



ONE ASEAN  
ONE RESPONSE

## SITUATION UPDATE

### MASSIVE FLOODS IN GREATER JAKARTA AREA INDONESIA

No. **2**

Monday, 6 January 2020, 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.

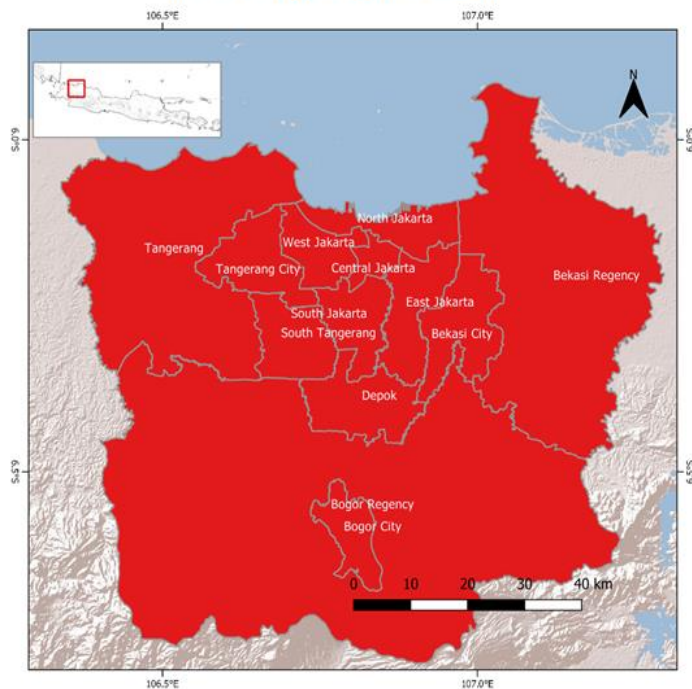
## SITUATION UPDATE NO.2 MASSIVE FLOODS IN GREATER JAKARTA AREA INDONESIA

Latest update by AHA Centre as per 06 January 2020

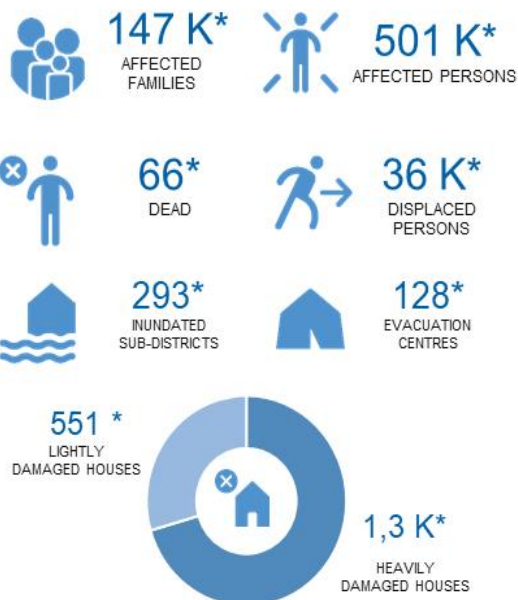


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### MAP OF THE AFFECTED AREAS



### KEY FIGURES



Figures as of 06 January 2020 (PM)

\*Estimations are based on data reported/confirmed by National Disaster Management Authority of Indonesia (BNPB) and other verified sources.

## 1. HIGHLIGHTS

- Due to the monsoon season and heavy rainfall since 31 December 2019, the Greater Jakarta area was affected by massive floods and localised landslides reported. As of **6 January 2020**, a total of **293 sub-districts** in **74 districts** of 3 provinces, i.e. Jakarta, West Java, and Banten, are flooded as from 1 January 2020.



