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WFP

Papua New Guinea

Food Security & Livelihoods Monitoring System

Earthquake Emergency Assessment Report | April 2018



United Nations
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Produced by WFP in support of National Disaster Centre and the United Nations

Contacts and Information

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Papua New Guinea Earthquake Emergency Assessment Report

KEY MESSAGES



Following a 7.5 magnitude earthquake that struck the Highlands region on 26 February, the PNG Food Security and Livelihoods Monitoring System was used to conduct an emergency assessment in affected areas of 31 LLGs in Hela, Southern Highlands, Western and Enga Provinces. A total of 1,534 households were interviewed by mobile phone.



The survey found 14% of respondents had been displaced.



Of the 31 LLGs surveyed, 9 were estimated to have highly impacted food security with households experiencing high or extreme food shortages, and many or most households in these areas suffering from hunger and/or surviving on famine foods (such as wild yams, tree leaves and banana roots). Many food gardens throughout the affected areas were reportedly destroyed removing the main source of livelihood and food supply for the majority of people living in the area. Ongoing stress on food security will continue until gardens are revived. Recovery efforts should prioritize re-establishment of food gardens in order to minimize potentially detrimental effects on food security.



Water supplies have been disrupted by landslides and alterations to river courses. The earthquake has yielded a significant shortage across all surveyed LLGs. Nearly half of all surveyed respondents reported facing extreme shortage (38%) or having no water supply (10%). Deficiency of clean water supply is linked to the spike in incidence of child illness, particularly diarrhea, which is compounded by lack of adequate sanitation.



One fifth of the respondents reported having received assistance for their household or community. For those where assistance had reached, most reported food and/or water delivery. Very little in the way of infant supplies, hygiene packs or support services was reported. Nearly all respondents also reported lack of functional infrastructure including road access, electricity and health facilities.

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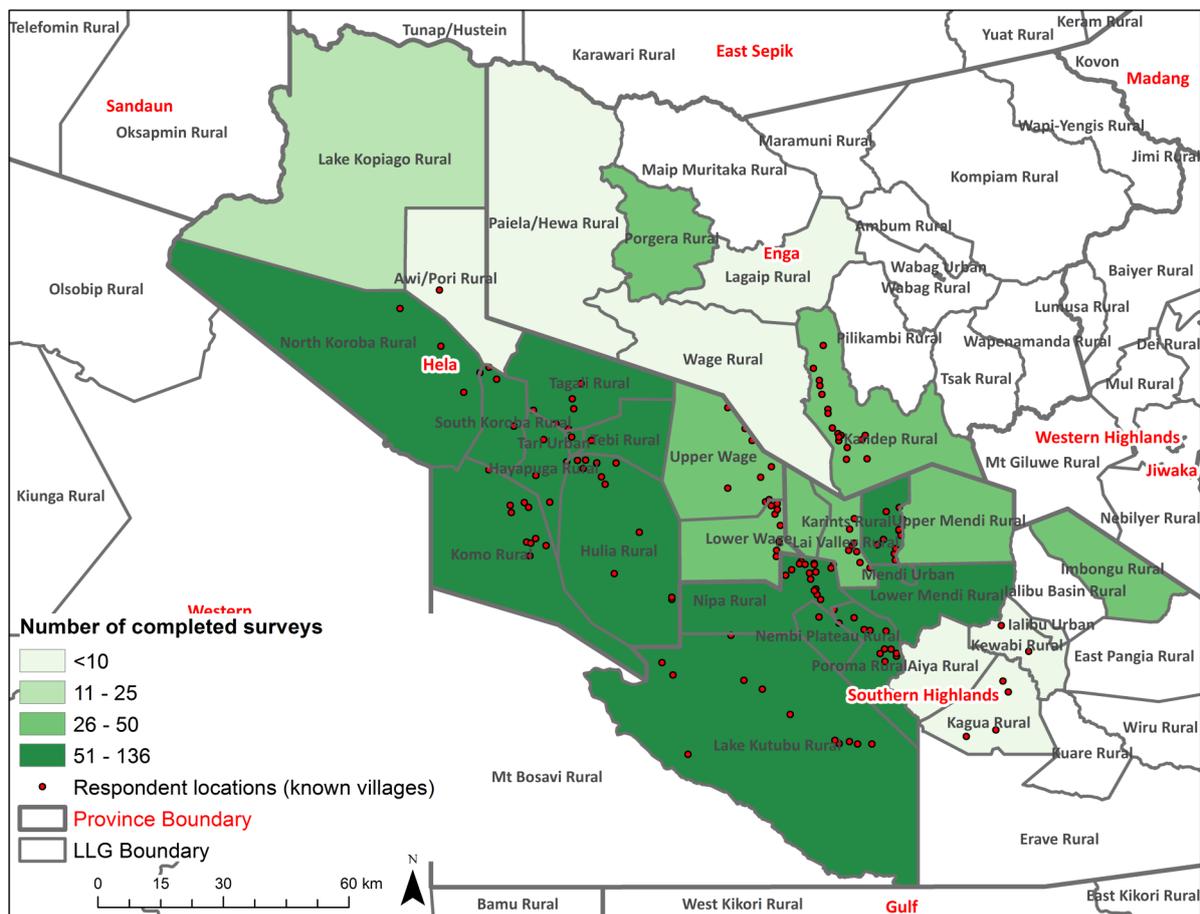
METHODOLOGY

Following a 7.5 magnitude earthquake that struck the Highlands region on 26 February, the PNG Food Security and Livelihoods Monitoring System was used to conduct an emergency assessment of affected areas in Hela, Southern Highlands, Western and Enga Provinces.

The aim of the survey was to understand the impact of the earthquake on affected communities, as such most of the survey questionnaire (Annex I) asked respondents to report at community—rather than household level. Findings may be useful for recovery programmes and policy planning.

Digicel operators interviewed a total of 1,534 households across 31 earthquake-affected LLGs (Map 1) by phone between 22 March and 12 April 2018. Surveys were conducted in the two main languages spoken in Papua New Guinea: Tok Pisin and English.

Map 1. Geographic distribution of calls by survey



The sampling methodology targeted households in LLGs affected by the earthquake where a State of Emergency was declared; respondents were randomly selected from Digicel’s database of registered mobile subscribers that had been active within the 10 days prior to the survey. An SMS message was sent to each respondent’s phone approximately 3 hours prior to each call.

Within each target LLG, the survey aimed to reach 50 households for interview. However, due to the location of Digicel’s mobile phone reception towers and the current location of the mobile phone subscribers, achieving this target was not always possible. Thus, some LLGs had far more than 50 interviews and some far fewer. Details on the number of households sampled per LLG are provided in Annex II. The maps throughout this report indicate LLGs where less than 10 respondents were reached.

As per standard survey procedures, respondents’ consent was obtained prior to the interviews. All respondents received a 2 kina airtime credit incentive after completing the survey. A total of 10 operators conducted the interviews (five female and five male).

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Households surveyed: **1,534**
(31 LLGs)



% of respondent households with
disabled member: **40%**



Gender Respondents
Female: **23%** | Male: **77%**



% of respondent households with
pregnant or breastfeeding woman: **54%**



Average size of
respondent's household: **10**



% of respondent households displaced
after earthquake: **14%**

Survey Limitations

Due to limited mobile network connectivity in some of the most remote earthquake-struck areas, it was not possible to reach all affected communities. The mobile survey was unable to collect any data from Mt. Bosavi Rural, Nomad, Ialibu Basin Rural, East Pangia Rural, Wiru Rural, Kuare Rural and Erave Rural LLGs. Furthermore, the precision of targeting was limited to the reach radius of mobile towers, which varies depending on terrain and other circumstances. As such, while village location was manually captured from respondents (see Map 1), the survey could not target specific villages and wards affected by the earthquake. For this reason, data is aggregated, analyzed and presented at the LLG level.

In general, mobile phone survey results tend to be skewed to wealthier households and those living in urban areas, as these populations are more likely to own or have access to mobile phones. In addition, women in PNG are much less likely than men to have access to a mobile phone, primarily due to cost, technical literacy, and cultural and infrastructure constraints. This may have led to bias in the sample due to the under-representation of women (23 percent of survey respondents).

Finally, due to the nature of mobile surveys, the questionnaire needed to be as short and simple as possible. As such, only a limited amount of information could be collected. Therefore, it is important to note that the results of this survey should not be seen as precise estimates, but rather a snapshot of the situation within earthquake-affected communities that can be used to complement and triangulate data from other field assessments.

In the maps included in this report, values shown indicate averages across all LLG respondents. Individual areas within LLGs may be more or less severely affected than indicated.

