

## **El Niño-induced drought in Cambodia: Rapid Assessment Report**



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Khmum, Kampong Chhnang, Pursat and Prey Veng  
Provinces**

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Your information, help, stimulating suggestions and encouragement enabled us to effectively coordinate in collecting relevant information to strengthen our understanding of the impact of the drought.

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## Executive summary

Cambodia is a country prone to floods and droughts, but 2016 has proven to be the hottest year on record. The ongoing 2015 – 2016 El Niño event is causing severe drought in much of the country. The Prime Minister, Hun Sen, has called this drought the worst natural disaster to hit Cambodia in 100 years. Nhim Vannnda, the permanent Secretary of the National Committee for Disaster Management, has called the drought “one of the worst events ever to happen in this country”. The government has declared that 18 of Cambodia’s 25 provinces have been severely affected by drought, impacting 2.5 million people, an estimated 950,000 of whom are children. In parallel, El Niño’s sister weather event, La Niña, is expected to bring flooding to much of the land which is currently afflicted by drought by August.

The most vulnerable households are always the hardest hit during disaster, and this includes children. Due to the drought, Health Centres have reported increases in cases of illnesses to which children are particularly vulnerable - diarrhoea, fever, and upper respiratory infections. Children spend a large part of their days at school, and the conditions in these schools pose a major threat to their health and wellbeing, due to the heat and lack of water, which can have an effect on children’s ability to participate. The drought has been particularly harsh on the livelihoods and assets of the poorest of the poor. These households have sold assets, livestock, and taken loans to dig for water, to pump water or to buy water containers and water. Some families have not been able to sustain their livelihood because of the drought - farming and fishing are both affected. In various Provinces, migration and debt have increased due to crop failure or reduced yields. Children are also being left behind in the care of relatives while their parents migrate for work.

Save the Children is responding to this ongoing drought by launching an emergency response shaped by the results of this initial survey. Through Cambodia’s Humanitarian Response Forum, we are leading the NGO sector to consolidate findings of rapid assessments across the country which will be used to inform our interventions, as well as those of other international and local NGOs. We will continue to support the efforts of the Royal Government of Cambodia to mitigate the effects of the drought in schools, health centres and communities. We are providing relief supplies to the hardest-hit communities in order to prevent children from dropping out of school, ensure that they are protected from dangerous situations and that they have the healthcare and nutrition that they need to survive and thrive. In parallel, we are building the resilience and preparedness of communities, enabling them to respond not only to this year’s drought and flood season, but also future drought and flood cycles exacerbated by climate change.

This assessment demonstrates the need for urgent emergency response and resilience-building for the most drought-affected communities and schools. The Royal Government of Cambodia is leading the way, calling on all levels of society to do what they can to mitigate the effects of disaster. However, the response has been slow and there are significant gaps in ongoing interventions. This report draws conclusions and makes recommendations for response strategies in the sectors of Education, Health and Child Protection. Save the Children will do whatever it takes to reach every last child.

## Introduction

Cambodia has a population of 15.33 million<sup>1</sup> people, with close to 80% of the population living in rural areas<sup>2</sup>. Roughly 18% of the population live below the national poverty line<sup>3</sup> and are unable to meet basic needs. Children under five years old have widespread micronutrient deficiencies, with 32% of children suffering from chronic malnutrition and one in ten presenting as acutely malnourished<sup>4</sup>. Maternal mortality stands at 170 deaths per 100,000 live births and under-five mortality is 35 deaths per 1,000 live births<sup>5</sup>. According to the Cambodia Demographic Health Survey (CDHS) 2014, 65% of Cambodian households (urban 95% / rural 60%) use an improved source of drinking water during the dry season, and 84% (urban 98% / rural 81%) during the rainy season; while 55% of households have access to improved sanitation facilities (urban 92% / rural 49%), with 50.4% of rural households practicing open defecation<sup>6</sup>. An estimated 980,000 people are considered to be food insecure in Cambodia. Chronic food insecurity is perpetuated by limited access to education and health services among poor people, and low investment in public infrastructure<sup>7</sup>.

Cambodia is currently experiencing the effects of an El Niño event, which includes significantly less rainfall patterns, warmer weather and delayed or shorter monsoon rains. El Niño is an abnormal weather pattern caused when warm water from the western Pacific Ocean flows eastward. It results from variations in ocean temperatures in the Pacific around the equator and occurs on average every two to seven years. The 2015-16 El Niño is projected to be the worst on record in recent years<sup>8</sup>. The current El Niño is comparable to the 1997-98 in terms of severity, but unlike the 1997-98 El Niño that followed a relatively neutral year in 1996, this event follows 2014, which witnessed several months of a mild El Niño<sup>9</sup>. Although the worst of the 2015-16 El Niño may have passed, it has already stretched over a longer timeframe than the 1997-98 El Niño. La Niña, a weather phenomenon that is forecast to follow this year's El Niño, is expected to bring heavy rainfall in August and September, which could result in floods in drought-affected areas, where the ground cannot adequately sustain heavy rainfall. Damage to agricultural land caused by floods could result in further food insecurity, and encourage communities to put into place coping mechanisms.

Cambodia experienced a dry and hot climate from December 2015 to May 2016, particularly during April and May, when maximum temperatures reached up to 41 degrees Celsius - about 1 degree higher than in 2015. In 2014, 116,129 ha (5 per cent) of cultivated land was affected and 20,289 ha (0.79 per cent) was damaged. In 2015, the onset of rains was delayed until mid-July, affecting 77,419 ha of cultivated land. The consequences of this slow onset disaster are that the most vulnerable populations with limited resilience options will be affected. The effects of this current dry spell endanger livelihoods, harvests, and the health and nutritional status of rural poor

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<sup>1</sup> WB, 2014 ; <http://data.worldbank.org/country/cambodia>

<sup>2</sup> Cambodia Demographic Health Survey 2014

<sup>3</sup> WB, 2012 ; <http://data.worldbank.org/country/cambodia>

<sup>4</sup> CDHS 2014

<sup>5</sup> *ibid*

<sup>6</sup> *ibid*

<sup>7</sup> WFP 2016 ; [http://reliefweb.int/sites/reliefweb.int/files/resources/Cambodia%20CB%20March\\_HQ.pdf](http://reliefweb.int/sites/reliefweb.int/files/resources/Cambodia%20CB%20March_HQ.pdf)

<sup>8</sup> See, for example, 'A Strong El Nino Is Here, and Likely To Last Through Winter and Spring, NOAA Says' ; <https://weather.com/news/climate/news/strong-el-nino-noaa-update-september2015>

<sup>9</sup> NOAA/NWS ; [http://www.cpc.ncep.noaa.gov/products/analysis\\_monitoring/ensostuff/ensoyears.shtml](http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/ensostuff/ensoyears.shtml)

households relying on subsistence agriculture or fishery activities. Past El Niño events and weather forecasts for the next few months indicate the crisis will intensify in the region with millions more suffering if no action is taken.

