



# SITUATION UPDATE NO. 3 M 7.4 EARTHQUAKE & TSUNAMI Sulawesi, Indonesia

No. **3**

Monday, 1 October 2018, 17:00 hrs (UTC+7)

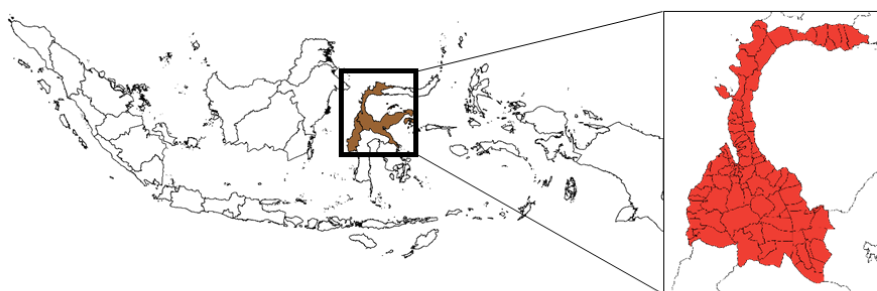
*This Situation Update is provided by the AHA Centre for use by the ASEAN Member States and relevant stakeholders. The information presented is collected from various sources, including but not limited to, ASEAN Member States' government agencies, UN, IFRC, NGOs and news agencies.*

## M 7.4 EARTHQUAKE & TSUNAMI IN SULAWESI, INDONESIA

Correct as at 01 October 2018

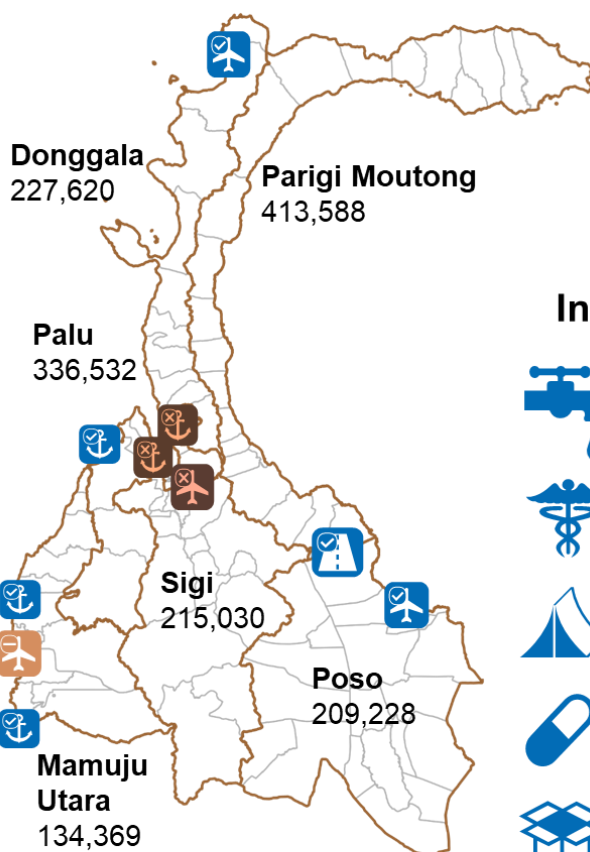


ONE ASEAN  
ONE RESPONSE



### Affected areas:

- Donggala
- Palu
- Parigi Moutong
- Sigi



48,025  
displaced



844  
fatalities



103  
sites



632  
major injuries

### Initial assistance identified:



NFI



- Air transport capable to land in short runway (2 km airstrip)
- Family Tents
- Water Purification sets
- Generator sets
- Medical assistance
- Environmental management for mosquito-borne diseases (malaria)



**Disclaimer:** AHA Centre's Situation Update for this event will be released daily at 1700 hrs (UTC+7). All partners who would like to share their information must do so by 1500 hrs (UTC+7). All key statistics quoted by AHA Centre are those received from the National Disaster Management Authority (BNPB) of Indonesia.



