នៅក្នុងភូមិ ១=នៅក្នុងឃុំ ២=នៅក្នុងស្រុក ៣=នៅទីរួមខេត្ត ៤=នៅភ្នំពេញ ៥=ផ្សេងៗ ៦=មិនដឹង		ទីកន្លែង							
			-ស្នប់ខ្សែពាន	០	១	២	៣	៤	៥	៦	
			-ធុងចម្រោះទឹកសេរ៉ាមិច	០	១	២	៣	៤	៥	៦	
			-ធុងចម្រោះទឹកខ្សាច់ជីវសាស្ត្រ	០	១	២	៣	៤	៥	៦	
			-ធុងចម្រោះទឹក ស៊ីហ្វុន	០	១	២	៣	៤	៥	៦	
			-អាងកងលូ/អាងត្រងទឹកភ្លៀង	០	១	២	៣	៤	៥	៦	
			-ពាងយក្សត្រងទឹកភ្លៀង	០	១	២	៣	៤	៥	៦	
			-អាងកងហ្ស៊ីរ៉ូស៊ីម៉ង់ត៍ ត្រងទឹកភ្លៀង	០	១	២	៣	៤	៥	៦	
			-ថ្នាំក្លរីនសំរាប់ដាក់ក្នុងទឹក	០	១	២	៣	៤	៥	៦	
			-ធុងចម្រោះមានអំពូលពន្លឺព្រះអាទិត្យ	០	១	២	៣	៤	៥	៦	
១៤៤		តើអ្នកបានទទួលជំនួយពីអង្គការណាមួយ ដើម្បី ធ្វើ ឬ ទិញឧបករណ៍ រឺ ផលិតផលផ្គត់ផ្គង់ទឹក ណាមួយក្នុងចំណោម ឧបករណ៍ទាំងអស់នេះដែរឬទេ? *(សូមបង្ហាញជំរើសទាំងអស់)* *(គួសគ្រប់ចម្លើយដែលបានឆ្លើយ ។)* *សូមសួរ៖ អំពីឧបករណ៍ផ្សេងៗទៀតដែល អ្នកឆ្លើយតបធ្លាប់ស្គាល់ រឺ បើញក្រៅពីនេះ*	១. មិនដែលបានទទួលជំនួយទេ	☐							បើមិនដែលបានទទួលជំនួយទេ សូមរំលង **➔សំណួរ ១៤៦**
			២. ស្នប់ខ្សែពាន	☐							
			៣. ធុងចម្រោះទឹកសេរ៉ាមិច	☐							
			៤. ធុងចម្រោះទឹកខ្សាច់ជីវសាស្ត្រ	☐							
			៥. ធុងចម្រោះទឹក ស៊ីហ្វុន	☐							
			៦. អាងកងលូ/អាងត្រងទឹកភ្លៀង	☐							
			៧. ពាងយក្សត្រងទឹកភ្លៀង	☐							
			៨. អាងកង់ហ្ស៊ីរ៉ូស៊ីម៉ង់ត៍ ត្រងទឹកភ្លៀង	☐							
			៩. ថ្នាំក្លរីនសំរាប់ដាក់ក្នុងទឹក	☐							
			១០. ធុងចម្រោះមានអំពូលពន្លឺព្រះអាទិត្យ	☐							
			១១. ផ្សេងៗ(បញ្ជាក់)៖.....								
១៤៥		តើជំនួយអ្វីខ្លះ ដែលអ្នកបានទទួលពីអង្គការនោះ? *(សូមបង្ហាញជំរើសទាំងអស់)* *(គួសគ្រប់ចម្លើយដែលបានឆ្លើយ)*	១. ការផ្តល់ឱ្យ/ជួយសម្ភារៈសំណង់	☐							
			២. ការផ្តល់ឱ្យ/ជួយកំលាំងពលកម្ម	☐							
			៣. ការផ្តល់ប្រាក់កម្ចី	☐							
			៤. ការផ្តល់យោបល់បច្ចេកទេស	☐							
			៥. ការផ្តល់គំរូ/រចនាម៉ូដ	☐							
			៦. ការផ្តល់ការលើកទឹកចិត	☐							
			៧. ផ្សេងៗ (បញ្ជាក់).....								