- b. Today (6 January 2020), the Emergency Operations Centre (PUSDALOPS) of National Disaster Management Authority of Indonesia (BNPB) held a floods response coordination meeting at BNPB Headquarters, led by the Chief of PUSDALOPS BNPB. The meeting was attended by the representatives of various ministries, governmental and non-governmental agencies.
- c. BNPB has been leading national coordination with other national agencies to support the local disaster management authority (BPBD). BNPB has mobilised support to the affected people by dispatching relief items, deploying personnel, disseminating information, and establishing evacuation centres.
- d. As the situation improves, the number of displaced people in the three affected provinces are generally decreased over time.
- e. In-country ASEAN Emergency Response and Assessment Team (ASEAN-ERAT) Indonesia is mobilised to reinforce BNPB in providing technical assistance in the management of evacuation site and provision of minimum services at the Jati Asih evacuation site of BNPB.
- f. The AHA Centre has issued Flash and Situation Updates for this event, which available here ([Flash Update No.1](#), [Flash Update No.2](#), [Flash Update No.3](#), [Situation Update No.1](#)).

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

### *Summary of events*

- a. The occurrence of the Northeast Monsoon has brought a continuous heavy rain in Jakarta and its surrounding area, known as the Greater Jakarta (JABODETABEK: Jakarta, Bogor, Depok, Tangerang, and Bekasi), which consists of three provinces namely Banten, Jakarta, and West Java. The floods started in the early morning of 1 January 2020, and have spread out throughout the day. In Banten and West Java Provinces, several localised rain-induced landslides have also been reported.
- b. BMKG reported that the recorded rainfall intensity during 1 January 2020 at Halim Perdanakusuma Air Force Base in East Jakarta reached up to 377mm/day. This number is the highest compared to the rainfall intensities that also caused massive flooding in Jakarta a few years back, such as 2007 (340 mm/day) flooding event. In addition, BMKG also reported that the rain may still continue until 7 January 2020, with a plausible high tide up to 30-60 cm height occurs in northern Jakarta during 5-6 January 2020 which may detain water volume inland.
- c. Currently, most of the displaced people have returned to their home, although some evacuation efforts in Banten and West Java Provinces, are still ongoing.

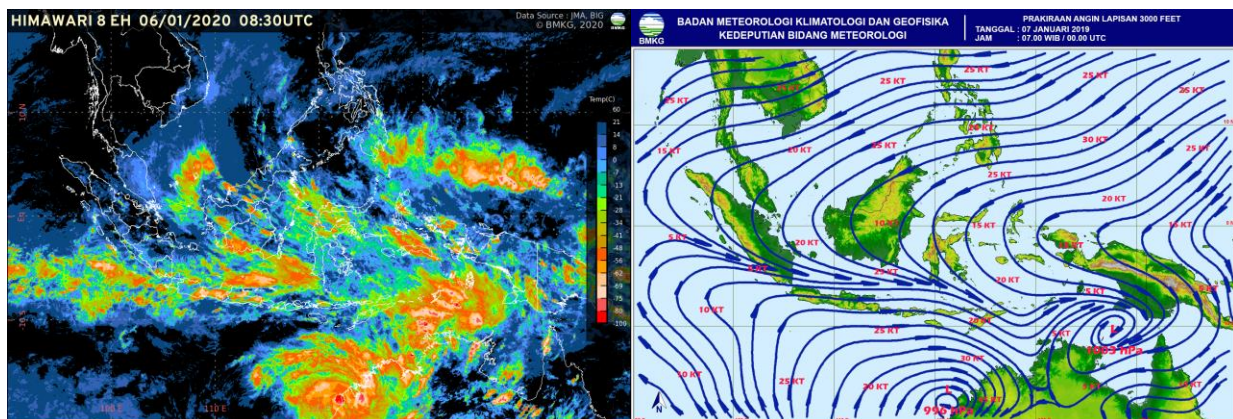
### *Forecast and anticipated risk*

- d. Based on the floods response coordination meeting in BNPB Headquarters on 3 January 2020, BMKG reported that from 11 to 15 January 2020 wet atmospheric conditions from African Region may land in Indonesia, which includes Greater Jakarta, middle part of Sumatra,



Java, South Kalimantan, and South Sulawesi. These areas are potentially showered by extreme heavy rains and may recur at the end of January and the end of February.

- e. The latest weather analysis reported by BMKG indicates that potential rainy weather may still occur in the Greater Jakarta, as the wet air from the southern Sumatra transverse to Java due to the Northeast Monsoon season.

