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Household Resilience in Cambodia: A Review of Livelihoods, Food Security and Health

Part 1: 2015/2016 El Niño Situation Analysis



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KEY MESSAGES FROM RESPONDENTS



As of mid to late May 2016, 37 percent of households reported water shortages, with elevated water prices putting disproportionate financial pressure on poor households.



Drought-related crop losses led to a 22 percent decline in household paddy and cassava production. Attempting to mitigate losses, households re-invested in agricultural activities, taking on additional loans as a result (averaging USD 1,282 per household).



62 percent of households reported income losses over the past year, with household's losing 19 percent of income on average. This translated to a loss of USD 0.19 per person per day for the near poor.



18 percent of households lacked dietary diversity while 11 percent reported to be hungry. To cope, 13 percent of households were regularly altering eating patterns, with 37 percent eating less preferred food and 10 percent cutting adult portion sizes to ensure their children had enough to eat.



Amongst households with children under 5, two-thirds reported that one or more of their children was sick, with diarrheal illnesses most prevalent. Complementary feeding for children under 2 was found to be a concern with 60 percent lacking the needed diversity and 32 percent lacking the needed number of meals.



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INTRODUCTION

The 2015/ 2016 global El Niño event was officially declared in March 2015, peaked in December 2015 and came to an end in May 2016. It resulted in unseasonably low precipitation levels and increases in temperature by as much as 3 degrees Celsius on average. These weather abnormalities have resulted in what has been characterized as “the worst drought in 50 years” for Southeast Asia.

The hotter and drier conditions experienced during the 2015/2016 El Niño event placed significant stress on households throughout the country. Numerous anecdotal reports emerged of crop losses, with many households needing to re invest in seeds and other inputs to replant. Likewise, it was noted that in certain parts of the country, fish stocks were suffering from the prolonged period of lower than normal precipitation and from the extreme heat.

The situation deteriorated significantly in April 2016 with prolonged reductions in rainfall translating to widespread water shortages for households throughout the country. According to the National Committee for Disaster Management (NCDM), 2.5 million people across 18 provinces were severely impacted, with parts of Banteay Meanchey, Battambang and Pursat provinces amongst the most affected.¹

The severity of the situation triggered a nationwide response. Targeted distribution of drinking water began in the last week of April with up to 5 million liters of water delivered per day to the most affected provinces. Complementing the Royal Government’s efforts, UN agencies, NGOs and the Cambodia Red Cross also provided targeted water distribution to communities as well as to affected health care centers and schools. Alongside water distributions, UN agencies and NGOs redirected routine development programming towards affected communities, with a focus on rehabilitation of water

sources such as wells and community ponds.

The significant nationwide response by the Royal Government of Cambodia, which officially ended at the end of May 2016, as well as the timely arrival of the 2016 rainy season has alleviated the acute concerns over household water shortages.

Any impacts on livelihoods, however, may be felt for the coming months and years. Consequently, WFP, UNICEF and FAO, in collaboration with the NCDM and Provincial Committees for Disaster Management (PCDMs) agreed to conduct a series of three nationwide household surveys over the course of 2016 and 2017 which will enable a better understanding as to how households are impacted by and recover from shocks, with the aim being to better understand household risks and vulnerabilities in order to inform resilience building efforts throughout the country. The surveys will also provide an evidence base that can be tapped into by organizations that would like to explore particular issues impacting households.²

The first of the three surveys, the El Niño Situation Analysis, was conducted in May 2016 to provide a baseline food security and livelihoods analysis as the El Niño period concludes. Follow up surveys will be conducted in December 2016 and May 2017 to assess the extent to which normality has returned and better understand the strategies and mechanisms that enable households to recoup their losses.³

² Raw datasets to be made available.

³ In the event La Niña returns in the latter half of 2016 and there is any significant flooding, this series of surveys will also enable a better understanding of the impacts of multiple shocks on households and provide the evidence base for possible mitigation efforts and responses.

¹ NCDM/ Counsel of Ministers, Nhim Vanda’s Letter to Resident Coordinator.

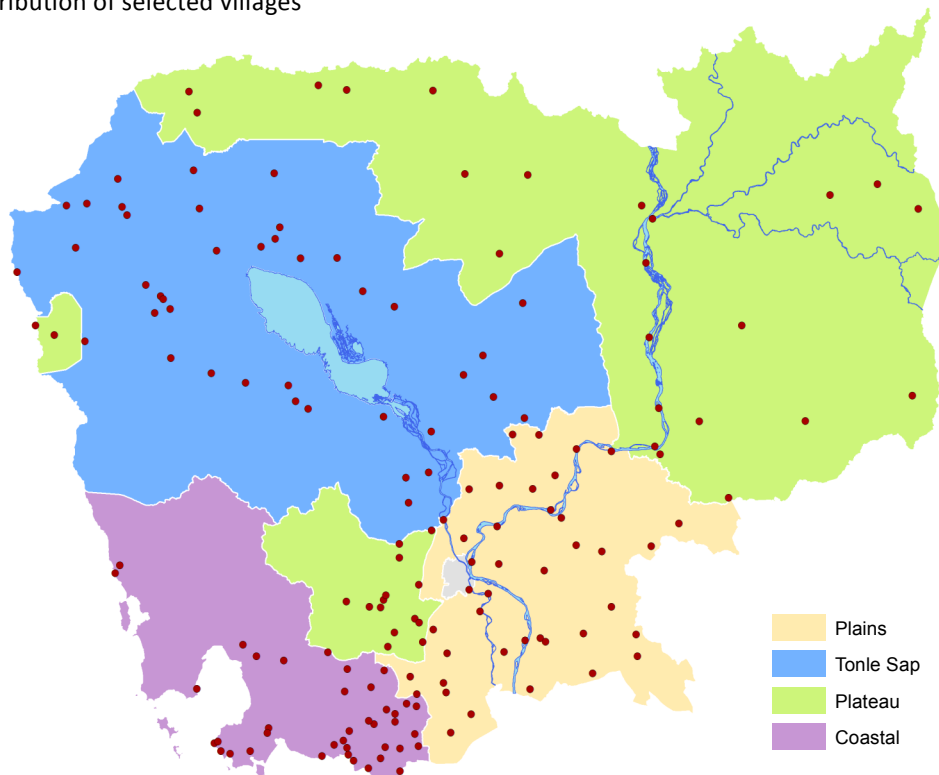
METHODOLOGY

The objective of the El Niño Situation Analysis was to assess the medium and long term impacts of the 2015/2016 El Niño event in order to better understand household risks and vulnerabilities with an eye towards better understanding the resilience of Cambodian households.