ល.រ	កូដ IDE	សំណួរ	លេខកូដ		រំលង
១៤៦		តើអ្នកធ្លាប់ទិញឧបករណ៍ រឺ ផលិតផលផ្គត់ផ្គង់ទឹកណាមួយ ដែរឬទេ? *សូមបង្ហាញជំរើសទាំងអស់គួសគ្រប់ចម្លើយដែលបានឆ្លើយ។* *សូមសួរ: តើមានឧបករណ៍ផ្សេងទៀតដែល អ្នកឆ្លើយតបធ្លាប់ស្គាល់ រឺ ឃើញក្រៅពីនេះទេ?*	១-ទេ, មិនធ្លាប់ទិញទេ	☐	បើធ្លាប់បានទិញ ➔សំនួរ ១៥១
			២-ស្នប់ខ្សែពាន	☐	
			៣-ធុងចម្រោះទឹកសេរ៉ាមិច	☐	
			៤-ធុងចម្រោះទឹកខ្សាច់ជីវសាស្ត្រ	☐	
			៥-ធុងចម្រោះទឹក ស៊ីហ្វុន	☐	
			៦-អាងកងលូ/អាងត្រងទឹកភ្លៀង	☐	
			៧-ពាងយក្សត្រងទឹកភ្លៀង	☐	
			៨-អាងកង់ហ្ស៊ីរ៉ូស៊ីម៉ង់ត៍ ត្រងទឹកភ្លៀង	☐	
			៩-ថ្នាំក្លរីនសំរាប់ដាក់ក្នុងទឹក	☐	
			១០-ធុងចម្រោះមានអំពូលពន្លឺព្រះអាទិត្យ	☐	
			១១-ផ្សេងៗ(បញ្ជាក់)		
១៤៧		តើគ្រួសារអ្នកធ្លាប់គិត ឬ ពិភាក្សាគ្នាអំពីការទិញឧបករណ៍ រឺ ផលិតផលផ្គត់ផ្គង់ទឹកណាមួយ ដែរឬទេ?	១-បាទ/ចាស៎	☐	បើទេ រំលង ➔សំនួរ ១៥១
			២-ទេ	☐	
១៤៨		បើធ្លាប់ តើអ្នកបានពិភាក្សាគ្នាចុងក្រោយបំផុតនៅពេលណា?	១-តិចជាង ១ខែ កន្លងទៅ	☐	
			២-ពី ១-៦ខែ កន្លងទៅ	☐	
			៣-ពី ៧-១២ខែ កន្លងទៅ	☐	
			៤-ជាង ១ឆ្នាំ កន្លងទៅ	☐	
១៤៩		តើនរណាក្នុងផ្ទះរបស់អ្នក តែងតែទទួលខុសត្រូវក្នុងការសំរេចចិត្តដើម្បីទិញឧបករណ៍ រឺ ផលិតផលផ្គត់ផ្គង់ទឹក?	១. មេគ្រួសារ	☐	
			២. មេគ្រួសារ និង ប្តី/ប្រពន្ធ	☐	
			៣. ប្តី/ប្រពន្ធ របស់មេគ្រួសារ	☐	
			៤. សមាជិកគ្រួសារទាំងអស់	☐	
			៥. ផ្សេងៗ(បញ្ជាក់):.....		
១៥០		ឧទាហរណ៍ថា បើខ្ញុំត្រលប់មកផ្ទះរបស់អ្នកក្នុងរយៈពេល១ឆ្នាំក្រោយ តើអ្នកអាចមាន ឧបករណ៍ ឬ ផលិតផលផ្គត់ផ្គង់ទឹក ដែរឬទេ?	១-មិនអាចមានទេ	☐	
			២-ប្រហែលអាចមាន	☐	
			៣-នឹងអាចមាន	☐	
			៤-មានហើយ	☐	

