

EARTHQUAKE IN LOMBOK, INDONESIA



ONE ASEAN
ONE RESPONSE

M 6.4 Lombok Earthquake (29 July 2018) &
M 7.0 Lombok Earthquake (5 August 2018)



Affected areas:

- Central Lombok
- East Lombok
- Mataram City
- North Lombok
- West Lombok

Immediate Needs being addressed:

- Tents
- Blankets
- Food
- Potable water

3,512.689
affected

437
fatalities

419,424
displaced

1,054
injuries

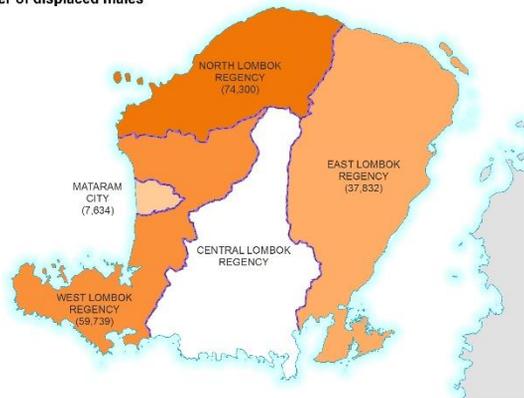
IDR 3.82 trillion
(USD 260 million)

IDR 242.1 billion
(USD 164.9 thousands)

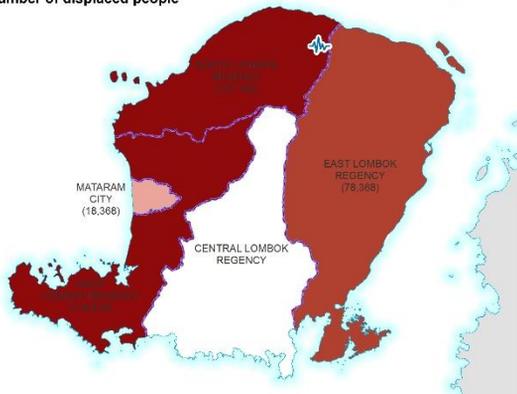
Lombok: Number of displaced people (as of 12 Aug 2018)
Number of displaced females



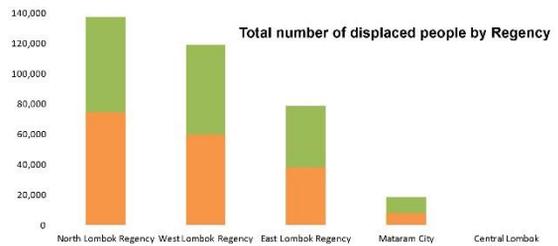
Number of displaced males



Total number of displaced people



Total number of displaced people by Regency





SITUATION UPDATE No. 6
M 6.4 Lombok Earthquake (29 Jul 2018) &
M 7.0 Lombok Earthquake (5 Aug 2018), INDONESIA
adinet.ahacentre.org/reports/view/1249 | https://reliefweb.int/disaster/eq-2018-000122-idn
Tuesday, 14 August 2018, 15:00 hrs (UTC+7)

No. **6**

This situation update is provided by AHA Centre for the use of ASEAN Member States and relevant parties among ASEAN Member States. The information presented is collected from various sources including but not limited to ASEAN Member States, UN, IFRC, INGOs, & News Agencies.