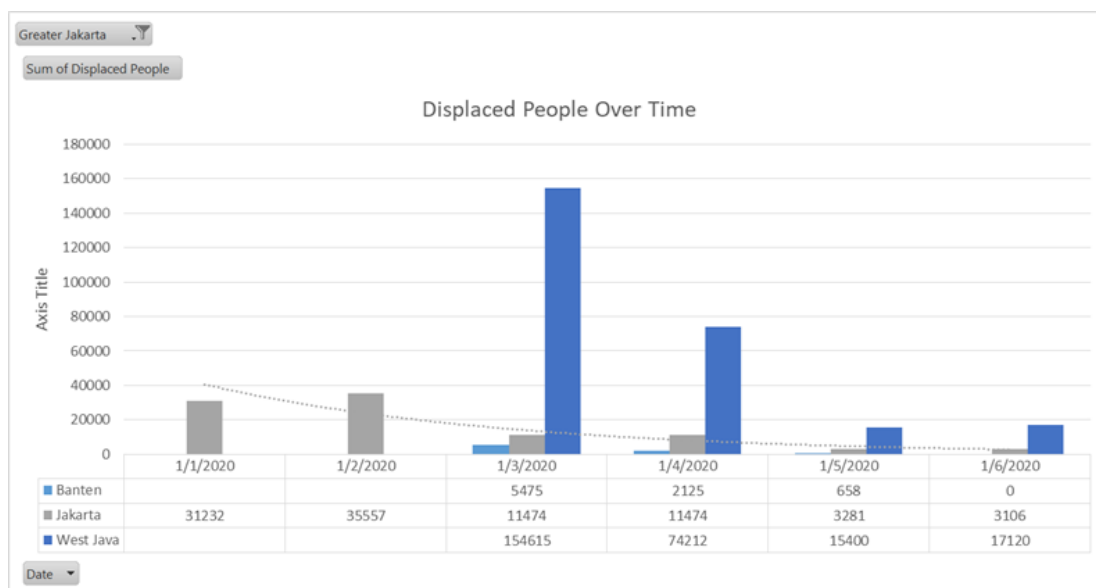


**Figure 1:** Left-Snapshot of HIMAWARI-8 EH Satellite, showing cloud temperatures based on radiation observation. Black or blue colour in the scale bar means that there is no significant cloud formation. On the contrary, orange to red colour means that colder temperature with bigger potential for cloud formation that may cause rains. Right-Snapshot of wind and pressure conditions at 3000 feet high, showing the prevailing winds in Java area tends to move easterly. Both pictures are taken as of 6 January 2020.

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

- a. The emergency status alert for floods and landslides has been declared by the mayors in 12 affected cities and regencies. Hence, the Indonesia's National Disaster Management Authority (BNPB) is actively responding to this event as a form of support to the local disaster management authorities (BPBDs). According to National Disaster Management Authority (BNPB), the situation in Greater Jakarta area is improving, although several missions on search and rescue are still ongoing in Banten and West Java Province particularly due to the landslides. The needs at this point of time include the following:
  - Essentials: Food, drinking water, clean water, latrines, clothes, and blankets.
  - Health: Rescue teams, paramedics, medicine, and trauma healing.
  - Others: Heavy equipment.





**Figure 2:** Graph of total displaced people per province, over time. The grey dash line showing negative trends of displaced people in Jakarta, that reflecting an overall continuous decrement over time.

b. Breakdown of total impacts by location can be seen below. The data is valid as of 6 January 2020. Below discussion is limited to the scope of the Greater Jakarta Area. During this flood response, BNPB is also collecting data from other areas in Banten and West Java Provinces, that is not included in this analysis such as Lebak Regency, Karawang Regency, Bandung City, Bandung Regency, etc.