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FOOD SECURITY SITUATION

Food Security Impact Score

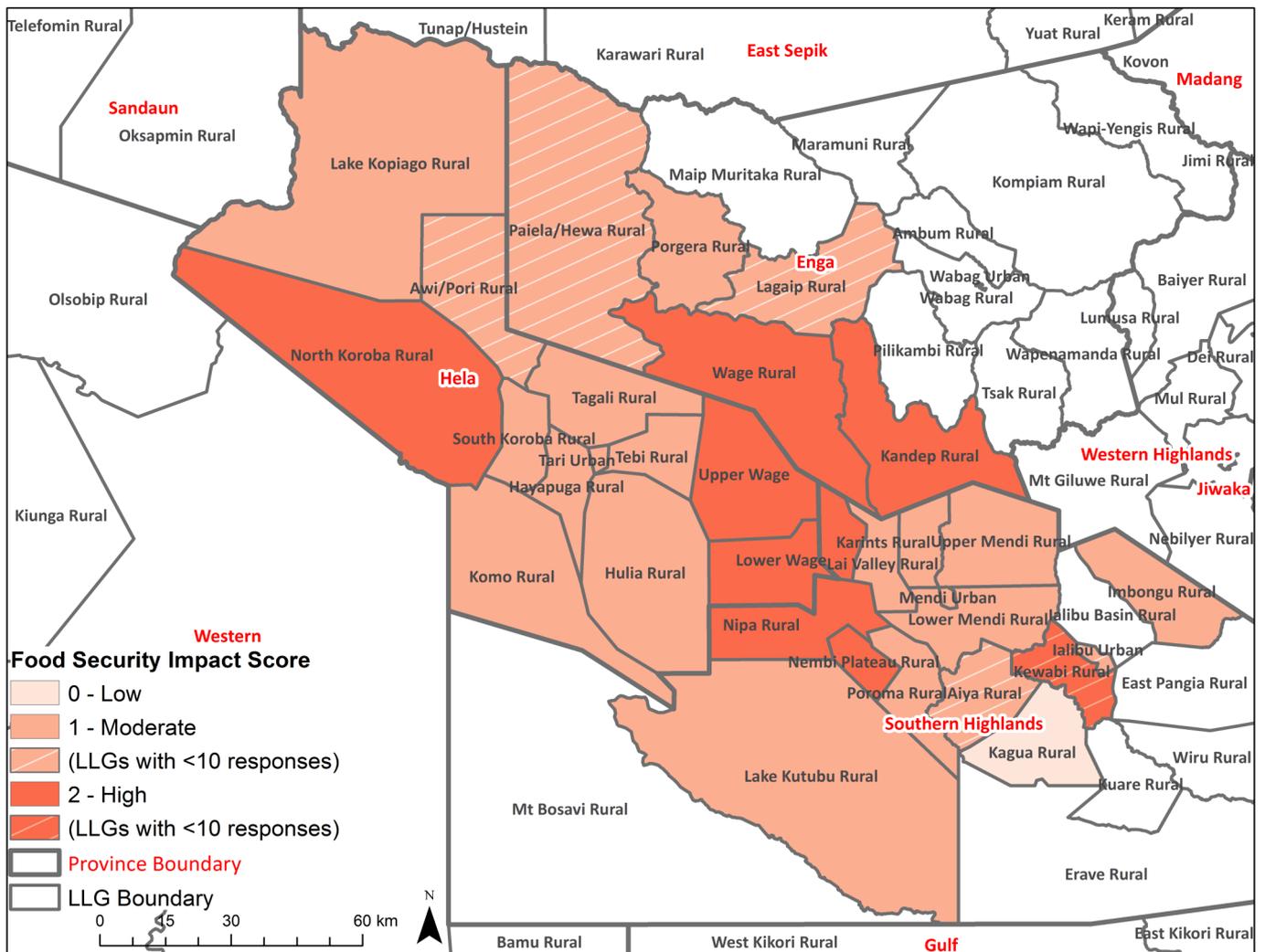
The surveyed LLGs were classified into three categories: low, moderate or high food security impact based on a composite score on the status of Food Supply, Hunger, Famine Foods, Markets and Gardens Damaged in the community. Of the 31 LLGs surveyed, nine were classified as being *highly* impacted, affected by high or extreme food shortages, with many or most households in these areas suffering from hunger and surviving on famine foods (such as wild yams, tree leaves and banana roots).

Table 1 lists all highly impacted LLGs, in which a total of 210,426 people live.

Province	LLG	Population
Enga	Wage Rural	30,664
Enga	Kandep Rural	42,438
Hela	North Koroba Rural	13,631
Hela	Upper Wage	14,950
Hela	Lower Wage	20,654
Southern Highlands	Nembi Plateau Rural	25,216
Southern Highlands	Kewabi Rural	14,300
Southern Highlands	Nipa Rural	48,573

Table 1. LLGs classified as highly impacted food security

Map 2. Community food security summary status by LLG



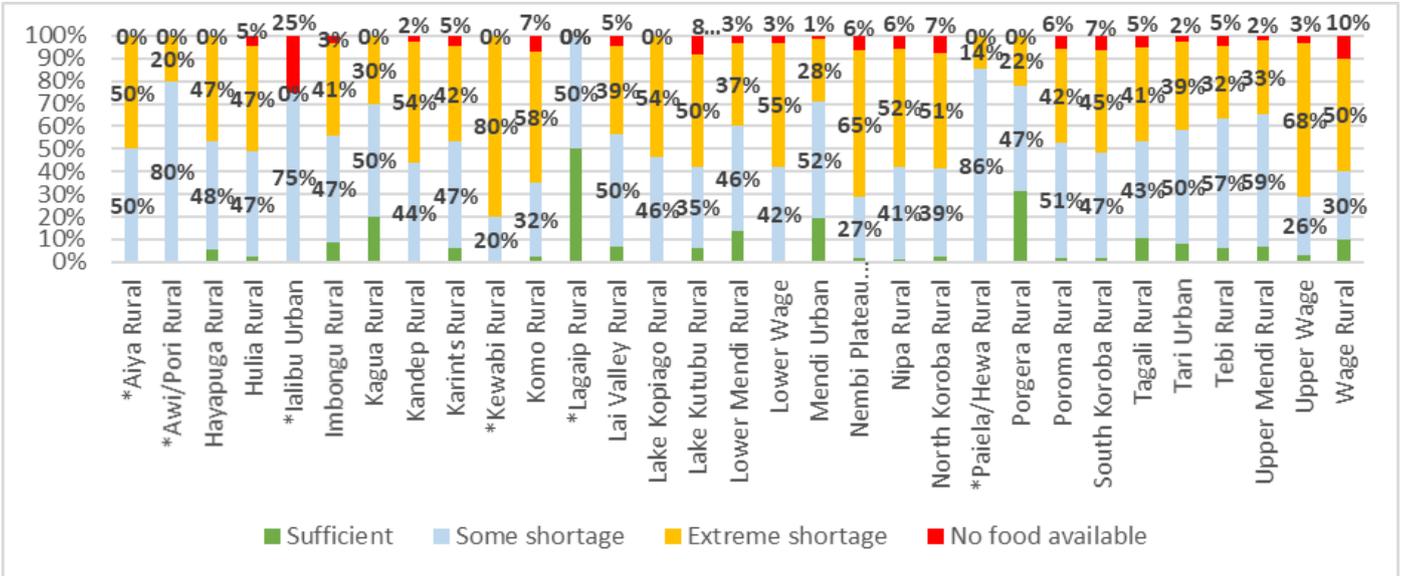
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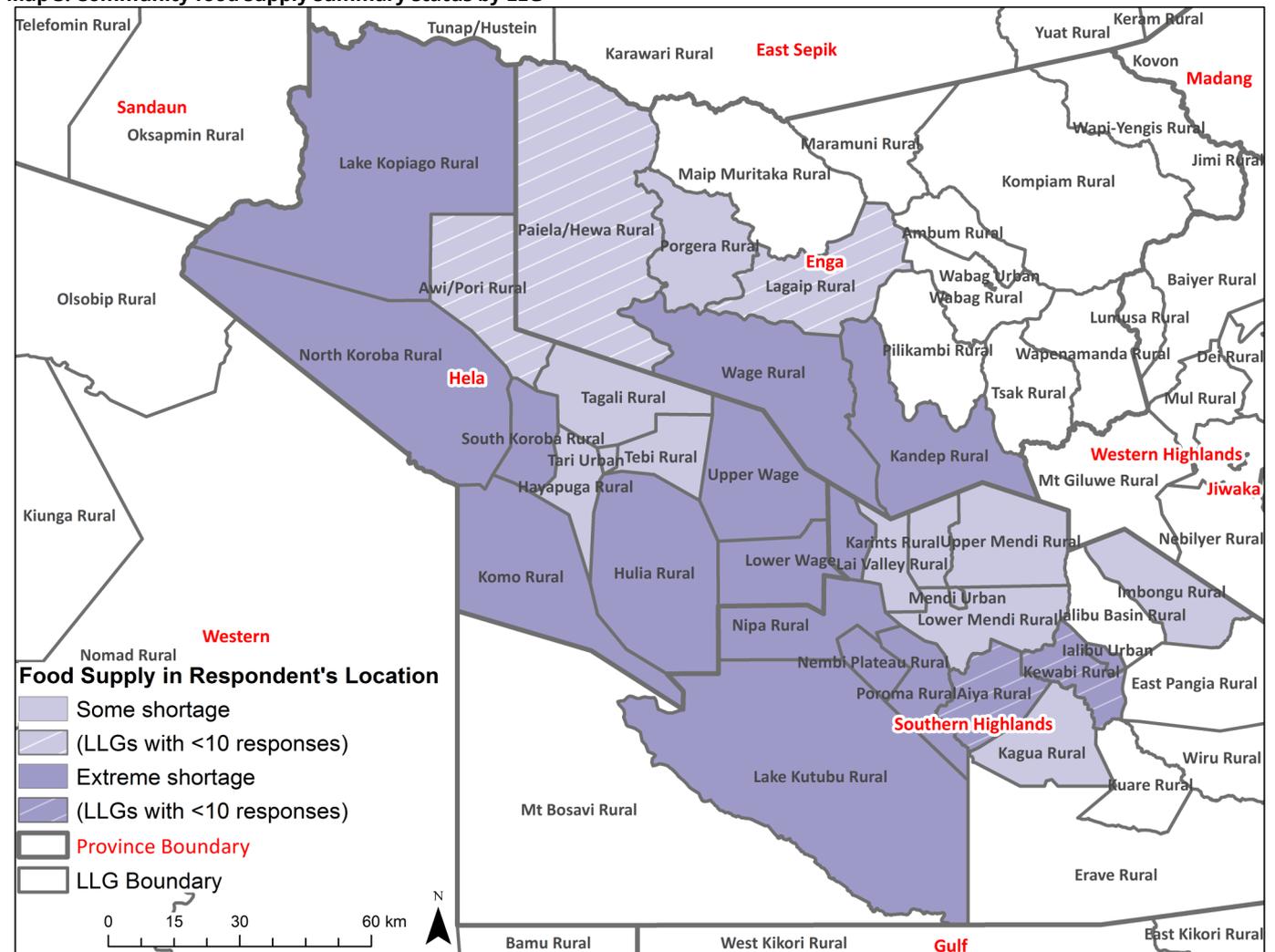
FOOD SECURITY SITUATION: FOOD SUPPLY

Some or extreme shortage of food supply was reported by the majority of respondents in all surveyed LLGs.

