Overview of El Niño in Papua New Guinea (PNG)

El Niño affects the weather in large parts of the world, depending strongly on location and season. The strongest effects on lowering precipitation are in South-East Asia and the western Pacific Ocean, especially in the dry season (August-November) where severe droughts can prevail (OCHA, 2015).

The last devastating El Niño experienced in PNG was in 1997 and 1998. At the time, it was found that virtually everyone in rural PNG was affected to some extent with an estimate of 40% of people seriously affected. Analysis from a survey in November-December 1997 found 260,000 people in a critical, life threatening situation and an additional 1.9 million consuming limited food. Water scarcity was also a problem with 5,000 people in a critical, life threatening situation with extremely limited water supplies and 363,000 people with minimal amounts of poor quality water available. This was caused by a severe reduction in crop yields due to below average rainfall with up to 80% in many areas.

The 2015 El Niño is projected to be worse, or of a similar scale to that of 1997-98 with latest estimates estimating 3 million people will be affected in PNG. As a result of these projections, CARE began monitoring the potential impacts of El Niño in its areas of operation in Eastern Highlands Province, Morobe, Chimbu and the Autonomous Region of Bougainville in May 2015, tracking indicators such as rainfall, river levels, food crop yields, social indicators and market trends in discussions and cooperation with government and other key stakeholders.

PNG has been experiencing erratic weather patterns since May 2015, including hail and frost in some regions. Much of the rest of the country has been experiencing a significant reduction in rainfall and unusually hot weather, with the highlands particularly affected.

In August 2015, the PNG National Weather Office reported that El Niño had peaked earlier than predicted and that this reduced rainfall could be expected to continue until at least February or March 2016.

CARE PNG El Niño monitoring of drought indicators

CARE has been monitoring a series of indicators: rainfall, water (river levels in rural areas, town water supplies in urban areas), food crops yields (taro, cassava, banana, kaukau), health incidences (diarrhoeal diseases, typhoid), social indicators (increase in theft), electricity (power outages in urban areas), food prices and market trends; and August and September monitoring reports were based on these. The October monitoring is slightly different as it aims to be more reflective of the changing situation in CARE programming areas on mainland PNG, since the September assessments and monitoring. This monitoring report is based on information gathered from staff, community, partner, and government assessments in Menyamya, Obura Wonenara, and Gumine districts.

Changes in monitored areas since September

In late September and early October, CARE conducted rapid assessments and WASH kits distribution in 8 localities across Obura Wonenara, Menyamya, and Gumine districts. This was followed at the end of October by CARE conducting health patrols in the Andakombe and Simogu areas of Yelia LLG, Obura Wonenara district under its existing health program with the assistance of a local partner – Barola Haus Mama and provincial health staff. Health activities included providing 466 vaccinations to children and women
of childbearing age, provision of clinical care to 51 community members, and refresher trainings for 48 village health volunteers (VHV) on drought-related health issues. In Andakombi, VHV-led health promotion activities, focusing on drought awareness and hygiene promotion, reached a total of 584 community members. It was found that medical stocks were low at health centre’s, in particular antibiotics, which limited the clinical treatment could be provided. In addition, a Mid Upper-Arm circumference (MUAC) nutritional assessment was conducted for 169 children aged between 6-59 months. In Simogu, there were 12 cases of moderate malnutrition, but there were no cases of malnutrition in Andakombi. A total of 777 15 litre collapsible jerry cans and accompanying aqua-tabs were directly distributed in Simogu and the remainder were left with community leaders and VHVs to distribute to those who were not able to pick up their WASH Kits. Prior to distribution, all beneficiaries received information on the correct usage of aquatabs, basic hygiene promotion as well as drought-resilience/agricultural messages. In total, 1, 495 households were reached and covered a total beneficiary population of 6, 625 people, including 224 pregnant women and new mothers, and 44 people with disabilities. In Tamoi-Menyamya, households that received WASH relief packs distributed by CARE in early October have reported they have increased water storage capacity and reduced cases of diarrheal diseases.