Province-City/Regency	Evacuation Centres	Displaced People	Death Tolls
<b>Banten</b>	<b>1</b>	<b>0</b>	<b>10</b>
South Tangerang	1	0	4
Tangerang City	0	0	6
<b>Jakarta</b>	<b>10</b>	<b>3106</b>	<b>16</b>
Central Jakarta	0	0	2
East Jakarta	1	200	8
North Jakarta	1	20	1
South Jakarta	3	19	1
West Jakarta	5	2867	4
<b>West Java</b>	<b>108</b>	<b>17120</b>	<b>31</b>
Bekasi City	75	221	9
Bekasi Regency	0	1750	1
Bogor City	0	0	1
Bogor Regency	27	15115	17
Depok City	6	34	3
<b>Grand Total</b>	<b>119</b>	<b>20226</b>	<b>57</b>

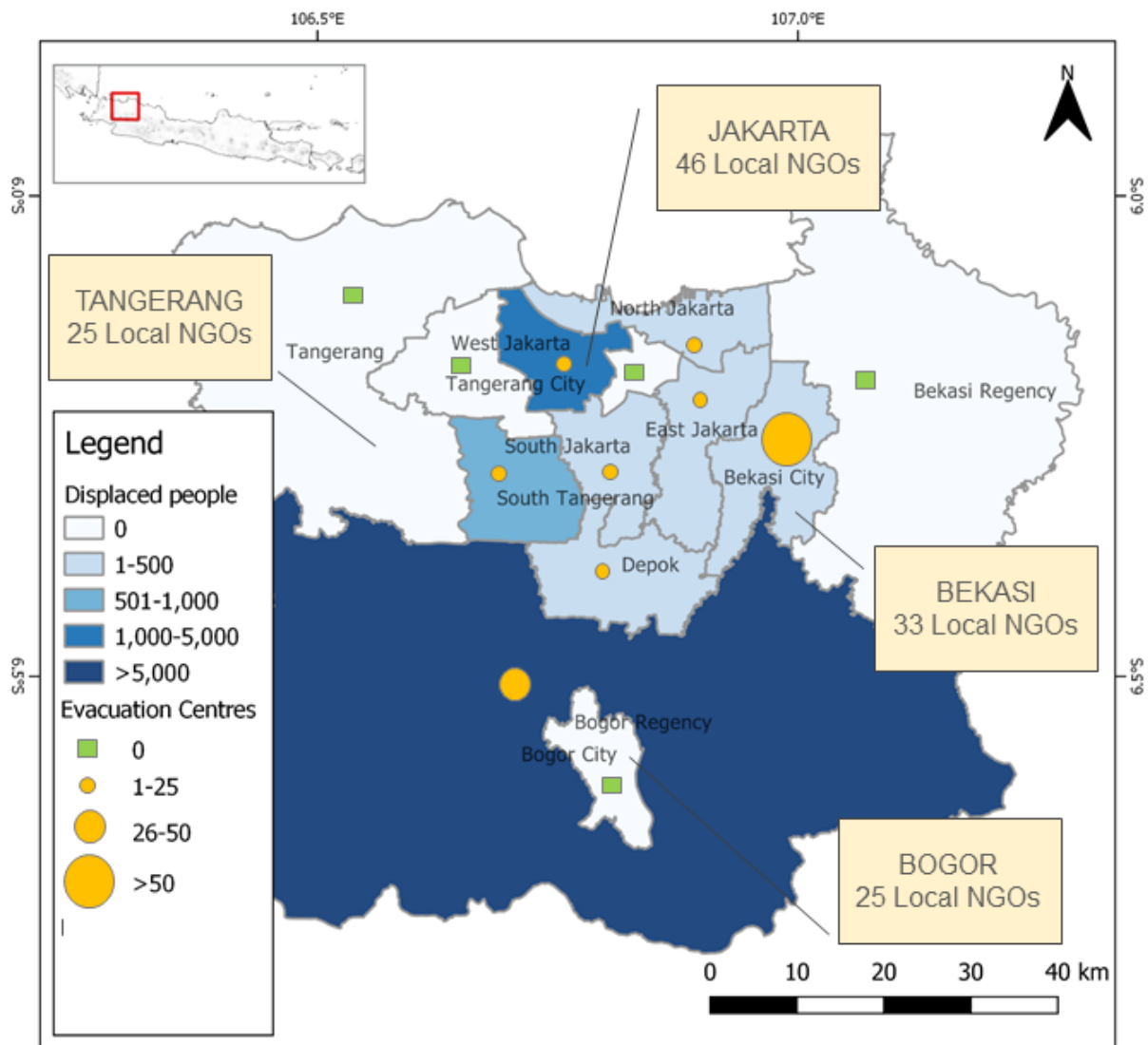
**Table 1:** Figures for impacts in the 12 affected cities/regencies which are included in the Greater Jakarta area. Data is obtained from BNPB as of 6 January (Monday) 2020.