SITUATION UPDATE

## 1. HIGHLIGHTS

- a. Strong earthquakes occurred on 28 September 2018 and caused great damages and casualties in Palu City, and regencies of Donggala, Parigi Moutong, and Sigi. An earthquake with magnitude 6.0 occurred at 13.59 hrs UTC+7 and already caused building damages. Afterwards, a M 7.7 (updated to M 7.4) earthquake occurred at 17:02 hrs causing more damages. It then triggered a near-field tsunami, possibly due to landslide in the ocean floor and the tsunami struck Talise beach in Palu City and beaches in Donggala and some settlements and buildings on the beach. Assessment and data collection on the number of victims are still underway.
- b. According to the population census data of 2010, 1,536,367 are potentially affected by this event across 6 regencies and 85 districts. Initial reports (as at 1 October, 1300 hrs Jakarta time) BNPB has confirmed 844 fatalities with over 632 injuries and 90 missing persons across 934 affected villages. There are currently over 48,025 evacuees being housed in 103 evacuation sites. Note that these figures are still expected to rise.
- c. Government of Indonesia, through BNPB and Ministry of Foreign Affairs, have welcomed offers of international assistance as of 1 October 2018. This statement was also delivered by BNPB during Emergency Briefing and Coordination Meeting Partners at AHA Centre Emergency Operations Centre on 1 October, 10.00 hrs. And repeated during BNPB's Press Conference at 1300 hrs.
- d. Representative of BNPB has strongly stated that humanitarian partners should make concrete and written offers first, which will be reviewed to ensure the offer meet humanitarian needs, before granting access. BNPB has stated that the over-arching guidance on acceptance of international assistance are: 1) selective acceptance, based on humanitarian needs; 2) focus to those who already offered their assistance; 3) prioritise those who has capacity.
- e. On 1 October 2018, 1700 hrs, Ministry of Foreign Affairs organised a meeting between Vice Minister and all ambassadors of countries offered their assistance. The AHA Centre is also attending the meeting. Meeting results are not available at this time, and will be shared during next Coordination Meeting with Partners at AHA Centre EOC on 2 October 2018.
- f. For information on specific needs for search and rescue teams (USAR) and emergency medical teams (EMTs), OCHA and WHO, with the AHA Centre, are in discussions with the Government of Indonesia on specific offers as a matter of urgency. Government of Indonesia will only accept specific USAR and EMTs based on the relief teams indicated their availability on the V-OSOCC.
- g. AHA Centre organised Emergency Briefing and Coordination Meeting with partners at its Emergency Operations Centre on 1 October 2018, 1000 hrs Jakarta time, to brief the diplomatic and humanitarian partners who wish to support the government-led emergency operations. This coordination meeting will be held on a daily basis at 1400 hrs, starting from 2 October 2018.
- h. ASEAN Emergency Response and Assessment Team (ERAT) has reached Palu on and establishing their base of operations and coordination setup with Coordinator of National Assisting Post (Pospenas) for incoming international assistance.



- i. For other type of assistance, AHA Centre is supporting BNPB in coordinating the offers of assistance. Humanitarian partners are encourage to use ASEAN's SASOP Form Offer of Assistance available here: <http://bit.ly/SASOP4Sulawesi>. Based on BNPB as at 1 October 2018 there are six initial needs required:
  - ✓ Air transport capable to land in short runway (2 km airstrip)
  - ✓ Family Tents
  - ✓ Water Purification sets
  - ✓ Generator sets
  - ✓ Medical assistance
  - ✓ Environmental management for mosquito-borne diseases (malaria)
- j. Land/road lane from Palu-Poso and Palu-Mamuju are accessible now. The status of the nearest airports and seaports are:
 

**Airports updates:**

  - a. Palu airport: opened and priority will be given to emergency, SAR and humanitarian flight.
  - b. Mamuju airport: Tower building damaged but still functioning
  - c. Toli-toli airport: Normal
  - d. Poso airport: Normal
  - e. Luwuk Bangai airport: Shifting of tower but still functioning

**Ports updates:**

  - f. Pantoloan Port (Kota Palu): most severely damaged compared to other ports
  - g. Wani port: Building and docks were damaged
  - h. Ampana Port, Luwuk Port, Belang-belang Port, Majene Port: In good condition with no damage reported

