



care



Save the Children



Final Report

Rapid Assessment of the Drought in Koh Kong Province

April 2016



Picture of a dried-out river that once formed a waterfall. Koh Kong Province, April 2016.

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Acronyms

CARE	CARE Cambodia
DRIEL	Disaster Resilience through Improved Education and Livelihoods
DREAM	Disaster Resilient Entrepreneur Agriculture Model
DRR	Disaster Risk Reduction
FGD	Focus Group Discussion
HHs	Households
KII	Key Informant Interviews
PCDM	Provincial Committee for Disaster Management
PDoA	Provincial Department of Agriculture
PDoWRAM	Provincial Department of Water Resources and Meteorology
PIN	People in Need
PoE	Provincial Department of Education
SCI	Save the Children International
WHO	World Health Organisation

Background

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. 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. The 2015-16 El Niño is projected to be the worst on record in recent years, or of a similar scale to that of 1997-98.

The Ministry of Water Resources and Meteorology reported that Cambodia would experience a dry and hot climate from December 2015 to May 2016, particularly during April and May, when maximum temperatures will reach up to 41 degrees Celsius, about 1 degree higher than in 2015. As a result, the Ministry, relevant institutions and local authorities have urged the public to acknowledge this information and pay more attention to preserving water for daily use as well as for agricultural fields.¹

Both drier and wetter rainfall conditions have previously been observed during El Niño years. 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.²

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 are likely to endanger livelihoods, harvests, and the health and nutritional status of rural poor households relying on subsistent agriculture or fishery activities in the most-affected provinces. At this time it is predicted that 93,503 families in Cambodia will be affected by the drought.³

In addition, the World Health Organization (WHO) has estimated that worldwide, El Niño-related weather including severe drought, flooding, heavy rains and temperature rises will put 60 million people at increased risk of food insecurity and malnutrition, disease outbreaks, acute water shortages, and disruption of health services. In January 2016, the Director of WHO's Emergency Risk Management & Humanitarian Response Department warned that in order to prevent unnecessary deaths and illnesses, governments must invest in strengthening their preparedness and response efforts immediately.⁴

Rationale

The Disaster Resilience through Improved Education and Livelihoods (DRIEL) project is funded by Save the Children New Zealand and implemented by Save the Children International (SCI) in partnership with People in Need (PIN) and the Provincial Department of Education (PoE). DRIEL's goal is for coastal communities in Koh Kong Province to be more resilient to the impacts of disasters and climate change through improved household livelihoods, increased life-skills of children and adults, and improved land use planning – it is nearing towards the end of the second year phase.

In 2016, the project faced significant challenges with the dry spell commencing in November to December 2015 and predicted to last through to the end of July or August 2016 – a total period of almost nine to ten months.⁵ Communities within DRIEL target areas have raised concerns about

¹Cambodia Humanitarian Response Forum (HRF) Report - No. 2, 2015; *Families affected by the dry spell, as identified by key informants in 7 provinces*, December 2015

²Ibid.

³Ibid.

⁴World Health Organisation, Health Consequences of El Nino, <http://www.who.int/hac/crises/el-nino/22january2015/en/>, January 2016, Accessed 01 April 2016

⁵ Ministry of Water Resources and Meteorology statement released 23 November 2015

water shortages and that they will not have enough to sustain the current level of their livelihood activities. The dry spell has affected DRIEL project implementation particularly work that is being done on strengthening livelihoods within the community and creating linkages with local schools.

Currently, there is not enough water for communities to plant crops and vegetables; adequately raise their livestock; and there are insufficient amounts to meet their personal water consumption needs. Community members have stopped DRIEL livelihood activities and started adopting negative coping mechanisms including taking out loans and reducing the amount of food they consume during meals.

Leveraging the expertise of the DRIEL partnership and other actors with DRR/CCA and humanitarian programming experience in the affected areas in Koh Kong, the following organisations - Save the Children, People in Need (PIN), Provincial Department of Education, Youth and Sport (PoE) and CARE Cambodia - completed a joint rapid assessment across the Districts of Andoung Tuek and Botom Sakor, Koh Kong Province between 4-6 April 2016. Each of the organisations has ongoing projects in the region, which address health, livelihoods, education, and disaster risk reduction. The purpose of the assessment is to better understand the impacts of the drought to date and to identify likely mitigation measures as a means to estimate the overall cost of a potential intervention.