- c. With the total number of 35,503 evacuees as of today (6 January 2020) by BNPB, Bogor Regency is currently having the highest number of evacuees in Greater Jakarta with total 15,115 people still displaced in 1,123 evacuation centres. Meanwhile, 16,163 displaced people of which include in BNPB's report today, are located in Lebak Regency, Banten Province (outside Greater Jakarta Area).

Province-City/Regency	Evacuation Centres	Displaced People	Death Tolls
<b>Banten</b>		<b>9</b>	<b>16163</b>
Lebak Regency	9	16163	8
<b>Grand Total</b>	<b>9</b>	<b>16163</b>	<b>8</b>

**Table 2:** Figures for impacts in Lebak Regency, Banten Province which not included in the Greater Jakarta area. Data is obtained from BNPB as of 6 January (Monday) 2020.



**Figure 3:** Map of the displaced people as of 6 January 2020. Data Sources: BNPB, and Desk Relawan BNPB.



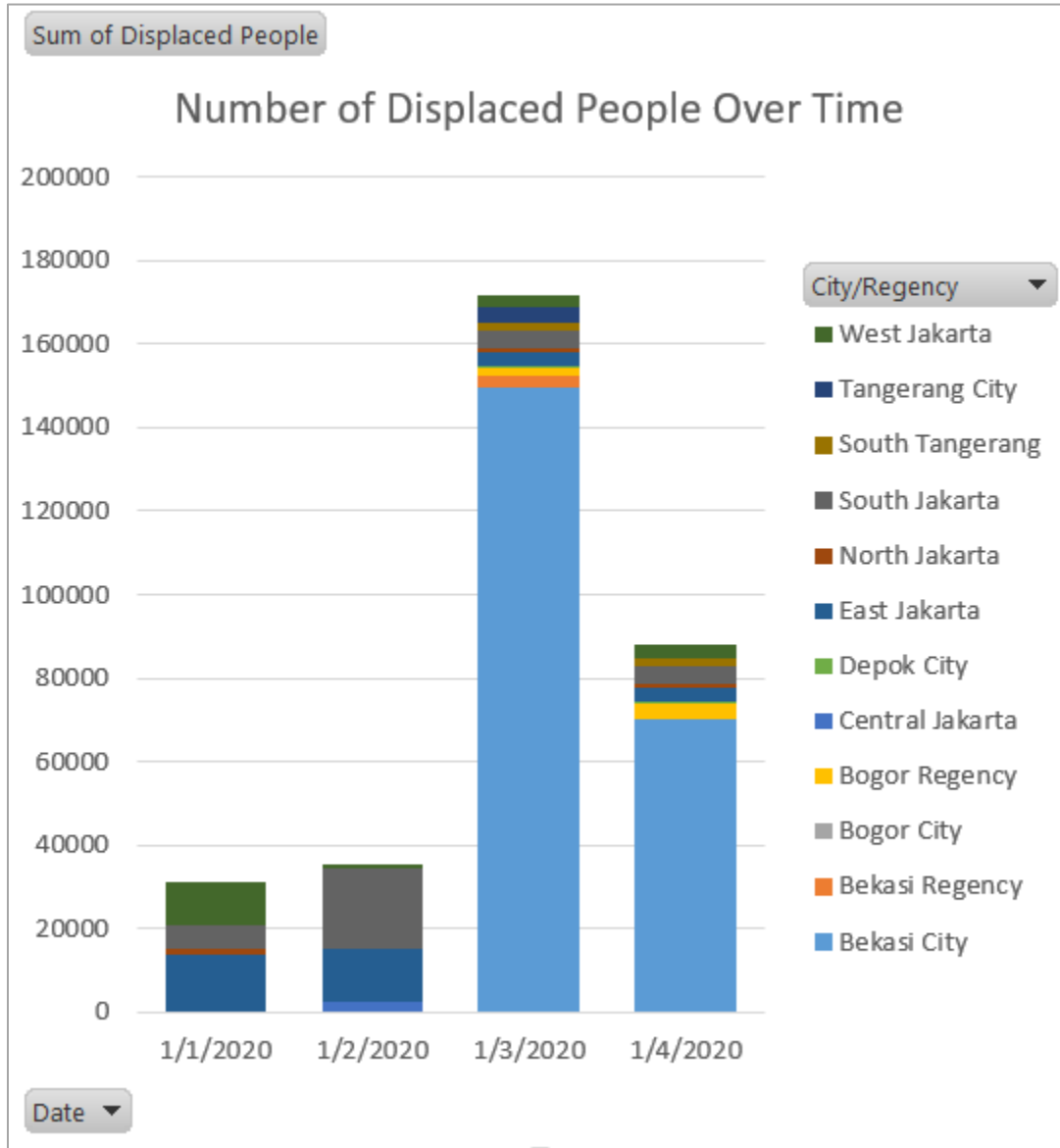
- d. From Figure 3, most of the displaced people are located in Bogor Regency, followed by West Jakarta, and South Tangerang. Yet, total evacuation centres are still mostly located in Bekasi City, which was identified as the most affected area with 360 thousand people affected and more than 100,000 displaced as of 3 January 2020. In addition, a total of local NGOs that have been deploying personnel on the ground also still centralised in Jakarta area.
