OBJECTIVE

In April 2017, an independent programme outcome survey was conducted to measure key sanitation and hygiene indicators at the end of Cambodia Rural Sanitation and Hygiene Improvement Programme (CRSHIP)

The specific objectives of the survey were:
- To provide statistically reliable data on key sanitation and hygiene outcomes of CRSHIP programme in households and public facilities
- To measure whether Open Defecation Free (ODF) status has been sustained among previously verified communities
- To assess the programme integration of equity and non-discrimination and the needs of marginal and vulnerable households or populations
- To describe emerging indicators of programmatic effect, including behavioural norms, habits, and satisfaction with available sanitation services

CRSHIP is implemented in 2 phases in 11 selected rural provinces: CRSHIP1 (Kampong Cham, Kampong Speu, Takeo, Svay Rieng and Kandal) and CRSHIP2 (Kampot, Prey Veng, Kampong Chhnang, Kampong Thom, Tboung Khmum and Kratie).

The survey is intended to provide consistent and representative estimates of key indicators in the program area for use in assessing programme effectiveness.

CONTEXT

The Royal Government of Cambodia (RGC) through the Ministry of Rural Development (MRD) is a recipient of an multi-year grant (currently in its eighth year) from the GSF.

This grant is implemented through PLAN International Cambodia.

The goal of CRSHIP is to increase access to improved sanitation and promote proper hygiene practices in rural communities of Cambodia. The programme promotes the consistent use of latrines, hand-washing with soap, and drinking only safe water in rural communities, and develops and strengthens the capacity of government, local authorities, and local NGOs in promoting improved sanitation and hygiene.

National ODF Criteria: 1. 100% do not practice OD and at least 85% have access to functional improved latrines (meaning there are shared latrines); 2. All households dispose of infant feces into owned and shared latrines; 3. No evidence of human excreta in the village environment; 4. Community has formulated and enforces informal or formal actions against OD

METHODS/SAMPLING

The survey with Angkor Research and University of Buffalo uses a cross-sectional design, with a multi-stage cluster sampling approach. The target population comprises all households and individuals living in communities where the GSF program has been initiated. Because the effects of the intervention are expected to reach community-wide, including into extra-household settings, data collection also include assessment of schools and health facilities in all selected communities. The sample size estimation was developed to allow sufficient power to provide reliable point estimate for key outcomes of interest for each of the top-level administrative sub-units (state, region, district, etc.) within the program. A most conservative expected rate, i.e., 50% was assumed for outcome prevalence.

Table 1: sample allocation based on the multi-stage sampling strategy in the outcome survey, 2018

<table>
<thead>
<tr>
<th>Strata</th>
<th>Total</th>
<th>Selected</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary Sampling Unit</strong></td>
<td>76 villages</td>
<td>19 villages / sub strata</td>
<td>PPS (Probability proportional to size)</td>
</tr>
<tr>
<td><strong>Households</strong></td>
<td>1216 households</td>
<td>16 households / village</td>
<td>Simple random</td>
</tr>
<tr>
<td><strong>Structured Observation</strong></td>
<td>304 observations</td>
<td>4 observation / village</td>
<td>Simple random</td>
</tr>
<tr>
<td><strong>Health/school Facilities</strong></td>
<td>Any present</td>
<td>Any present</td>
<td>Purposive</td>
</tr>
</tbody>
</table>

KEY FINDINGS

Access to WaSH services: Overall, outcome survey results mark an overall improvement of most WaSH components in comparison with the CDHS 2014, MTOS 2014 or in 2015 JMP estimates as there is no baseline survey available. Handwashing with water and soap is now accessible by almost everyone in GSF CRSHIP target areas. Sanitation in the WaSH service still seems to be lagging, despite obvious improvements since 2014-2015.

Structured observations: Handwashing with water and soap occurred in only 13.0% of the cases after defecation or toilet use, while almost all households across all segments do have access to basic handwashing facilities (98.7%). 15.7% of open-defecation (OD) were observed, while only 9.9% of the households had reported no access to any sanitation.

WaSH and socio-demographics: Kratie seemed to be the province which requires more efforts. It was found to have the highest rate of households using surface water, open-defecation and spending less money on toilet facilities; Wealth was well-correlated with most WaSH indicators. Wealthiest households were more likely to have basic or safely-managed drinking water, basic sanitation facilities, basic hygiene facilities and appropriate MHM facilities and materials; Education also seemed to be important in sanitation-related decisions.

Access to Water

As per the JMP ladder for water, 77.8% of the surveyed households had access to a safely-managed source of water, 14.6% to a basic source of water and 0.8% to a limited source of water.

A total of 93.2% of the households were found to have access to an improved source of water. CRSHIP1 areas had a much higher percentage of safely-managed water access (80.67%) compared with 59.94% of households in CRSHIP2 areas. Only 5.6% of the households were reported to only have access to surface water (e.g. river, lake, pond, etc.).