This was a nationwide household survey, covering 160 villages and 2,400 households in the 4 recognized “natural regions” in Cambodia (Plains, Tonle Sap, Coastal and Plateau or Mountain⁴). In total, 600 households were randomly selected per “natural region”, using two-stage probability proportional to size cluster sampling methods.

Data collection involved 11 enumeration teams, with each team visiting between 14 and 15 villages. Data collection was conducted via mobile devices, using the KoboToolBox mobile data collection application.

Map 1: Geographic distribution of selected villages



11 enumeration teams

160 villages visited

2,400 households interviewed

4 agro-ecological zones

15 days of data collection

The survey included the following modules:

- Water and sanitation
- Household income and expenditures
- Household indebtedness
- Household agricultural and fishery (including aquaculture) production
- Livestock ownership and health
- Household food security
- Child health and diets
- Migration patterns
- Protection and gender

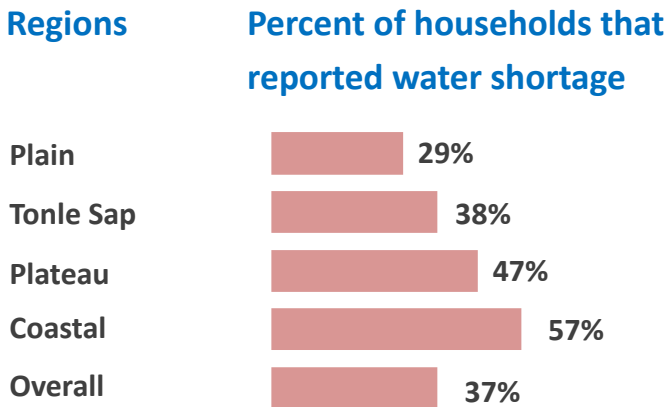
Data collection began on 12 May and was completed by 26 May.⁵ This survey is the first of 3 surveys to be conducted, with the second survey scheduled for December 2016 and the final survey scheduled for May 2017.

⁴“Plateau or Mountain” region referred to as “Plateau” for the remainder of this document

⁵As of 26 May, 159 villages had been assessed with one village in Kandal province outstanding due to administrative access issues. Access to this village was granted two weeks after all other data collection was completed.

WATER SHORTAGES AND ACCESS ISSUES

Despite the national ongoing response at the time of the survey, water scarcities were still widespread. Overall, 37 percent of households reported shortages⁶, with households in the Coastal (57 percent) and Plateau (47 percent) provinces most affected.



Despite shortages, patterns in how households accessed drinking water had not discernably changed. Main drinking water sources were similar to “normal” dry seasons, with boreholes, surface water, tanker trucks/carts and wells continuing to be the most common sources. Similarly, the time required to collect water did not noticeably worsen, increasing only slightly from 22 minutes in “normal” seasons to 23 minutes in the current season.⁷ Consequently, there was also no increase in reports of safety problems while collecting water, with less than 1 percent affected in both “normal” seasons and the current one.

Amongst those purchasing water, the cost of water was widely considered to have significantly increased. Overall, 52 percent of households purchased water in the month preceding the survey, and, amongst these households, 33 percent reported that water prices were “much higher than” one year ago. An additional 29 percent indicated that prices were “somewhat higher”.

⁶ Water shortages refer to shortages in household drinking water or drinking water available for livestock

⁷ The reported is in term of walking to water assets. By motorbike the time required 15 minutes during El Niño and 14 minutes in normal dry season.

On average, households spent KHR 39,400 (close to 10.00 USD) on water in the previous month, which was the equivalent of 9 percent of their average non-food budget. Cost burdens on households differed slightly across the country, however, with households in the Tonle Sap spending slightly over 10 percent of their non-food budget on water, while households in the rest of the country spent comparatively less (8 percent).

Water shortages had implications for household hygiene as well. Nationally, 4 percent of households did not have water for handwashing at the time of the survey. The problem was most pronounced among households in the Plateau region, with 7 percent reporting no water. By contrast, water for handwashing was more available in the coastal areas, with less than 1 percent reporting no water.

Impact on Livestock

There was considerable concern regarding water availability for livestock as well. Nationally, 15 percent of households reported “severe” water shortages for livestock. Concerns were most pronounced in the Coastal region, with 32 percent designating the situation as “severe”.

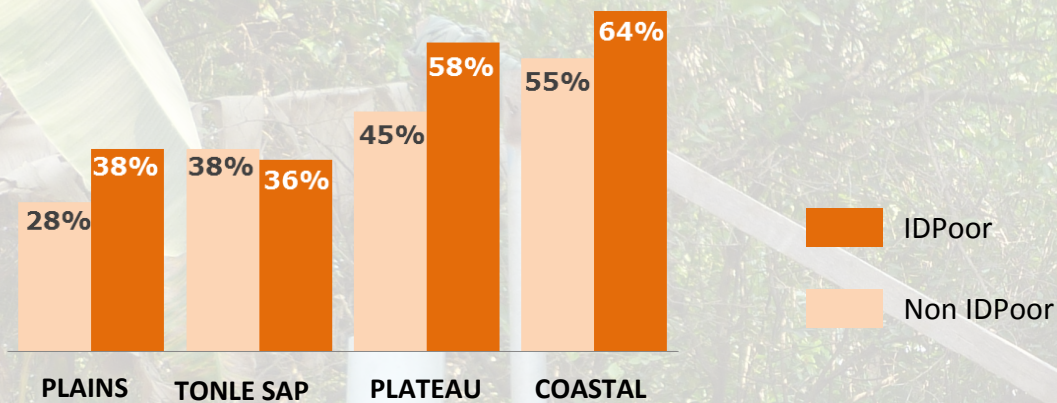
“Severe” water shortages appeared to have consequences in terms of livestock health. Overall, 5, 23 and 57 percent of households reporting “severe” shortages indicated that cattle, pig and chicken mortality rates were higher this year than “normal”. By contrast, amongst households without “severe” shortages 2, 7 and 30 percent of households reported higher mortality rates.