- e. Although the situation has generally improved across Greater Jakarta area, several essential needs are still necessary to be fulfilled. With more than tens of thousands of people are still in the evacuation centres, assessment of needs and gaps may help to improve the current situation.
- f. Based on the analysis of the AHA Centre, the displaced population from the 12 affected regencies in the Greater Jakarta area on 6 January 2020, will need more than 15 tons of rice (with the assumption per person will need around 0.8kg of rice per day) and 290 thousands litres of water per day (following the [sphere standards](#) of 15 litres of water consumption per person per day).

Province-City/Regency	Rice (Kilograms)	Latrines (Unit)	Water (Litre)
<b>Banten</b>	526.4	32.9	9870
South Tangerang	526.4	32.9	9870
Tangerang City	0	0	0
<b>Jakarta</b>	<b>2624.8</b>	<b>164.05</b>	<b>49215</b>
Central Jakarta	0	0	0
East Jakarta	160	10	3000
North Jakarta	16	1	300
South Jakarta	95.2	5.95	1785
West Jakarta	2353.6	147.1	44130
<b>West Java</b>	<b>12320</b>	<b>770</b>	<b>231000</b>
Bekasi City	176.8	11.05	3315
Bekasi Regency	0	0	0
Bogor City	0	0	0
Bogor Regency	12092	755.75	226725
Depok City	51.2	3.2	960
<b>Grand Total</b>	<b>15471.2</b>	<b>966.95</b>	<b>290085</b>

