



Geographic impact

On February 26, a magnitude-7.5 earthquake hit Papua New Guinea at a depth of 35 km, with the epicenter about 89 kilometers southwest of Porgera in Enga province. A series of aftershocks followed into the next day. On Feb 28, a magnitude-6 shake hit the same location. All these have caused severe damage in 17 LLGs and affecting 4 Provinces.

Geographical profile



Epicenter in Hela province, Highlands region



4 Provinces, 5 Districts affected (Earthquake intensity 7.0 and above)

Profile of the affected population



~465,000 people exposed to extreme disaster in worst impacted LLGs.



~273,814 people likely in need of immediate assistance.



~164,070 extremely food insecure people.

Livelihood profile



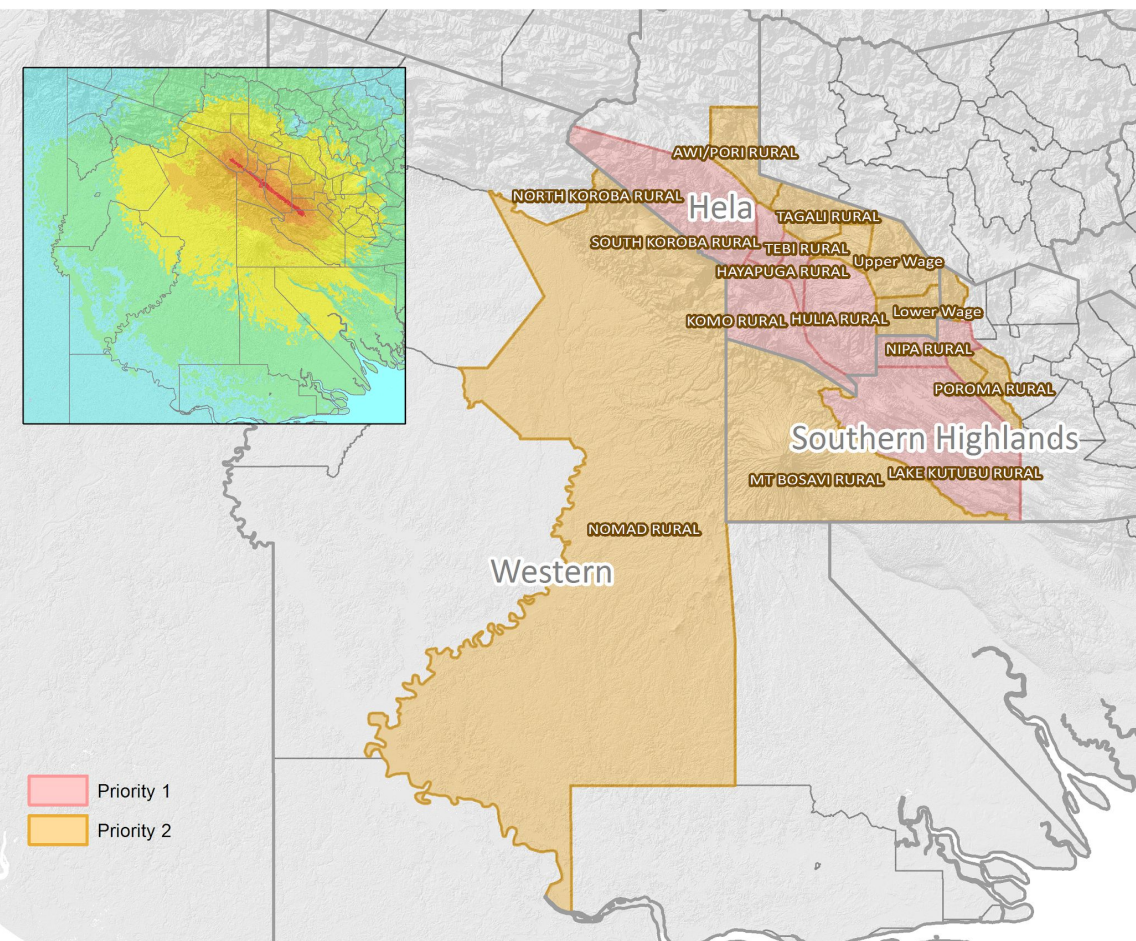
Subsistence Agriculture is the dominant livelihood