This difference in perception of mortality was reflected in the actual percentage of livestock deaths between January and May 2016. Overall, amongst those households reporting “severe” shortages, 4 percent of cattle died as well as 15 and 42 percent of pigs and chicken, respectively. For comparison, amongst households not reporting “severe” shortages, 1, 7 and 29 percent of cattle, pigs and chickens died, respectively.

Drinking water shortages: Poor households disproportionately affected

Drinking water shortages were more prevalent amongst the poor, with 42 percent of IDPoor reporting shortages versus 36 percent of the non IDPoor. Differences between the IDPoor and non IDPoor were most evident in the Plateau, Plains and Coastal regions. In the Tonle Sap, by contrast, there was little difference.

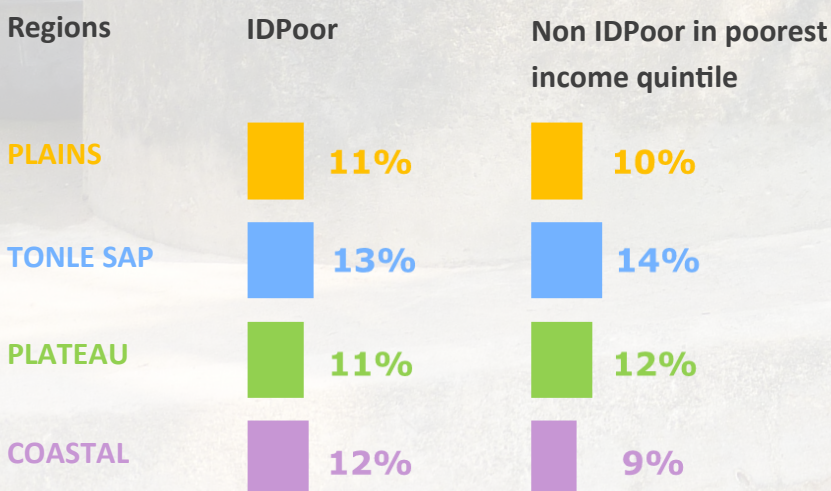
Percent of IDPoor and non IDPoor households that reported water shortage



In addition, water purchases placed disproportionate financial pressure on IDPoor and other poor households. On average, IDPoor households spent KHR 44,000 on water in the month preceding the survey, translating to 12 percent of their non-food budget. By contrast, non IDPoor households spent KHR 38,700, amounting to 8 percent of their non-food budget.

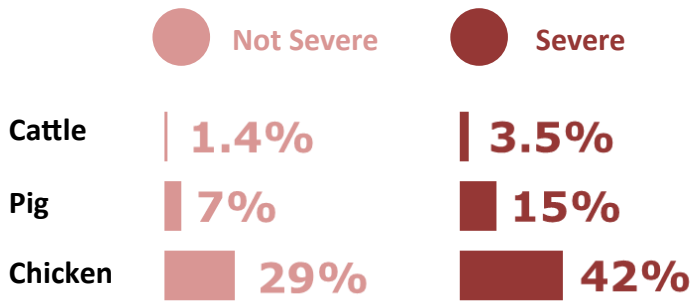
The burden on IDPoor households was relatively uniform throughout the country, with between 11 and 13 percent of the non food budgets spent on water regardless of region. Amongst households in the poorest income quintile that were not IDPoor, similar patterns were observed, though differences were slightly more pronounced, ranging from 9 to 14 percent by region.

Percent of non-food budget spent on water



On average, IDPoor households spent **12%** of non-food budget on water

Percent of livestock deaths by severity of reported water shortage



Impacts on Agriculture

Households reported a 22 percent decrease in paddy production, as compared to “normal” years. Overall, 52 percent of paddy-growing households reported losses in production of 25 percent or more. Households most affected resided in the Tonle Sap, Plains and Plateau regions, with production losses estimated at 29, 20 and 19 percent, respectively. While losses were lower in the Coastal areas, they were still significant, with household production declining by 8 percent.