1. HIGHLIGHTS

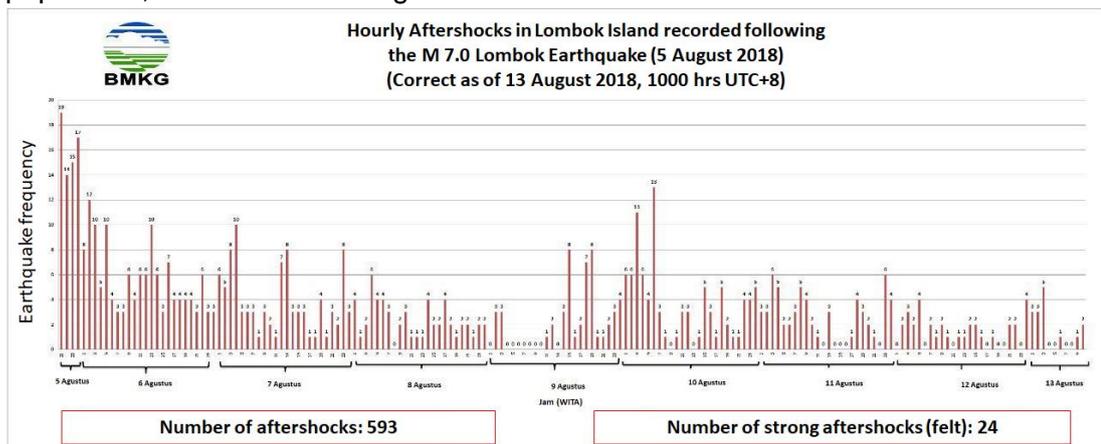
- a. A series of moderate and strong earthquakes have rocked cities and regencies in Lombok Island, West Nusa Tenggara (NTB) since 29 July 2018; i.e. with the strongest shocks recorded M 7.0 (5 Aug), M 6.4 (29 Jul), and M 6.2 (9 Aug). Although the tremors were also felt in neighboring province of Bali, only NTB Province declared emergency response status.
- b. NTB Governor had extended the emergency response period, effectively from 12 to 25 August 2018. The purpose of this extension is to further evacuate affected people from hazardous areas at risk and prevent collateral disasters, as well as to ensure access to national government supports and resources.
- c. As of 13 August 2018 (13.30 hrs UTC+7), National Disaster Management Authority ([BNPB](#)) has verified an overall fatalities of 436, 1,353 people injured (all levels of injuries), and 352,793 people displaced. An updated assessment had been conducted and identified approximately IDR 5.4 billion (\pm USD 368 million) in economic damage and loss. See Section 3 for breakdown information on disaster impact.
- d. **The Government of Indonesia through the BNPB maintains the position that that international assistance is not required.** BNPB has also encouraged all agencies and organizations based in Indonesia not to invite their international partners.
- e. [President Joko Widodo visited the affected areas](#), command post, and national assisting post (*Pospenas*) in North Lombok Regency on 13 August 2018. Section 4 describes the commitment of Government of Indonesia following the visit.
- f. The first sortie of ASEAN relief items was successfully transported by BNPB to Lombok International Airport (LOP) on 13 August 2018. A handover ceremony was conducted by the Executive Director of the AHA Centre and the Primary Secretary of the BNPB. The first sortie of ASEAN relief items consists of Mobile Storage Unit (MSU) and family tents (172). A second sortie is scheduled to arrive on 14 August 2018 with additional family tents, family kits, and personal hygiene kits.
- g. The AHA Centre In-Country Liaison Team (ICLT) and ASEAN-ERAT have facilitated the reception to incoming ASEAN relief items. In addition, they have supported the establishment of the MSU at Selaparang Airport (AMI), as the primary receiving point for domestic relief items from various locations in Indonesia.



- h. The AHA Centre will adjust our Situation Update release to synchronise daily data being released from Incident Command Post (schedule: 1700 UTC+8) and national cluster (schedule: 1600 hrs UTC+7). The AHA Centre flash updates on this disaster can be found here: <https://ahacentre.org/flash-updates/> while series of situation updates can be found here: <https://ahacentre.org/situation-updates/>

2. SUMMARY OF EVENTS, FORECAST, AND ANTICIPATED RISK

- a. Indonesian Meteorology, Climatology and Geophysics Agency (BMKG) on 9 August 2018 explained that the phenomena observed in Lombok is a set of series consisting of foreshocks, main shock, and aftershocks occurred along one back arc system, with similar mechanism and relatively near epicentre location. BMKG estimated that according to aftershocks recorded and geological information of the areas, the trend of tremors in Lombok may decrease in 3-4 weeks' time. [BMKG released a public statement on 13 August 2018](#) in response to inappropriate information on an earthquake prediction surrounding Java Island. BMKG also encouraged the public to ensure that they are receiving official earthquake information only from BMKG.
- b. As seen in the figure below, up till 13 August 2018, 2000 hrs (UTC +8) [BMKG](#) recorded 593 aftershocks in Lombok Island following the mainshock of M 7.0 on 5 August 2018, with 24 of them were felt due to moderate shaking (\geq M 4.5) and relatively shallow epicenter (10-25 km below ground surface). These aftershocks may constitute additional risk to buildings with hanging debris, responders, affected population, houses and damaged infrastructure.