Objective

Better understand the impacts of the current drought with attention to livelihoods and personal water consumption in two Districts in Koh Kong Province. The results will be used to generate support from a national level to support relief efforts in Koh Kong Province.

Expected outputs

1. Improved understanding about the extent to which the current dry spell is and will be impacting livelihoods (agricultural and livestock) in 2016;
2. Improved understanding about the level and current access to fresh water, specifically for:
 - Personal use; and
 - Agricultural use.
3. Increased awareness of community based coping strategies in relation to the current dry spell, including:
 - Current coping strategies being utilised and;
 - Coping strategies that will be used if the dry spell continues.

Methodology

A rapid assessment utilizing focus group discussions (FGDs) was completed from the 4th to 6th of April 2016. FGDs were used given that the impacts of the drought to date have been reported on a more anecdotal basis, specifically with more communities indicating a greater reliance on coping mechanisms to survive. It was also felt that the qualitative approach would give the organizations a better sense of the reality given the slow onset nature of droughts and the ability to determine their effects through mechanisms such as markets, given that supply chains do not always release all available goods into a market at any given time.

Over the course of the three days, a total of six focus group discussions (FGD) were completed with six villages representing Khemara Phoumin, Koh Kong and Botom Sakor Districts in Koh Kong Province. Participants totalled 53 (32 women) and were purposively selected based on the four organizations' already established target communities that represented the geographic diversity of Koh

Kong, including villages located on islands and the main land, to better capture the varying needs of the populations based on their proximity to the ocean, rivers and highland terrain of Koh Kong Province. The participants represented villages totalling 1052 households. Each FGD was comprised of an average of eight individuals, who represented village chiefs, group leaders, school representatives, Commune Councils, veterinarians, and community members at large.

The assessment teams were comprised of 14 individuals representing PIN, PoE, CARE Cambodia and Save the Children. Volunteers for the FGDs were identified through engagement with local authorities at the village level.

The interview guide utilized questions that would help the assessment team to establish contextual trends for the drought compared to the situation in the communities at the same time last year (March/April 2015). Interviews followed standard protocols to elicit open ended discussion with specific prompting where required to better understand the context. The questions specifically addressed impacts on livelihoods and personal water consumption with attention to coping strategies and identifying mechanisms that would alleviate the drought burden.

Five key informant interviews (KII) were planned with local authorities and the government, but in the end KIIs were completed with only one representative from the Provincial Committee for Disaster Management (PCDM) in Koh Kong town. The purpose of the KII was to verify the FGD data outcomes for the drought with attention to the needs of the most vulnerable communities, access to water and to determine if there were any planned interventions. Interview guides were shared with the PCDM in advance of the interview to enable respondents the opportunity to obtain any required data from other key government departments.

After completing the FGD and KII, the assessment teams met to analyse the data. Outcomes were verified where possible with data and literature available. Additionally, meetings have been held with the World Food Program, HRF and other key stakeholders to establish if further data on the situation exists.

Summary of Key Findings

Identified Impacts and Risks from the Drought

Results from the FGDs identified a number of concerns raised by community members from Koh Kong Province regarding the drought. All participants agreed that there had not been any rain since December 2015 and that this is the hottest year they can remember. This is in line with data that has been shared by the Ministry of Water Resources and Meteorology (MoWRAM).⁶

The lack of rain and dry, hot weather have created a number of challenges for community members. Based on the results, a majority of respondents indicated that the impacts of water shortages due to lack of rain have resulted in the following: not enough water to tend to livestock; lack of water for agricultural purposes including maintaining crops and growing seedlings; lack of water for personal consumption including for drinking and hygiene purposes; villagers are being required to purchase water, which previously they did not have to purchase; and migration flows around the province and to Thailand seem to be increasing. During FGDs, women were particularly outspoken about the impact the drought has had on hygiene in the household.

⁶ See, for example, Phnom Penh Post, "Scorching hot season sets new all-time highs" (April 21st, 2016) <http://www.phnompenhpost.com/national/scorching-hot-season-sets-new-all-time-highs>

Respondents indicated that the decrease in water supply and access will likely result in loss of livelihoods and income due to lower livestock and agriculture yields, increases in communicable and water-borne diseases, population displacement and debt.