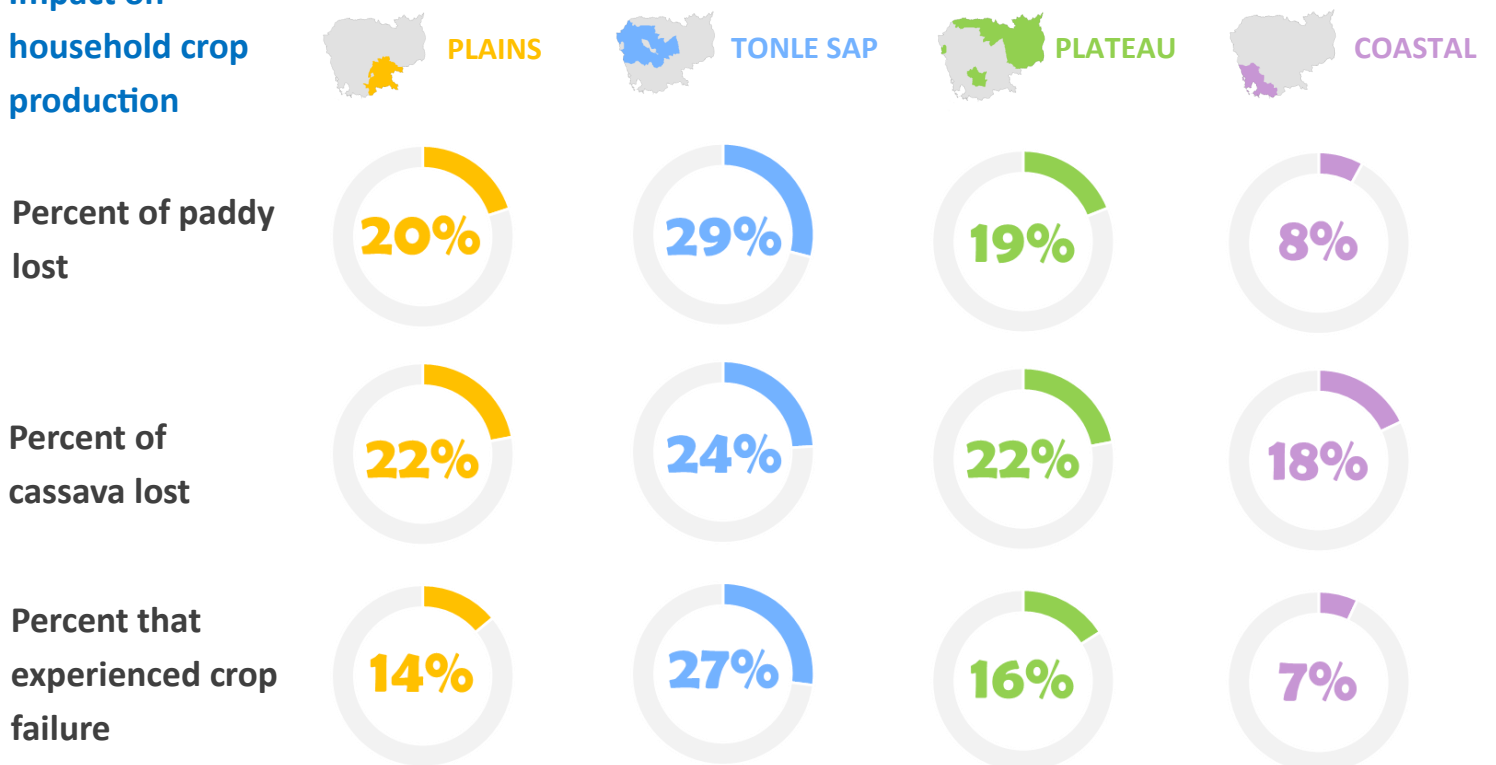
The impact on cassava-growing households was similar, with 56 percent also reporting losses in production of 25 percent or more. This translated to a loss in average household production of 22 percent nationally, with the Tonle Sap, Plateau and Plains regions most impacted. In the Tonle Sap, cassava production declined by an estimated 24 percent, while in both the Plateau and Plains regions losses were estimated at 22 percent. Losses were significant in the Coastal region as well, with production declining by 18 percent.

LIVELIHOOD LOSSES: 2015/2016 El Niño

El Niño substantially affected livelihoods throughout Cambodia. Widespread crop losses significantly impacted incomes and led many households to take on additional loans, increasing indebtedness.

The extent and distribution of agricultural losses and the affects on income are discussed in greater detail below.

Impact on household crop production



Crop failures⁸ were reported by 18 percent of agricultural households, with lost paddy crops representing roughly 66 percent of these reports.⁹ Of those reporting crop failures, 17 percent lost one crop, while just over one percent lost two crops. Crop failures were most often reported by households in the Tonle Sap and Plateau regions, with 27 and 16 percent reporting this respectively. The Coastal region reported the fewest crop failures, with only 7 percent of households affected.

Crop losses and failures also affected seed availability for the current planting season. Overall, 14 percent of households reported insufficient seeds for the 2016 wet season rice crop. To replenish seeds stocks, 57 percent will reportedly buy seeds, while 22 percent will have to purchase on credit. Overall, 6 percent will reportedly borrow seeds from relatives, friends or neighbors.

Seed shortages were most commonly reported by households in the Plains and Tonle Sap regions, with 19 and 12 percent reporting this respectively. Households in the Plains were far more likely than

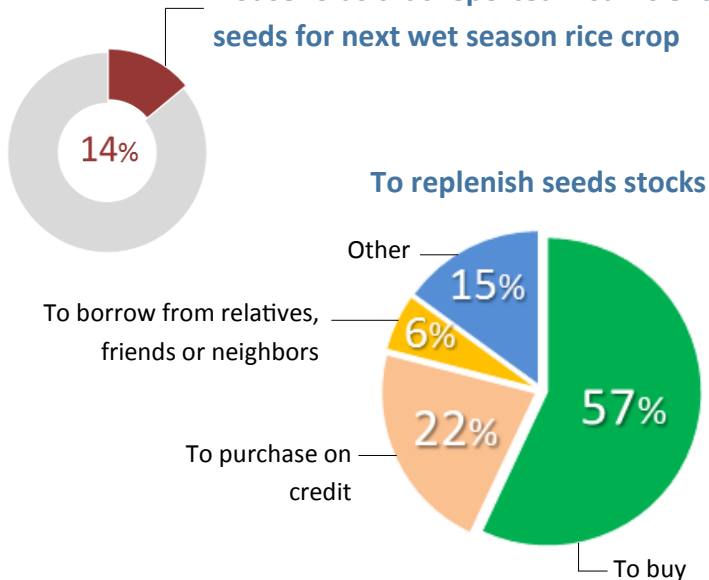
those in the Tonle Sap to report having to go into additional debt to replenish seeds, with 33 percent of affected households reporting this versus only 9 percent in the Tonle Sap.

Impacts on Incomes

Agricultural losses triggered income losses, affecting 62 percent of households and resulting in an estimated 19 percent net reduction in income overall. This translated to a loss of USD 0.19 per person per day amongst the near poor (those making between USD 1 and 2 per day) between May 2015 and May 2016. Approximately one-fifth of household income, on average, was lost in the Plains, the Tonle Sap and Plateau regions and just under one-third of households reported losses of more than 25 percent. Losses were less, but still significant, in the Coastal region, affecting 10 percent of households and resulting in an average reduction in income of 8 percent.

Households that reported significant cassava losses (>25%), reported a 44 percent reduction in income, while those less affected reported a 22 percent reduction. The situation was similar amongst paddy producing households. Those highly impacted by early wet and normal wet season paddy losses experienced an income loss of 29 and 27 percent, respectively, while those less affected reported a loss of 11 percent. Likewise, significant losses of dry season paddy crops resulted in a 33 percent reduction in income, while those less affected reported an income loss of 14 percent. Households more reliant on non-farm income, by contrast experienced fewer income losses.