According to the National Centre for Disaster Management (NCDM), at least 18 of Cambodia's 25 provinces are currently affected by the drought, with 2.5 million people from 625,000 households severely affected. The government has not declared a state of emergency, but has called upon national and local authorities, UN agencies and civil society to respond to the crisis. As a result of water shortages, affected families have resorted to buying water from private vendors, exacerbating economic difficulties among the poor population. Use of unsafe water is already highly prevalent in Cambodia's rural areas, and the water shortage has led to a further increase. In some affected areas, people have reportedly stopped bathing and cleaning, which could pose health threats. Food shortages have been reported in some provinces as a result of the prolonged drought despite estimates that the 2015 rice production is above the five year-average. Currently farmers in the affected provinces are reported to have insufficient water to irrigate their crops. An unknown number of livestock have died, and declining water levels in lakes are reducing the number of fish. Figure 1, below, produced by the United Nation's (UN) Food and Agriculture Organization (FAO) reflects an average crop calendar for Cambodia when weather conditions are consistent. The main wet-season rice crop could be severely impacted if, as predicted, monsoon rains are delayed until July or August.

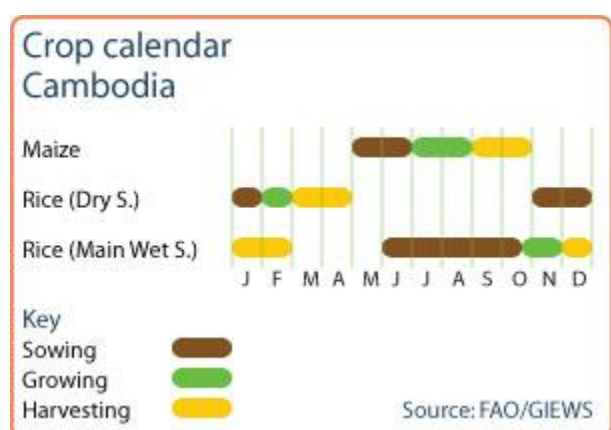


Figure 1: FAO Crop Calendar for Cambodia

"Drought this year is among the worst events ever to happen in this country... if rain does not come soon, the remaining water resources will soon be exhausted".

*Nhim Vannnda, Permanent Secretary of NCDM, May 5<sup>th</sup> 2016.*

While no outbreaks of water- or vector borne diseases are yet to be reported, authorities are concerned about the increased risk of diarrhoea, dengue, and cholera outbreaks. High fevers and skin irritation caused by the heat or by the utilization of unclean water sources for drinking and bathing have been reported, and hospitals have reported that lack of water impacts their ability to provide adequate health services. Increased migration to cope with livelihood losses has been reported, with recent news reports of significant amounts of undocumented migration to Thailand as a direct consequence of drought<sup>10</sup>. However, trends are hard to compare to other years due to lack of consistent data and migratory patterns.

<sup>10</sup> See, for example, 'Thais arrest 81 fleeing drought', 11<sup>th</sup> May 2016 ; <http://www.khmertimeskh.com/news/24864/thais-arrest-81-fleeing-drought/>

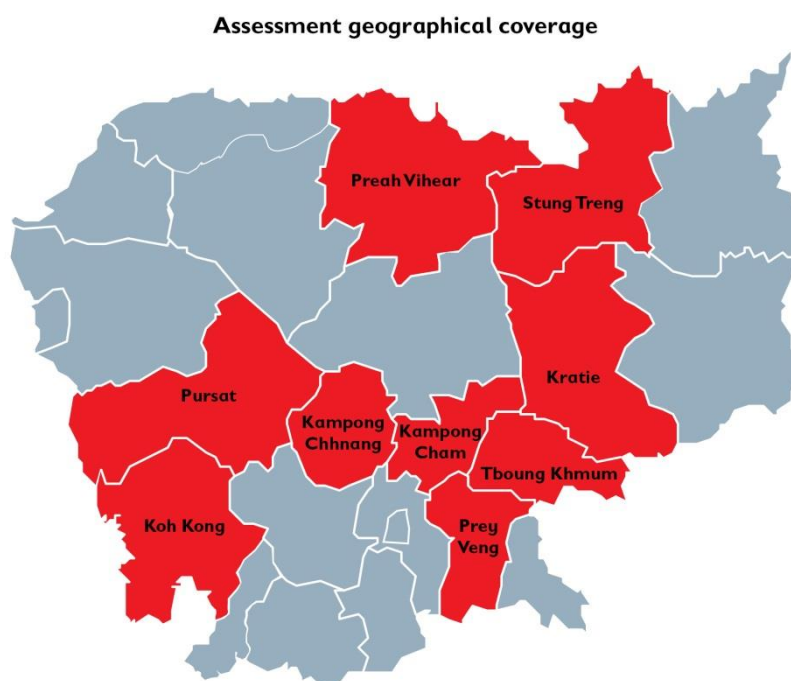


## Objectives of the assessment

This rapid assessment aims to: 1) understand the overall situation of the drought in nine target provinces of Save the Children to determine how it has impacted populations; 2) gain a better understanding of the drought in order to develop an appropriate response plan; and 3) improve coordination with key stakeholders to avoid unnecessary interventions and duplication.

## Methodology

The rapid assessment took the form of a survey that was completed by Save the Children staff in each of the nine target provinces of Koh Kong, Preah Vihear, Kratie, Stung Treng, Tboung Khmum, Kampong Cham, Pursat, Kampong Chhnang, and Prey Veng. The results of this survey complement ongoing field observations and the findings of focus-group discussions which were held with 53 community members in Koh Kong province in April 2016. The Save the Children assessment team consisted of the country office Humanitarian Response Working Group (HRWG) members who are responsible for overseeing and providing general guidance and leadership during emergency and humanitarian responses. The HRWG representatives included area managers and provincial teams with at least three staff per province, who included provincial coordinators, programme coordinators and officers in health, education, child protection, and child rights governance.



Key informant interviews (KII) were used to gather information for the assessment. Informants were purposively selected to represent the education, health, disaster management, and protection

needs of children and reflected a cascade approach from the Provincial to District to Commune levels. KII respondents included representatives from the Provincial and District Departments of Education (POE/DOE), Health Centre chiefs, Provincial and District Committees for Disaster Management (PCDM/DCDM), Commune Committees for Women and Children (CCWC), and school principals.