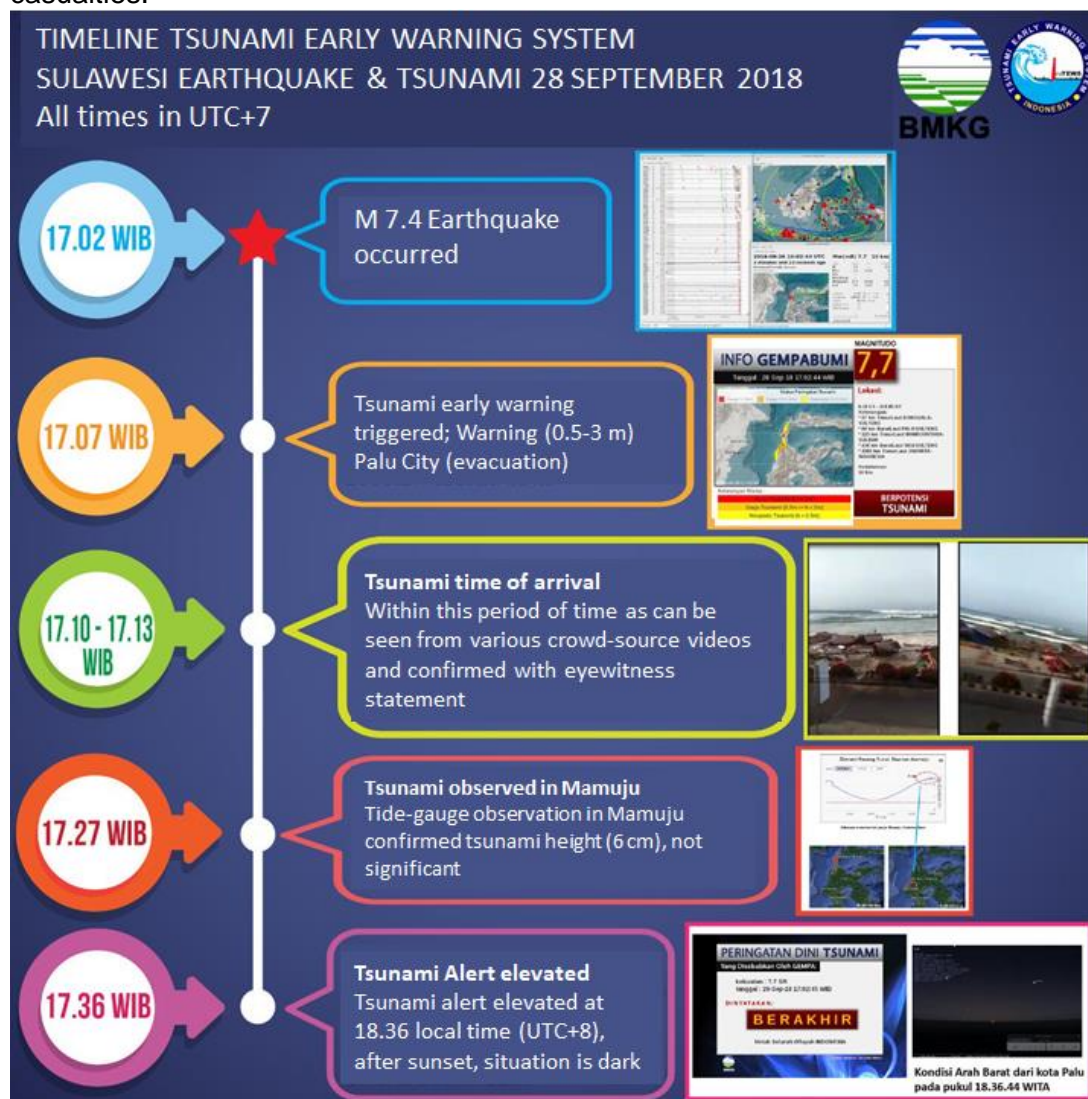
## 2. SUMMARY OF EVENTS, FORECAST AND ANTICIPATED RISK