Livestock rearing Is a key livelihood in some areas



The area has vast mining concessions with operations by Exxon Mobil, Oil Search, OK Tedi & Barrick Gold Corp



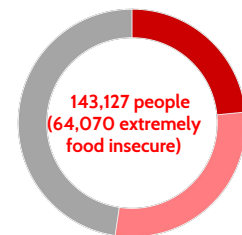
Priority 1

~143,127 likely in immediate need of humanitarian assistance

Households within this classification reside in 7 LLGs which experienced intensity 8 and 9 earthquake on the scale of 1 to 10.

Among the affected 211,000 people who reside in these areas, approximately 143,127 are identified as needing urgent humanitarian assistance. They face the immediate risk of displacement and will have lost most of their assets with short- and long-term consequences to their lives and livelihoods.

According to the latest WFP mobile VAM (mVAM) food security assessment of December 2017, approximately 64,070 people in these 7 LLGs were already identified as extremely food insecure. The recent earthquake has further compromised food security in these areas.

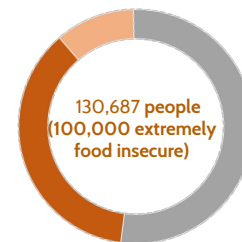


Priority 2









~130,687 likely in need of humanitarian assistance

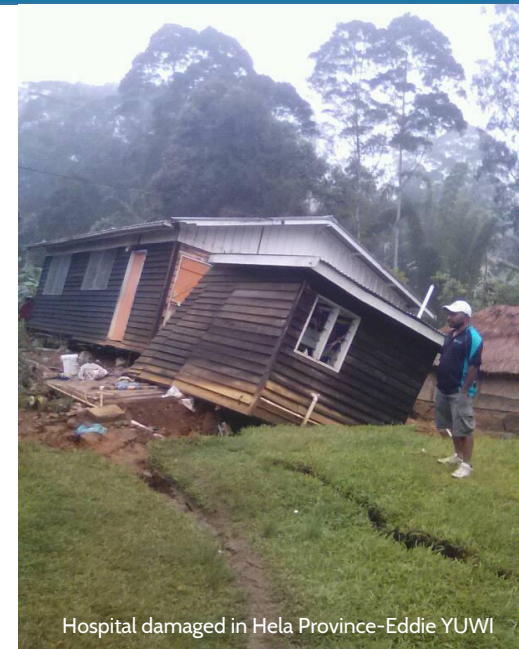
Households within this classification reside within 10 LLGs struck by level 7 earthquake intensity. Among 254,500 people who are severely affected, 130,687 of them are in need of immediate assistance due to severe impact on lives, assets and livelihoods.

The latest WFP mVAM results indicate that about 100,000 people in these areas were already extremely food insecure.



HUMANITARIAN NEEDS ESTIMATES

| | | Priority 1 | Priority 2 | Total | Assumption |
|--|-------------------------|------------|------------|------------|---|
|  | Male (all age groups) | 74,138 | 66,886 | 141,024 | - |
|  | Female (all age groups) | 68,989 | 63,801 | 132,790 | - |
|  | Children < 5yrs | 29,337 | 25,698 | 55,035 | - |
|  | Infant | 11,860 | 9,962 | 21,822 | - |
|  | Rice(kg) | 399,330 | 365,897 | 765,227 | 2.8 kg rice weekly/person |
|  | Drinking water (litre) | 2,495,964 | 2,287,010 | 4,782,974 | 17.5 litre drinking water weekly/person |
|  | Clean water (litre) | 9,556,080 | 8,756,077 | 18,312,157 | 67 litre clean water weekly/person |
|  | Toilet | 7,102 | 6,511 | 13,613 | 1 toilet every 20 people |



Hospital damaged in Hela Province- Eddie YUWI



Rescue teams in Hela province- Eddie YUWI



Resilience profile

Resilience:

Most of the earthquake-affected areas experienced substantially above-normal temperatures between August and October 2017, and reported incidence of drought which impacted crop production (mainly kaukau and sago in this part of the country).