In each province, interviews began with Provincial representatives from the sectors of education, health and disaster management who provided guidance on the most affected Administrative and Operational Districts. Representatives from education, health and disaster management at these levels were contacted to complete interviews. Similarly, representatives from these interviews provided guidance on which were the most affected Communes, Health Centres and schools for further assessment. This resulted in the completion of 27 KIIs with three Provincial Departments in each Province. A similar number of interviews were completed at the Administrative and corresponding Operational District levels, followed by interviews with 18 Commune, 18 Health Centres, and 36 school director representatives. In cases where there was a lack of consistency between the Provincial and District level reports regarding the most affected Communes, Health Centres and schools, a ranking tool was used for selection. Overall, information to ascertain the situation of Health Centres was more difficult to obtain. Commune officials, including Commune Councils for Women and Children, were interviewed to ascertain the drought's impacts on migration, community water sources, livelihoods and coping strategies.

The questionnaire was developed with support from the Save the Children health, nutrition, WASH, education and child protection specialists. Questions for the assessment were intended to help identify basic information about the education, health, nutrition, WASH, and child protection situation in the targeted areas. The survey assessment was also used to determine trends with regards to the impacts, risks and problems associated with the drought; who is doing what and where in terms of drought response and support; what is the plan of action for other agencies and government; and what are the priority interventions needed in the sectors identified above. The survey assessment questionnaire can be found in Annex A.

Prior to data collection beginning, the Save the Children monitoring, evaluation, accountability and learning (MEAL) team developed a database for inputting and analysing the data collected. A one-day training was completed with data collectors where they reviewed questionnaire and the MEAL specialist provided guidance on how to input and use the database. All data collected from KII was checked and verified by a Provincial Team Leader and MEAL specialist to ensure that data collection was completed and entered into the database with as few errors as possible. A report was then generated at Provincial level and shared with National-level MEAL colleagues and Program Specialists, who were responsible for reviewing the outcomes and consolidating the findings.

During data collection some challenges were faced. Given that Provincial and District respondents did not always agree with the areas that were most affected by the drought, the field teams at times faced challenges with identifying priority Communes, Health Centres and schools. All data was collected through KIIs. Without direct visits to the Communes, Health Centres and schools and face to face meetings with key staff, information may be missing from the assessment.

## Key Findings

In total, this assessment covered 40 Communes across nine Provinces with a total population of 387,724 people (11,572 households) with 50,109 children (24,544 girls). The approximate total number of students in the schools assessed is 9,100 (4,500 girls), covering a total of 34 schools. Within the nine Provinces, 73% of the Districts and 51% of the Communes have been affected. These findings align with the NCDM's estimation that at least 50% of Districts have been affected. According to survey respondents from the Provincial and District levels of the health, education and disaster management sectors, the most severely affected Provinces are Koh Kong and Prey Veng: in both provinces all Districts reported some effect due to the drought, with schools reporting greater impact than Health Centres. Kratie was the next to report the greatest effect, particularly at the Commune and School level. Within schools, the biggest issue is water shortages and high temperatures resulting in children losing concentration and indicating that they have diarrhoea and fevers. The table below (Table 1) provides a summary of the Districts, Communes, Health Centres and Schools reporting effects from the drought across the nine Provinces.

**Table 1: Impact of the Drought in nine Provinces**

Province	Total # of Districts	# and % of Districts affected	Total # of Communes	# and % of communes affected	Total # of Health Centres	# and % of Health Centres affected	Total # of schools	# and % of schools affected
Kampong Cham	10	5 (50%)	109	10 (10%)	87	NA*	405	139 (34%)
Kampong Chhnang	8	5 (63%)	65	18 (28%)	41	0	273	32 (12%)
Koh Kong	7	7 (100%)	29	29 (100%)	12	NA	116	74 (64%)
Kratie	6	4 (66%)	40	14 (35%)	30	10 (33%)	209	115 (55%)
Prey Veng	13	13 (100%)		116 (100%)	103	103 (100%)	540	540 (100%)
Pursat	6	3 (50%)	49	20 (40%)	40	NA	295	117 (39%)
Preah Vihear	8	7 (88%)	49	7 (14%)	27	5 (19%)	215	12 (6%)
Stung Treng	5	4 (80%)	34	NA	12	2 (17%)	136	NA
Tboung Khmum	7	3 (42%)	64	9 (14%)	61	NA	395	101 (26%)
Total	70	51 (73%)	439	223 (51%)	413	120 (29%)	2584	1130 (44%)

\*Not available at the time of the assessment

## Health Centres: Impact, Interventions and Gaps

Interviews indicated that Health Centres across seven Provinces are seeing an increase in heat and water related illnesses due to the drought; Kratie and Preah Vihear reported no major effects from the drought. Kampong Cham, Kampong Chhnang and Pursat reported the most increases in illnesses in children under five years old with diarrhoea, fever, skin and eye conditions, upper respiratory infections, and feeding problems. The remaining Provinces also reported increases in cases of diarrhoea, fever, heat exhaustion, respiratory problems and skin rashes as a result of the drought. Across all Provinces, cases of diarrhoea and fever were reported as the most common followed by upper respiratory infections. Health Centre staff indicate that the consumption of



untreated water and poor hygiene during food preparation and feeding are likely to be the causes of the increases in diarrhoea.

The most common sources of water reported in Health Centres are open wells, pumps, ponds, and canals. Many Health Centres reported declining water volume, with several reporting water shortages. This is having an impact on the ability of the Health Centres to provide appropriate services and maintain hygiene standards. Health Centres in Kratie, Pursat, Koh Kong and Kampong Chhnang have resorted to purchasing water and in some instances require patients to bring their own water for drinking and hygiene purposes. In addition to this, Health Centres reported that water prices have gone up, which is making it more difficult for the Health Centres to purchase water. Due to the water shortages, some Health Centres reported that their latrines do not have water and have become dirty. Other Health Centres are experiencing power cuts, which makes it difficult to properly store some medicines. Many Health Centres do not have electric fans or air conditioners, which staff and patients indicate makes it difficult to work or comfortably receive services, particularly in-patient services. The table below (Table 2) reflects the responses from the 18 Health Centres in the nine Provinces with regards to whether they had seen an increase in the incidence of illnesses in children under five years old compared to last year.

**Table 2: Illnesses in Children under Five Years old reported from nine Provinces**

Province	Diarrhoea	Fever	Upper Respiratory Infections	Incidence of Skin or Eye Problems	Feeding Problems	Malnutrition
Kampong Cham	Yes	Yes	Yes	Yes	Yes	No
Kampong Chhnang	Yes	Yes	No	Yes	Yes	Yes
Koh Kong	Yes	Yes	Yes	Yes	No	No
Kratie	No	No	No	No	No	No
Preah Vihear	No	No	No	No	No	No
Prey Veng	Yes	Yes	Yes	Yes	Yes	No
Pursat	10% increase	15% increase	10% increase	No	Yes	No
Stung Treng	Yes	Yes	Yes	No	No	Yes
Tboung Khmum	No	Yes	No	No	No	No

Some Health Centres receive support to deal with the water shortage. UNICEF will support some Health Centres with 15,000 litres of water per month, starting from May 2016. The OD in Pursat provides additional financial support to buy water for the Health Centres and the local authorities are pumping water from the river into a canal to provide more water sources.