ជ. ការលាងដៃ/អនាម័យផ្ទាល់ខ្លួន

ល.រ	កូដ IDE	សំណួរ	លេខកូដ		វិលង
១៥១		តើអ្នកលាងដៃរបស់អ្នកជាមួយសាប៊ូ ញឹកញាប់ប៉ុណ្ណាដែរ? *(សូមគូសចម្លើយតែមួយ)*	១-ច្រើនជាង ៣ដង ក្នុង១ថ្ងៃ	☐	បើមិនដែលសោះ ➔សំនួរ ១៥៦
			២-ពីរ-បី ដង ក្នុង១ថ្ងៃ	☐	
			៣-ម្តងក្នុង១ថ្ងៃ	☐	
			៤- ពីរ-បីថ្ងៃលាងម្តង	☐	
			៥-តិចជាង ១ដង ក្នុង១អាទិត្យ	☐	
			៦-មិនដែលសោះ	☐	
១៥២		តើហេតុអ្វីបានជាអ្នកលាងដៃរបស់អ្នកជាមួយ សាប៊ូ? *(សូមកុំអានជំរើស)* *(គូសគ្រប់ចម្លើយដែលបានឆ្លើយ)*	១-ដើម្បីឱ្យអស់ក្អែល/សំអាតដៃ	☐	
			២-ដើម្បីឱ្យដៃមើលទៅស្អាត	☐	
			៣-ដើម្បីឱ្យដៃមានក្លិនល្អ	☐	
			៤-ដើម្បីការពារជំងឺ	☐	
			៥-សំអាតមីក្រុប/មេរោគ	☐	
			៦-ផ្សេងៗ(បញ្ជាក់)		
១៥៣		ជាធម្មតា តើពេលណាខ្លះ ដែលអ្នកលាងដៃរបស់អ្នកជាមួយនឹងសាប៊ូ? *(សូមកុំអានជំរើស)* *(គូសគ្រប់ចម្លើយដែលបានឆ្លើយ)*	១-នៅពេលដៃកខ្វក	☐	
			២-ពេលត្រឡប់មកផ្ទះវិញ	☐	
			៣-មុនពេលហូបអាហារ	☐	
			៤-បន្ទាប់ពីហូបអាហារ	☐	
			៥-បន្ទាប់ពីបត់ដៃបត់ជើង	☐	
			៦-មុនពេលទៅគេង	☐	
			៧-បន្ទាប់ពី ក្រោកពីដំនេក	☐	
			៨-មុនពេលរៀបចំអាហារ	☐	
			៩-មុនពេល ងូតទឹកអោយកូនងែត	☐	
			១០-ក្រោយពេល ងូតទឹកអោយកូនងែត	☐	
			១១-ផ្សេងៗ(បញ្ជាក់)		
១៥៤		តើអ្នកលាងដៃនឹងសាប៊ូ នៅកន្លែងសំរាប់លាងដៃមែនឬទេ?	១-បាទ/ចាស	☐	បើ បាទ/ចាស់ ➔សំនួរ ១៥៦
			២-ទេ	☐	
១៥៥		បើទេ, តើអ្នកលាងដៃរបស់អ្នកនៅទីណា?	១-នៅកន្លែងប្រភពទឹក	☐	
			២-នៅក្នុងបង្គន់	☐	
			៣-នៅក្បែរបង្គន់	☐	
			៤-នៅក្នុងបរិវេណ នៃផ្ទះបាយ	☐	