Similar to the lack of water, respondents felt that the dryer and hotter weather alone would also have impacts. Specific impacts identified by the respondents include the following: increased frequency of livestock virus outbreaks; market price increases for vegetables; increase in loans to purchase livelihood equipment; the severity and frequency of fires increasing; heat related illnesses for pregnant and lactating women, infants, young children, and elderly populations including diarrhea and heat stroke; and migration (most commonly undocumented migration to Thailand). The outcomes of such impacts, respondents felt, would be realized through debt and increased poverty, damaged homes and infrastructure, increased illnesses and reduced access to health services due to households having to increase their expenditure (both financial and time) to source water.

More specifically, respondents indicated that community members from vulnerable groups, such as pregnant and lactating women, children, people with disabilities and the elderly, would face additional challenges. For women, specifically pregnant and lactating women, additional challenges included not enough money for water and decreased mobility to fetch water. For children, people with disabilities and the elderly, respondents indicated concern about their health, particularly with colds, fevers, diarrhea, and vomiting.

“The weather is hotter; it is the worst year of dryness and heat that we can remember. There have been some fires on crops and cashew nut trees. Homes and land have been destroyed and people have no option but to buy water from a supplier outside of the village.”

FGD, 5 April 2016, Koh Kong Province



Image 1: An example of well which is near dry and contaminated yet still being used by the community. This well is located at BakRinous Village, Ta Noun Commune, Koh Kong Province.

“Without a doubt, this year has been the most difficult regarding water shortages. There is not enough water to raise animals nor enough for human consumption. A lot of water sources have dried out; people are sick (especially children) with colds, flu, fever and diarrhea. There are more mosquitos this year; and a lot of diseases for our animals – our cows aren't eating grass or much at all, which could signify foot and mouth disease.”

FGD, 5 April 2016, Koh Kong Province



Image 2: Pond located at Bak Ronous Village, Ta Noun Commune, Koh Kong Province. Water from this pond is commonly used for agricultural irrigation and livestock. Community members estimate that they have less than a month of water left in the pond.

Effects of Drought on Community Water Sources

Once the FGDs explored the varying impacts of the drought, specific attention was given to better understanding community water sources. Respondents' answers indicated that sources of water vary from village to village and that all of the villages are dependent on rain water as their primary water source. Specific geographical factors in Koh Kong, which is a mountainous and coastal zone, indicate that the Province absorbs more water than other parts of Cambodia, which makes it dependent on a larger amount of rain. This presents a large number of challenges, especially for livelihoods, water sanitation and hygiene (WASH), food security and agricultural production.

During the FGDs, the assessment team asked very specific questions of respondents to try and determine the amounts of water that households are consuming and how this compares with the previous year. Overall, the respondents indicated that a majority of households from the communities that they represented relied on harvesting rain for their personal and agriculture water consumption. This was followed by open well sources and piped in water. However, a majority of respondents indicated that these sources of water have either dried up at the time of the FGD or were considered to be critically low. Some probing was used to try and gauge relative numbers based on the number of households in each village to estimate the need and is reflected in the Diagram 1 below.