**Table 3:** Needs analysis of displaced population based on the latest official data from BNPB (6 January 2020).

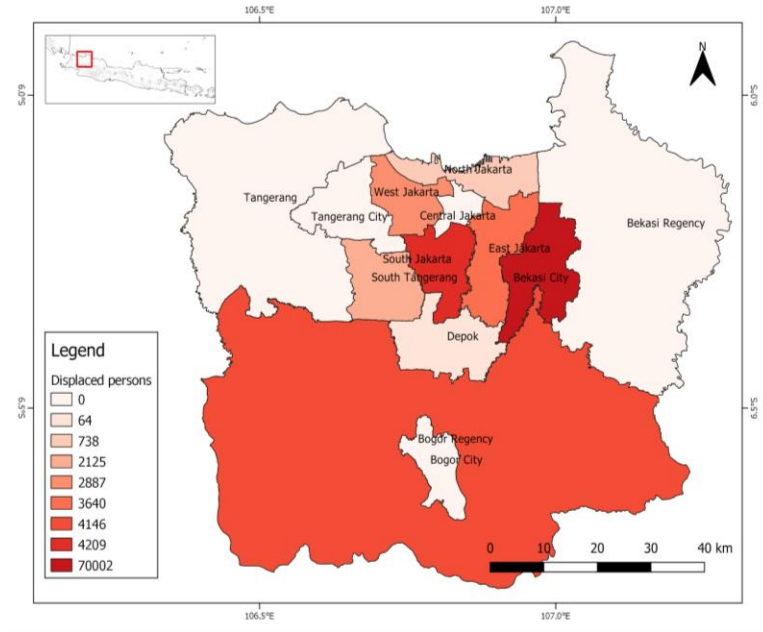
- g. On average, the evacuation centres in West Jakarta, Bogor Regency, and South Tangerang accommodate more than 500 displaced population per location. In Lebak Regency, per evacuation centre is estimated to accommodate more than 2000 displaced people. Direct observation will be required to confirm this analysis.



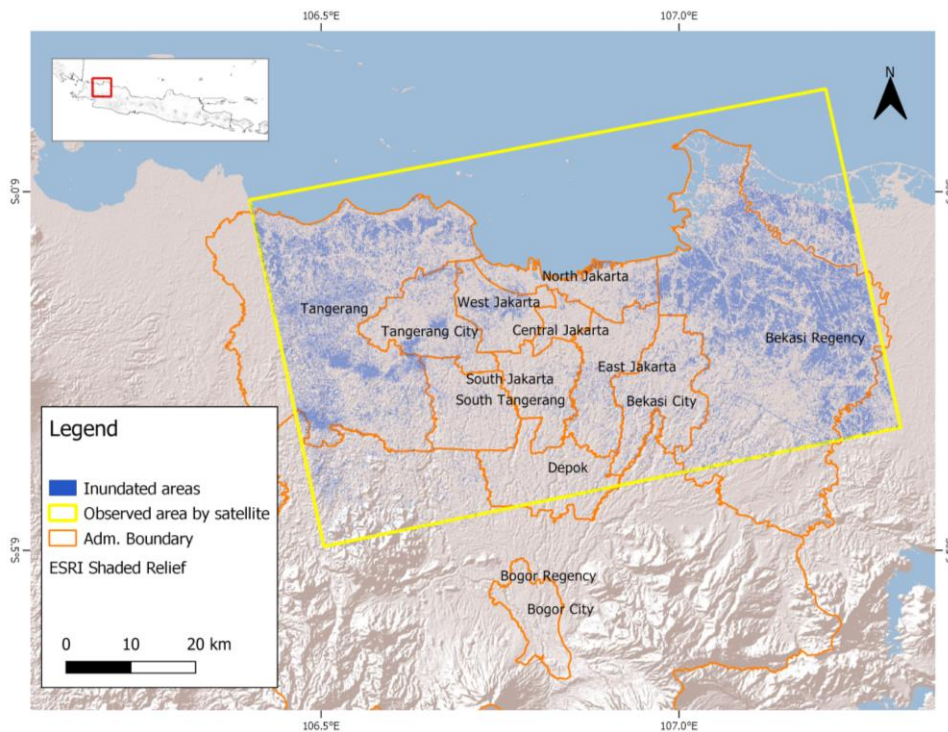


**Figure 4:** Stack bar graph of total displaced people over time. It shows that on 1-2 January the collected data only gathered from Jakarta area. The data from Bekasi was received on 3 January 2020 and increased the total displaced persons to more than 100.000. As per yesterday (4 January 2020), Bekasi City remains as the most affected area in the impact of the floods in the Greater Jakarta. There is an increment of total displaced persons on 2 January 2020 due to the collected numbers in West South Jakarta, although the floods have receded in several areas, particularly in Central and North Jakarta Cities.