- a. ***Earthquake source, mechanism, and intensity information***  
 A powerful M 7.4 earthquake occurred on 28 September 2018, 17.02 hrs UTC+7 in Central Sulawesi Indonesia. The earthquake epicentre was located at 0.18 South and 119.85 East, 26 km north to the Donggala Regency, at a depth of 10 km ([BMKG](#)). Based on the location of the epicentre and depth of hipocentre, the earthquake was resulted due to Palu Koro fault. According to the observed fault movement, the earthquake was generated due to deformation with a strike-slip mechanism ([BMKG](#)). The earthquake exposed more than 310,000 people Donggala Regency (VII-VIII MMI), more than 350,000 people in Palu and Mapaga (VI-VII MMI), Gorontalo and Poso (III-IV MMI).
- b. A strong M 5.5 earthquake occurred on 1 October 2018, 12.43 UTC+7 with epicenter 0.06 North and 119.55 East at a depth of 10 km. An III MMI were reported in Palu city. Aftershocks with moderate-to-strong magnitude are still expected in the area due to tectonic setting in Sulawesi Inland. In the hilly areas, due to existing fault-lines, aftershocks may trigger landslides. In addition, there is a likelihood that sediment across Palu Bay has not been solidified. Thus, humanitarian partners on the ground needs to be aware of potential liquefaction and landslide in the coastal areas if another strong earthquakes occurred. As can be seen in the figure below, red lines indicate updated fault lines across Sulawesi Island, which may move again due to instability.
- c. [PVMBG](#) is forecasting the potential area for land movements in Indonesia in September 2018 compared to August 2018 will tend to experience a slight increase in potential in most parts of Indonesia starting from parts of the islands of Sumatra, Java, Kalimantan, Bali. The Indonesian region, which in general remains to be



watched out for, especially in the area of roads and settlements in hills, mountains, and along river streams.

- d. BMKG's Indonesian Tsunami Early Warning System provided an infographic exhibit the timeline of the earthquake and tsunami events. This may have explain the short-amount of time available for people to evacuated and resulted in high number of casualties.



**Figure 1.** Timeline of Tsunami Early Warning System – Sulawesi Earthquake and Tsunami 28 September 2018 (Courtesy: BMKG)

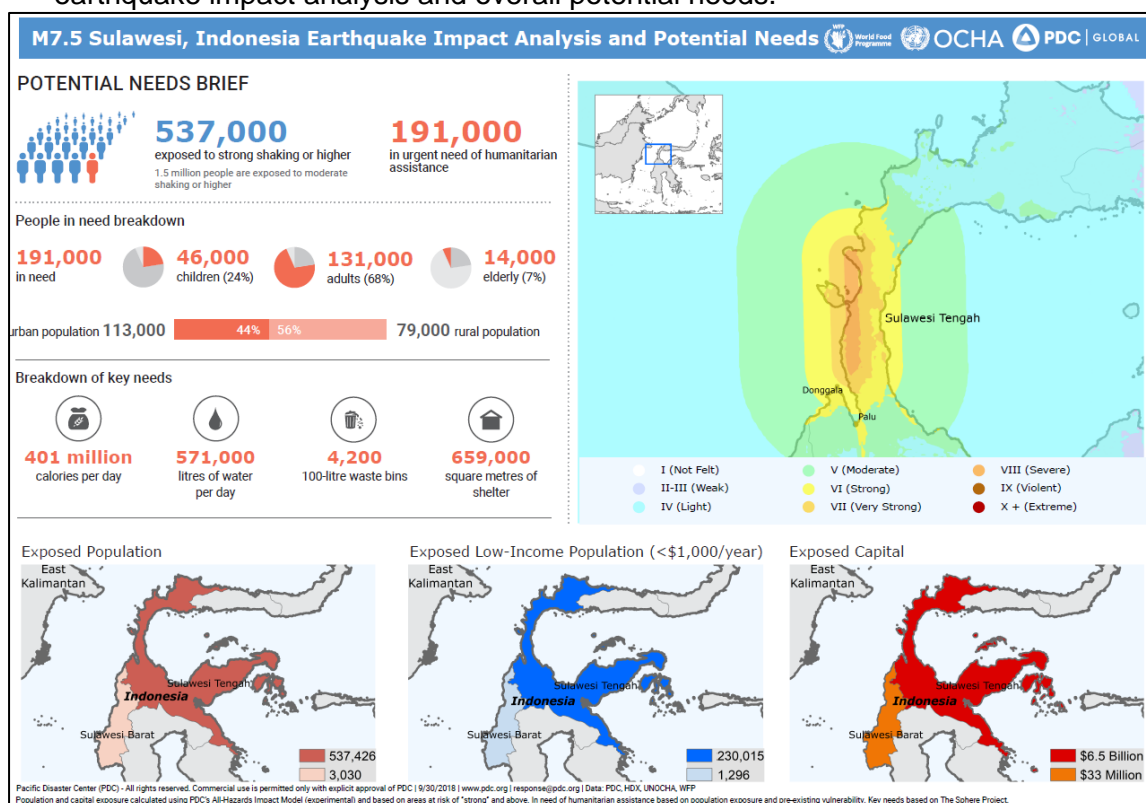
- e. Sulawesi is considered to have medium level of malaria transmission to malaria. Health authorities have identified that the risk of transmission may increase as environmental management is disrupted due to the disaster. In Indonesia, malaria is resistant to traditional treatments such as chloroquine and sulphadoxine-pyrimethamine. A more effective therapy, artemisinin-containing combination therapy (ACTs), costs 10 times more at 1 USD per adult dosage. (Source: UNICEF, WHO SEARO).
- f. Schistosomiasis is specifically endemic in three neighbouring areas: Napu, Lindu and Bada valleys, all located in the highlands of Central Sulawesi province. The disease, which is better known as snail fever, had been identified in 28 villages, in the two districts where the valleys are located. The distribution of the disease is limited to the