			៥-ផ្សេងៗ (បញ្ជាក់).....		
១៥៦		តើអ្នកធ្វើអ្វីខ្លះដើម្បីការពារក្មេងនៅក្នុងផ្ទះរបស់អ្នកកុំអោយកើតជំងឺរាគ? *(សូមកុំអានជំរើស)* *(គួសគ្រប់ចម្លើយដែលបានឆ្លើយ)*	១. បន់ស្រន់អារក្សអ្នកតា/ព្រលឹងជីដូនជីតា	☐	
			២. ចំអិនអាហារឱ្យបានត្រឹមត្រូវ/ហូបអាហារភ្លាមៗបន្ទាប់ពីចំអិនហើយ	☐	
			៣. ប្រយត្ន័ប្រយែងចំពោះចំណីដែលក្មេងហូប	☐	
			៤. ហូបទឹកឆ្អិន	☐	
			៥. លាងបន្លែជាមួយទឹកស្អាត	☐	
			៦. ផ្ទុកទឹកឱ្យបានស្អាតត្រឹមត្រូវ	☐	
			៧. លាងដៃនឹងសាប៊ូបន្ទាប់ពីបត់ដៃបត់ជើងហើយ	☐	
			៨. លាងដៃនឹងសាប៊ូមុនពេលរៀបចំម្ហូបអាហារ	☐	
			៩. លាងដៃនឹងសាប៊ូបន្ទាប់ពីលាងគូថឱ្យក្មេងហើយ	☐	
			១០. សំអាតឧបករណ៍ដាំស្លរ និង សំភារៈញ៉ាំអាហារ	☐	
			១១. អត់ដឹង	☐	
			១២. ផ្សេងៗ(បញ្ជាក់)៖		
១៥៧		តើអ្នកធ្លាប់ឮការណែនាំអំពីអនាម័យដែលអ្នកបានដឹងពីមុនមកយ៉ាងដូចម្តេចខ្លះ? *(សូមកុំអានចម្លើយ)* *(គួសគ្រប់ចម្លើយដែលបានឆ្លើយ)*	១. មិនដែលសោះ	☐	បើមិនដែលសោះ ➔សំនួរ ១៥៩
			២-ប្រើប្រាស់បង្គន់	☐	
			៣-ហូបទឹកដែលមានសុវត្ថិភាព	☐	
			៤-រក្សាទឹកស្អាតអោយមានសុវត្ថិភាព	☐	
			៥-ការលាងដៃ	☐	
			៦-ការលាងដៃនឹងសាប៊ូ	☐	
			៧-អនាម័យម្ហូបអាហារ	☐	
			៨-ការគ្រប់គ្រងលើទឹកកខ្វក់	☐	
			៩-ចោលលាមកទារកនៅកន្លែងសមរម្យ	☐	
			១០-ផ្សេងៗ (បញ្ជាក់)		

១៥៨		តើអ្នកចេះដឹងអំពីរបៀបអនាម័យបែបនេះតាមនរណាខ្លះ/ប្រភពណាខ្លះ/សកម្មភាពអ្វីខ្លះ? *(សូមកុំអានចម្លើយ)* *(ត្រូវគូសគ្រប់ចម្លើយដែលបានឆ្លើយ)*	១-ការប្រជុំក្នុងសហគមន៍	☐	
			២-មេភូមិ	☐	
			៣-អ្នកជិតខាង	☐	
			៤-បងប្អូន/សាច់ញាតិ	☐	
			៥-វិទ្យុ	☐	
			៦-ប័ណ្ណណែនាំ/រូបភាពណែនាំ	☐	
			៧-បដាផ្សព្វផ្សាយពាណិជ្ជកម្ម	☐	
			៨. តាមទូរទស្សន៍	☐	
			៩-ភ្នាក់ងារ/មន្ត្រី NGO	☐	
			១០-មន្ត្រីរដ្ឋាភិបាល	☐	
			១១-មណ្ឌលសុខភាព	☐	
			១២-ភ្នាក់ងារអប់រំសុខភាព	☐	
			១៣-សាលា/គ្រូបង្រៀន	☐	
			១៤-វត្ត/ចៅអធិការវត្ត	☐	
			១៥-មិនដឹង	☐	
			១៦-ផ្សេងៗ(បញ្ជាក់):.....		