Figure 1. Reported level of community food supply by % respondents per LLG



Map 3. Community food supply summary status by LLG

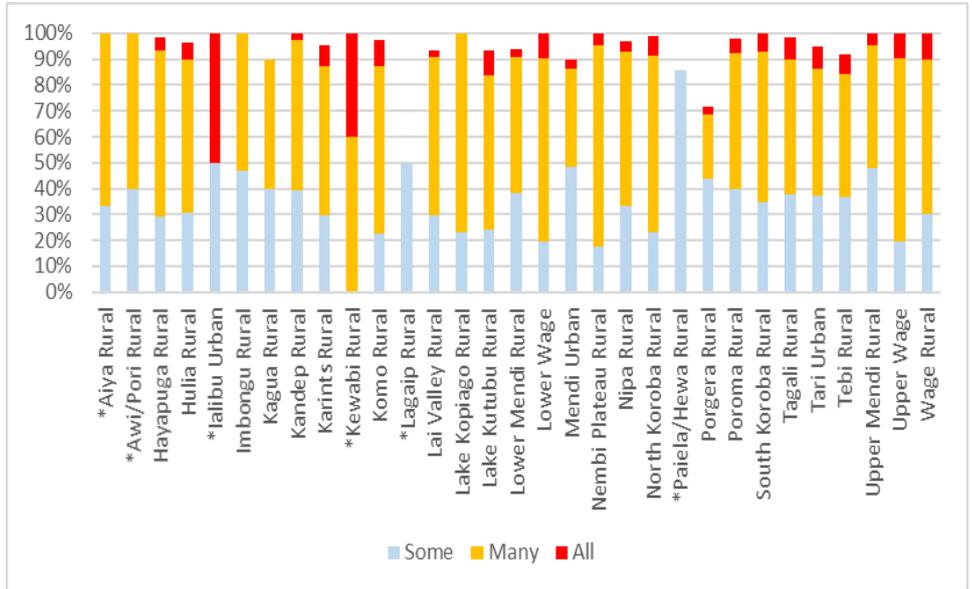


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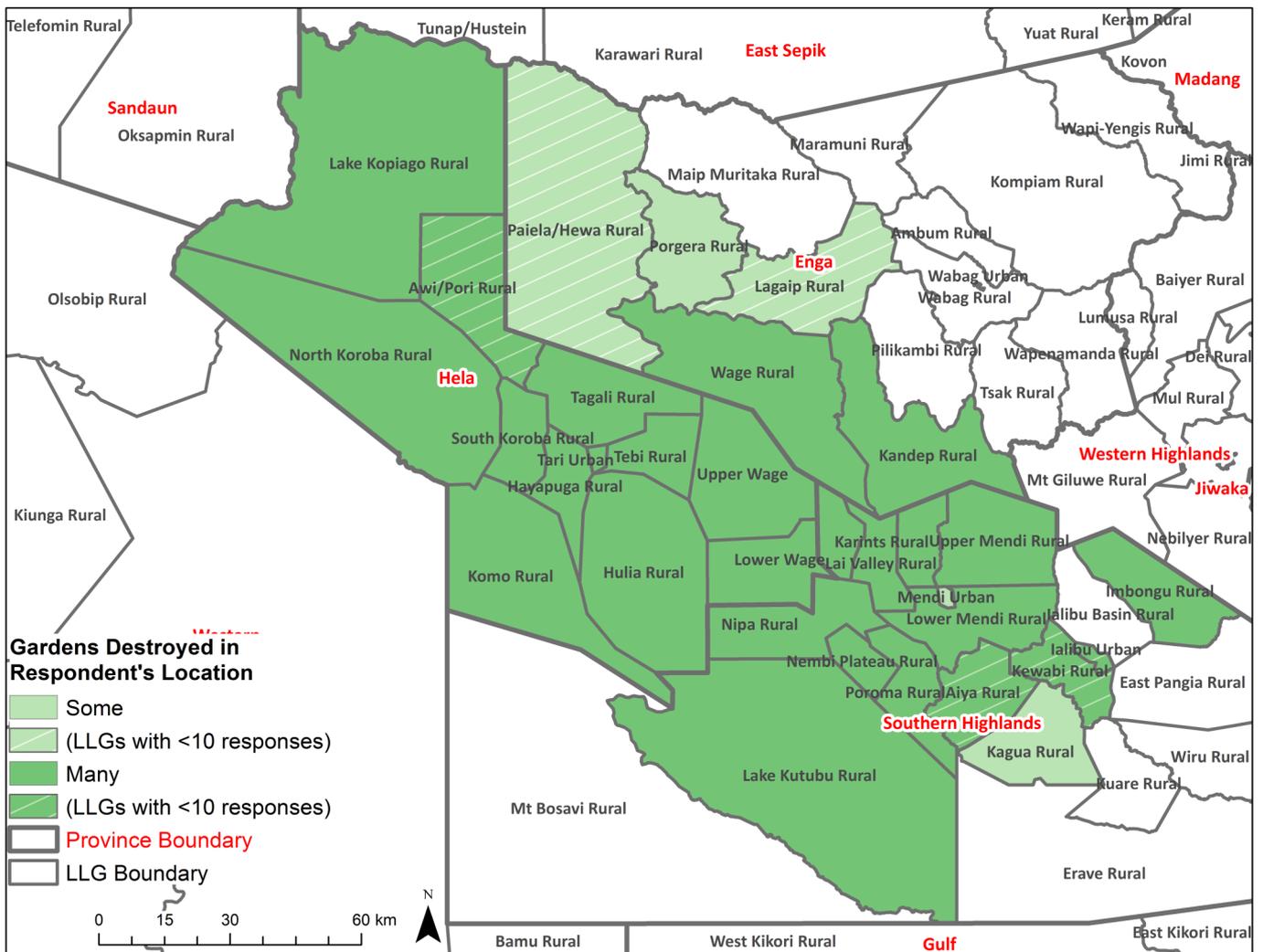
FOOD GARDENS

The earthquake and subsequent series of strong aftershocks reportedly destroyed many food gardens throughout the affected areas. Food gardens are a main source of livelihood and food supply for the majority of people living in the area. The effect of this damage will be long-felt beyond the immediate disruption to supply of staple food—mainly sago—and likely bear an enduring stress on food security until gardens are revived. Recovery efforts should prioritize re-establishment of food gardens in order to minimize potentially detrimental effects on food security.

Figure 3. Reported prevalence of food gardens fully damaged by LLG



Map 5. Summary status of food gardens fully damaged by the earthquake by LLG



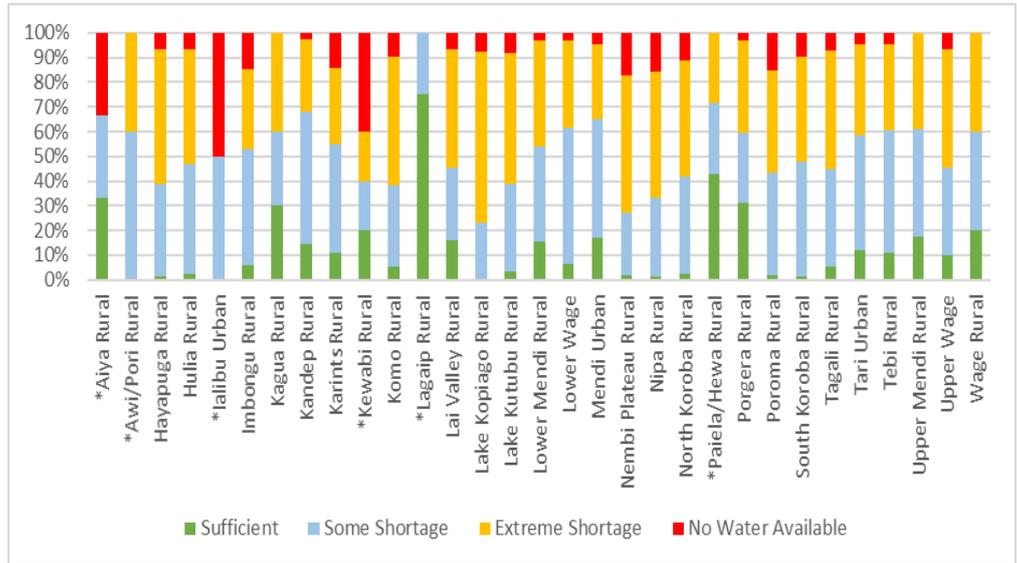
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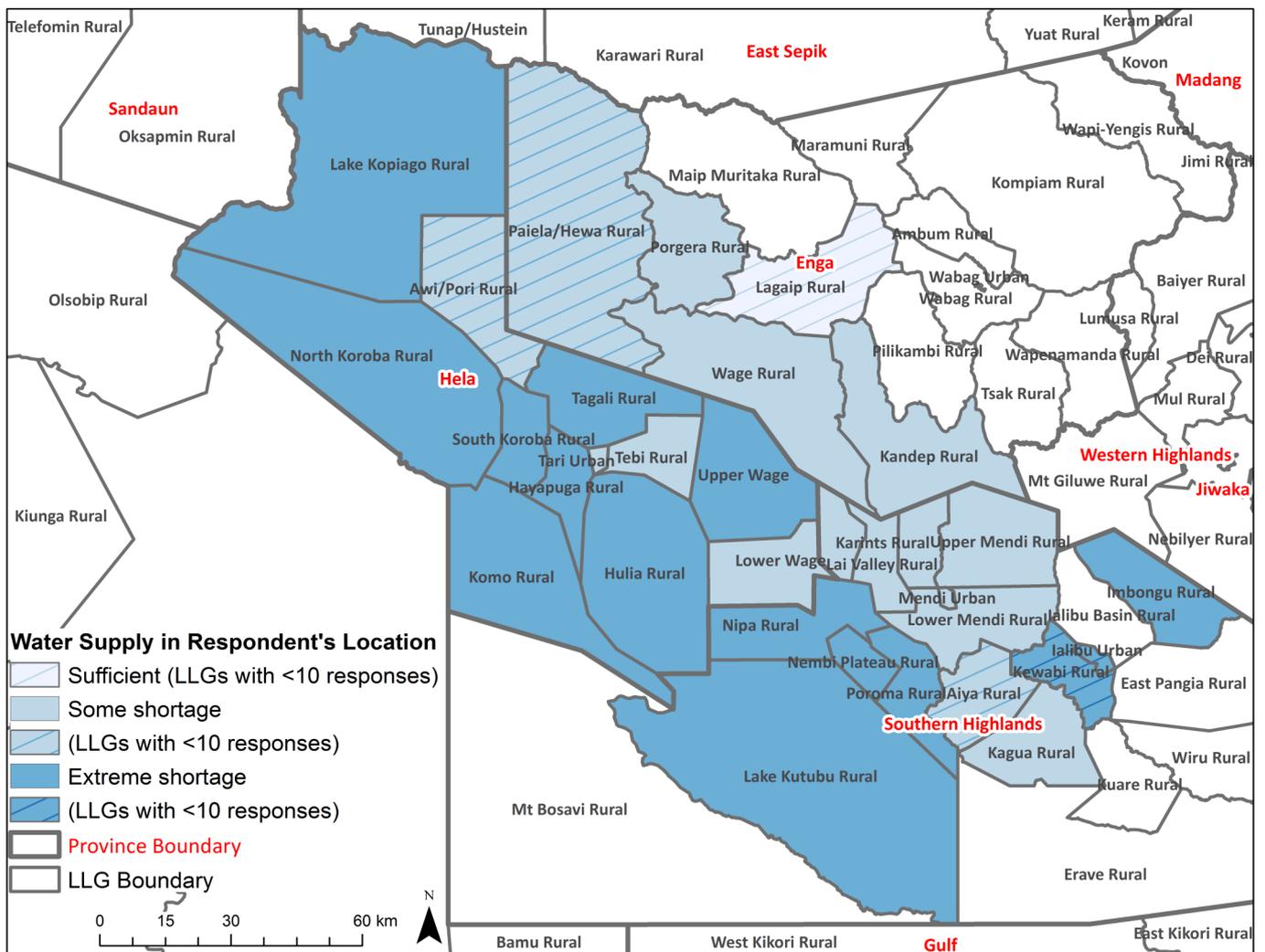
WATER ACCESS

Prior to the earthquake, supply of drinking water was sufficient within most of the surveyed areas, as reported in the last national [mobile food security surveillance survey](#). However, the earthquake has yielded a significant shortage across all surveyed LLGs. Nearly half of all surveyed respondents reported facing extreme shortage (38%) or having no water supply (10%). Deficiency of clean water supply is linked to the spike in incidence of child illness, namely diarrhoea (see Health Situation section).