In September, across CARE monitored sites in Eastern Highlands, Morobe and Chimbu provinces, many places fell under category 3 with food supplies reported to last for less than a month. As of end of October, early November, the situation in grassland sites has deteriorated. Instead of improvement of the situation, the rains have actually caused rotting of food that remained in the ground after the extended dry period. Greens are doing well in mountainous and heavily forested areas, but food will still take another 6 to 9 months to mature. The tables below presents CARE monitoring information and information collected in early November from a stakeholder meeting held in Mt Hagen.
### Menyamya District, Morobe Province

<table>
<thead>
<tr>
<th>Location Affected/ Monitored (Cluster/ Census Division, LLG, District)</th>
<th>Details of Impact</th>
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</table>
| **Wapi LLG**  
Ward 5, Tamoi  
Ward 8, Longli  
Ward 9, Ilbali  
**Kome LLG**  
Ward 1, Menyamya Station  
Ward 12, Hakwange  
**Langermar, Kapao LLG** | • In September, there has been little rainfall. Some light rains fell towards the end of September and the beginning of October. The first rains evaporated very quickly from the ground as the soil was very dry and only grass responded. Rains have stopped since June/July and not looking very likely to return  
• Vegetation especially grass not looking good and food crops not doing as well.  
• Food gardens with mostly cassava, potatoes are still ok at this stage, however, families have started to abandon their vegetable gardens because it is becoming difficult to get water for their gardens.  
• The main rivers are turbid due to high levels of sediment washed into the rivers from large areas of exposed soil; from continuous heavy recent heavy rains  
• Drinking water sources are still dry  
• The ground is still hard.  
• Food crops are still stunted  
• Greens recovering slowly and consumption is still very minimal.  
• Sweet potato is the staple food but it is difficult to find sweet potato vines for planting, as most have died during the drought.  
• People are trying to plant new gardens but obtaining cuttings from those who have them is difficult as they will be charged a fee for them,  
• Elementary Schools are still closed  
• Primary school are open, only for half a day  
• A few men and youths have moved to Lae to look for paid jobs. Women and children are struggling to look for food, water and other resources to sustain themselves  
• Female headed household are assisted by other family members as well as other women heads of households.  
• There is a breakdown in social cohesion in some communities. Due to shortage of food, water and firewood, people do not want to share their resources with others. | • The situation remains largely unchanged since the September monitoring. Despite heavy rains towards the last week of October and the first week of November, the humanitarian condition still remains challenging for the majority of the population. | • Most of the work (water carrying and collecting firewood) is still completed by the women but a few men are increasingly helping their wives  
• Children are also helping their mothers, to collect water and firewood  
• There is reported increased domestic violence among men married to more than one woman over the usage of scarce resources.  
• Increased stress levels is causing a few men with money to spend it on alcohol and gambling.  
• The most affected are the elderly, lactating women and people with special needs. |
| | • High levels of sediment are making rivers are constantly turbid after heavy rains.  
• Streams used for collecting drinking water are flowing in small quantities  
• Children are still attending schools  
• No men or youth have left villages to look for food / jobs in either Lae or neighbouring villages  
• Female headed households are assisted by other family members  
• There is strong community cohesion as it’s been raining a lot and there is enough food to share | • The situation has improved since the end of October and beginning of November rains.  
• Greens and food are growing back  
• The ground is becoming softer and easy to plough  
• Water for drinking is flowing in small quantities. | • The elderly and disabled people continue to be the most affected  
• Gender roles have not changed much. Women are still doing most of the work. |
Obura Wonenara District, Eastern Highlands Province

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| Lamari LLG | • All creeks have dried up  
• Little food is left and meal sizes have decreased  
• People are moving to higher altitudes to make gardens  
• Primary schools are having half day classes  
• Water borne diseases have increased from consumption of contaminated water  
• People/families are moving to higher altitudes where there is moisture to make gardens | • The food insecurity situation is deteriorating compared to September as the rains have caused remaining sweet potato in the ground to rot. | • As water nearby water and food sources diminish, men are having to do most of the work of finding water and food for the family while women and girls remain closer to home for safety and security concerns |
| Tairora Gadsup LLG | • Shortage of garden food  
• Children are going hungry for long periods and are not attending classes  
• Increase in water borne diseases from consumption of contaminated water  
• Law and order problems (especially theft) have increased as people are trying to obtain money to buy food  
• Settlers at Kassam Top have been refused access to flowing streams and springs by landlords  
• Schools are open only half a day | • The situation has not improved since September | • Children are going hungry for long periods due to shortage of food and are not attending school.  
• Domestic violence is reported to be increasing as rise as stress levels increase for household heads and their spouses |
| Yelia LLG | • People are moving further down to the Lamari river to find fish  
• Primary schools are open only half a day  
• Increase in water borne diseases in Simogu  
• Food shortage (In Simogu families have 1-2 months of forest-based food supply but those with larger families are already finding it hard to feed their family members.) | • In CARE assessed sites, the situation has largely remained the same since the September assessments  
• The food insecurity situation is deteriorating since September as the rains have caused remaining sweet potato in the ground to rot. | • Women are still doing most of the water collection work while men forage for food |
### Gumine District, Chimbu Province

