Highlights

- The Central Sulawesi Earthquake and Tsunami led to an estimated **94.5 thousand** displaced workers, of which 35 per cent are women and 15 per cent are young people aged 15-24.
- 54 per cent of the displaced workers were already vulnerable as an own-account worker or contributing family worker before the crisis hit.
- 40.5 per cent of the displaced workers were employed in the agricultural and fisheries sector.
- The impact on wages and earnings of the displaced workers is an estimated 6.1 billion IDR each day.

Background

On 28 September 2018, a series of earthquakes struck Indonesia’s Central Sulawesi province, the strongest being a 7.4-magnitude earthquake only 10 km deep and with its epicentre close to the provincial capital of Palu. The earthquake consequently triggered a tsunami striking beaches in Palu and Donggala.

The earthquakes, tsunami and resulting liquefaction and landslides caused numerous casualties and significant economic damage, mainly in Sigi and Palu but also in Donggala and Parigi Moutong. As of 30 October, 2,081 fatalities were reported and more than 4,400 people have suffered severe injuries. In addition, 206,494 people are currently displaced and 68,451 houses were damaged. The National Disaster Management Authority (BNPB) estimates the total cost of material damages at US$ 910 million.¹

In order to provide preliminary and on-going estimates of the crisis impact on workers and livelihoods, this briefing note presents initial estimates of the number of workers that have been displaced.

Estimates of impact on employment

Based on official reports of the BNPB as of 30 October 2018 at 17:00, the Sulawesi crisis led to the displacement of **94.5 thousand workers**. 42.1 per cent (39.8 thousand) of the displaced workers were based in Sigi, while Palu accounted for another 38.2 per cent (36.2 thousand).

Drawing on pre-crisis baseline employment and population data, the displaced workers consisted of:

- 33.2 thousand women (35 per cent of all displaced workers),
- 14.5 thousand young persons aged 15-24 (15.3 per cent),
- 51.4 thousand displaced workers (54.4 per cent) were engaged in vulnerable self-employment as an own-account worker or unpaid family worker, and
- 38.3 thousand displaced workers (40.5 per cent) were employed in the agricultural and fisheries sector. In addition, more than one-quarter of the displaced workers were engaged in market-oriented services such as trade and transport.

**Figure 1: Estimated workers displaced by Sulawesi Earthquake and Tsunami by regency (thousands)**

![Pie chart showing displaced workers by regency](chart.png)


**Estimates of impact on wages and earnings**

The estimated daily impact on wages and earnings of the displaced workers amounts to IDR 6.1 billion, or approximately US$ 267.4 thousand (see Table 1). Wages account for around two-thirds of that total. The crisis impacts on potential loss wages in Palu are particularly notable, given the relatively greater proportion of wage employees in total employment (61.5 per cent) and higher mean wages overall (around 40-55 per cent above levels in the other three affected regencies).

For own-account workers, who are especially vulnerable during a crisis due to the lack of income stability and access to social protection, loss earnings resulting from the Sulawesi Earthquake and Tsunami equate to nearly IDR 2.1 billion each day. Sigi alone accounts for almost two-fifths of the potential loss earnings of the self-employed own-account workers.
Assessment of impact in Palu

Palu was the worst affected area, based on fatalities and damaged housing, given the proximity of the provincial capital to the epicentre of the earthquake. In total, Palu accounts for 82 per cent of the fatalities and 96 per cent of damaged housing.

The Sulawesi Earthquake and Tsunami has displaced an estimated 36.2 thousand workers in Palu. Of these impacted workers, around two in five (14.1 thousand) are women. Moreover, approximately six thousand are young workers aged 15 to 24.

Unlike the other affected regencies, agriculture and fisheries are not major sources of jobs in Palu. Instead, around 45 per cent of the displaced workers were based in market-oriented service sectors such as retail and wholesale trade, transport and food services.

In Palu, as noted above, wage employment is comparatively more prevalent than in the other three regencies. Employees account for nearly 62 per cent of total employment. The average daily wage is an estimated IDR 109 thousand, while the median daily wage is around IDR 82 thousand. While displaced workers are unable to work and receive their wages during the crisis recovery period, the total impact on wages and earnings in Palu may amount to an estimated IDR 3.2 billion each day.

Assessment of impact in Sigi

In comparison to Palu, Sigi suffered significantly fewer fatalities (188) and damaged housing (897). However, the regency accounts for the highest total number of displaced persons and workers as a result of the widespread destruction caused by landslides and liquefaction. In total, the Sulawesi crisis has displaced an estimated 39.8 thousand workers in Sigi, or 42 per cent of all displaced workers, accounting for the highest share of the four affected areas.
Of the displaced workers in Sigi, around one-third (13.2 thousand) are women and a relatively high proportion (15.3 per cent or 6.1 thousand) are elderly aged 55 and above. In contrast to Palu, displaced workers in Sigi relied predominantly on agriculture and fisheries for their livelihoods. Overall, 55 per cent (or 22 thousand displaced workers) were employed in that economic sector.

In Sigi, the impact on wages and earnings of displaced workers who are unable to work during the crisis may total an estimated IDR 2 billion each day. Of particular concern are the 15.7 thousand displaced own-account workers and their families, many reliant on the agricultural and fisheries sector, whose source of income may have been destroyed completely during the crisis.

**Conclusion**

In total an estimated 94.5 thousand workers were displaced by the Sulawesi Earthquake and Tsunami. Major reconstruction efforts especially in Palu and Sigi are needed to rebuild roads, bridges, homes and other infrastructure. Investment in the recovery must also prioritize agriculture and fisheries, where the destruction has taken a massive toll on 38.3 thousand women and men in that sector alone. Many of these workers were employed as own-account (self-employed) farmers or unpaid family workers and are particularly vulnerable in view of their skill levels and limited income security and social protection.