Figure 4. Reported supply of drinking water by LLG



Map 6. Summary status of reported community drinking water supply by LLG



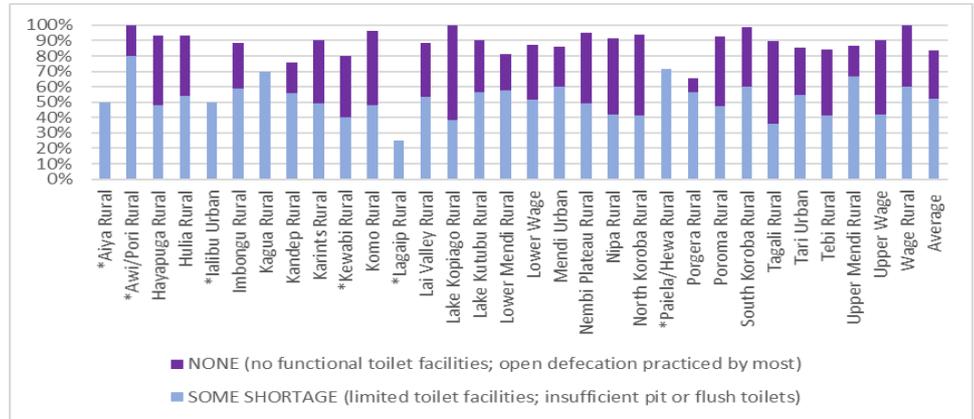
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SANITATION

All surveyed LLGs reported shortages in toilet facilities, with 31% of respondents reporting no functional toilet facilities or open defecation being practiced by most households. The worst reporting LLG was Lake Kopiago Rural where 62% of respondents indicate no functional toilet facilities. Figure 5 shows reported toilet facilities by LLG. Lack of adequate sanitation can have direct linkages to increases in illness within communities.

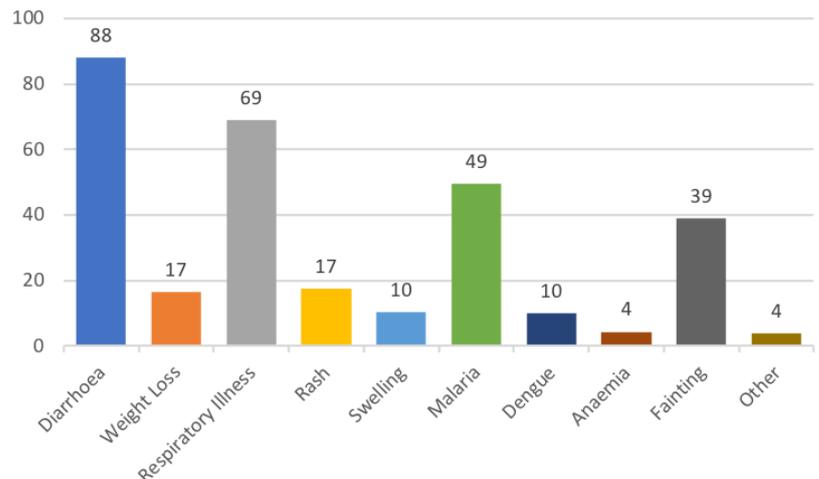
Figure 5. Availability of toilet facilities by LLG



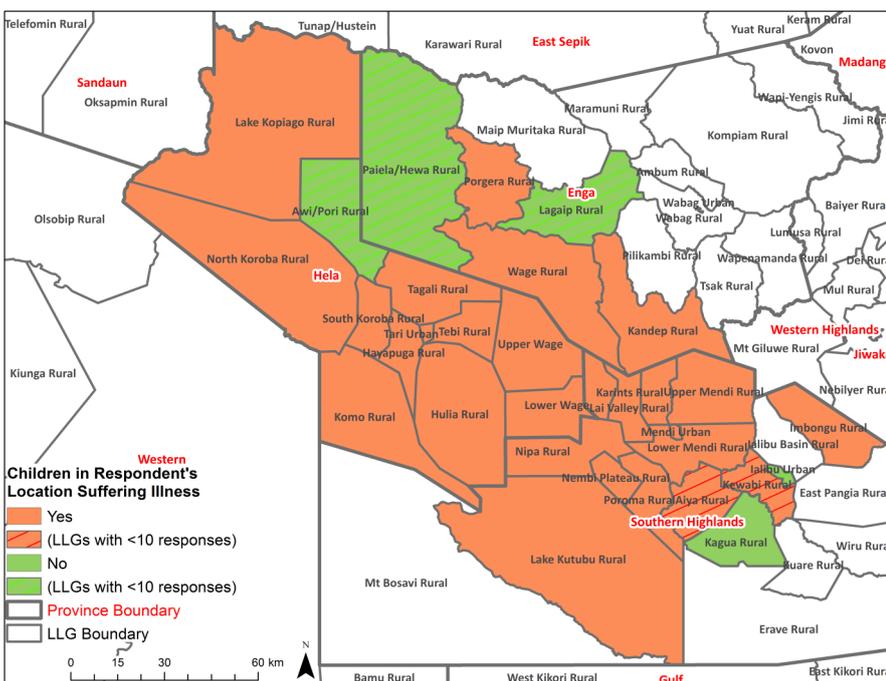
HEALTH SITUATION

Overall, 70% of respondents reported children suffering illness in their community. Only 5 LLGs reported no incidence of child illness (on average), and 4 of these were LLGs that were under-sampled. The primary reported illness was diarrhoea / dysentery / vomiting / stomach problems (88%). The high incidence of diarrhoea is likely linked to the reported lack of clean drinking water, and households consuming water from untreated or contaminated sources. Other highly reported illness types included coughing / tuberculosis / respiratory problems (69%), malaria (49%) and fainting / dizziness (39%) as shown in Figure 6.

Figure 6. % of all survey respondents reporting each type of child illness



Map 7. Reported prevalence of child illness by LLG



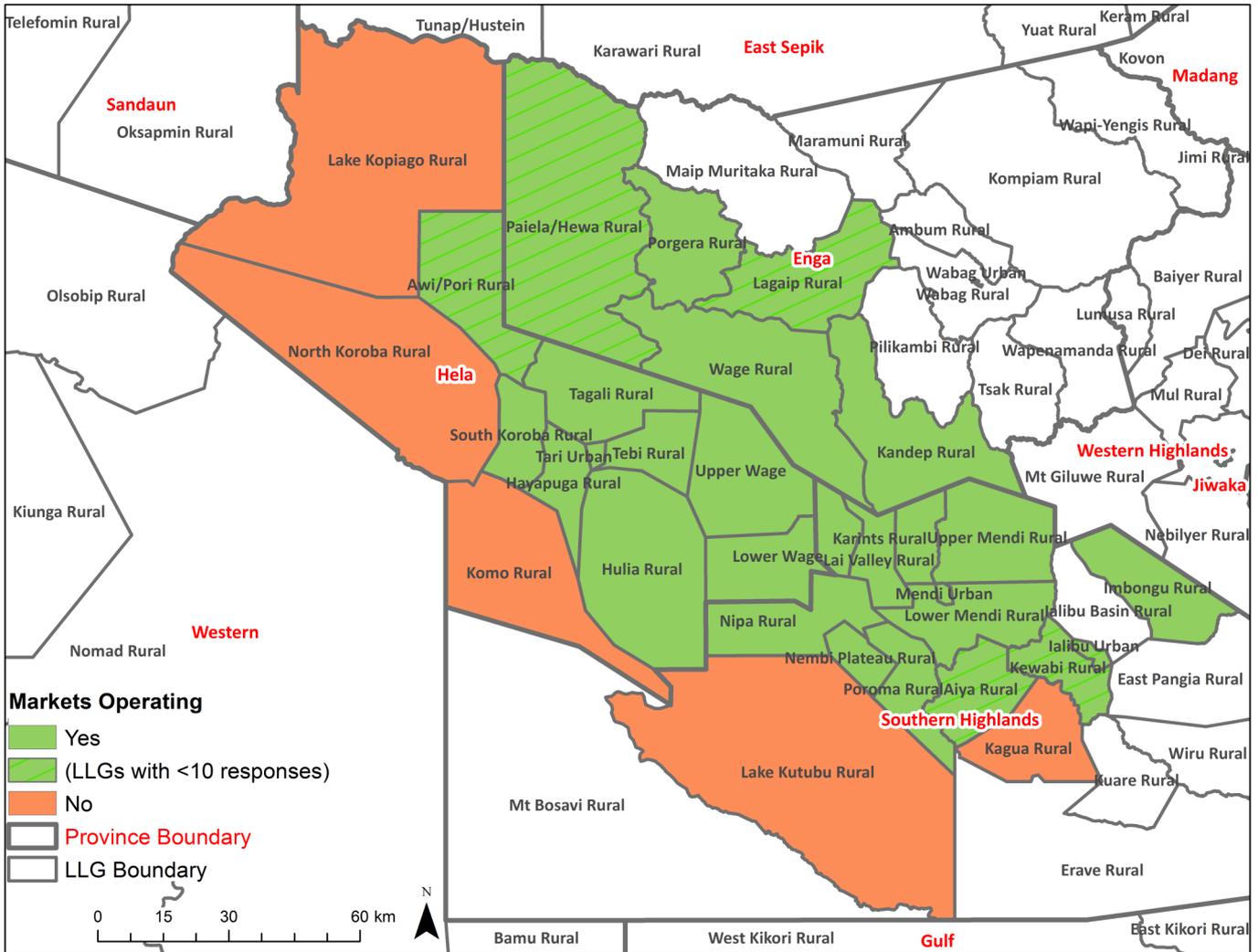
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MARKETS

A majority of respondents (66%) reported access to an operating market or shop, however 84% of these reported shortages in supply of the normal staple food (e.g. kaukau, taro or sago), with 54% reporting some shortage, 29% reporting extreme shortages and 1% reporting no availability of staple food items. Map 8 shows LLGs where markets were reported operating.