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| Gumine and Kumai Bomai LLGs | • People are still experiencing food and water security issues.  
  • Diarrheal diseases have decreased as many people collect and consume rain water | • Not much reported change since September. The only difference is that heavy rains have fallen and gardens are being re-planted.  
  • However, people have exhausted their cash reserves and are more stressed about how to provide food for their families | • Men are still making trips out of the district into Mt Hagen and Goroka to buy food for re-selling in the villages. |
### Reports from other Humanitarian Stakeholders in the Upper Highlands Region

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| Western Highlands Province Dei, Baiyer, Hagen Central Tambul | Assessments conducted by the Baptist Union of PNG in Dei, Baiyer, and Hagen Central found that there is markedly increased food insecurity and diarrheal diseases. There is a need for hygiene promotion training or awareness to be delivered to the people; however access to sufficient food is currently their main priority. Red Cross also completed a 2 week long assessment in 18 of the most affected in the Lower Kagul LLG of Tambul, Category 5, as supported by IFRC Disaster Response Emergency Fund. Main findings included:  
- Food is primary a concern for assessed families, who were eating kaukau that was left in the ground from the frost.  
- Springs have dried up, and affected families are carrying water from the main unprotected river. The majority are using 15 - 20 L cooking oil containers to carry water.  
- Access to safe water is a secondary need for most families, as primary need is food. As such, a response focusing on WASH alone is not likely to be accepted by the affected families. It is recommended that any assistance with nutrition is complemented by a WASH response, focusing on safe water handling and treatment.  
- Frost / drought severely affected growth of cash crops, and as such families’ income.  
- Coping mechanisms include eating less kaukau, supplementing it with rice, where possible, selling pigs at a reduced rate, in order to obtain some income. | Vulnerable members of community, including breast feeding mothers, children, elderly people living with disabilities are the most affected by shortage of food and lack of access to safe water. |
| Hela and Southern Provinces | The United Church of PNG conducted a 14 day assessment in September in Hela and Southern Highlands provinces. Monitoring continues and an active network exists.  
10 Health facilities in Hela region are experiencing very high patient attendance right now. Antenatal mothers are anaemic and feeling weak. Diarrheal diseases are very high. Pneumonia, typhoid fever, and malnutrition also very high. There is a fear that more children will die. Children have been admitted with repeated episodes of the same problem/infections.  
Church members are working together and supporting each other to pull-through this period. Some people, especially the elderly are choosing to remain in their villages during tribal conflicts and face risk to their personal safety by other warring tribes because they feel they’ve lost hope of all survival. Building materials are needed to support people who lost their homes to drought related bush fires. Pigs are being slaughtered and cooked using the traditional mumu (earthen oven) but the meat is not cooked well because of the shortage in leaves needed for trapping heat. UCPNG has also supported 157 pastors with rice so that they remain in the communities and provide support to other affected people.  
As people try to cope, there have been increased armed hold-ups. Bags of rice were stolen from the teacher’s college by armed men saying students shouldn’t be fed when the rest of the population is going hungry. In Ialibu, many houses burnt down as a result of bush fires. Ialibu – 26 homes burnt down. Frost also affected Ialibu badly. ICRC works in conflict areas in the Southern Highlands and Hela provinces and also conducted their own assessments. In their programming areas, the El Nino impact level is at category 3 but tribal fighting insecurities make them very vulnerable and thus increase level of impact. Communities are food stressed as they try to recover from consequences of tribal fights. Assessments found that families cannot take care of themselves as prices of food crops had also increased. 5 areas were looked at:  
1. Access to water,  
2. Access to food including foraging for livestock ,  
3. Buying power of households,  
4. Access to health,  
5. Access to education. Water containers are in need. People using bamboos to collect water which shows peoples’ resilience is high. Assessments were focussed on public facilities. Public facilities are not fully operational. If they are not functioning, there is more stress on the people. Pigs sold for K2000 now sold for K800 representing over 100% loss in income. Households are selling livestock just to buy food. If drought persists, challenge will be immigration. So many tribal tensions and hostilities don’t give much economic space for immigration or manoeuvre.  | Husbands are reportedly leaving their families in search of food from wantoks in town making the women and children more vulnerable when left alone. Some fathers are loaning their daughters to older rich men saying they can keep them in exchange for rice and when the hungry time is over, this exchange will end and the daughters returned. Young men have also been moving in masses into Mendi town and participating in the informal sector – street vending. Increased street vending have since resulted in social chaos as vendors compete for buyers and the Police try to exercise some control of these activities. Vulnerability is exacerbated for people in tribal conflict areas. Because it’s considered safer, these inter-tribal groups are confined in the areas they are from and cannot do much about helping themselves in water and food stressed environments. |
### Overall assessment