Diagram 1: Households Main Water Supply Source

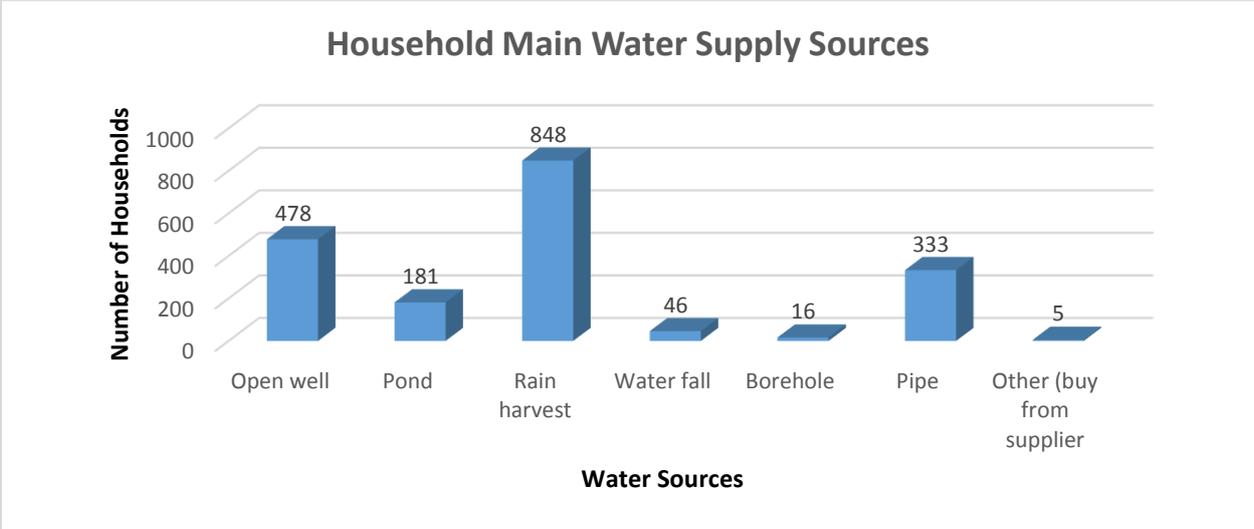
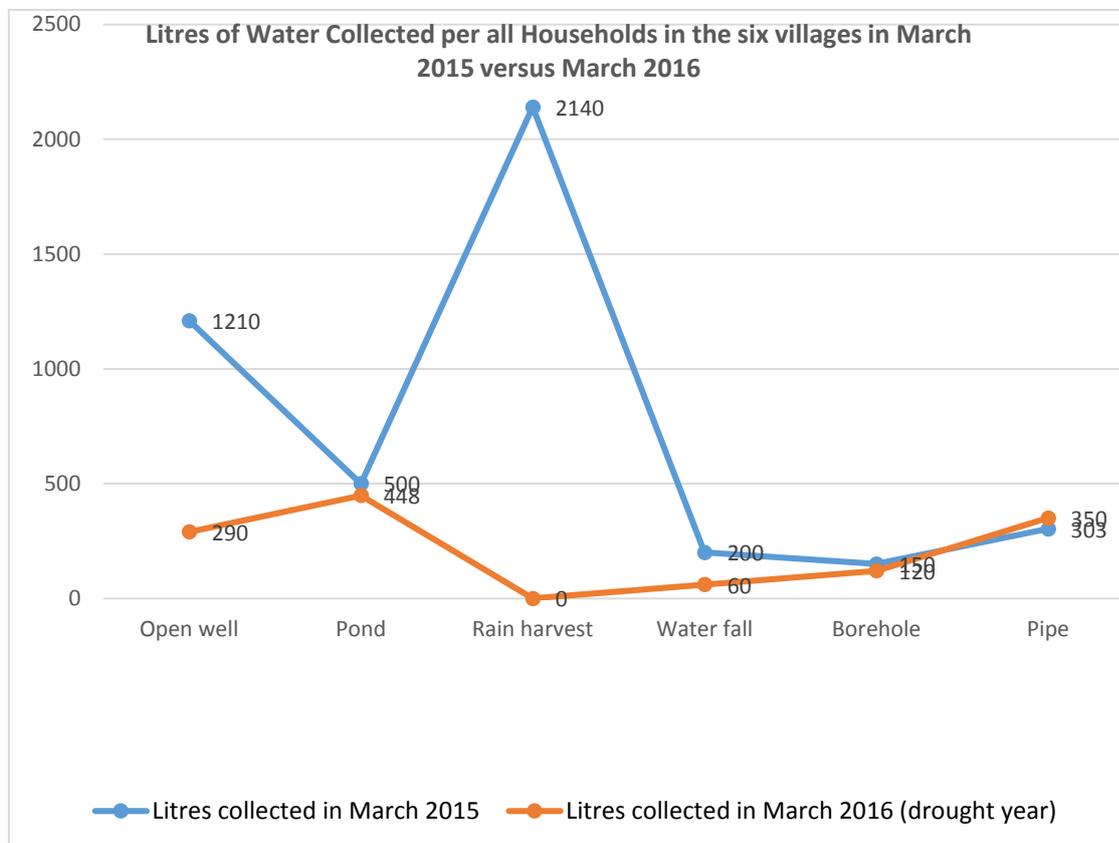


Diagram 1 above represents the main community source of water used by households in a typical year, as reported by FGDs. The two main types are open wells and rain water harvesting – and in a usual year (including during the dry season) there is generally some water available from these sources. However, this year due to the lack of rain there has been little to no water available from the open wells and rain harvesting systems which has led to water shortages for the villages under investigation for this rapid assessment in Koh Kong Province.