The earthquake affected areas are at times prone to erratic rain conditions - either flooding or drought, which affects crop production. Considering the substantial dependency of much of the population on garden-crop agriculture, resilience to cope with adverse shocks, be it climate-related or otherwise, is limited.



Livelihood profile

Livelihoods:

Garden crop production and livestock keeping are the dominant income generating activities within the earthquake-affected area. mVAM historical livelihood analysis shows that households dependent on livestock-keeping and garden crops as their main source of income are more vulnerable to being severely food insecure than their peers.



WASH, Protection and Gender

Water & Child Health:

According to the most recent mVAM survey, supply of drinking water is relatively good, and historical data shows a substantial improvement in community water over the last two years.

Similarly, the rate of reported child illness amongst households with children continued to show a gradual decline.



Food security

Food security:

Approximately 30 percent of the population of the seven extremely affected LLGs (Priority 1) are estimated to be severely food insecure according to the Food Insecurity Experience Scale (FIES), an official indicator used to track progress towards the SDG target of zero hunger. Two are deemed as “food insecurity hotspots” (those with 40% or higher prevalence of households considered to be severely food insecure): **Komo Rural** and **South Koroba Rural** (mVAM Report 4, February 2018).

Households from **North Koroba Rural LLG** surveyed in the most recent mVAM survey reported facing extreme shortage of food supply.

Within the 10 severely affected (Priority 2) LLGs, approximately 39 percent of the population is estimated to be severely food insecure.



Markets

Supply of staple commodities:

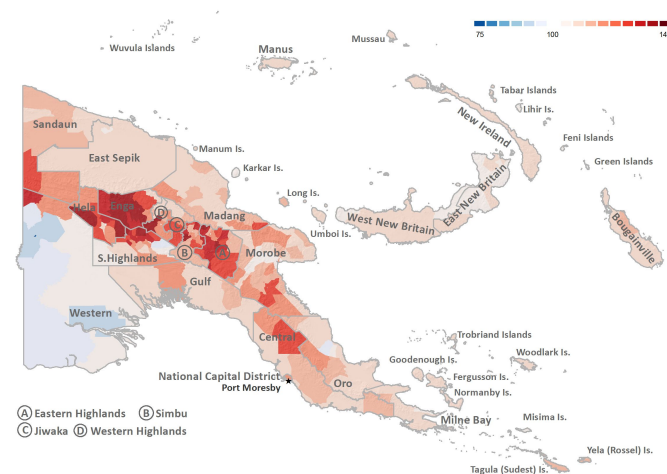
According to the latest mVAM data, most of the earthquake-affected areas faced some shortage of supply of staple crops. **North Koroba Rural LLG** reportedly faced extreme shortage.

Prices of staple commodities:

Within the Priority 1 LLGs, the average price of kaukau was about 2.8 KPG/unit, and the price of sago was reported at 3 KPG/unit in Lake Kutubu Rural LLG. In North Koroba Rural LLG, where an extreme shortage of kaukau supply was reported, the average price was nearly double the average at 5 KPG/unit.

Meanwhile the average price of rice was about 5.70 KPG/kilo, which is in line with the national median reported price of rice, which has remained stable at around 5PGK per kilo for nearly the past two years.