Households that reported insufficient seeds for next wet season rice crop



⁸ Defined as total crop failure, meaning the household was forced to replant.
⁹ Nationally, 13 percent of households reported paddy crop failures, while 4 percent reported cassava crop failures. An additional 1 percent of the households reported failures in fruit tree crops while just under 2 percent reported failures of "other" crops.

additional debt burden accrued was USD 1,282 per household, with most loans directed toward reinvestment in agriculture, in an attempt to mitigate production losses or crop failures. This was particularly pronounced among cassava-growing households, with 82 percent of drought-related loans spent on agricultural activities. Paddy farming households that suffered significant production losses to more than one paddy crop were over three times more likely to have reported taking out additional debt as a result of El Niño than households that were not highly impacted by losses. By contrast, loans unrelated to El Niño were more commonly attributed to consumption related expenditures.

Drought-related debts were most commonly reported in the Plains, with 15 percent of households taking on an average additional debt of USD 1,231. By contrast, households in the coastal provinces were least likely to take out additional loans, with just 2 percent reporting this.

FOOD SECURITY

Dietary inadequacy and food related stresses were elevated at the time of the assessment. Overall, 18 percent of households lacked adequate dietary diversity while 11 percent reported hunger (as defined by the household hunger score). Both measures were higher than reported in recent surveys, with data from the 2014 Cambodia Socio-Economic Survey (CSES)¹⁰, for example, showing that just 11 percent of households had inadequate dietary diversity while less than one percent reported hunger.

El Niño-related income losses appeared to significantly impact the food security status of households. Overall, 27 percent of households that experienced significant income losses (>25 percent) lacked proper dietary diversity and 20 percent experienced hunger. By contrast, among less affected households, only 12 percent lacked adequate dietary diversity and 6 percent experienced hunger.

Among cassava producers, 82% of El Niño-related loans spent on agricultural activities

¹⁰ While the CSES provides an indication of change, a direct comparison cannot be drawn, as the survey methodology differed between the CSES and this drought impact assessment, most notably as CSES data was collected over the course of the year (potentially obscuring some more transient impacts) while this survey was conducted within a three-week period at the peak of the drought crisis

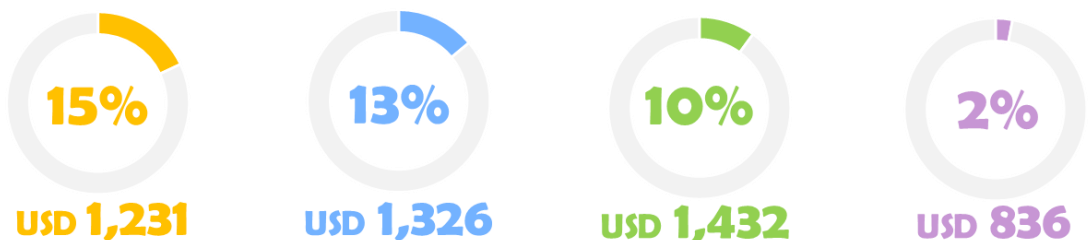
Impact on household finances



Percent of income lost



Percent accruing drought-related debts



The impact of income loss on food security



As agricultural losses accounted for a significant portion of income lost, a similar correlation was observed between crop losses and food security. For instance, amongst households that experienced significant paddy losses (25 percent or more) in the early wet and normal wet season 19 and 36 percent had inadequate dietary diversity and 11 percent reported hunger. Among households less affected 12 and 14 percent lacked diversity in their diets and 10 and 4 percent reported hunger, respectively. The same pattern was seen amongst those that lost significant dry season paddy, with 15 percent lacking dietary diversity and 4 percent reporting hunger. Amongst the less affected, 7 percent lacked dietary diversity and none reported hunger.

Cassava losses also appeared to impact food security, though not necessarily leading to deterioration in dietary diversity. This is largely a result of the fact that cassava producing households had significantly poorer dietary diversity to start with than other agricultural households. Thus, those affected by crop losses were able to maintain their already poor dietary diversity but the quantity and consistency of

their diets suffered, leading to substantial increases in perceived hunger amongst these households (from 5 percent to 13 percent).

In response to food stress, 13 percent of households were heavily reliant¹¹ on food-based coping mechanisms, regularly altering what, how much, and how frequently they were eating. Among these households, 84 percent reported eating less preferred food in the week preceding the survey, while 58 percent reporting borrowing food. Likewise, 64 and 52 percent reported reducing portion sizes and number of meals, respectively. Almost 63 percent having to reduce their own consumption to ensure that children have enough to eat.

Again those experiencing significant impacts as a result of El Niño were more likely to report significant reliance on food-based coping mechanisms. Among those households experiencing significant income losses, 16 percent reported heavy reliance on food-based coping versus only 10 percent of those less affected.

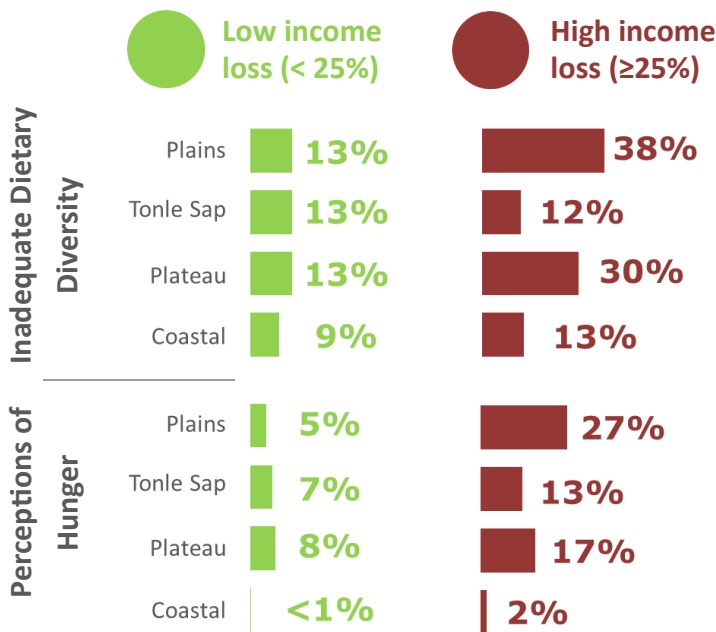
Food Security by Region

The percentage of households reporting poor dietary diversity, hunger and high levels of food-based coping were most pronounced in the Plains and Plateau regions with 22 and 20 percent reporting inadequate dietary diversity, 14 and 10 percent reporting hunger and 15 and 14 percent reporting high levels food-based coping, respectively. By contrast, food stresses were least evident in the Coastal region, with 10 percent lacking adequate dietary diversity, only 1 percent reporting hunger and 6 percent reporting high levels of coping.

