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.

This report focuses on the most affected areas only. Estimates are based on available evidence to date and may change upon new information becoming available.

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

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

Data Source: 2015 Projection based on PNG Census (2011); See more on the methodology of needs estimate in Additional Information section.
Livelihood profile

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.

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.

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

Source: mVAM survey, February 2018
Many airstrips and roads are reportedly damaged and currently not accessible. No specific details are available at this stage.

Source: WFP / Spatial Database Infrastructure

Moro Road damaged-Maggy
## DETAILS - Vulnerability Characteristics of Affected LLGs

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

*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 serve 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](https://earthquake.usgs.gov/earthquakes/eventpage/us2000d7q6#executive)
- **InaSAFE -** [http://inasafe.org](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

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