- c. It is currently hot and dry in Lombok, Bali and Sumba islands. A drought occurrence was identified in Lombok and Sumbawa islands of West Nusa Tenggara (NTB) Province since rainfall record is only around 0-20 mm. The total clean water needs for affected population has to be projected by considering the rainfall pattern during this dry season.
- d. Based on the field call with responders and with the number of houses damaged, there is a potential risk of exposure to **asbestos**. Damage to material containing asbestos can result in the release of small asbestos fibers that become airborne and are readily inhaled. Although asbestos is not acutely hazardous to health, the asbestos fibers can remain in the lungs for a long period of time causing diseases such as asbestosis and lung cancer.

- e. The national health cluster reported cases of diarrhea and chicken-pox in North Lombok Regency. Humanitarian workers on the ground would have to take note of these infectious diseases to break the chain of transmission.

3. ASSESSMENT OF DAMAGE, IMPACT, AND HUMANITARIAN NEEDS

- a. As of 13 August 2018 (1700 hrs UTC+7), National Disaster Management Authority ([BNPB](#)) has verified an overall fatalities number of 437. 1,054 people reported injuries (all classes of injuries), and 352,793 people displaced. Out of the total affected people that exposed to strong tremor V-VIII MMI (3,512,689 persons) in Lombok Island, around 11.9 % were still displaced (419,424 persons) displaced. The number of displaced people decreased as some had decided to return to their houses during daytime and return at night time to evacuation sites ([BNPB](#)).

An updated assessment was conducted and identified around IDR 5.4 billion (\pm USD 368 million) in economic damages and loss. BNPB estimated this amount based on damage and loss data verified on 9 August 2018. The actual economic damages and losses is expected to be potentially greater than the current estimated amount ([BNPB](#)). The majority of economic loss recorded is due to housing damages, i.e. around IDR 3.82 trillion (USD 260 million). Economic loss in productive sectors are around IDR 432.7 billion (USD 294.8 thousands), while social and cultural is estimated around IDR 816.5 billion (USD 556.4 thousands), and cross-sectoral around IDR 242.1 billion (USD 164.9 thousands). Regarding loss to productive sectors, potentially it is still estimated direct loss, while indirect and opportunity losses have yet to be calculated.

The table below provides recent information on affected population in each regency/city, which have been verified by Command Post for Lombok Earthquake.

Table 1. Casualties due to Lombok Earthquake*
(Correct as of 13 Aug 2018, 1700 UTC+8)**

Location	East Lombok Regency	North Lombok Regency	West Lombok Regency	Central Lombok Regency	Mataram city
Affected population (exposed to earthquake intensity V-VIII MMI)	1,192,110	218,533	685,161	939,409	477,476
Population displaced (BNPB)	78,368 (6.57%)	137,182 (62.77%)	118,818 (17.34%)	<i>N/A</i>	18,368 (43.84%)
<i>Male</i>	37,832 (48.3%)	74,300 (54.2%)	59,734 (50.3%)		7,634 (41.6%)
<i>Female</i>	40,536 (51.7%)	62,882 (45.8%)	59,084 (49.7%)		10,734 (58.4%)
Families displaced (estimated based on average family size in each city/regency of NTB, BPS)	22,981 (avg family member: 3.41)	38,106 (avg family member: 3.60)	33,375 (avg family member: 3.56)	<i>N/A</i>	5,018 (avg family member: 3.66)
Fatalities	12	374	38	2	9
Serious injuries	47	248	210	2	63
Light injuries	95	392	189	18	89
Damaged buildings					
Heavy damage	2,938	12,546	11,925	9	110
Moderate damage	0	0	0	722	25
Light damage	2,853	5,328	11,701	4,036	619

Initial estimation of economic damage & loss (BNPB)	IDR 417.3 billion / USD 284.5 thousands	IDR 2.7 trillion / USD 184 million	IDR 1.5 trillion / USD 102 million	IDR 174.4 billion / USD 118.9 thousands	IDR 242.1 billion / USD 165 thousands
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* Consolidated from most recent release from [BNPB](#) and Lombok Earthquake Command Post

**Assessment and verification processes are still ongoing

The needs for protection and immediate access to proper temporary shelter is high for North Lombok Regency, followed by West Lombok Regency, East Lombok Regency, and Mataram city. Initial recovery needs are also indicating a similar pattern.