Access to Handwashing Facilities

Access to basic handwashing facilities, where both water and soap are available, was almost universal during this outcome survey, with 98.7% of the households reported in this category according to the JMP ladder. Basic access to handwashing facilities was almost total for CRSHIP1 (99.0%) and slightly less for CRSHIP2 (96.9%). This rate increased among the wealthier categories (100.0%) although the poorest households had access to basic handwashing facilities in 96.3% of the cases already.

Only 0.6% of the surveyed households were found to have no access to any handwashing facility. The JMP 2015 estimates report 78.4% of households with an actual handwashing station, 65.6% with soap and water.

Access to Sanitation Facilities

As per the JMP ladder for sanitation, the outcome survey found out that 54.7% of the households had access to safely managed sanitation services, 6.2% to basic sanitation, 28.0% to limited sanitation, 1.2% to unimproved sanitation facilities and 9.9% had no access to any sanitation facility. CRSHIP1 and CRSHIP2 areas had similar access to safely managed sanitation (54.6% and 54.3%). These figures mean that 60.9% of the households had access to improved unshared facilities during the outcome survey. It is reported 76.0% of the households had access to improved unshared facilities in 2017 in the Cambodia Social Economic Survey (CSES). The rate of OD is 21.3% in 2017 CSES and around 10% in the 2018 outcome survey (across all households). This prevalence was slightly higher among villages without prior ODF certification at 11.6% and lower among ODF declared villages (6.1%).
Social norms – hygiene and sanitation

50.9% of respondents have well-established social norms on latrine use. A slight difference of this indicator is observed between females (51.3%) and males (48.2%). 56.76% of respondents have established social norms on handwashing, 25.84% being moderate and 17.4% being low.

**Figure 5: Comparison in level of social norms of latrine use between previously non-ODF and ODF communities**

<table>
<thead>
<tr>
<th>Norms</th>
<th>ODF</th>
<th>Non-ODF</th>
</tr>
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<tbody>
<tr>
<td>Well-established</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderate-established</td>
<td></td>
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<tr>
<td>Low-established</td>
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Sustainable of ODF

ODF sustainability was assessed by comparing the ODF status in the survey against the declared ODF status. Overall, 73.1% of the households in previously declared ODF villages were found to have access to at least basic sanitation facilities (against 60.9% in general surveyed population). The rates of households in ODF-declared villages with at least basic sanitation access increased with their level of wealth, up to 86.3% among the richest quintile.

Only one of the 38 previously declared ODF villages in the outcome survey sample can still be considered as strictly ODF after this survey, as per the national guidelines (four criteria). This village is in Kandal province. 84% of the previously ODF-declared villages comply with criterion 1 (100% households who do not practice open defecation and at least 85% have improved latrine) and criterion 4 (villages formulates and enforces a plan to eradicate open defecation practices). Criterion 2 (infant’s faeces disposed of in latrine) seems the most difficult for all households to comply to.

**Figure 6: Comparison in handwashing believes after defecation**

<table>
<thead>
<tr>
<th>Believe</th>
<th>Personal normative beliefs</th>
<th>Empirical expectation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.00% 20.00% 40.00% 60.00% 80.00% 100.00%</td>
<td></td>
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</tbody>
</table>

*Satisfaction

A composite score for satisfaction with latrine use was developed around privacy, cleanliness, safety at day and at night with higher score indicating less satisfaction. Overall, 44.3% of female respondents had a score of 0 out of 4 (median 2/4). Among respondents with limited mobility or vision, 53.2% had a score of 0 out of 4 (median 1/4). 51.1% of elderly people had a score of 0 out of 4 (median 1/4).

**Figure 7: Female caregiver/disabled/elderly people’s satisfaction with sanitation facilities in following dimensions**

**Figure 8: Comparison in access to sanitation facilities between previously non-ODF and ODF communities**

**Figure 9: Comparison in handwashing facilities between previously non-ODF and ODF communities**
Exposure to Programme Activities

The most commonly undertaken activity was "recalling that people in the village made a plan to build toilets", reported by 89.6% of all respondents. Male respondents were more likely to recall programme activities, while females were more likely to have tried to stop others from defecating in the open (55.5%, compared to only 47.0% of male respondents).

Among 53.1% respondents who have participated in the activities, a gender balance is observed (55.15% male and 52.79% female).

Equity and non-discrimination

Overall, 89.4% of the female respondents reported that their household had a toilet facility which their household members normally used. Across all segments of the sample, there was almost universal access to toilets for adult members of the family (98.6% for men and 99.1% for women) and the elderly (96.4%). But children and people with mobility or visual disability were found to have a lower access (83.2%, 81.9% and 70.8%, respectively for boys, girls and people with impairment). The household head’s level of education was negatively correlated with the access to latrine for children.