Map 8. Summary status of functioning markets by LLG



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COPING

Nearly all survey respondents reported that food insecurity (lack of availability or access to food) led members of the community to cope in at least one way. Limiting food intake, increased psychological stress levels, and children missing school were reported most frequently (Figure 7). Figures 8 and 9 show the prevalence of reduced food intake and children missing school within surveyed LLGs.

Figure 7. % of all survey respondents using each type of coping strategy

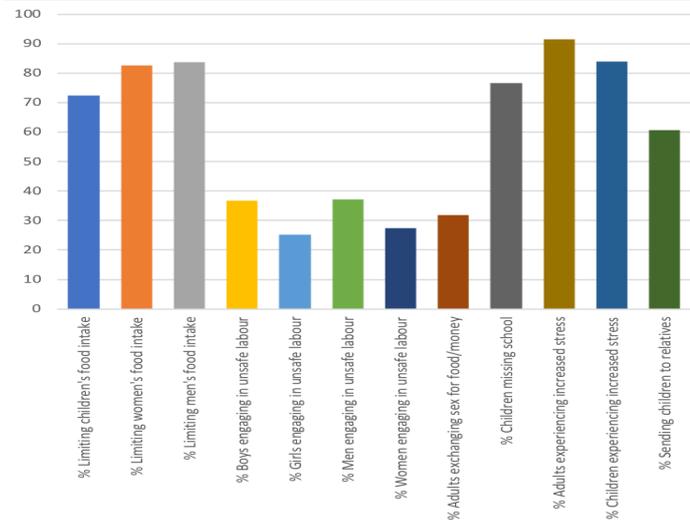


Figure 8. % of survey respondents limiting food intake by LLG

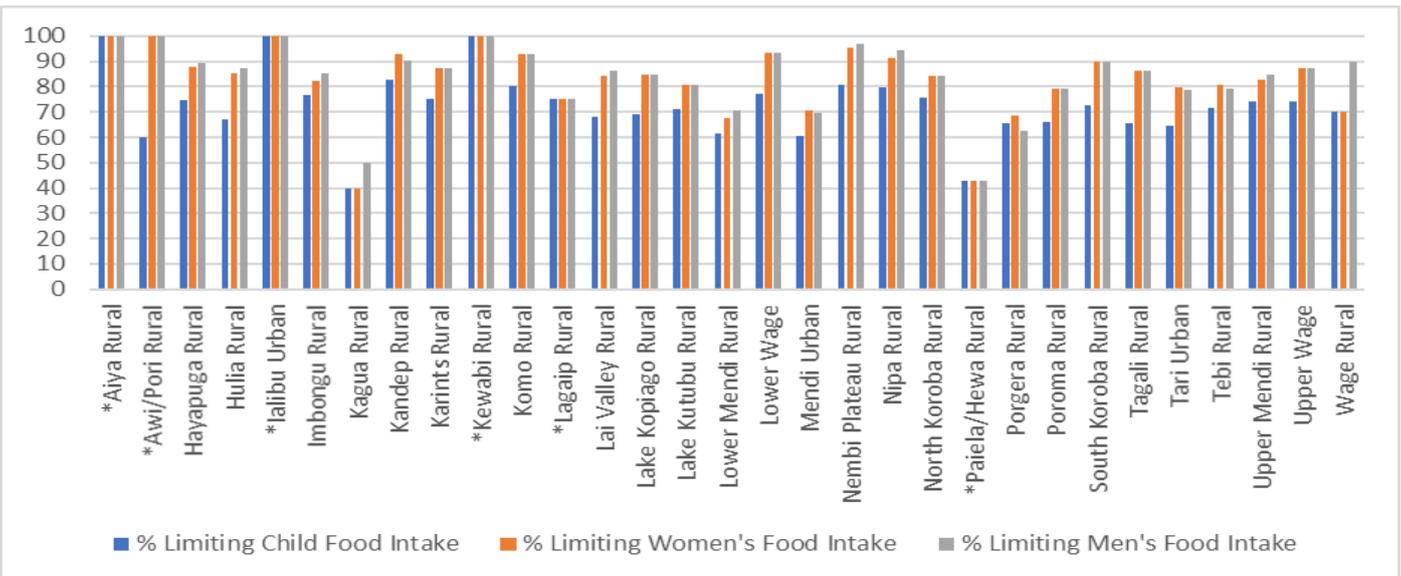
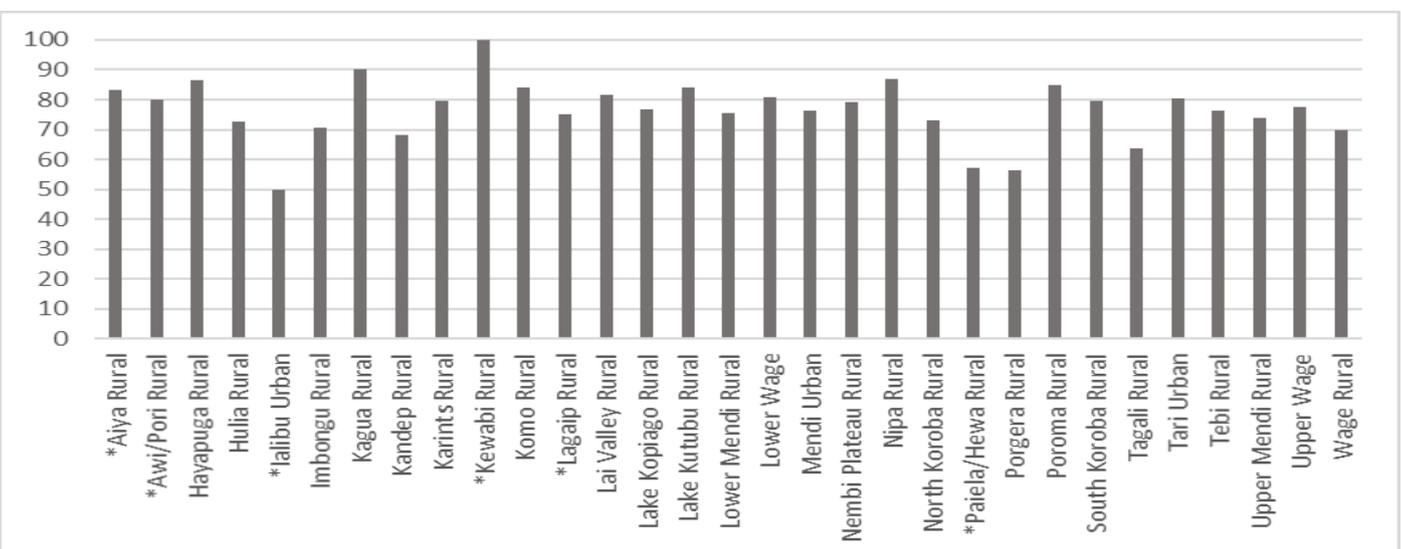