The situation continues to deteriorate in areas covered by CARE PNG’s September drought monitoring. Despite heavy rains towards the last week of October and the first week of November, the humanitarian condition still remains dire for the majority of the population. The high proportion of highlands people who grow their own food (some 85%) increases the vulnerability to food insecurity across the region due to the low yields from the gardens CARE and partner staff are observing. Since crop yields are so low, and further food stores have rotted with some rains, there are no food surpluses to sell. As a result, households purchasing parity for food or other essentials remains low. Households continue to use a variety of coping mechanisms as a result of the food shortages, such as limiting the number of meals per day and eating “famine” or “bush” food. Access to water supply is slightly improving with the recent rains but the downside has been that remaining food stocks in the ground have rotted. The soil has softened in some places but in areas where it got very hard and dry, the water hasn’t been able to permeate the soil enough to make the land plough-able and conducive for growing food. In places where people are able to plant, it won’t be until 6 to 9 months later when they will be able to consume the crops. With the effects of El Nino expected to continue into 2016, the food security situation is likely to remain difficult, over the coming months.

### CARE PNG

CARE has been working in Papua New Guinea for 26 years (1989–2015) helping remote communities in Emergency Response, WASH, Governance, Sexual, Reproductive and Maternal Health and Women’s Economic Empowerment. Women’s empowerment and gender equality are at the centre of the organisation’s programming and operations. CARE has over 110 international and national staff with management and technical expertise working primarily in four provinces (Eastern Highlands Province, Autonomous Region of Bougainville, Chimbu and Morobe) across the country. CARE PNG’s headquarters is in Goroka, EHP, where approximately 75 staff are based, and CARE also has an office in Buka, ARB with approximately 35 attached staff. There are two project offices, one in Arawa, ARB and one in Menyamya District, Morobe Province.

<table>
<thead>
<tr>
<th>Province</th>
<th>Description</th>
<th>Many families lost their homes and possessions to bush fires and have been left in a worse situation as a result.</th>
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<tbody>
<tr>
<td>Kandep, Lagaip,</td>
<td>UCPNG also conducted assessments in Enga with sites covered including Levani valley, Tengo valley, Panduaga valley, and Kandep valley. 12 houses were also burnt down in another area. In the place where 12 houses were burnt down, only 3 houses now remain and these have been turned into a Care Centre through community consensus to accommodate the homeless people. Children have been fainting in classrooms in Panduaga and Awabia Primary schools. The church organised half a tonne of rice on credit from a supplier in Tari town to feed grade 8 students a good meal a day for four weeks (20 school days) so they could remain in school till end of national examination week. These meals were organised because children were eating plain cabbages – which continue to grow well, and going to school. The rice was rationed well and finished on Friday 7th November. Rice has also been delivered to Panduaga health centre for inpatients.</td>
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<td>Enga Province</td>
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<td>Telefomin, Sandaun</td>
<td>Assessments in Telefomin found that hard hit areas are the very remote and inaccessible places with the greatest need being for food. BUPNG who conducted the assessments is targeting 40,000 people and working through the local MP and district administration to coordinate relief efforts.</td>
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ABOUT CARE
CARE works with poor communities in developing countries to end extreme poverty and injustice.

Our long-term aid programs provide food, clean water, basic healthcare and education and create opportunities for people to build a better future for themselves.

We also deliver emergency aid to survivors of natural disasters and conflict, and help people rebuild their lives.

We have 70 years’ experience in successfully fighting poverty, and last year we helped change the lives of 72 million people around the world.