ឈ. ការទំនាក់ទំនង

ល.រ	កូដ IDE	សំណួរ	លេខកូដ		វិលង
១៥៩		តើមនុស្សក្នុងគ្រួសាររបស់អ្នកប៉ុន្មាននាក់ដែលជាសមាជិកក្រុមសហគមន៍?	១-គ្មានទេ	☐	
			២-ម្នាក់	☐	
			៣-ពីរនាក់	☐	
			៤-បីនាក	☐	
			៥-ផ្សេងៗ (បញ្ជាក់).....	☐	
១៦០		តើអ្នកធ្វើដំណើរចេញទៅក្រៅភូមិញឹកញាប់ ប៉ុណ្ណាដែរ?	១-លើសពី ១ដង ក្នុង ១សប្តាហ៍ / រាល់ថ្ងៃ / ស្ទើរតែរាល់ថ្ងៃ	☐	
			២-១ដង ក្នុង ១សប្តាហ៍	☐	
			៣-១-២ដង ក្នុង ១ខែ	☐	
			៤-តិចជាង ១ដង ក្នុង ១ខែ	☐	

			៥-តិចជាង ១ដង ក្នុង ១ឆ្នាំ	☐	
			៦-កម្រណាស់	☐	
			៧-មិនដែលសោះ	☐	
១៦១	5.16	តាមយោបល់របស់អ្នក តើអ្នកគិតថាព័ត៌មានបាន មកពី**ជាងកំបោរ** អ្នកអាចទុកចិត្តបាន ក្នុងការទិញ ផលិតផលផ្គត់ផ្គង់ទឹកស្អាត និង ឧបករណ៍ធ្វើបង្គន់អនាម័យ? *(សូមអានចម្លើយ ហើយជ្រើសយកចម្លើយ តែមួយ)*	១- គឺជាប្រភពព័ត៌មានដ៏ល្អ	☐	
			២- គឺជាប្រភពព័ត៌មានជាមធ្យម	☐	
			៣- គឺជាប្រភពព័ត៌មានមិនល្អ	☐	
			៤- មិនដឹង	☐	
១៦២	5.16	តាមយោបល់របស់អ្នក តើអ្នកគិតថាព័ត៌មានបាន មកពី**អ្នកផលិតល្ង** អ្នកអាចទុកចិត្តបាន ក្នុងការទិញ ផលិតផលផ្គត់ផ្គង់ទឹកស្អាត និង ឧបករណ៍ធ្វើបង្គន់អនាម័យ? *(សូមអានចម្លើយ ហើយជ្រើសយកចំលើយតែមួយ)*	១- គឺជាប្រភពព័ត៌មានដ៏ល្អ	☐	
			២- គឺជាប្រភពព័ត៌មានជាមធ្យម	☐	
			៣- គឺជាប្រភពព័ត៌មានមិនល្អ	☐	
			៤- មិនដឹង	☐	
១៦៣	5.16	តាមយោបល់របស់អ្នក តើអ្នកគិតថាព័ត៌មានបាន មកពី**ហាងលក់សំភារៈសំណង់** អ្នកអាចទុកចិត្តបាន ក្នុងការទិញ ផលិតផលផ្គត់ផ្គង់ទឹកស្អាត និង ឧបករណ៍ធ្វើបង្គន់អនាម័យ? *(សូមអានចម្លើយ ហើយជ្រើសយកចំលើយតែមួយ)*	១- គឺជាប្រភពព័ត៌មានដ៏ល្អ	☐	
			២- គឺជាប្រភពព័ត៌មានជាមធ្យម	☐	
			៣- គឺជាប្រភពព័ត៌មានមិនល្អ	☐	
			៤- មិនដឹង	☐	
១៦៤	5.16	តាមយោបល់របស់អ្នក តើអ្នកគិតថាព័ត៌មានបាន មកពី**មន្ត្រីរដ្ឋាភិបាល** អ្នកអាចទុកចិត្តបាន ក្នុងការទិញ ផលិតផលផ្គត់ផ្គង់ទឹកស្អាត និង ឧបករណ៍ធ្វើបង្គន់អនាម័យ? *(សូមអានចម្លើយ ហើយជ្រើសយកចម្លើយតែមួយ)*	១- គឺជាប្រភពព័ត៌មានដ៏ល្អ	☐	
			២- គឺជាប្រភពព័ត៌មានជាមធ្យម	☐	
			៣- គឺជាប្រភពព័ត៌មានមិនល្អ	☐	
			៤- មិនដឹង	☐	
១៦៥	5.16	តាមយោបល់របស់អ្នក តើអ្នកគិតថាព័ត៌មានបាន មកពី**បុគ្គលិកអង្គការក្រៅរដ្ឋាភិបាល** អ្នកអាចទុកចិត្តបាន ក្នុងការទិញ ផលិតផលផ្គត់ផ្គង់ទឹកស្អាត និង ឧបករណ៍ធ្វើបង្គន់អនាម័យ? *(សូមអានចម្លើយ ហើយជ្រើសយកចម្លើយតែមួយ)*	១- គឺជាប្រភពព័ត៌មានដ៏ល្អ	☐	
			២- គឺជាប្រភពព័ត៌មានជាមធ្យម	☐	
			៣- គឺជាប្រភពព័ត៌មានមិនល្អ	☐	
			៤- មិនដឹង	☐	