Figure 9. % of survey respondents reporting children missing school by LLG

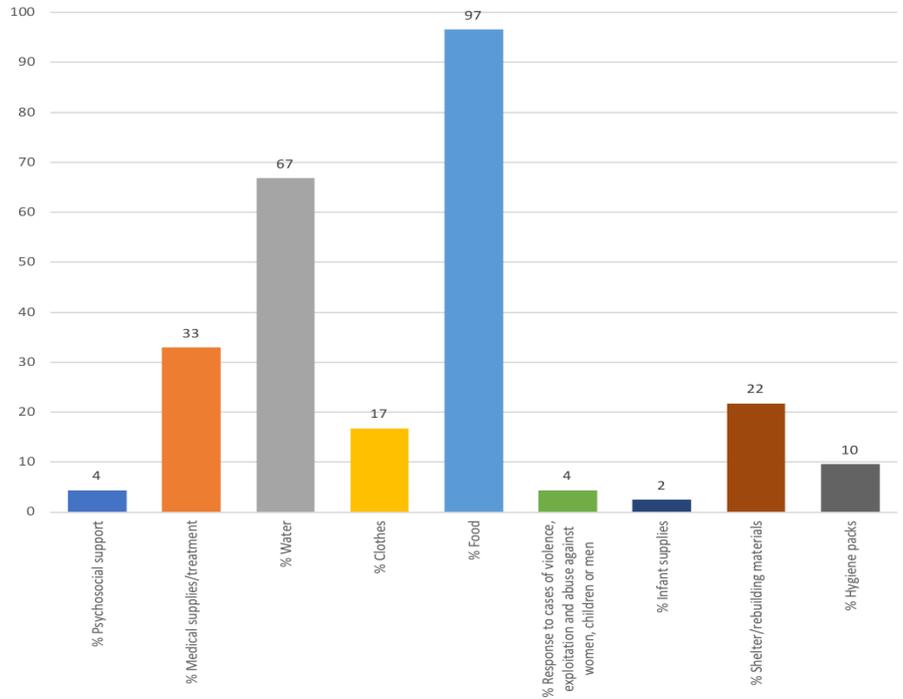


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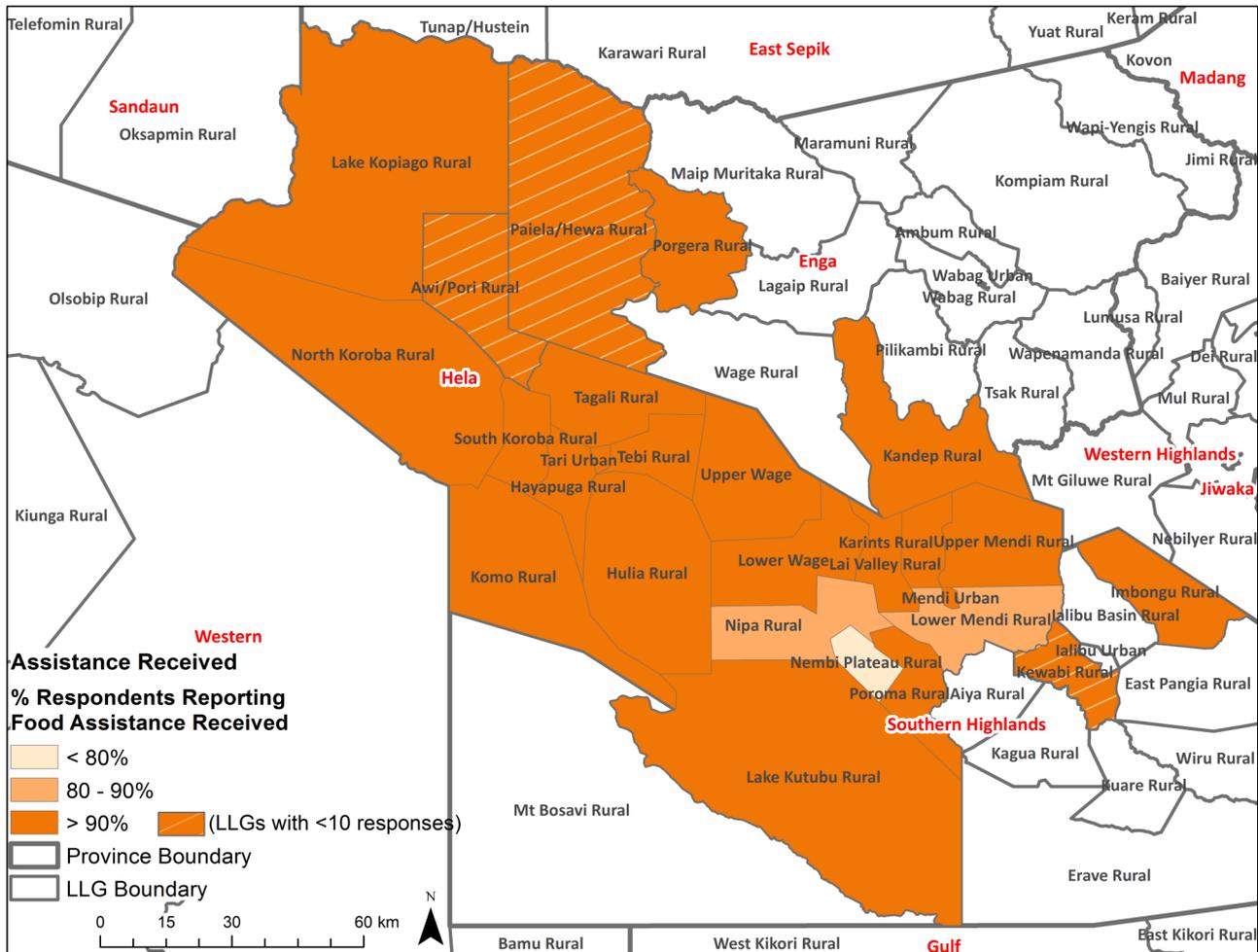
ASSISTANCE RECEIVED

Respondents were asked to report whether their household or anybody from their community had received assistance —80 percent reported that they had not received any type of assistance. Figure 10 shows the most common types of assistance received among the 20 percent of respondents that reported their household and/or community receiving assistance. Food was the most common type (reported by 97%), followed by water (67%) and medical supplies/treatment (33%). Maps 9—11 show the geographic distribution for specific types of assistance.

Figure 10. Type of assistance received



Map 9. Summary status of food assistance received by LLG

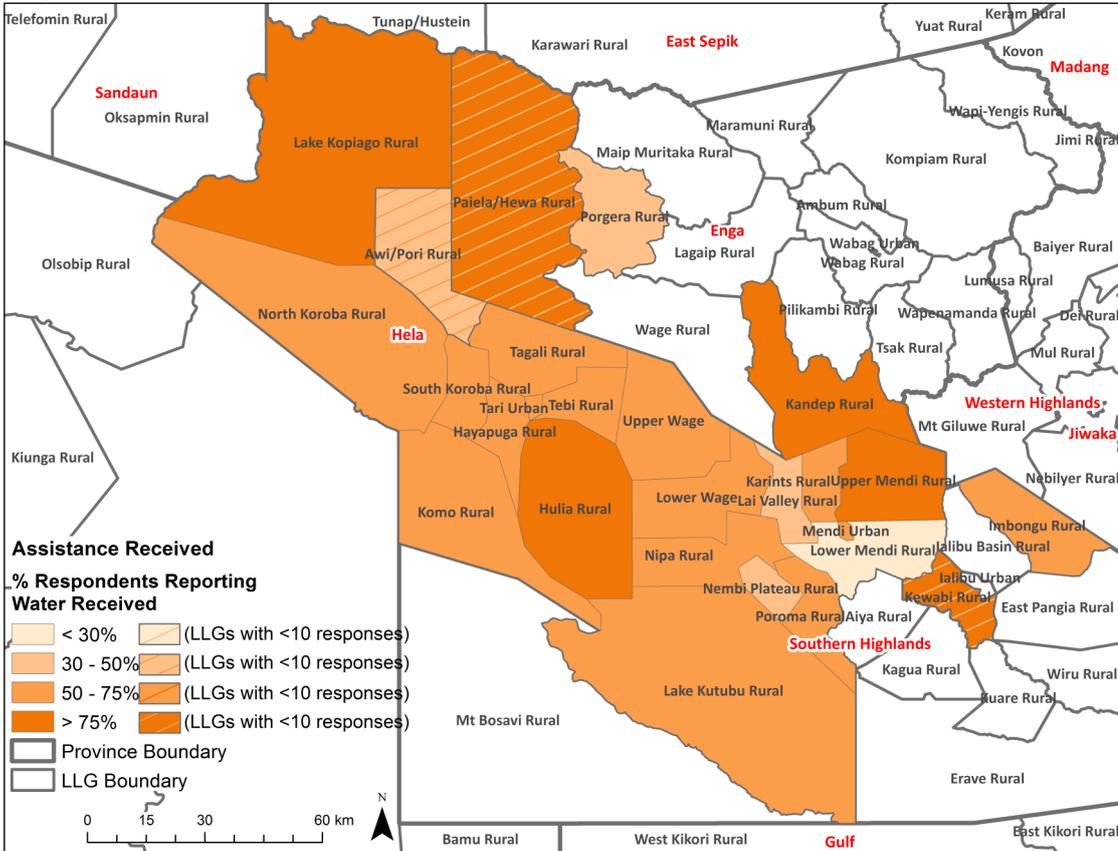


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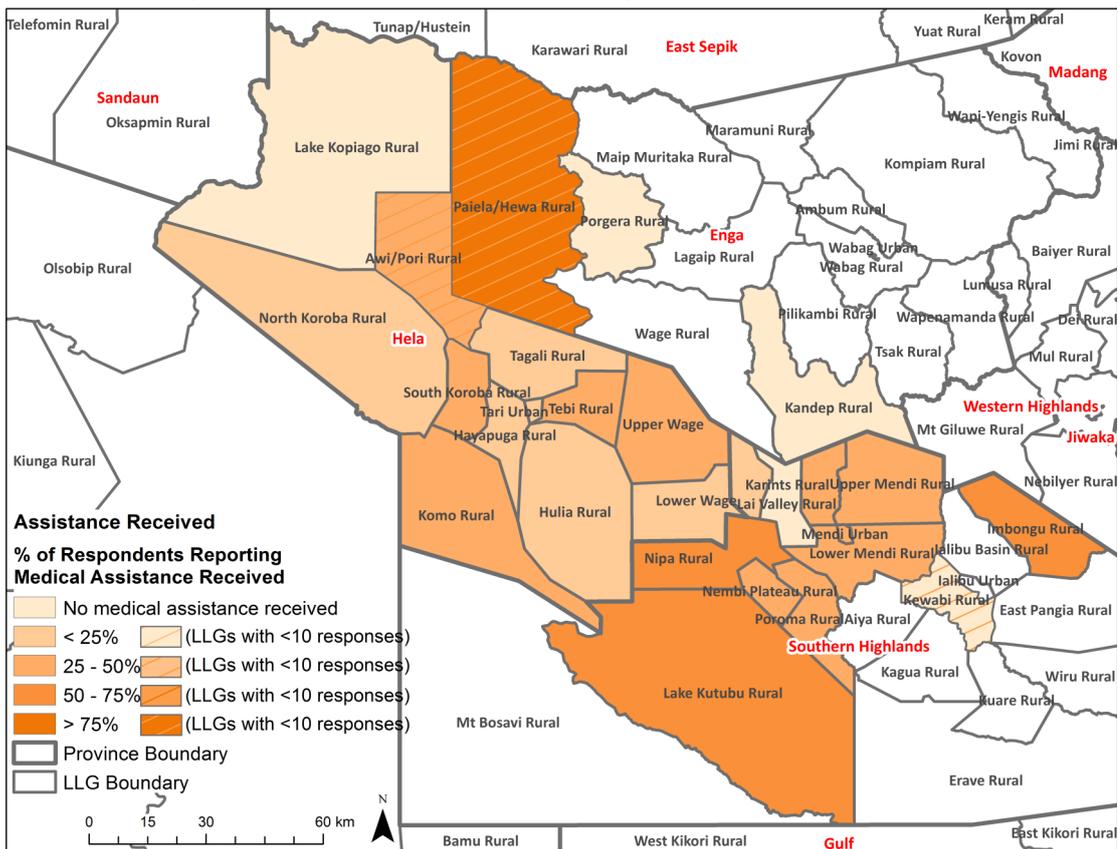