Though many of the Health Centres have some infrastructure, more support is required for drugs to treat diarrhoea with oral rehydration zinc, skin and eye problems, and to maintain appropriate IV stocks. Health Centres could benefit from some improvements to water sources such as wells, water tanks, pumps, filters and rain water collection devices, as well as solar power to maintain service delivery. A big gap identified is the need to raise awareness with the public about hygiene and sanitation, how to take care of individuals during hot weather, and to educate the public about conserving water.

## Schools: Impact, Interventions and Gaps

The survey covered 36 schools with a total number of 9,029 children, including 4,487 girls. The lack of water in schools is considered to be the biggest problem; all surveyed schools reported water shortages. Water sources such as ponds, rivers, canals and wells have run dry or have very low water volume. Some schools have no water storage capacity. In the majority of schools there is not enough drinking water, latrines cannot be flushed or cleaned, and there is no water for hand washing. Many schools have no equipment to purify water. This has major impacts on the hygiene and health of the students and teachers, and many have fallen ill with fever, diarrhoea, and dehydration. The high temperatures make many classrooms too hot for students and teachers to pay attention or concentrate on their work. Children often go out during classes because it is too hot and to look for drinking water. Children become dehydrated, get headaches and fall sick because of the lack of drinking water and the heat. Many children are absent, do not come to school regularly, arrive late or leave early. Most schools report high levels of absenteeism with an average of 17.8%, but some schools in Koh Kong and Preah Vihear reported up to 40% absenteeism. Schools in Pursat and Kampong Cham were the least affected with absenteeism. Classes that take place during the afternoon are particularly affected. Some parents do not allow their children to go to school, because they are concerned about the heat and the health of their children. Some students are taken out of school to migrate with their parents, or to help take care of siblings while caregivers look for water. Others have to spend time to collect water themselves. Some teachers do not come to teach because of the heat. The figure below (Figure 2) summarizes the most common issues raised in schools due to the drought.

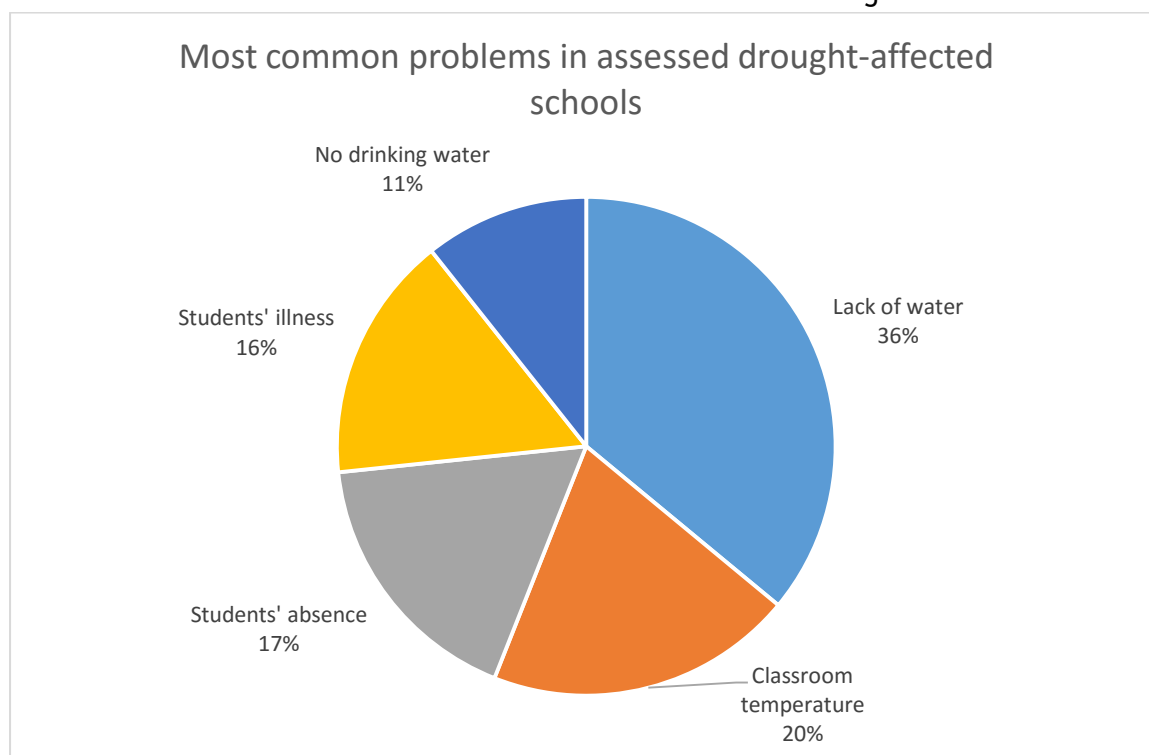


Figure 2: Most Common Problems in Assessed Drought-Affected Schools

In addition to determining estimations of children absent from school, the assessment also sought information on drinking water in schools and the condition of latrines. Only one out of three schools surveyed has enough drinking water for their students. In total, 31% of schools do not have enough drinking water for the students and another 31% of schools do not have drinking water at all. Nearly 50% of students are required to bring their own drinking water to school and 29% of all schools buy drinking water ranging from 1,800 to 3,000 Riel (USD 0.45 – 0.75) per 20 litres. Table 3 below provides a Provincial summary of the drinking water situation in the surveyed schools.

**Table 3: Drinking Water Situation in Schools**

Province*	Sufficiency of drinking water in school			Students are required to bring their own drinking water	Buy water	Costs	Other
	sufficient	insufficient	none				
Kampong Cham	0	1	3	Some schools require students to pay 400 riel per week for water	3	1,800 – 2,500 riel per 20 litres	Pagoda; commune
Kampong Chhnang	0	0	4	0	4	3,000 Riel per 20 litres	
Koh Kong	4	0	0	4	0		Pagoda
Kratie	0	4	0	4	0	3,000 Riel for 1,000 litres	
Preah Vihear	1	3	0	4	0		
Prey Veng	2	0	2	0	0		
Pursat*	2	0	0	2	0		
Stung Treng	1	1	2	0	0		
Tboung Khmum	2	2	0	2	3	17,500 – 20,000 riels for 1,500 litres	
Total	12	11	11	17	10		
	35%	31%	31%	47%	29%		

\* In all the provinces four schools were interviewed except in Pursat where interviews were completed only in two schools



*Children carry water to use in the school latrine at Kiri Akphiwat primary school, Samaki Meanchey, Kampong Chhnang province. May 2016.*

One out of three schools has functioning latrines. In the schools surveyed, 12% do not have latrines and 56% have non-functioning latrines due to water shortages. This is of particular concern for girls who due to the insufficient water may have to go into the villages to use latrines or wander into the fields to relieve themselves. This could put girls at increased risk of gender-based violence and rape, as well as contributing to more girls being absent from classes or leaving school altogether. The table below (Table 4) is a summary of the condition of latrines in the schools that were surveyed.