villages due to limited location where the transmitting agents of the parasite. As earthquakes and landslides were reported in these areas, access to provide clean water and basic medical services will be disrupted hence the risk of disease transmission will increase.

### 3. ASSESSMENT OF DAMAGE, IMPACT, AND HUMANITARIAN NEEDS

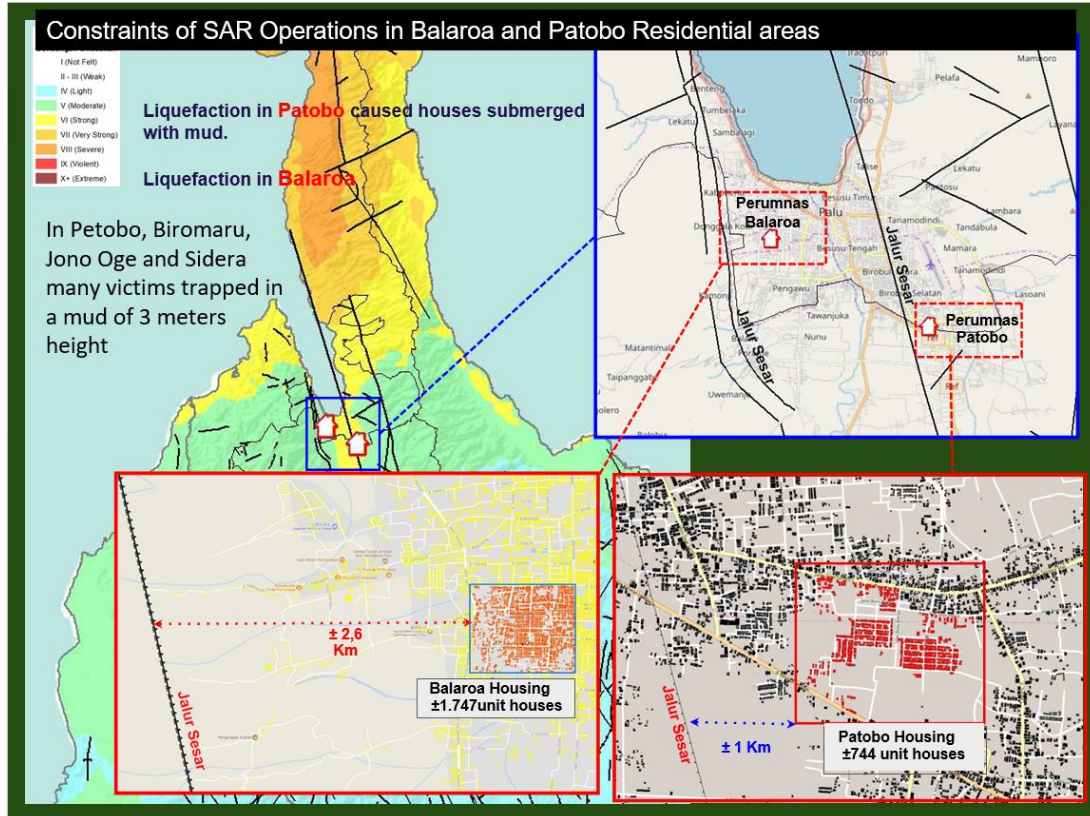
- a. According to the population census data of 2010, 1,536,367 are potentially affected by this event across 6 regencies and 85 districts. Initial reports (as at 1 October, 1300 hrs Jakarta time) BNPB has confirmed 844 fatalities with over 632 injuries and 90 missing persons across 934 affected villages. There are currently over 48,025 evacuees being housed with 24 evacuation sites. Note that this figures are still expected to rise.
- b. One of the AHA Centre's partners, Pacific Disaster Center has provided the following earthquake impact analysis and overall potential needs.