In addition to trying to get a greater sense of the number of households impacted and their main water sources, the assessment team asked a number of questions of the FGD participants to try and gain consensus on the litres of water collected by each household in each village and compare it to the month of March this year and last year (2015). In a typical year or last year, the sum of litres of water collected by the survey catchment area in one day stood at around 4,503 litres. However, as of the time of the FGD, respondents indicated that they are collecting significantly less from their preferred source, with the villages collecting a total of 1,408 litres of water from all sources per day. Many respondents also indicated that they are not able to access water from their preferred source and that even less water is able to be sourced from waterfalls, which as indicated in Diagram 1 is not the most commonly used source of water.

Diagram 2 below reflects the litres of water that households were able to source in March 2015, compared with the amount of water that households were able to source in March 2016. The diagram reflects the total amount of water collected by all of the households in the six villages surveyed. The diagram indicates that no one is able to access water from rain harvests and that most sources are lower than last year.



Respondents indicated in the FGDs that community members do not pay to use ponds, open wells, rain water or boreholes. However, because of the drought and lack of water available from their preferred sources, since February 2016 they have been required to begin purchasing water from other private sources. Respondents representing the village of Ta Meakhspecifically indicated that they have to purchase water that is owned by a family in another village, KonKok, who have a deep tube well on their property. The cost is 7 Riel per litre. However, the water being purchased from this source is not meeting the village's needs. As a result, they also have to purchase water from an external supplier in another village, Ba Ronous, at the cost of 40,000 Riel (around 10 USD) for 2,400 litres. This specific example indicated that communities are not able to source water from their own villages in some instances, but are having to travel to multiple villages to purchase water. This means not only are they purchasing it, but having to transport it distances which is a time burden for households. Respondents indicated that many people in the village expect that the price will continue to go up in the coming months as the situation gets worse.

In summary, all FGD participants reported that they felt there was not enough fresh water to meet their community's fresh water needs including for drinking, personal hygiene, food preparation, household and other non-agricultural activities. According to respondents, the decreases in access to rain water began in November or December 2015 and they began to feel the effects in February and

March 2016. If, as predicted by MoWRAM, the water shortage does not improve until July or August in 2016, the impacts will only get worse.

Effects of Drought on Livelihoods, Agriculture and Livestock

Similar to better understanding water sources, the FGDs also further explored in greater detail the effects of the drought on livelihoods, agriculture and livestock. The following concerns were noted when FGD respondents were asked about their main water concerns related to their livelihoods: debt and increased costs from microfinance loans for purchasing water and extra livelihood equipment; loss of income from home gardens, livestock raising and declines in fishing yields; illnesses for animals and humans, especially children; food insecurity from price increases; and WASH related issues due to less water and poor water quality to ensure adequate hygiene and health particularly for women and children.

Overall respondents felt that community members would not have enough access to fresh water to support livestock and that over half of the villages in the area would not have enough fresh water to support their expected level of agriculture based livelihoods including home gardens, cash crops, fruit trees, etc. Many respondents indicated that they felt this would continue to be the case for at least another four to five months.

Time was spent with the respondents, working with them to try and rank the most common livelihoods in their villages to get a sense of primary livelihood means. Labour from agriculture production was identified by the groups as the most common, followed by raising chickens, cultivating rice, factory work and fishing. To try and better establish cash available to villages, the assessment team also asked the respondents what the most common sources of income were available. This was done to try and get a sense of real income and to identify possible coping mechanisms. The most common source of income is from remittances from family members who have migrated, followed by the sale of cows and buffalo, chickens, labour from agricultural wages and selling rice crops. Despite income sources differing some from actual livelihoods, the reality is that respondents are concerned about their income source and about where they will be able to get food.

“We are afraid of having not only less income, but less food.”

FGD, 5 April 2016

Koh Kong Province

Coping Strategies

A ranking system was used to identify the most common coping strategies to deal with the drought. FGD respondents reported taking a loan as the most common coping strategy to alleviate the impacts of the drought. The second most common coping strategy was undocumented migration out of Koh Kong to Thailand followed by changing daily diet; some respondents indicated that they were consuming less at meals.