ASSISTANCE RECEIVED

Map 10. Summary status of water assistance received by LLG



Map 11. Summary status of medical assistance received by LLG

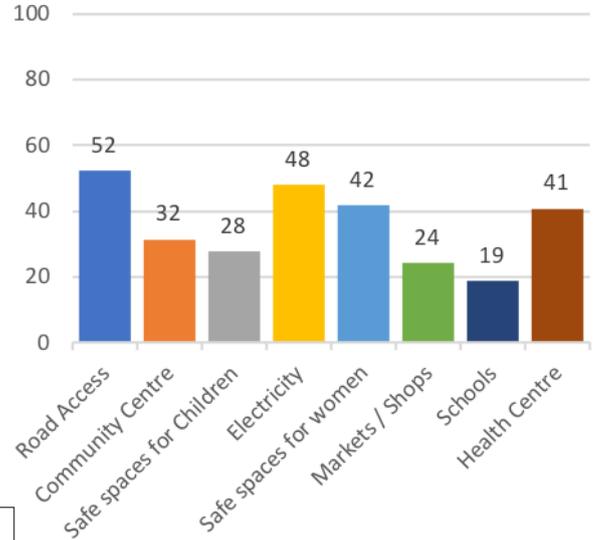


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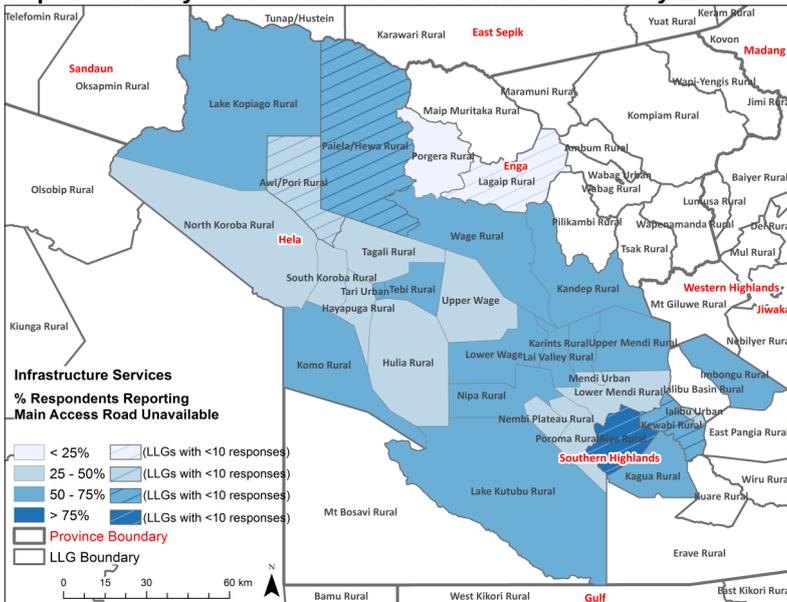


Nearly all respondents reported that some infrastructure and services were unavailable in their communities. Figure 11 shows the most common types of infrastructure and services that were reported as unavailable. Roads were most often reported unavailable (reported by 52%), followed by electricity (48%), safe spaces for women (42%) and health facilities (41%). Maps 12—15 show the geographic distribution for specific types of infrastructure.

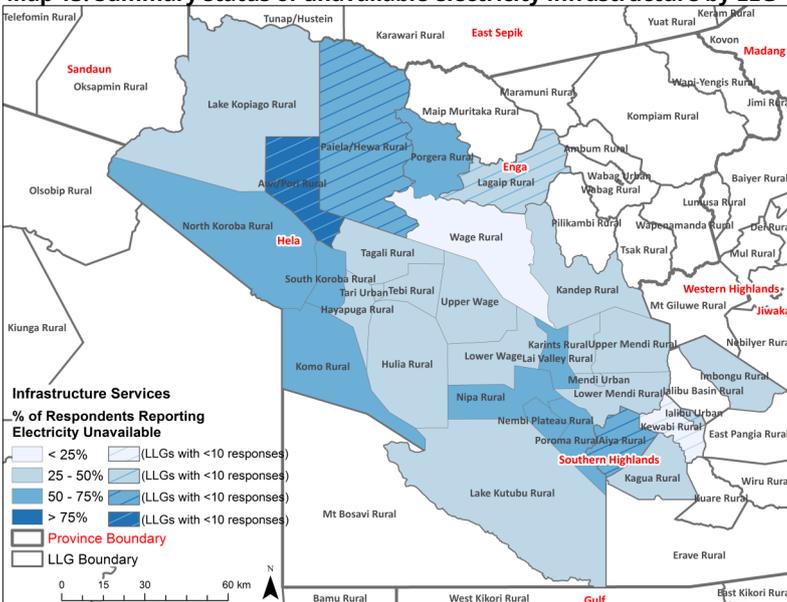
Figure 11. % of all survey respondents reporting infrastructure unavailable



Map 12. Summary status of unavailable road infrastructure by LLG



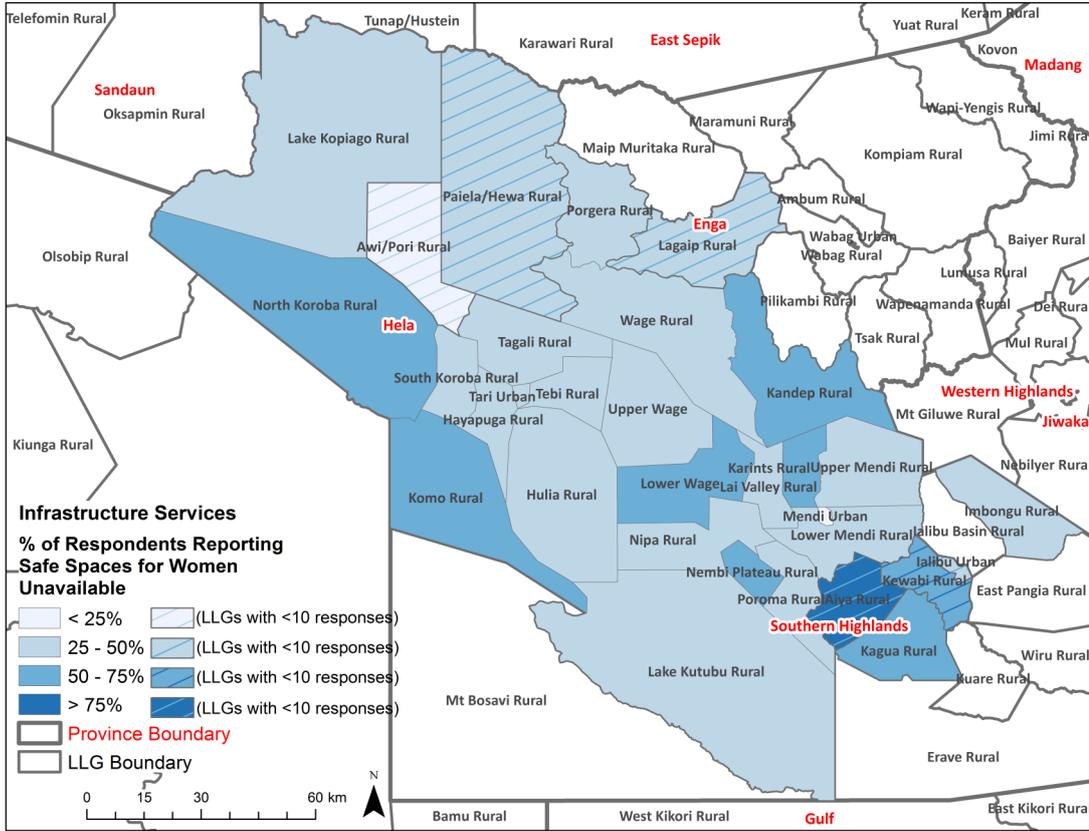
Map 13. Summary status of unavailable electricity infrastructure by LLG



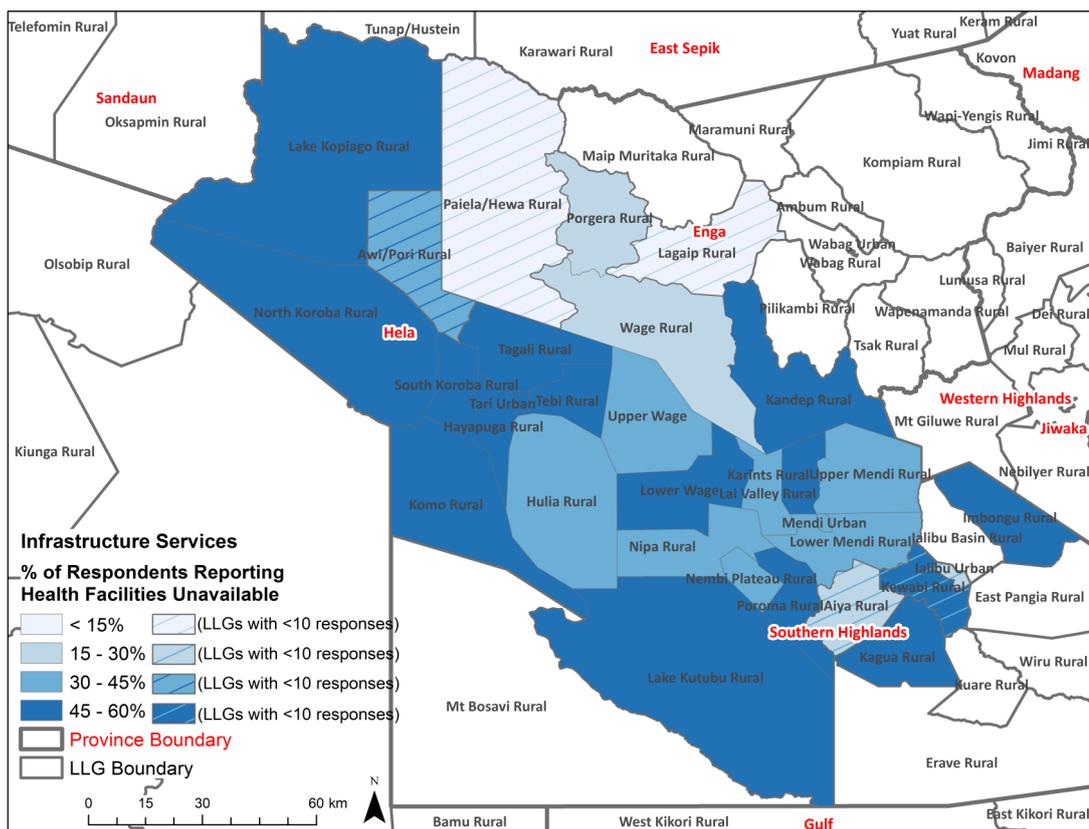
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Map 14. Summary status of LLGs with no safe spaces for women available



Map 15. Summary status of LLGs with no health facilities available



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ANNEX I: MOBILE QUESTIONNAIRE

PNG mVAM Earthquake Emergency Assessment Survey Script: March 2018

Name of Enumerator	
Respondent ID	
Site ID (tower)	
Date of the survey	(dd/mm/yy)

Introduction:

[Enumerator]: Hello, my name is *[Enumerator Name]* and I am calling on behalf of United Nations World Food Programme and National Disaster Center. We are conducting a survey to learn about the situation in your community after the recent earthquake. If you agree to participate, you will be providing valuable information to help your community. Your participation in this survey is voluntary, and all your answers will remain confidential. The survey will take a maximum of 12 minutes of your time. If you complete the survey, you'll receive an airtime credit of 2 Kina.