**Figure 2. Earthquake Impact Analysis and Potential Needs**

- c. BNPB reported a total of 114 foreigners have been affected or become casualties (see below). Ministry of Foreign Affairs is handing the evacuation of affected foreigners.
  - 1 Singaporean (safe and evacuated to Jakarta)
  - 2 Belgian (1 safe and evacuated to Jakarta, 1 still unknown)
  - 1 Korean (unknown condition, and potentially trapped in Hotel Roa-roa)
  - 6 France (unknown condition)
  - 1 Spanish (safety confirmed in Ternate)
  - 3 Malaysian (safety confirmed, contact BNPB for their location)
  - 20 Germans (safety confirmed, 2 at Mutiara Palu Airport, 17 in Prince John Dive Resort)
  - 10 Vietnamese (evacuated to Mutiara Palu Airport)

- 32 Thais (safety confirmed, 15 at Mutiara Palu Airport, 17 at IAIN campus)
  - 21 Chinese (safety confirmed at Best Western Hotel).
  - 1 Swiss (safety confirmed at Prince John Dive Resort)
- d. Liquefaction has caused thousands of houses submerged. BNPB stated 1,747 houses were submerged in Balaroa housing area and 744 houses were submerged in Patobo housing area. Search, rescue, and retrieval operations are constrained with limited heavy equipment on the ground. See figures below.



**Figure 3. Constraints of SAR Operations in Balaroa and Patobo Residential Areas**  
(Courtesy: BNPB)





**Figure 4. Situation at Balaroa Housing areas (Courtesy: BNPB)**



**Figure 5. Situation at Balaroa Housing areas (Courtesy: BNPB)**

- e. Damage and impact listed below are constraining emergency response operations carried out by the relevant agencies and actors (BNPB):
- I. Lack of electricity
  - II. Unstable communication lines and channels
  - III. Limited heavy equipment and manpower

- IV. Road access to mobilise additional items
- V. Size of the affected areas

#### 4. ACTIONS TAKEN AND RESOURCES MOBILISED

##### Response by Government of Indonesia

- a. President Joko Widodo had visited the affected areas on 30 September 2018 and subsequently provided clearance to Ministry of Foreign Affairs to made statement regarding international assistance.
- b. Government of Indonesia, through BNPB and Ministry of Foreign Affairs, have welcomed offer of international assistance as of 1 October 2018. This statement was also delivered by BNPB during Emergency Briefing and Coordination Meeting Partners at AHA Centre Emergency Operations Centre on 1 October, 10.00 hrs. And repeated during BNPB's Press Conference at 1300 hrs.
- c. Governor of Central Sulawesi has announced an initial 14 days of emergency response period dated 28 September to 11 October 2018. In addition, the governor elected Commander of Military Resort 132/Tadulako as Incident Commander with the Incident Command Post located at Makorem 132/Tadulako ( -0.897464°, 119.877599°), Palu city.
- d. BNPB has setup National Assisting Post (*Pospenas*) at the vicinity of Central Sulawesi Governor Office (-0.890633°, 119.871074°).
- e. A [web portal on BNPB's page](#) has been prepared for sharing maps, providing updates and information to public and media.
- f. Indonesian Space and Aeronautical Agency (LAPAN) provided high resolution pre earthquake and tsunami images, accessible here:  
[http://pusfatja.lapan.go.id/simba/gr/earthquake/Layout\\_Gempa\\_Palu\\_Donggala/](http://pusfatja.lapan.go.id/simba/gr/earthquake/Layout_Gempa_Palu_Donggala/)
- g. Basarnas and supporting organizations for the joint search and rescue efforts divided 6 (six) operational areas:
  - ✓ Hotel Roa-roa; -0.902946°, 119.868549° (anticipated 50-60 people buried)
  - ✓ Ramayana Mall; -0.908270°, 119.876543°
  - ✓ Dunia Baru Restaurant; -0.909587°, 119.875826°
  - ✓ Collapsed buildings across Talise beach
  - ✓ Balaroa residential area; -0.904885°, 119.842509°
  - ✓ Others
- h. BMKG has dispatched a team immediately to Palu to conduct microseismic, macroseismic, microzonation and post-tsunami surveys:
  - ✓ Microseismic survey is a monitoring of a small earthquake after an earthquake for the prediction of aftershocks to end
  - ✓ Macroseismic survey is monitoring damage on the post-earthquake field
  - ✓ Microzonation survey to review the earthquake-prone areas, which are divided into certain areas
  - ✓ Post-tsunami survey to review of the traces of the tsunami wave starting from the coast to the mainland
- i. According to BNPB, Government of Indonesia has received offers of assistance from: AHA Centre, Australia, China, European Union, Morocco, Philippines, South Korea, Singapore, Turkey, and The US.