**Table 4: Condition of Latrines in Schools**

Province	Functioning	Not functioning	No latrines	Situation for girls
Kampong Cham	1	3	0	Have to use latrines in the village or go to the field
Kampong Chhnang	1	3	0	
Koh Kong	3	0	1	No water for cleaning
Kratie	2	1	1	No water for cleaning; go to the field
Preah Vihear	1	3	0	Not enough latrines for girls; go to the field
Prey Veng	0	4	0	No water for cleaning; girls use latrines in village; or go to the field
Pursat	0	2*	0	
Stung Treng	3	1	0	No water for cleaning
Tboung Khmum	0	2	2	Go to the field
<b>Total</b>	<b>11 (32%)</b>	<b>19 (56%)</b>	<b>4 (12%)</b>	

\* Only two schools surveyed in Pursat

Schools have received guidance from MoEYS to adjust to the drought. Guidelines include the use of flexible learning schedule, to allow classes to start earlier and finish earlier; instructions on class room environment, ensuring shaded areas to play and meet; increased break times; and asking students to bringing water from home. Schools are instructed to use the programme budget to buy water if needed. Individual schools have received support from CSOs such as Sovannaphum who provided scholarships for students.

Provincial Offices of Education actively support the implementation of MoEYS' instruction on water use and school flexible learning schedules, and they provide awareness to schools on water use and hygiene. Along with District Offices of Education, they plan to supply water to the schools that lack water for usage. In Preah Vihear, for example, the Provincial Office of Education provides big water bottles and water tanks to schools. Schools, teachers and children are educated about water saving, water treatment and water storage. Children are encouraged to bring water to school for their own consumption and hygiene.

Some schools asked for immediate water delivery. Schools need more support in increasing their water storage capacity (water tanks or otherwise), with digging wells, and repairing wells. Schools require construction of more latrines and repair of latrines and hand washing stations. Installing water catchment will help deal with shortage when rains arrive. In the classrooms there is need for water filters, purifiers and water containers, and electric fans.

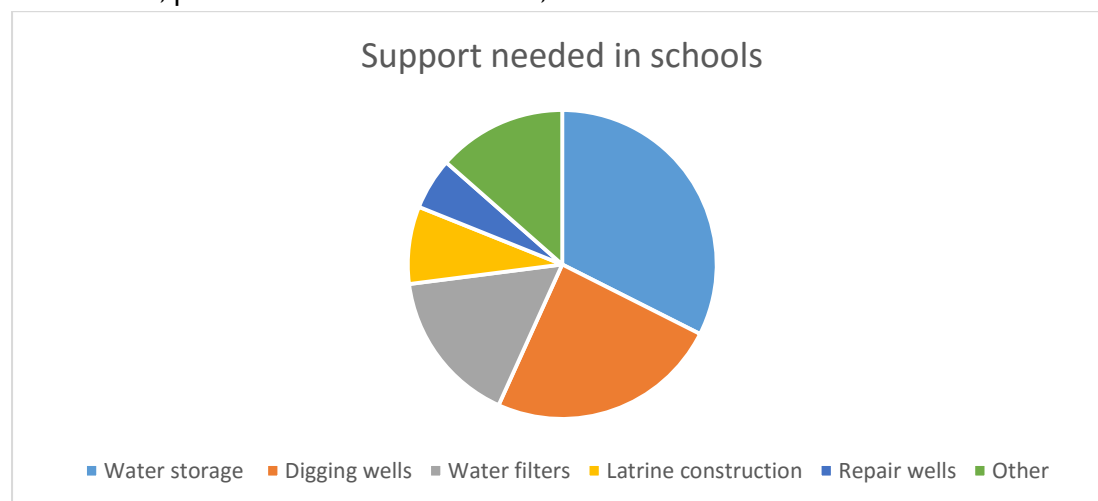


Figure 3: Support needed in schools

## Communities, Households and Livelihoods: Impact, Interventions and Gaps

Commune interviews were used to determine the situation at a community and household level with particular attention to child protection issues in addition to education and health. Key areas of focus included drought impact on migration, food and water, and coping mechanisms. Increased migration to cope with livelihood losses has been reported, with recent news reports of significant amounts of undocumented migration to Thailand as a direct consequence of drought<sup>11</sup>. Some of the Commune representatives interviewed reported an increase in migration out of communities, ranging from 2 to 5%. In Kampong Leng District, Kampong Chhnang Province, two Communes - Chror Nouk and Por - reported increases in migration out of the Communes at 25% and 30%, respectively. No respondents indicated any reports of children migrating on their own as a result of the drought. Some families are migrating with their children, but many parents who migrate are leaving their children in the care of grandparents. For example, Reay Pay Commune authorities in Kang Meas District in Kampong Cham Province reports that 20% of children are living with their grandparents as a result of the drought. Another Commune - Prek Koy, in the same district reported that 15% of children are living with grandparents. Many grandparents face challenges in taking proper care of their grandchildren because of old age, poor health and lack of means. Parents' migration has shown to have negative effects on children's education, health and even resulted in more children participating in the labour market<sup>12</sup>. The most marginalized children, including children living with disabilities, are more vulnerable to the effects of the drought as their as households struggle to make ends meet and the care and protection of children becomes deprioritized.

Most communes surveyed reported increases in the prices of food (rice and vegetables) and water (except Kratie and Tboung Khmum Provinces). Koh Kong and Pursat Provinces reported the highest price increases; in Pursat food prices increased approximately 80% from average market value and the price of water increased 150% from 10,000 Riel (around USD 2.50) to 25,000 (USD 6.25) Riel per truck. Koh Kapi Commune in Koh Kong District reported that the price of water increased from 5,000 Riel (around USD 1.25) to 8,000 riel (around USD 2.00) for 200 litres. Respondents in Chroy Pros Commune in Koh Kong District reported the price of water nearly doubled from 3,400 riel (USD 0.85) to 6,500 riel (USD 1.63) per 220 litres. Based on respondents' reports, families in Preah Vihear and Prey Veng Province are spending the most time and money purchasing food from locations outside of their Communes. In Korng Meas District, Kampong Cham Province, Communes reported that migration and debt had both increased due to crops being destroyed by drought or as a result of lower yields. As another coping strategy, some families are taking fewer meals in a day or reducing the amount of food they eat.