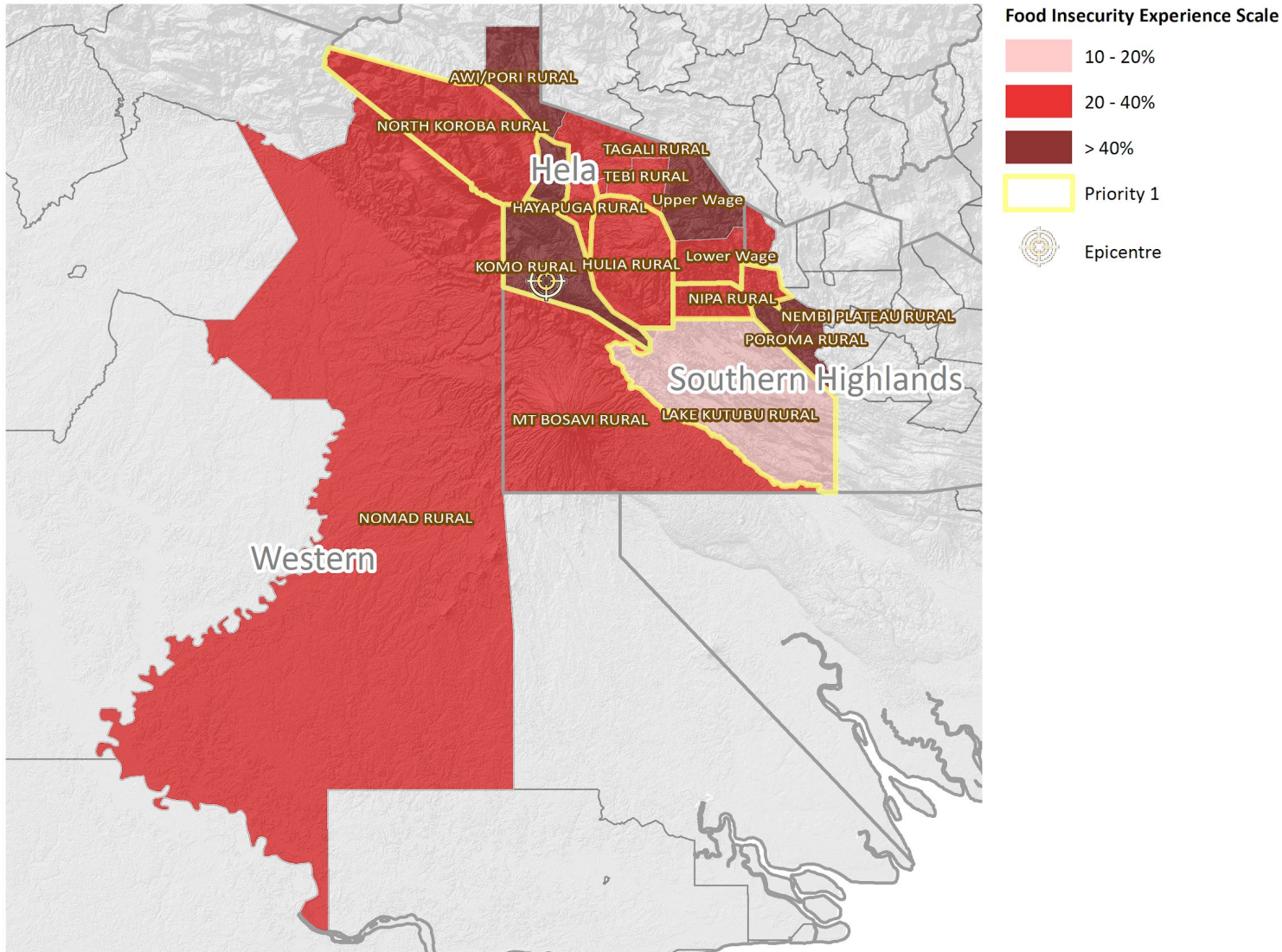
Temperature anomaly in September 2017



Sources: CHIRPS data, mVAM report February 2018

SUPPLEMENTARY INFORMATION-Food insecurity

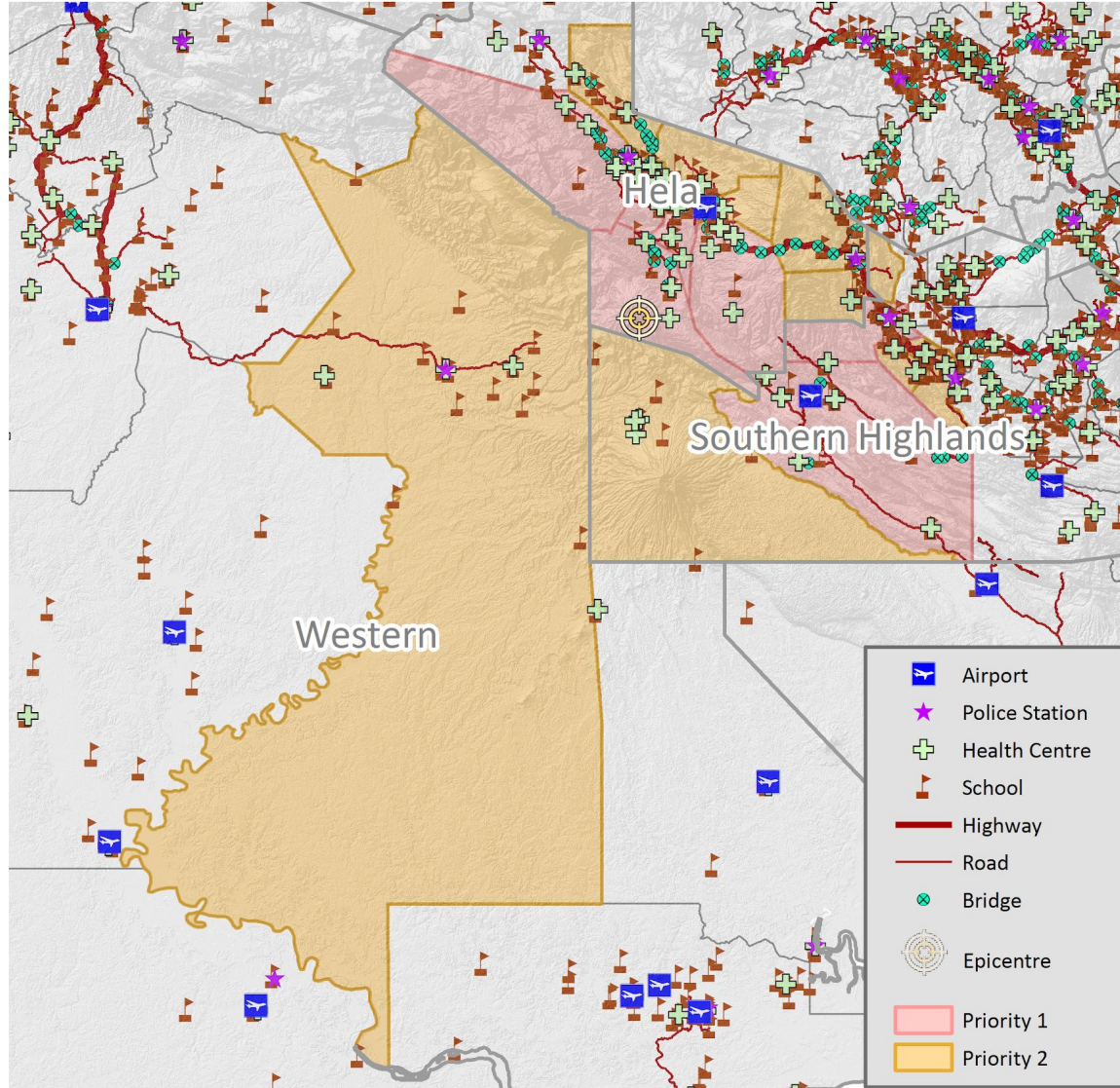
Food Insecurity: % of population in Priority 1 and Priority 2 affected LLGs estimated to be severely food insecure (FIES)



Source: mVAM survey, February 2018

SUPPLEMENTARY INFORMATION-Infrastructure

Infrastructure : Location of airports, police stations, health centres and schools in affected LLGs



Many airstrips and roads are reportedly damaged and currently not accessible. No specific details are available at this stage.