Appendix 6: Sample latrine models

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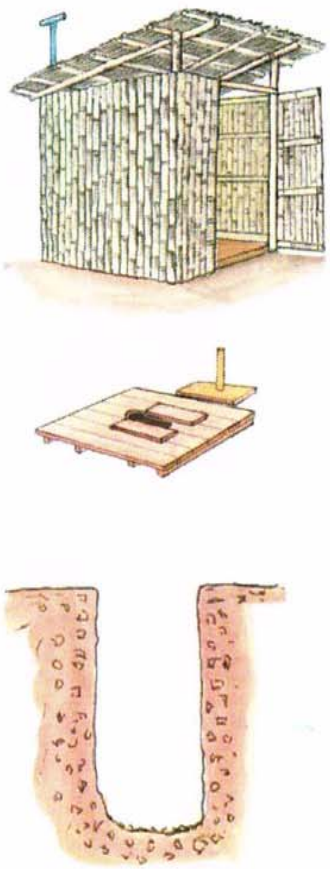

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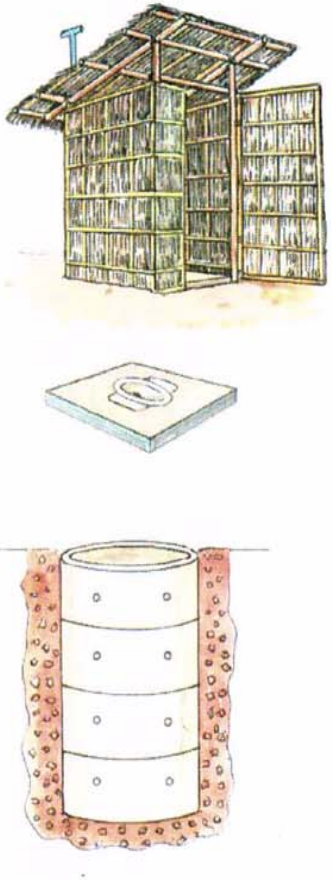