Figure 10: Comparison in level of activity exposure and the access to sanitation facilities by province

Menstrual Hygiene Management (MHM)

20 questions were included to assess perception and stigma about MHM to serve as a baseline for GSF to go forward as there is currently no MHM activities in the programme design.

**Appropriate materials with private place to wash and change:** ~90% respondents felt safe while using the facility (93.8%) with enough privacy (91.1%). Educated respondents were more likely to have appropriate MHM materials and facilities (over 95%) than non-educated ones (84.7%). This indicator seems also positively correlated with wealth, as over 96% respondents from the two highest wealth quintiles had access to these things while those from the poorest ones less likely to report so (88.7%).

**MHM related awareness and stigma:** young females reported to know what was happening during their first period more often than those from older age categories. They were also the least likely to feel ashamed about their period (71.4% and 88.5% for the two first age categories, compared with over 94% among the two older categories).

**Exclusion of activities during menstruation:** women from the richest wealth quintiles were less likely to report this issue (around 20% for the two highest quintiles, compared with over 30% and 40% for women from the poorest groups).

Figure 11: Access to sanitation facilities by education of household head

Figure 12: Menstrual hygiene indicators by age
Schools

**Water:** Overall, 67.1% of schools surveyed had basic access to water, 3.5% limited and 29.4% had no access. Access was generally consistent throughout the year with 94.4% able to access their main water source year-round.

**Sanitation:** Observations were made at 406 toilets in 70 schools. Ratio of student per toilet cubicle ranges from 5.5 to 238.3 and increased with school level: 29.4 in preschools, 84.8 in primary schools and 88.3 in secondary schools. Most schools in the sample burn their solid wastes (89.5%). Overall 76.8% of surveyed schools had toilet facilities for students, mostly located outside the actual school building but on school premises. 46.6% had toilets which were designed for the disabled students. While all schools surveyed had improved toilets, only 32.6% were classified as basic on JMP ladder since they were gender-segregated. In almost all schools, students could access the toilets whenever they needed to (95.9%).

**Hand hygiene:** Observations were made at 236 handwashing stations in 60 schools. All schools had a place where students could wash their hands, an additional 12 schools had no water at these places and thus were rated as no access. Only 15.8% of schools achieved basic on the JMP ladder while the 37.9% were rated as limited due to the lack of soap.

**Menstrual hygiene management (MHM):** Observations were made at 95 schools about menstrual hygiene management. 30.5% of schools provided education regarding MHM during the last school term, mostly to Grade 5 and Grade 6 students though 58.6% of these schools had no materials to use. Only one school surveyed had a separate place for women to change and wash apart from latrines. However, all schools had a place to dry sanitary cloths or clothing.

Health facilities

**Water:** The most common source of water for the facilities was from a tube well or bore hole (75.0%) while the other facilities main water source was piped water (25.0%). No facilities used this water for drinking, and all but one facility used it for patient care. All facilities used the water for equipment reprocessing and cleaning of the facility or equipment.

**Sanitation:** Observations were made at the 26 toilets in eight health facilities. All facilities had at least one toilet and all the toilets surveyed were flush type toilets. In 62.5% of cases the toilet was cleaned by a cleaner or janitor and in the remaining cases by another health facility staff member. Encouragingly 84.0% of the toilets observed were classified as clean with the remaining 16.0% classified as somewhat clean.

**Hand hygiene:** Observations were made at the 47 handwashing stations in eight health facilities. All but one facility had handwashing stations present and amongst those that did the average number was 6.7 stations. Most of these stations were located near staff areas of the facility (66.0%). Almost all stations (95.7%) had water available and soap was also available at 85.1% of stations.

Limitations of the study

Most data were self-reported and respondents may thus have over- or underestimated some of their statements. However, for the indicators most likely to yield extreme values (such as cost-related items), the analysis focused on median values and provided the interquartile range, the standard deviation and/or the confidence interval.

A social desirability bias may be observed for some of the habits, social norms and use indicators. Values are to be considered carefully, with data collected from actual structured observations (more objective and representative).

For numerous levels of disaggregation, some of the presented results may have lost some statistical power. Most of the time, when this type of situation occurred, the analysis also provided the number of observations or frequency of observations for the reader to be aware of the denominator.

This analysis was weighted to be representative of GSF target population. The base weights’ calculation considered relevant provinces’ household populations, mostly from commune database 2013. These estimates were most likely outdated at the time this report was written.

The date of ODF declaration was missing for several ODF villages and may have influenced results for sustainability section. The calculation of wealth index as per DHS Program methodology involved the use of cut-off points to design five wealth quintiles. Since the last DHS was conducted in 2014 in Cambodia, these cut-off values were most likely outdated and resulted in strongly skewed results with over 80% of the households belonging to the top two quintiles. New cut-off values were chosen to get an equal representation among the five wealth groups and to ensure sufficient statistical power for any disaggregation by wealth quintile.