Moro Road damaged-Maggy

Source: WFP / Spatial Database Infrastructure

DETAILS – Vulnerability Characteristics of Affected LLGs

| Province | District | LLG | Population (Projected 2017) | % Population severely food insecure (FIES) | # People severely food insecure (FIES) | Food Supply | Hunger | Main staple crop | Staple crop supply |
|--------------------|----------------|--------------------|-----------------------------|--|--|------------------|--------|------------------|--------------------|
| Hela | Tari-Pori | Hayapuga Rural | 21,175 | 31% | 6,590 | Some shortage | Some | Kaukau | Some shortage |
| Hela | Komo-Magari ma | Hulia Rural | 48,860 | 28% | 13,686 | Some shortage | Many | Kaukau | Some shortage |
| Hela | Komo-Magari ma | Komo Rural | 22,184 | 44% | 9,698 | Some shortage | Many | Kaukau | Some shortage |
| Southern Highlands | Nipa-Kutubu | Lake Kutubu Rural | 19,413 | 14% | 2,809 | Some shortage | Some | Sago | Sufficient |
| Southern Highlands | Nipa-Kutubu | Nipa Rural | 58,678 | 25% | 14,571 | Some shortage | Many | Kaukau | Some shortage |
| Hela | Koroba-Kopiago | North Koroba Rural | 15,994 | 40% | 6,353 | Extreme shortage | Many | Kaukau | Extreme shortage |
| Hela | Koroba-Kopiago | South Koroba Rural | 24,567 | 42% | 10,361 | Some shortage | Many | Kaukau | Some shortage |

Data Source: WFP mVAM survey, February 2018

? ASSUMPTIONS

Geographic impact: The geographic impact analysis is based on InaSAFE Earthquake simulation. Shakemaps of earthquake ground shaking are produced by the United States Geological Survey (USGS) and used by the World Food Programme to produce impact assessments within minutes of an earthquake. InaSAFE analysis estimates the number of people exposed by each MMI level using modelled population exposure data from Papua New Guinea 2011 census and 2015 population projection.

Priority areas: The classification of priority areas of this version are a result of geo-analysis of disaster impact within each LLG. Additional analysis of food insecurity prevalence within the most affected LLGs allows identification of populations at additional risk. Within the affected areas, the LLGs with high food insecurity indexes (greater than 40% of population facing extreme food insecurity according to the FIES assessment) are identified as requiring targeted assistance. It is assumed that the economic disadvantage of these households compared to their counterparts exposes them to higher risks and more challenges to recovery.

Needs estimate: In this analysis, the InaSAFE model is adopted to make initial estimates on minimal humanitarian needs. For the InaSAFE model the following assumptions were used to calculate the needs for the estimated severely affected population:

- Each person should be provided with 2.8 kg of rice weekly;
- Each person should be provided with 17.5 liters of drinking water weekly;
- Each person should be provided with 67 liters of clean water weekly;
- A toilet should be provided for 20 every persons;

The estimates serves as a reference to understand the scale of needs on the ground. The unit need per person should be customized by national decision-makers.



REFERENCES & LINKS

- Earthquake event:
<https://earthquake.usgs.gov/earthquakes/eventpage/us2000d7q6#executive>
- InaSAFE - <http://inasafe.org>
InaSAFE is free software that produces realistic natural hazard impact scenarios for better planning, preparedness and response activities. Developed by Indonesian National Disaster Management Authority (BNPB), Geoscience Australia and GFDRR
- PNG National Statistics Office -
<http://nso.gov.pg/index.php/population-and-social/other-indicators>



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