- b. The increasing number of vulnerable groups, comprising of pregnant women, infants, toddlers and the elderly, are also exposed to health risks based on the latest update from the Health Crisis Centre of the Ministry of Health (MoH) on 12 August 2018. As of this update, 59,603 pregnant women, 72,582 infants, 213,724 toddlers and 304,526 elderly have been identified. For patients seen in hospitals as in-patient and out-patient, these account for up to 830 and 5,160 respectively. Among the common diseases and health conditions seen, these include skin disease, acute respiratory tract infection, wounds, fractures, joint pain, hypertension, fever and body malaise.
- c. Following the activation of Sentinel Asia platform and Disaster Charter, until 11 August 2018, five remote damage assessment activities through aerial survey and satellite observation have been completed: 1) by Indonesian agencies (BNPB, BIG, BPPT, and PVMBG); 2) by UNITAR-UNOSAT following the M 7.0 earthquake; 3) Regional Service of Image Processing and Remote Sensing (SERTIT), Government of France; 4) various observations made by data provider nodes and data analysis nodes of Sentinel Asia; and 5) DigitalGlobe. All observations identified at this point are of various locations, and thus can be complementing each other. Images available for Lombok are available in AHA Centre's [Situation Update #2](#), [Situation Update #3](#), [Situation Update #4](#), and [Situation Update #5](#). There were no additional observations published as of 13 August 2018, although the AHA Centre took note that at least seven UAV teams from various national government agencies and organizations are planning to conduct aerial surveillance starting in this week.

In parallel, 14 out of total 52 villages affected have been assessed remotely / with around 3,081 buildings potentially damaged. Those villages (except for Gili Indah) were also identified by BNPB as isolated areas requiring immediate assistance. Damages identified through aerial surveillance and satellite observation are largely targeted at **a total collapse** where destruction to roof and structure of buildings are clearly identified from satellite images and/or captured aerial imagery. Based on the field call with ASEAN-ERAT and BNPB team on the ground, some of the damages identified and verified on the ground include those light damages; i.e. where the roof of the building remains, but with structural damages. Therefore, potentially the number of collapsed houses/buildings, at this point, is assessed to be more than 3,000 whereas the total damaged buildings (all level of severity) is more than 67,000 (BNPB). The most recent consolidated information matrix on remote assessment activities (aerial surveillance and satellite observations) following the M 6.4 and M 7.0 Lombok Earthquake can be retrieved from [the AHA Centre' Situation Update #5](#).



It has also been accessed that 71,740 houses and 458 schools reported to sustain damages. 189 places of worship including other public facilities were also reported to sustain damages.

4. ACTIONS TAKEN AND RESOURCES MOBILISED

Response by Government of Indonesia

- a. [President Joko Widodo](#) visited the affected areas of Tanjung District in North Lombok Regency as well as the Command Post and National Assisting Post near the regent office on 13 August 2018. The President was accompanied by NTB Governor and Ministry of Public Works and Housing.
- b. For the initial stage of early recovery, the Government is committed to rehabilitate houses of around 1,000 families. Government through Ministry of Public Works and Housing will provide reconstruction fund of around IDR 50 million per family for those who sustained heavy housing damages; IDR 25 million per families for those who sustained moderate housing damages; and IDR 10 million per families for those who sustained light housing damages. Government will also ensure the availability of essential building materials while monitoring the market price.
- c. Meanwhile, rehabilitation and reconstruction of public facilities, e.g. hospitals and schools, will be carried out by the government with initial starting time within the next two weeks ([BNPB](#)). This initiative ensures that the affected population return to normalcy which will raise overall resiliency
- d. National government agencies are committed in fully supporting the efforts of NTB Provincial Government in both emergency response and recovery, which includes resource mobilisation, logistics, funding, equipment, management, and personnel support ([BNPB](#)).