[Enumerator]: Are you interested in participating in this survey, now or another time?

YES, now → **SKIP TO QUESTION 0.1**

YES, later → When can I call you at another time? [Record when to call back - day/time]

NO → **END SURVEY**

Question 0.1: Age_Respondent

[Enumerator]: What is your age? [Record # of years] **If Age_Respondent is less than 16 → Ask to speak to another HH member older than 16**

Section 1: Demographic and Geographic info

Question 1.1: Gender_respondent

[Enumerator]: Is the respondent a man or a woman? [Record: Man or Woman]

Question 1.2: Gender_HoH

[Enumerator]: Is the head of your household a man or a woman? [Record: Man or Woman]

Question 1.3: Age_HoH

[Enumerator]: How old is the head of your household? [Record: Age of the HoH - # of years old]

Question 1.4: HH size

[Enumerator]: How many people are part of your household - meaning sharing basic resources, living and eating together? [Record: # of HH members]

Question 1.5: ADM1_province

[Enumerator]: In which Province are you currently living? [Record: Name of Province]

Question 1.6: ADM2_district

[Enumerator]: In which District are you currently living? [Record: Name of District]

Question 1.7: ADM3_LLG

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ANNEX I: MOBILE QUESTIONNAIRE

Question 1.8: ADM4_Village

[**Enumerator**]: In which Village are you currently living? [Record: Name of Village]

Question 1.9: ADM_displacement

[**Enumerator**]: Were you and your family displaced after the earthquake and needed to move?

O YES O NO -> **SKIP TO QUESTION 1.11**

Question 1.10: ADM3_displaced

[**Enumerator**]: If yes, in which village/LLG where you and your family were living in before being displaced due to the earthquake?..... [Record: Name of Province, District, LLG or Village]

If you cannot find LOCATION in the list, please identify: _____

Question 1.11: _1_11_How_long_are_you_plannin

[**Enumerator**]: How long are you planning to stay at your current location?

O Less that 2 weeks O 2-4 weeks O More than 1 month O Don't know

Question 1.12: HHmembers_disabled

[**Enumerator**]: Do any members of your household have a disability (e.g. physical, medical conditions, mental illness, sensory-vision, hearing or speech - that limits their activities and opportunities for equal participation in society), if so how many?

O YES [Record: # of disabled HH members]_____ O NO disabled HH members

Question 1.13: HHmembers_pregnant/lactating women

[**Enumerator**]: Are any female members of your household currently either pregnant or breastfeeding?

O YES [Record: # of P/L HH members]_____ O NO P/L HH members

Section 2: Community situation section

[**Enumerator**]: Now I would like to ask you some questions about the situation in your village.

Question 2.1: # of HHs in community

[**Enumerator**]: How many households live within your community/village? [Record: Number of households]

Question 2.2: Water_supply

[**Enumerator**]: What is the current status of drinking water in your village?

O SUFFICIENT (Drinking water supplies mostly unaffected) O SOME SHORTAGE O EXTREME SHORTAGE
O NO WATER AVAILABLE

Question 2.3: Sanitation_situation

[**Enumerator**]: What is the current availability of toilet facilities in your village?

O NONE (no functional toilet facilities; open defecation practiced by most)
O SOME SHORTAGE (limited toilet facilities; insufficient pit or flush toilets)
O SUFFICIENT (most toilet facilities are functioning; sufficient number of toilet facilities)
O Did not respond

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ANNEX I: MOBILE QUESTIONNAIRE

Question 2.4: Food_supply

[**Enumerator**]: What is the current food supply situation in your village?

SUFFICIENT SOME SHORTAGE EXTREME SHORTAGE NO FOOD AVAILABLE

Question 2.5: Hunger

[**Enumerator**]: How many households in your village are currently experiencing hunger?

NONE (0-5%) SOME (5-25%) MANY (25-75%) ALL (75-100%)

Question 2.6: Famine_foods

[**Enumerator**]: How many households in the village are currently ONLY consuming famine foods such as foods found in the forest? (for example: wild yam, wild berries, banana corm or green pawpaw)

NONE SOME MANY ALL

Question 2.7: Food_insecurity_coping

[**Enumerator**] Has food insecurity (lack of availability or access to food) led members of the community to do any of the following?

Limit children's food intake?.....[Record Yes, No, Did not respond]

Limit women's food intake?[Record Yes, No, Did not respond]

Limit men's food intake?[Record Yes, No, Did not respond]

Boys engaging in unsafe labour?[Record Yes, No, Did not respond]

Girls engaging in unsafe labour?[Record Yes, No, Did not respond]

Women engaging in unsafe labour?[Record Yes, No, Did not respond]

Men engaging in unsafe labour?[Record Yes, No, Did not respond]

Adults engaging in exchanging sex for food/money?[Record Yes, No, Did not respond]

Children missing school?[Record Yes, No, Did not respond]

Increased psychological stress levels of adults?[Record Yes, No, Did not respond]

Increased psychological stress levels of children?[Record Yes, No, Did not respond]

Children being sent to live with other relatives?[Record Yes, No, Did not respond]

Question 2.8: Garden_damaged

[**Enumerator**]: How many gardens in the village were fully damaged by the earthquake and will not be able to produce any crops? NONE SOME MANY ALL

Question 2.9: Markets_functioning

[**Enumerator**]: Are there any markets, shops or food vendors in your village or nearby where you can buy food?

YES NO -> **SKIP TO QUESTION 2.12**

Question 2.10: Main_staple_supply

[**Enumerator**]: What is the current supply of the main staple food item (Kaukau, Sago, Taro) in your nearest market/shop, compared to normal?

SUFFICIENT SOME SHORTAGE EXTREME SHORTAGE NONE MARKET DOES NOT NORMALLY SELL

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ANNEX I: MOBILE QUESTIONNAIRE

Question 2.11: Main_staple_price

[**Enumerator**]: Currently, how much does 1 heap of the main staple food item (Kaukau or Sago) cost in your nearest market/shop?

[Record the amount paid for 1 heap in PGK. Record "A" if respondent does not know amount paid. Record "B" if item is not available in the market]

Question 2.12: Displaced

[**Enumerator**]: Since the earthquake, how many households in your village have been displaced and have had to move to another location?

- NONE SOME MANY ALL

Question 2.13: Deaths

[**Enumerator**]: Did anyone in your village die as a direct consequence of the earthquake? If so, how many?

- NO YES [Report the number of people] _____

Question 2.14: Child_sick

[**Enumerator**]: Are any children in your village currently suffering from any sickness?

- YES NO CHILDREN -> **SKIP TO QUESTION 2.16**
 NO -> **SKIP TO QUESTION 2.16**

Question 2.15: Sick_type

[**Enumerator**]: IF YES: What are they suffering from?[Record all that apply]

- DIARRHOEA / DYSENTERY / VOMITING / STOMACH PROBLEMS MALARIA
 SIGNIFICANT WEIGHT LOSS / FAILURE TO GAIN WEIGHT DENGUE
 RASH/SKIN PROBLEM / PEELING SKIN / BRITTLE HAIR ANAEMIA
 GENERALIZED SWELLING / BELLY SWELLING FAINTING AND DIZZINESS
 COUGHING / TB / RESPIRATORY PROBLEMS OTHER _____

Question 2.16: Assistance_recieved

[**Enumerator**]: Since the earthquake, have you or anybody in your village received any kind of assistance? (choose both "Yes" if applicable)

- YES – my household received assistance
 YES – others in the village received assistance (but not my household)
 YES – both my household and other households in the village received assistance
 NO -> **SKIP TO QUESTION 2.18**

Question 2.17: Assistance_type

[**Enumerator**]: If yes, what kind of assistance has been provided? [Record all that apply]

- Food Hygiene packs Shelter/rebuilding materials Clothes Medical supplies/
treatment Infant supplies Water Psychosocial support Response to cases of violence,
exploitation and abuse against women, children or men Other (please specify) _____

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ANNEX I: MOBILE QUESTIONNAIRE

Question 2.18: Infrastructure_services

[**Enumerator**]: what services are **not** currently available in your village? [Record all that apply]

- Electricity Main access road Shops/markets Health/first aid facilities and clinics
 Schools Safe spaces/centres for women Safe spaces/centres for children
 Community centres Other (please specify) _____

Question 2.19: Infrastructure_houses

[**Enumerator**]: How many houses within your community/village were badly damaged by the earthquake and now considered to be unliveable?..... [Record number of damaged/unliveable houses]

Section 3: Open Question

Question 3.1: Open_ended

[**Enumerator**]: What are your most urgent needs at the moment?

..... [Free text]

If respondent does not want to respond to the open ended question, go to the conclusion.

Section 4: Conclusion

Question 4.1: Call_back

[**Enumerator**]: May we call you back in case we do a follow up survey in the future?

YES

NO

[**Enumerator**]: Thank you very much for your time! Your answers will aid the understanding of, and response to, needs in your community.

Section 5: Instructions for Enumerator

Question 5.1: Survey_status

Please end the survey ticking one of the box below:

Survey completed

Survey incomplete

Question 5.2: Respondent_knowledge

Please rate your perception of the respondent's knowledge of the food security situation and ability to provide good quality information:

Knowledgeable

Not very knowledgeable

Not applicable (survey incomplete)

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ANNEX II: NUMBER OF COMPLETED SURVEYS PER LLG

LLG	# surveys
*Aiya Rural	6
*Awi/Pori Rural	5
Hayapuga Rural	75
Hulia Rural	88
*Ialibu Urban	4
Imbongu Rural	34
Kagua Rural	10
Kandep Rural	41
Karints Rural	64
*Kewabi Rural	5
Komo Rural	112
*Lagaip Rural	4
Lai Valley Rural	44
Lake Kopiago Rural	13
Lake Kutubu Rural	62
Lower Mendi Rural	65
Lower Wage	31
Mendi Urban	89
Nembi Plateau Rural	63
Nipa Rural	69
North Koroba Rural	82
*Paiela/Hewa Rural	7
Porgera Rural	32
Poroma Rural	53
South Koroba Rural	136
Tagali Rural	58
Tari Urban	132
Tebi Rural	63
Upper Mendi Rural	46
Upper Wage	31
Wage Rural	10