As income losses were similar in the Plains, Tonle Sap and Plateau Mountain regions, it was expected that the food security impacts would be similar. This,

¹¹ Heavily reliant is defined as having a Reduced CSI score >7. In practice, this category of households includes those that engaged in: 1) less serious coping mechanisms either every day in the week preceding the survey (i.e. eating less preferred food); 2) more serious coping mechanisms at least 3-4 days per week (i.e. reducing portions sizes, skipping meals, etc.); 3) a mix of both.

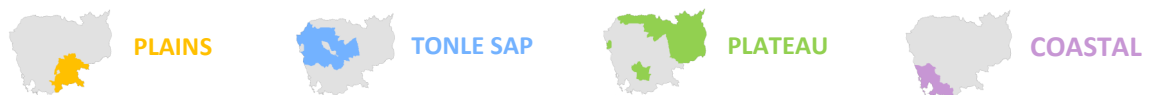
The impact of income loss on food security by regions



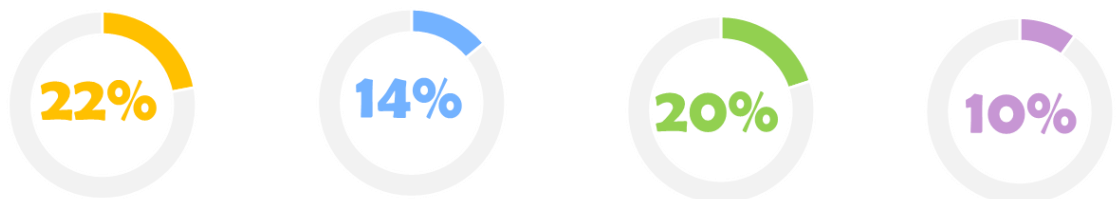
however, was not the case. In the Plains and Plateau regions, households that experienced significant income loss were 3-4 times more likely to report inadequate diets and 6.6 and 2.4 times more likely to report hunger respectively. In the Tonle Sap, by contrast, impacts were not as pronounced. Income

loss, in fact, did not result in any deterioration in the dietary adequacy, with 12 to 13 percent lacking dietary diversity regardless of the extent of income loss. Hunger was more pronounced among the households that reported significant income loss but the differences were comparatively lower, with these households 1.9 times more likely to report hunger.

Reasons for this were not immediately clear though households heavily impacted by El Niño in the Tonle Sap tended to have better access to land, with households owning 1 hectare more on average (averaging 3.2 hectares versus 2.2-2.4 hectares in other parts of the country). This may have provided some flexibility in the crops planted, allowing households to diversify to more drought resistant crops to mitigate losses (though the data collected was not sufficient to examine this further). In addition, these households had good access to credit, with close to one third of households with significant income losses reporting drought related loans compared to one fifth in the Plains region and fewer than one-fifth in the Plateau region.



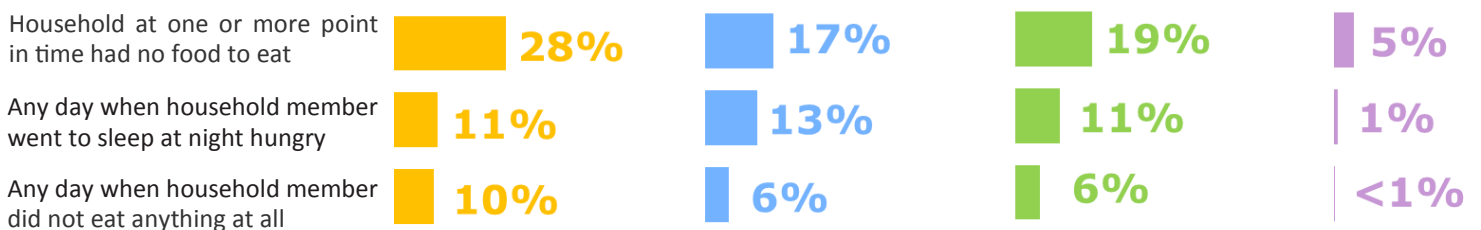
Percent of households with inadequate dietary diversity



Percent of households with perceived hunger



In the past 30 days...



Percent of households reporting food-based coping strategies

In the past 7 days...

Rely on less preferred and less expensive foods

Borrowed food or relied on help from friends/relatives

Reduced portion size of meals

Reduction in the quantities consumed by adults for young children

Reduced the number of meals eaten per day



PLAINS



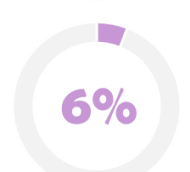
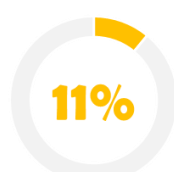
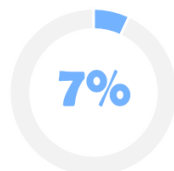
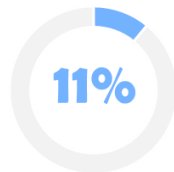
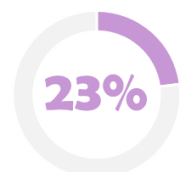
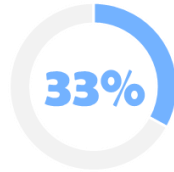
TONLES SAP



PLATEAU



COASTAL



CHILD HEALTH AND NUTRITION

Amongst households with children under 5, almost two-thirds reported that one or more of their children was sick in the two weeks preceding the survey. Of these households, over a third (35 percent) had a child suffering from diarrhea, while nearly one-quarter (24 percent) had children suffering from either Acute Respiratory Infections (ARIs) or fevers.