Response by the AHA Centre

- a. The AHA Centre is in close coordination with the BNPB of Indonesia, providing support on information management and dissemination of information to regional and international stakeholders both at headquarter and field levels. This includes inclusion of official BNPB products and information into the AHA Centre Situation Update. The AHA Centre ICLT was dispatched by the AHA Centre to Lombok Island on 6 August 2018 for supporting on-site coordination.
- b. All ASEAN-ERAT members arrived on 8 and 9 August 2018. While BNPB has welcomed ASEAN-ERAT, their primary deployment purpose is to learn from Indonesia's experience in managing the disaster and obtaining exposure on the ongoing emergency response operation. Subsequently, ASEAN-ERAT has completed the task of conducting damage assessment in 17 sites in Gunung Sari and Batu Layar districts, West Lombok Regency, together with local BPBD and BNPB team. Furthermore, ASEAN-ERAT had also provided BPBD of West Lombok Regency and BNPB with an evacuation plan for the evacuation sites in the regency. All data and



recommendations from ASEAN-ERAT were submitted to Command Post in West Lombok Regency and National Assisting Post (*Pospenas*) as part of the effort to provide an overall understanding of damages, impact, and humanitarian needs.

- c. The first sortie of ASEAN relief items has been successfully transported by BNPB to Lombok International Airport (LOP) on 13 August 2018. A handover ceremony was conducted by the Executive Director of the AHA Centre and the Primary Secretary of the BNPB. The first sortie of ASEAN relief items consists of Mobile Storage Unit (MSU) and family tents (172). A second sortie is scheduled to arrive on 14 August 2018 with additional family tents, family kits, and personal hygiene kits.
- d. ASEAN-ERAT together with BNPB and BPBD have completed the establishment of MSU for storing relief items at Selaparang Airport (AMI). The airport is one of the main entry points of domestic assistance.



First Sortie of ASEAN Relief items have reached Lombok



Current situation of an evacuation site in Gunung Sari District, West Lombok Regency, ASEAN-ERAT assessment site #2

Response by National and Local Humanitarian Partners

- a. With reference to Press Release from Lombok Earthquake Command Post, there are currently 83 national/local humanitarian partners on the ground, as of 11 August 2018. This is a significant jump from 17 as reported in the previous situation update.
- b. However, complete information of humanitarian activities are still not available at this point, hence only 273 types of humanitarian assistance can be identified in three regencies (North Lombok, East Lombok, and West Lombok) at this point (see attachment). Distribution of NGOs working in each district can be seen below. However, a future analysis may include type and quantity of assistance provided by each organization.
- c. CARE Indonesia is channeling assistance through its local partner Kopernik, who operates in Lombok and provides support to survivors. CARE is also working through local partners to deliver clean water, hygiene and sanitation supplies, shelter kits and



other basic items. Women and girls are particularly vulnerable groups following a natural disaster, CARE will also be conducting a gender assessment to ensure response efforts best meet the needs of women, girls, men and boys.