## Response by the AHA Centre

- a. AHA Centre has expressed condolence to Indonesia through BNPB Indonesia and offered support from regional resources, including mobilising ASEAN Emergency Response and Assessment Team (ASEAN-ERAT), providing relief items from the Disaster Emergency Logistic System for ASEAN (DELSA) regional stockpile, and facilitating the deployment of capacities available in the region, such as from the ASEAN Standby Arrangements.
- b. AHA Centre organised Emergency Briefing and Coordination Meeting with partners at its Emergency Operations Centre on 1 October 2018, 1000 hrs Jakarta time, to brief the diplomatic and humanitarian partners who wish to support the government-led emergency operations.



**Figure 6.** Emergency Briefing & Coordination Meeting with Diplomatic Missions and Humanitarian Partners at AHA Centre EOC

The coordination meeting attended by BNPB, Ministry of Social Affairs, Singapore Embassy, Philippines Embassy, Mission Aviation Fellowship, Muslim Aid, ICRC, IFRC, Mission of Cambodia to ASEAN, MDMC Muhammadiyah, LSP PB/MPBI, DFAT Australian Embassy, UNFPA, IOM, UN OCHA, Child Fund, WFP, PKPU HI. Minutes of Meetings have been circulated to attendees.

- c. ASEAN Emergency Response and Assessment Team (ERAT) has reached Palu with Indonesian Airforce's C130. They have established coordination with Mutiara Palu Airport Authority and establishing their base of operations and coordination setup with Coordinator of National Assisting Post (Pospenas) for incoming international assistance.





**Figure 7 ASEAN-ERAT is in Palu – Coordination activities with Airport Authority and National Assisting Post (Pospenas)**

- d. The AHA Centre requested activation of Sentinel Asia's Emergency Observation Request (EOR) and received access from DigitalGlobe on satellite-based observation. AHA Centre and LAPAN recommended to Sentinel Asia to escalate the observation to International Disaster Charter.

**Response by ASEAN Dialogue Partner(s) (in alphabetical order)**

- a. The [European Union](#) has released an initial € 1.5 million in emergency humanitarian assistance for the disaster victims. The EU has also already activated its emergency Copernicus satellite mapping service to assist the Indonesian authorities, as well as, continue to closely monitor the situation and ready to mobilise more assistance.
- b. [The government of the Republic of Korea](#) will offer humanitarian assistance of USD 1 million in cash to Indonesia. Given the possible growth in the extent of damage, the ROK government will mull over sending a Korea Disaster Relief Team to Indonesia after consultations among relevant government agencies at home and with the Indonesian government.
- c. Swiss Development Cooperation (SDC) has signified availability to provide aid and teams to assist through AHA Centre's coordination.