Similar to Health Centres and schools, Communes reported that the number of households who have to buy drinking water is increasing. Commune respondents indicated that the average price

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<sup>11</sup> See, for example, 'Thais arrest 81 fleeing drought', 11<sup>th</sup> May 2016 ; <http://www.khmertimeskh.com/news/24864/thais-arrest-81-fleeing-drought/>

<sup>12</sup> [http://www.cdri.org.kh/webdata/download/otherpapers/Migration%20and%20child%20well-being\\_CDRI.pdf](http://www.cdri.org.kh/webdata/download/otherpapers/Migration%20and%20child%20well-being_CDRI.pdf)

for 20 litres of water ranges from 1,000 Riel (USD 0.25) to 4,000 Riel (USD 1.00). In Kang Meas District, Kampong Cham Province, all households in 13 villages in Reay Pay and Prek Koy Communes have to buy drinking water. In Koh Kong District nearly all households now buy drinking water. The water that is bought for drinking is often not treated. Households often do not use water filters or boil the water before drinking, resulting in many people including children drinking untreated and possibly contaminated water.

In addition to migration, food and water, interviews with Communes focused on being able to better understand the situation of households with regards to coping mechanisms. Households have started to develop various coping mechanisms to deal with the drought. In some instances, households have started sharing water with those who do not have water. However, in many situations households have begun purchasing water, which affects their purchasing power and increases their debt. A few families have sold their livestock to invest in digging ponds. In Pursat, households reported taking loans from microfinance institutes (MFI) to drill wells, bore-holes, and reconstruct ponds. According to a recent news article, "... [MFI] loan requests have surged on the back of poor agriculture yields and prolonged drought...Farmers say the drought has increased their expenses on seeds and water, while decreasing their incomes. Many are relying increasingly on family members working abroad to cover their loan payments."<sup>13</sup> Households in all Provinces have begun to sell assets to cover the costs of drilling wells.

Many households also report using dirty and possibly contaminated water from animal watering holes or other unclean sources for household consumption. For example, in Chet Borey District in Kratie Province villagers, including children who study at the school, use the little remaining water in puddles in Kampi stream for their daily cooking, drinking, washing and bathing. This water source is also accessed by livestock. Water contaminated by manure can contain bacteria such as E.Coli and Salmonella, and symptoms from drinking contaminated water can include diarrhoea, nausea, vomiting, cramps or fever. When people bathe in contaminated water they are exposed to ear and respiratory infections, skin rashes or infection of open wounds<sup>14</sup>. Using unsafe water for daily household consumption can have an effect on health and contribute to increases in diseases.

Most households have only small water tanks that can store a limited volume of water for use over the course of one day. As a result, some families bathe less frequently and travel far away from home to bathe, which especially puts women and children at risk. Risks also increase particularly for children who are involved in collecting water, travelling long distances (up to 4-5 km) to collect water, and collecting water at night or in the early morning (4am). An additional



*Thong Sroy, 13, has dropped out of school and instead spends time fetching water, finding food and cooking for her mother, grandmother and younger sister. Her father moved away six years ago and her mother is too unwell to work.*

<sup>13</sup> <http://www.phnompenhpost.com/business/mfis-tackle-drought-concerns>

<sup>14</sup> <https://www.dhs.wisconsin.gov/publications/p4/p45088.pdf>



risk includes leaving children alone at home while caregivers collect water. In Koh Kong, it was reported that children will leave their homes at night when the sea level is high to travel by boat to areas where they can collect water.

Coping mechanisms that have had a direct impact on children include keeping children home from school to take care of younger siblings and cattle, while parents look for work or collect water. Some children are kept home from school to collect food for animals or to be involved in household chores, while others are increasingly involved in livelihood activities such as fishing, picking frogs and collecting edible plants and fruits. Some children have been kept home due to concerns about their health due to it being too hot at school or too long of a distance to walk in the heat. Some children have refused to go to school because of the heat. Within schools, requests have been made for students to bring their own water due to shortages or concerns about the quality of water, while some have stopped school gardening projects resulting in students having less access to fruits and vegetables.

Across the Provinces it was reported that the PCDM have been involved in numerous activities including coordinating the digging of ponds, canals, rehabilitating and constructing open wells, repairing and installing water pumps, and providing funding for water distribution. In Stung Treng a committee was formed to provide quick response to people affected by the drought by seeking information from every local authority. The committee is also seeking support from private sector and NGO's. Additionally, in Stung Treng the army have provided water to villagers at Prek Meas village - 80,000 litres and one water truck, while also repairing water wells and digging ponds. In Prey Veng and Kampong Chhnang, the PCDM have not taken action yet but are continuing to collect information on a daily basis, while in Koh Kong the provincial governor has requested all government staff and CSO to address the drought together. PCDM in Koh Kong has also distributed water for households, but only to villages along the main road.

In Stung Treng, the DCDM collaborated with local authorities (police, soldiers, commune offers) to distribute water to villagers who are in need and store water in villages facing the most severe impact of drought, while reaching out to the Cambodian Red Cross and PCDM for further assistance. The Cambodian Red Cross in Preah Vihear has also been working closely with the DCDM to restore wells, while the Provincial Department has been distributing water tanks and water. It was indicated at the time of that assessment that DCDM interviewed had managed in total to construct 32 open wells, ponds and boreholes, while providing clean water to six schools (200 L per school per week), raised awareness on disease prevention, hygiene, and using clean water including boiling water. One of the biggest challenges noted across all Provinces is the lack of coordination among stakeholders responding to the drought, particularly at the community level.

## Conclusion

All surveyed provinces indicated that some interventions have been undertaken, to alleviate the situation in Health Centres, schools and at the household level. The call for action on the 26<sup>th</sup> of April by the Prime Minister has led to more action especially at the provincial level. Most initiatives focus on addressing the water shortage by distributing water, digging holes and wells and

increasing water storage capacity for service providers. The Cambodian Red Cross and a few other CSO are involved in improving water storage capacity, providing water, water containers and water filters to schools and households. PCDM has not been active in all surveyed provinces which is also reflected in non-responsiveness by some DCDM's. In some cases provincial and district authorities did not acknowledge that the situation is problematic while some communities are clearly badly affected. The Provincial Offices of Education have provided guidance to schools to mitigate the effects of the heat and to deal with water shortage, allowing schools to use program budgets to buy water and shorten the hours of school days. Some initiatives at Health Centres and schools have focused on hygiene education. Most interventions appear to be uncoordinated and one-off activities rather than a sustained effort to provide continued support to affected service providers and households. There appear to have been no interventions to support livelihoods of families or to build their resilience to prevent negative outcomes from adopting various coping strategies.