The least common coping strategies were timber and charcoal production, taking children out of school for labour, selling off of equipment/productive assets and selling off produce earlier than expected. Other coping strategies mentioned by villagers included spending less money and selling off all or part of one's land. Villagers also spoke about their fears of not being able to purchase or have enough food if the drought situation did not improve soon.

Key Informant Interview with Provincial Committee for Disaster Management (PCDM)

A KII was conducted with the one PCDM representative on 6 April 2016. The participants confirmed that the province was facing a drought and that communities have started to feel the effects of the drought since February 2016.

Characteristics that make this dry spell different from previous years include that there has been no rain during the dry season (when there normally is a small amount), that in general there was less rain last year and the weather has been hotter; and children have become ill as a result.

Respondents stated that there is currently not enough access to fresh water for basic needs and that, based on the MoWRAM estimates, they expect this through to August or potentially even November 2016. If that is the case, this means that drought will last for over one year. The PCDM did indicate that over the upcoming period (from the time of the interview through the next six months) that they are working to identify opportunities for building new as well as rehabilitating existing deep tube wells and ponds.

Finally, the PCDM explained that a company in cooperation with the provincial authorities has developed a large water reservoir. However, this reservoir is only accessible by the two districts of Mondul Sima and Khemera Phumin, which are located in the main town of Koh Kong. Five other districts do not have such developments or access to this reservoir. According to the PCDM, the Provincial Office of Rural Development (PRD) is also drilling boreholes for communities. As an action point from the interview, the PCDM is working to confirm the location, timing, and overall extent of the work that PRD is doing. PIN will be following up with PCDM in the coming weeks to clarify further on this.

Solutions and Proposed Response Interventions

When the assessment team asked the FGD respondents what support is needed over the next few weeks to six months to overcome the impacts and risks of the drought, the following long and short term solutions were identified. Table 4 presents the short and long term proposed interventions.

“The water shortage crisis requires urgent and immediate action.”

FGD, 5 April 2016, Koh Kong Province

Table 1: Interventions suggested by FGD Respondents of Koh Kong Province

Intervention Duration	Type	Intervention(s)
Short-term (next few weeks)	Advocacy	<ul style="list-style-type: none"> • Help relieve the water shortage by advocating to suppliers to have better access, transport and reduce the price with a possible subsidy for transportation offered from government.
	Distribution	<ul style="list-style-type: none"> • Distribute water containers to poor HHs (220L, 70,000.00 -90,000.00R) • Provide water containers for storage and collection of rain water and sealed containers to be able to transport more water • Distribute 30 litre jar • Distribute water filters • Provision of cash grants to assist in alleviating debt and meeting immediate water shortage needs
	Education	<ul style="list-style-type: none"> • WASH promotion/awareness training • Distribute hygiene kit to all teachers and students
	Infrastructure	<ul style="list-style-type: none"> • Support water suppliers with a subsidy so as to provide lower cost water to villagers. • Dig new open well • Work with water supplier to improve water quality • Rehabilitate existing wells that have dried out • Dig a new pond • Rehabilitate existing ponds that have dried out • Install rain water harvesting systems and tanks for poor households
Long-term (next 6 months plus)	Advocacy	<ul style="list-style-type: none"> • Advocate for the government and NGOs to build a new community water source
	Education	<ul style="list-style-type: none"> • Livelihoods training and grants to villagers for agriculture, livestock raising, and home garden • Training to a focal point in the village to become a VAHW to help others in the village and provide agriculture training
	Infrastructure	<ul style="list-style-type: none"> • Connect villages to the pipe water from town

Potential Beneficiaries

A drought response intervention could aim to reach 43 villages of the DRIEL target villages and target two fifths of the most vulnerable and extremely poor households based on the households who report not having enough funds to purchase adequate rainwater harvest systems.

Recommendations

1. Provide cash grants to assist in meeting immediate water shortage needs and alleviating debt.
2. Implement a WASH intervention including the distribution of water filters and containers, as well as a series of hygiene promotion sessions.
3. Deliver livelihoods training and grants.

4. Rehabilitate existing water sources and advocate for the development of new water supply infrastructure (ponds, rain water harvesting systems etc.) for the most affected villages.
5. Advocate for community members to access and purchase water outside of the community at a more affordable rate.

Annexes

Annex A: List of Tables and Example of Tools

Annex B: Map of Koh Kong

Annex C: Pictures from Assessment