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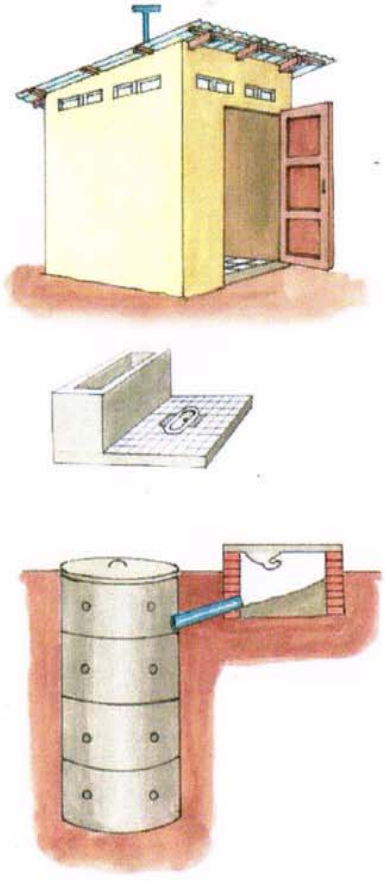

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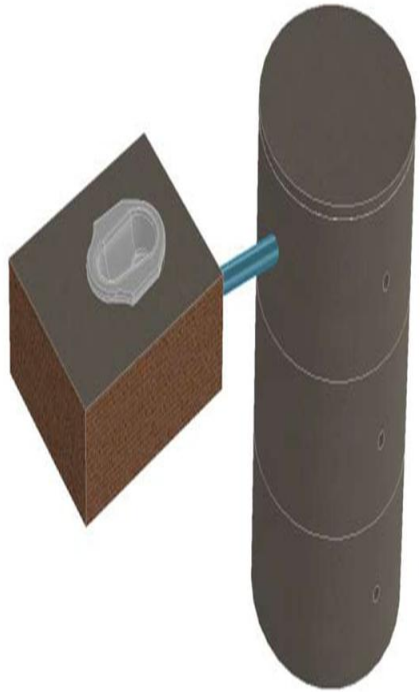

Appendix 7: Sample water products

១. អណ្តូងស្រូបខ្សែពោន

២. ធុងចំរោះសេរ៉ាមិច

៣. ធុងចំរោះខ្សាច់

៤. ឧបករណ៍ចំរោះទឹកស៊ីហ្វុង

៥. អាងកង់លុត្រងទឹកភ្លៀង

៦. ពាងយក្ស

៧. អាងកង់ហ្វឺរ៉ូស៊ីម៉ងត៍ត្រង់ទឹកភ្លៀង

៨. ក្លរីនសំរាប់ដាក់ក្នុងទឹក

៩. ធុងចំរោះពន្លឺកាំរស្មីព្រះអាទិត្យ

Appendix 8: Field Survey Team

No	Name of participants	Survey Fieldwork Roles	Status	Institutions
1	Mr. Touch Puthy	Field Coordinator	Baseline Survey Coordinator	Lien Aid Cambodia
2	Ms. Sun Sothy	Field Facilitator	Officer	PDRD, Kg Speu
3	Mr. Mel Sophanna	Supervisor/Team Leader	Lecturer	RUPP
4	Mr. Dork Vuthy	Supervisor/Team Leader	Lecturer	RUPP
5	Mr. Chap Nimol	Enumerator	Lecturer	RUPP
6	Mr. Heng Sitha	Enumerator	Officer	MOEY
7	Mr. Seang Bora	Enumerator	Officer	MOEY
8	Mr. Mel Phanny	Enumerator	Student	RUPP
9	Mr. Kem Sarom	Enumerator	Student	RUPP
10	Ms. Hak Sokhly	Enumerator	Student	RUPP
11	Ms. Hong Pich	Enumerator	Student	RUPP
12	Mr. Loeuk Savann	Data Entry Supervisor	Lecturer	RUPP
13	Mr. Hean Hen	Data Entry Personnel	Student	RUPP
14	Mr. Hong Sovantararith	Data Entry Personnel	Student	RUPP
15	Ms. Mel Sopheak	Data Entry Personnel	Student	VANDA Uni.
16	Ms. Chhay Amra	Data Entry Personnel	Student	RUPP