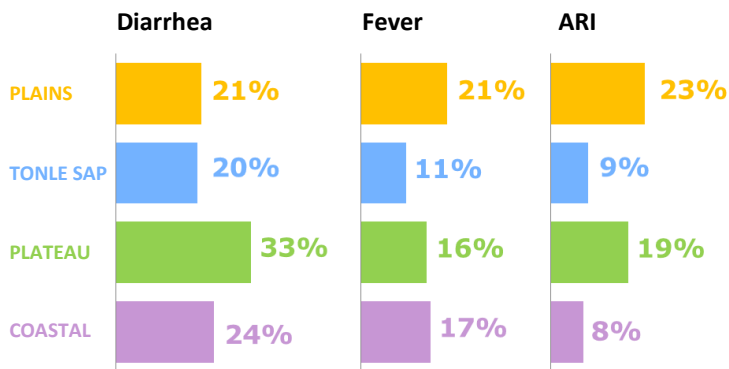


Percentage of households with a sick child under 5

Illnesses among children did not appear to be associated with either water shortages or livelihood impacts, with roughly two-thirds of households reporting sick children in the preceding two weeks regardless of drought-affectedness.

47% of surveyed households had children that were sick in the two weeks preceding the assessment *and* did not meet dietary diversity or meal frequency standards.

Percent of households with a child suffering from illness



Nationally, 59 percent of households with children 6 to 23 months had a child that did not receive 4 or more food groups per day, and 32 percent had a child that did not receive the minimum meal frequency per day. This corroborates findings from previous national surveys and points to continued problems with complementary feeding amongst children.

As with illness, there was no clear association between complementary feeding practices and water shortages or livelihood impacts. Close to two-thirds of children, regardless of income or crop loss, did not receive the minimum meal frequency while 63 and 54 percent of children in drought-affected ($\geq 25\%$ income loss) and unaffected households ($< 25\%$ income loss) and unaffected households ($< 25\%$ income loss).

Infant and young child feeding patterns

Children 6 to 23 months not consuming 4+ food groups per day



Children 6 to 23 months not consuming the minimum number of meals per day



income loss) did not receive 4 or more food groups per day (a difference which was not statistically significant). There did appear to be a correlation between poor household dietary diversity and poor dietary diversity among children. Thus, if there has been deterioration in household diets (as suggested by previous findings), one would assume a corresponding increase in dietary problems for children.

DISCUSSION

Who Was Most Affected?

While livelihood impacts were widespread, impacting the both the poor and non-poor alike, the populations most affected by El Niño were those that had productive assets (i.e. land, livestock, etc.); households which are not traditionally considered to be amongst the most vulnerable. Yet, these households not only rely on these (often climate-sensitive) assets as their primary sources of income and food but they also invest in them, often taking on loans to maximize productivity and profit. Thus, when a climatic shock disrupts these activities, these household not only lose income but they are often unable to repay their existing debts, placing them at even greater vulnerability. Asset-poor households, by contrast, tend to rely on wage labour activities or migration for income and thus are likely more adaptable to climate-related shocks, more easily shifting back and forth from farm and non-farm wage labour activities.

The magnitude of the impacts on households with productive assets and the resulting shifts in income on a population basis is illustrated in the graphic below.¹² As this shows, incomes deteriorated significantly throughout the population, with incomes of roughly 7

¹² Income quintiles here refer to quintiles in normal, non shock or Pre El Niño times. This graphic shows the income quintiles pre El Niño, with the different colors in each illustrating the percentage of that quintile that ended up in a lower-income quintile as a result of El Niño-related income losses.

percent of the population deteriorating from the better off quintiles (middle, fourth and richest) pre-El Niño to income levels found in the bottom two quintiles.

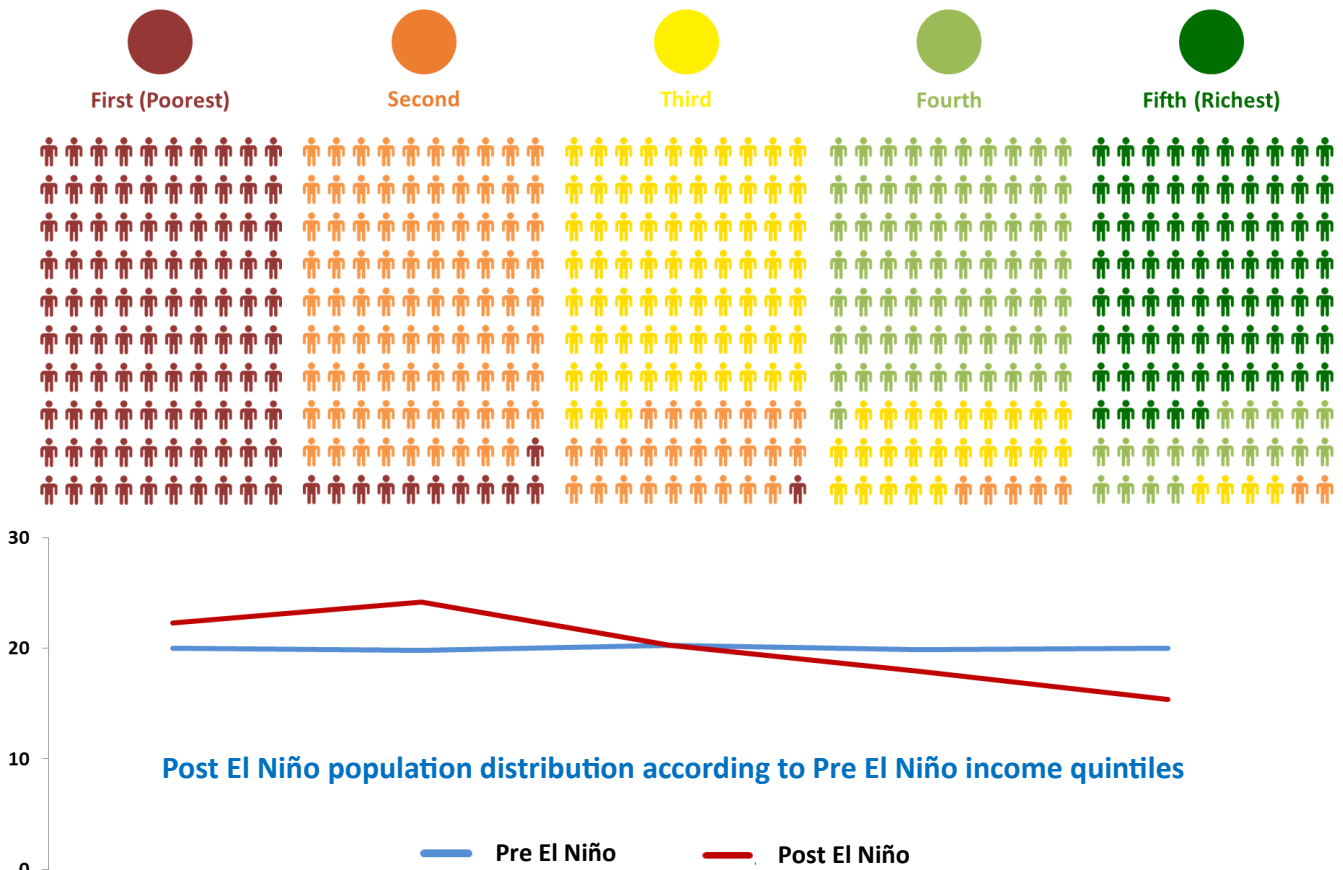
In the middle income quintile, for instance, 26 percent of households were reduced to income levels found in the second quintile prior to El Niño, while one percent of households deteriorated to levels of the lowest quintile. Likewise in the fourth quintile, 24 percent saw their incomes reduced to levels of the third income quintile while 5 percent deteriorated to levels of the second quintile. Even amongst the richest quintile, there was considerable fluidity. Approximately 19 percent of households saw their incomes reduced to levels of the fourth quintile while 4 and 2 percent deteriorated to income levels found in the third and second quintiles respectively.