From the information that was obtained from Health Centres, it appears that most are able to cope and to mobilise support from OD's and district and commune authorities when it comes to water shortages. Despite this, Health Centres did report increases in cases of diarrhoea, fever, and upper respiratory infections. Many Health Centres reported declining water volume, with quite a few reporting water shortages. This is having an impact on the ability of the Health Centres to provide appropriate services and maintain hygiene standards. Gaps remain with securing oral rehydration solution with zinc, improving water sources, and having in place appropriate awareness raising materials to educate the public about hygiene and sanitation, prevent heat related illness and water conservation.

Schools are where children spend a large part of their days and the conditions in these schools pose a major threat to the health and wellbeing of children, due to the heat and lack of water, which can have an effect on children's ability to participate. Responses indicate there is less drinking water available in schools with 56% of latrines not functioning. Schools have resorted to buying water from suppliers or neighbouring villages at an increasing cost. Some schools require children to bring their own water. The water is often unclean and schools lack the means to treat the water which puts children who drink this at high risk. Many children have fallen sick with an average increase of 17.8% of all students absent, and up to 40% in certain schools. There is a high risk that temporary absence will lead to permanent dropouts contributing to an increasing outflow of children. Girls are especially affected by the lack of water and resultant poor hygiene. They often have to roam far from school to nearby villages or secluded locations to relieve themselves. Schools have received guidance from MoEYS to adjust to the drought including water tanks and bottles, and cash, but require support with water storage, construction of toilets, and ensuring classrooms have water filters, purifiers and containers.

There are clear indicators that the drought has serious impacts on the livelihoods of families. Many families now have to spend a significant amount of their income on buying water where it previously was free and have to pay higher prices for food. Money may also be spent on transporting water. Households have sold assets, livestock, and taken loans to dig for water, to pump water or to buy water containers and water. Some families have not been able to sustain their livelihood because of the drought - farming and fishing are both affected. In various Provinces, migration and debt have increased due to crop failure or reduced yields. Children are also being left behind in the care of relatives while their parents migrate for work.

Given the proportion of respondents and findings, the results appear to indicate that effects from the drought are being felt the worst in schools and at the household level. Immediate interventions should focus on schools, while further information is collected to better understand the situation at the household level, especially in terms of livelihoods. Of particular concern is identifying which households are in need of medium to long-term support, while ensuring that children can continue their education and are in good health.

Overall, it is also important to support the coordination of emergency response at the National, Provincial, District, Commune and Community levels. The PCDM can play a key role organising the coordination of meetings and collecting information at the Provincial and District levels. Additionally, Communes can play a strategic role in coordination between Districts to Communes with the PCDM and DCDM, while also supporting coordination efforts in communities.

## Annexes

### Provincial level summary narrative reports

#### Detail plan and questionnaires:

	Step 1 - Provincial level (day1)	Step 2 - District level (day2)	Step 3 - Commune/school/health centre level (day3 and 4)
<b>Objective</b>	<ul style="list-style-type: none"> <li>Identify target district and commune (if possible) most affected</li> <li>Identify existing and planned interventions in those most affected districts</li> <li>Who does what and where</li> <li>Identify what is major needs</li> <li>Collecting report/paper.</li> </ul>	<ul style="list-style-type: none"> <li>Identify communes, schools and health centre most affected</li> <li>Identify existing and planned intervention</li> <li>Who does what and where</li> <li>Identify major need</li> <li>Collecting report/paper.</li> </ul>	<ul style="list-style-type: none"> <li>More detail discussion by each sector of the 3 below:               <ul style="list-style-type: none"> <li>Education - school</li> <li>Health and WASH – health centre</li> <li>Child protection – school and health centre, CCDM</li> </ul> </li> </ul>
<b>Questionnaire and audience</b>  <i>Please note that the</i>	<b>PCDM:</b> <ol style="list-style-type: none"> <li>How many districts are affected?</li> <li>Which districts have the most severe impact</li> </ol>	<b>DCDM (district governor)</b> <ol style="list-style-type: none"> <li>How many communes are affected?</li> <li>Which communes have the most severe impact from drought - and then we focus on those areas (with emphasis on those where</li> </ol>	<b>Education:</b>  <b>At the school level:</b> <i>Introduction</i> <ol style="list-style-type: none"> <li>As the result of drought, what are the 3 major</li> </ol>