5. RECOMMENDATIONS AND PLAN OF ACTIONS

Recommendations to be considered by humanitarian partners

- a. Based on a release from [BNPB](#) and agencies at Command Post on 12 August 2018, the most urgent humanitarian needs are **basic relief items for 352,793 IDPs**, i.e. the following items:
 - tents
 - blanket
 - sleeping mats
 - ready-to-eat meal
 - WASH
 - clean water
 - complete resumption of telecommunication
 - trucks for relief items distributions
 - power generator / generator set for lightingIn line with the guidance from the BNPB, AHA Centre recommends those relief items above to be fulfilled from domestic sources.
- b. Due to seismic hazard characteristics in the affected areas, as described in Section 2, humanitarian partners and responders should exercise cautions during their operations, prepare and implement a security plan, and be alerted to potential collateral disasters. Safety of humanitarian workers has to be ensured due to identified security risk of looting on the ground. Disaster responders and humanitarian workers have to ensure safe evacuation sites, preferably outdoor in a solid ground, in anticipation of aftershocks or landslides.
- c. According to the briefing document from Lombok Earthquake Command Post, the challenges on the ground are as follows:
 - e. Lack of heavy equipment to knockdown concrete structures
 - f. Limited number of qualified personnel in comparison to vast affected areas
 - g. Resumption of electrical and telecommunication services limited to main line
 - h. Several access roads have been cut-off due to additional landslides
 - i. Disruption to clean water services
- d. With the current and near-future availability of satellite imageries and aerial survey, it can be used for on the ground validation and assessment of building damages and need of rehabilitation and reconstruction. **A practical suggestion to national/local humanitarian partners** conducting assessment is to use geotagging and/or open camera, in order for command post (*posko*) and national assisting post (*pospenas*) to retrieve location data and enable quick compilation of observation data. **Pastigana Team of BNPB at Pospenas has released guidance to humanitarian partners conducting assessment for using qlue application to allow geo-tagging.** Please also refer to plan of actions by AHA Centre and ASEAN-ERAT, for reference by other humanitarian partners.
- e. In order to develop a complete gap analysis for all 5 regencies/city affected, more detailed information on quantity of relief items provided and number of evacuees in each site is required.
- f. With the current development of health issues in the second week of disaster following the M 7.0 earthquake, several recommendations are important to be considered by humanitarian partners:
 - Disruption to primary healthcare, damage to sanitation services, water supply and housing as well as interruption to usual access to safe and sufficient food in the community, may lead to rapid increase in malnutrition, dehydration and communicable diseases especially among vulnerable groups (infants, toddlers and children under 5, and elderly). Due to the large IDP numbers, there is potential



overcrowding in evacuation sites which will exacerbate the health and sanitary conditions.

- To ensure that the primary health needs of surviving populations are maintained, provision of potable water, food, provision of water and sanitation facilities should be sustained. Wherever possible, breastfeeding should highly be encouraged. Sound management and removal of waste (toilets, chemical treatment of sludge and solid waste disposal), can greatly reduce the population to diseases such as diarrhea, hepatitis A, cholera, typhoid, intestinal helminths, leptospirosis, malaria and trachoma. Guidance on the development of techniques for proper sanitation and human excreta disposal in emergencies can be found [here](#) (WHO).
- To anticipate and prevent disease outbreaks (e.g. water-borne diseases, measles, chickenpox, acute respiratory infection, vector-borne due to presence of breeding sites), there may be a need to conduct a communicable disease risk assessment especially in evacuation sites to enhance the existing health surveillance system.
- To promote stockpiling and replenishment of medical/ hospital supplies, essential medicines including making relevant vaccines accessible (e.g. anti-tetanus, typhoid, measles) and ensuring that the vaccine cold chain is intact.
- Vaccine-preventable programmes which were disrupted during the emergency should be restored at the earliest time to prevent transmission of diseases (such as measles, rubella, polio and mumps etc.) in children.
- To sustain psychological and mental health support, so as to adequately address the needs of people with stressful and post event traumatic experiences.
- To deploy midwives in affected areas to monitor, provide support and ensuring maternal and neonatal (newborn) health are met. This is essential to prevent child and mother mortality as primary healthcare is disrupted.

Plan of actions by AHA Centre and ASEAN-ERAT

- a. The AHA Centre has seconded staff to BNPB's Data and Information Centre (*Pusdatin*) to support dissemination of official information to international stakeholders.
- b. The AHA Centre and ASEAN ERAT, in close coordination with BNPB, will continue to facilitate the deployment of ASEAN relief items second sortie to complement current emergency response operations.
- c. The AHA Centre will provide further updates as situation progresses and more information is available.

Prepared by:

AHA Centre - Emergency Operations Centre (EOC) in collaboration with BNPB's Data and Information Centre (*Pusdatin*) and Disaster Preparedness and Analysis (*Pastigana*)

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ABOUT THE AHA CENTRE

The AHA Centre - ASEAN Coordinating Centre for Humanitarian Assistance on disaster management - is an inter-governmental organisation established by 10 ASEAN Member States – Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand and Viet Nam - to facilitate the cooperation and coordination among ASEAN Member States and with the United Nations and international organisations for disaster management and emergency response in the region.

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