While the number of indebted households increased throughout the population, the biggest increase was observed in the middle and upper income quintiles. Within this cohort, increases were particularly acute amongst households whose incomes deteriorated to such an extent that they fell into lower income quintiles as a result of El Niño, where the percentage of indebted households increased to 54 percent. Amongst these households, those that fell one income quintile saw a 20 percentage point increase (up from 33 percent), while households that fell two or more income quintiles saw a 36 percentage point increase (up from 19 percent).

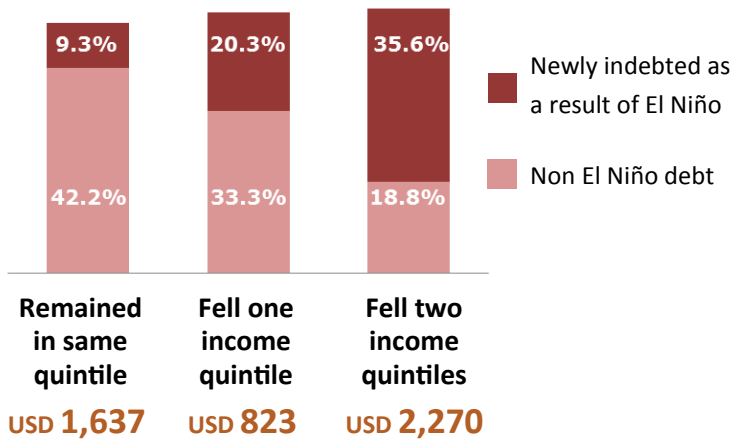
When considered in relation to the impacts of income loss on food security, these findings demonstrate the magnitude of El Niño’s impact. Incomes declined,

Income quintiles pre and post El Niño

As a result of El Niño, a significant percentage of households in upper income quintiles in normal times (pre-El Niño), saw their incomes reduced to levels equivalent to the lower income quintiles



Indebtedness of households that shifted into lower income quintiles as a result of El Niño



with usually better off households earning significantly less than they are accustomed to, which likely led to an increase in the numbers of poor or near poor. These households took out additional loans in attempt to mitigate losses, but food security suffered significantly nonetheless. What is not clear at this time (and what will be clarified in the coming surveys) is whether this is only a temporary loss that households will quickly recover from or whether income losses and increased debt burdens will continue to impact households in the near and

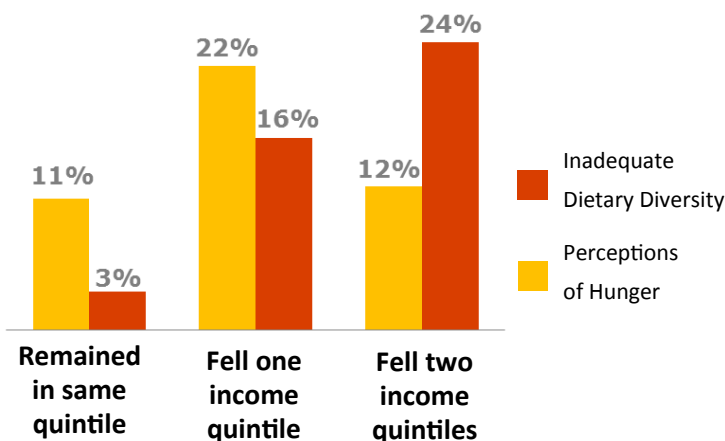
medium term. The duration of these livelihood disruptions will determine how poverty and food insecurity are to be affected longer term.

Impact on Poor Should Not be Overlooked

While emphasizing the losses experienced by households with productive assets, it is important to also point out that poor households suffered significantly as well. An average of 16 percent of income was lost by households in the poorest quintile and IDPoor households reported an 19 percent reduction in income. IDPoor households with access to land also suffered significant paddy and cassava losses, with household production declining by at least 28 and 21 percent respectively. Livestock were also significantly affected, with 10 percent of pigs and 28 percent chickens dying between January and May 2016.¹³

Notably, households in the poorest income quintile also had an extensive debt burden. Overall, 41 percent of households reported some level of debt, with households borrowing an additional USD 1,285 on average because of El Niño. This is in addition to other debts, totaling USD 2,065, for reasons unrelated to El Niño. Ability to pay back these debts may be an key issue for these households moving forward.

Food security status of households that shifted into lower income quintiles as a result of El Niño



¹³ The percent of livestock lost as a result of El Niño is not exactly clear, as it was not possible to assess what percentage of the reported mortality is actually baseline mortality (i.e. would have died regardless of El Niño).



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