<p><i>question here are more of leading or prompt question. Hence there is a need to initiate follow up question by the interviewer</i></p>	<p>from drought - and then we focus on those areas (with emphasis on those where we already work).</p> <ol style="list-style-type: none"> <li>3. Do you think that households have any negative coping strategies to deal with the drought?</li> <li>4. Can you name the three most common coping strategies?</li> <li>5. Any interventions responding to the drought?</li> <li>6. Who does what and where?</li> <li>7. Logistic: <ul style="list-style-type: none"> <li>- Commodity price so far increased up to now ? and in next 1 month?</li> <li>- Water filter available?</li> <li>- All the most affected area – accessible ? by what ?</li> </ul> </li> </ol>	<p>we already work).</p> <ol style="list-style-type: none"> <li>3. Do you think that households and school have any negative coping strategies to deal with the drought?</li> <li>4. Can you name the three most common coping strategies?</li> <li>5. Any interventions responding to the drought?</li> <li>6. Who does what and where?</li> <li>7. What are the 3 most important interventions needed?</li> <li>8. Logistic:</li> <li>9. Commodity price so far increased up to now ? and in next 1 month?</li> <li>10. Water filter available?</li> <li>11. All the most affected area – accessible ? by what ?</li> </ol> <p><b>District Office of Education</b></p> <ol style="list-style-type: none"> <li>12. How many schools in the district? How many schools are affected by drought?</li> <li>13. Which schools have the most severe impact from drought - and then we focus on those schools (with emphasis on those where we already work).</li> <li>14. Any interventions responding to the drought?</li> <li>15. Who does what and where?</li> <li>16. What are the 3 most important</li> </ol>	<p>issues/problem in the school?</p> <p><i>Education</i></p> <ol style="list-style-type: none"> <li>2. Does the drought have any immediate effect on children's studies?</li> <li>3. Are any children absent from classes in the last two weeks? What % of children did not come to school during last two weeks? For what reason?</li> </ol> <p><i>Water</i></p> <ol style="list-style-type: none"> <li>4. Do the schools have any water shortage? Do the schools have drinking water for children? If yes, where do you get your water from?</li> <li>5. Who are main water distributors in your area/ around this school area?</li> <li>6. How much do you pay for the water?</li> </ol> <p><i>Health</i></p> <ol style="list-style-type: none"> <li>7. Have children been sick because of hot/high temperature? (diarrhoea, fever, skin problems, cough...etc.) What is the most common of disease or sickness? % of children getting sick?</li> </ol> <p><i>Hygiene</i></p> <ol style="list-style-type: none"> <li>8. Are the latrines functioning – at school, and community.</li> </ol>
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	<p>Provincial Office of Education</p> <ol style="list-style-type: none"> <li>How many districts are affected?</li> <li>Which districts have the most severe impact from drought - and then we focus on those areas (with emphasis on those where we already work).</li> <li>Do you think that school have any negative coping strategies to deal with the drought?</li> <li>Can you name the three most common coping strategies?</li> <li>Any interventions responding to the drought?</li> <li>Who does what and where?</li> </ol> <p>PHD</p> <ol style="list-style-type: none"> <li>How many Operational Districts</li> </ol>	<p>interventions needed?</p> <p>Operational District</p> <ol style="list-style-type: none"> <li>How many Health Centres in the OD? How many Health Centres are affected by drought?</li> <li>Which health centres do you think have been the most affected by the drought? (we will focus on those Health Centres (with emphasis on those where we already work).</li> <li>Have you noticed any difference in the health outcomes of the populations within the district due to the drought?</li> <li>Do you think people's health is worse this year compared to last year? <ol style="list-style-type: none"> <li>Have you seen an increase in the number of children under five years old being admitted for treatment of malnutrition (សម្រាកព្យាបាលបញ្ហាកង្វះអាហារូបត្ថម្ភ)?</li> </ol> </li> <li>What do you think are the three biggest health issues as a result of the drought?</li> <li>Would it be okay if we follow up with the Health Centres and ask them some more in-depth questions?</li> <li>What are the 3 most important</li> </ol>	<p>9. Do girls face specific problems due to hygiene?</p> <p><i>Support</i></p> <p>10. Did you receive any support from others? Who? And how's their support.</p> <p>11. What (other) support do you need?</p> <p><b>Child protection</b> <b>At the Commune level: CCWC in the two communes selected.</b></p> <p><i>Negative coping mechanisms</i></p> <p>1. Have households developed any negative coping mechanisms to deal with the drought? (less than half of households? Or more than half of households?). Below are examples:</p> <p>-Child labour</p> <ul style="list-style-type: none"> <li>Dropping out of school</li> <li>Risk behaviour (children involved in collecting water)</li> <li>stress related violence against children</li> <li>support in exchange of services</li> <li>Safe place for sleeping/playing</li> <li>taking on new loans</li> <li>selling off assets/live stock</li> <li>other ....</li> </ul> <p>What are the three most common coping</p>
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	<p>are affected?</p> <ol style="list-style-type: none"> <li>2. Which OD's do you think have been the most affected by the drought? (We will focus on those areas (with emphasis on those where we already work).</li> <li>3. Have you noticed any difference in the health outcomes of the populations within the province due to the drought?</li> <li>4. Do you think people's health is worse this year compared to last year?</li> <li>5. What do you think are the three biggest health issues as a result of the drought?</li> <li>6. Would it be okay if we follow up with the OD and ask them some more in-depth questions?</li> </ol>	<p>interventions needed?</p>	<p>mechanisms with households in your commune?</p> <p><i>Migration</i></p> <ol style="list-style-type: none"> <li>2. Any changes in out-migration since the drought started? %?</li> <li>3. Children leaving on their own? %?</li> <li>4. Are children left behind recently because of migration of parents? %</li> <li>5. Are alternative caregivers less capable of taking care of the children under their care? (think of grandparents) %</li> </ol> <p><i>Children with special needs</i></p> <ol style="list-style-type: none"> <li>5. Are children with special needs especially affected by the drought? How?</li> </ol> <p><i>Food and water</i></p> <ol style="list-style-type: none"> <li>1. Has the price of food increased in the markets?</li> <li>2. Is it getting harder for households to purchase foods that they typically buy?</li> <li>3. Have households been reporting any information on how they are coping with the water shortage?</li> <li>4. Are more households having to purchase water?</li> <li>5. Are they treating (chloramine or and boiled water) the water?</li> <li>6. Do you know how much on average they</li> </ol>
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			<p>would pay for 20 litres of water?</p> <p><i>Safety/security</i> Has the security/safety in the community been affected because of the drought? (f.e conflict; sexual violence)</p> <p><b>Health</b></p> <p><b>Health Centre Interview Questions:</b> <b>Conditions of Health Centre:</b></p> <ol style="list-style-type: none"> <li>1. Has there been any specific challenges that the health centre has faced due to the drought? What has been the impact?</li> <li>2. Does the health centre have enough water to meet the needs of your case load?</li> <li>3. What is the health centres water source? Has this changed since December 2015?</li> <li>4. Are the latrines functioning in the health centre?</li> <li>5. Did you receive any support to deal with the challenges faced due to the drought? Who? And how's their support.</li> <li>6. What (other) support do you need?</li> </ol> <p><b>Illnesses:</b></p> <ol style="list-style-type: none"> <li>7. Compared to last year, in the last two weeks: <ol style="list-style-type: none"> <li>a. Have you seen an increase in the incidence (new cases) of diarrhoea in</li> </ol> </li> </ol>
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			<p>children under five years old?</p> <p>b. Have you seen an increase in the incidence (new cases) of fever (គ្រុនក្តៅ) in children under five years old?</p> <p>c. Have you seen an increase in the incidence of upper respiratory infections (ផ្តាសាយ) in children under five years old?</p> <p>d. Have you seen an increase in the incidence of skin or eye problems with children under five years old?</p> <p>e. Have you seen an increase in children under five years old with feeding problems?</p> <p>f. Have you seen an increase in the number of children under five years old being admitted for treatment of malnutrition (សម្រាកព្យាបាលបញ្ហាកង្វះអាហារូបត្ថម្ភ)?</p> <p><b>Coping Strategies for Food and Water:</b></p> <p>8. Have households been reporting any information on how they are coping with eating at the household during the drought?</p> <p>9. Have you noticed any other poor health outcomes in children under five years old as a result of the drought?</p>
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<b>Allocated time/duration</b>	<b>Day 1:</b> <ul style="list-style-type: none"> <li>a. ½ day for interview</li> <li>b. ½ day for consolidation and plan next interview</li> <li>c. Submit initial finding to national office</li> </ul>	<b>Day 2</b> <ul style="list-style-type: none"> <li>a. ½ day for interview</li> <li>b. ½ day for consolidation and plan next interview</li> <li>c. Submit initial finding to national office</li> </ul>	<b>Day 3 and day 4:</b> <p>Specific time to be planned by each field office. Field interview with:</p> <ul style="list-style-type: none"> <li>a. Schools</li> <li>b. Health Centre</li> <li>c. Commune authority (CCDM)</li> </ul> <p><b>Note:</b></p> <p>Which schools/Health Centres have the most severe impact from drought - and then we pick maximum 2 of those schools and 1 Health Centre (with preference for those where we already work).</p>
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