**Response by the Humanitarian Country Team**

- a. The Humanitarian Country Team (HCT) convened today, 30 September in Jakarta to discuss on the need to have a coherent, structured, coordinated assessment covering various sectors (logistics, health and displacement);
- b. WHO and UNFPA is working closely with Ministry of Health (Pusat Krisis Kesehatan) to support requests from sub-clusters. Rapid health assessments will be conducted in support to Ministry of Health based on agreed template covering several sub-clusters.
- c. WFP is currently working through their national offices to support the operations. However, logistical challenges remain and is limiting the movement of teams.
- d. IOM and UNICEF is working closely with Ministry of Social Welfare to support the displacement tracking, social welfare and psycho-social needs. UNICEF is also working closely with the Ministry of Education through the safe schools development programme to support the needs on the ground.



### Response by Other Humanitarian Partners

- a. [CARE Indonesia](#) is in the process of relocating its team of emergency response specialists from Jakarta to assess the situation with local partners.
- b. A [Catholic Relief Services \(CRS\)](#) emergency response team is en-route to Palu to support local partners in the area. CRS is ready to address immediate needs with relief supplies, including tarps, blankets and sleeping mats and also sanitation and clean-up kits.
- c. Open Street Map data for Palu City and Donggala Regency are available at Humanitarian Data Exchange and updated on daily basis at 2300 hrs UTC+7. The datasets include buildings, road, point of interest, waterways. OSM tasking managers are available here,
  - OSM Tasking Managers for Donggala Regency available here: <http://tasks.openstreetmap.id/project/45>
  - OSM Tasking Managers for Palu city available here: <http://tasks.openstreetmap.id/project/78>
- d. [Indonesian Red Cross \(PMI\)](#) has prepared relief items and support to be provided through the regional office in Makassar in the form of the following: 200 blankets, 200 sleeping mats, 500 jerrycans, and 200 sarongs. In addition, PMI has also delivered 100 Red Cross vests and operational funds amounting IDR 100 million.
- e. [Mercy Relief](#) will be sending its disaster response team to Palu, Central Sulawesi on 2 October 2018 to provide the first phase of emergency relief distribution. Immediate needs to be provided are shelter kits, solar light, medical service, water and food items. Mercy Relief will also launch a public fundraising appeal in Singapore for this cause from 1 to 31 October 2018.
- f. [Project HOPE](#) deployed a medical team to Sulawesi to work with the local authorities and emergency responders to address the urgent health needs.
- g. [The Salvation Army](#)'s Indonesia Emergency Services Team has been activated by Territorial Headquarters in Bandung, and a major disaster response in Central Sulawesi is being planned. The local team is preparing a detailed assessment and the primary support offered would be pastoral and emotional support for the victims.
- h. [World Vision](#) staffs are already on the ground, responding to children and families in needs. World Vision's pre-positioned supplies in Palu are including hygiene, family and children kits that will be dispatched as soon as distributions can be organised.

## 5. RECOMMENDATIONS AND PLAN OF ACTIONS

### AHA Centre's plans

- a. The AHA Centre will organise an Emergency Briefing and Coordination Meeting tomorrow, 2 October, at the Emergency Operations Centre of the AHA Centre. The briefing will apprise participants about the latest situation update, provide overview of the response of the Government of Indonesia and humanitarian partners.
- b. The AHA Centre will be coordinating offers of assistance as requested by Government of Indonesia. Humanitarian partners are encourage to use ASEAN's SASOP Form Offer of Assistance available here: <http://bit.ly/SASOP4Sulawesi>. A consolidated list will be forwarded to BNPB for their deliberation.





- c. The ASEAN-ERAT will lead the coordination on the ground to support BNPB. ASEAN-ERAT will offer to establish the Joint Operations Coordination Centre of ASEAN (JOCCA) and Reception and Departure Centre (RDC).
- d. The AHA Centre to coordinate with BNPB whether SAR team would be accepted. Singapore and Malaysia SAR team stand ready to be deployed at all times. A list of all relief teams (around 50 teams SAR and EMTs) are monitoring the situation through Virtual-OSOCC.
- e. AHA Centre had expressed condolence to Indonesia through BNPB Indonesia and offered support from regional resources, including mobilising ASEAN Emergency Response and Assessment Team (ASEAN-ERAT), providing relief items from the Disaster Emergency Logistic System for ASEAN (DELSA) regional stockpile, and facilitating the deployment of capacities available in the region, such as from the ASEAN Standby Arrangements.

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**Prepared by:**

AHA Centre - Emergency Operations Centre (EOC) in cooperation with National Disaster Management Authority (BNPB; Data & Information Centre)

### 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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