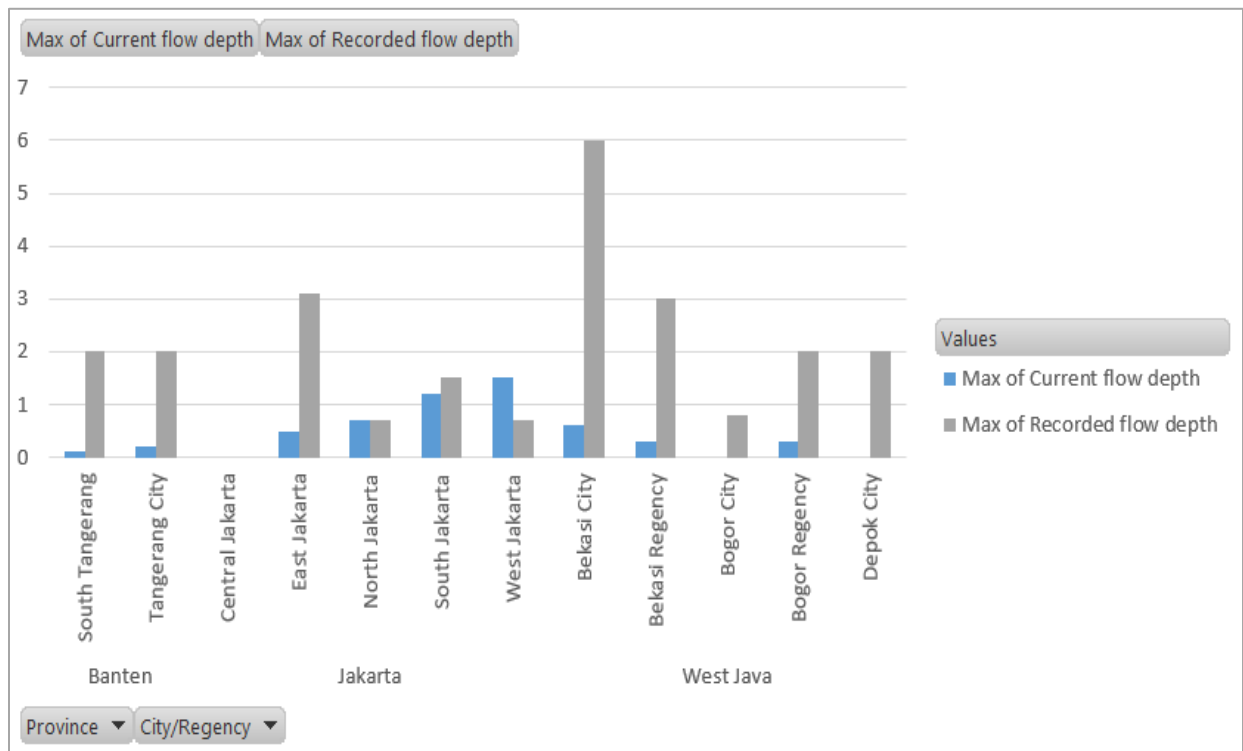
**Figure 5:** Map from the least to the most displaced people occurrence as per 4 January 2002.



**Figure 6:** Map of likely inundated areas in Greater Jakarta shows in light blue pixels based on synthetic aperture radar satellite data before 21 December 2019 and during (02 January 2020) the flood event. The analysis was done by the ARIA-SG team at the Earth Observatory of Singapore (EOS), a member of Sentinel Asia. This map showed that during 2 January the estimated floods event occurred particularly in Bekasi and Tangerang area, while water in Jakarta, in fact, was also started to recede from the given date.







**Figure 7:** Clustered bar chart for the latest flow depth observed as of 4 January 2020 (blue), and maximum recorded flow depth since the beginning of the event until 3 January 2020 (grey). There is no reported inundation height in Central Jakarta, while West Jakarta has certain flow depth anomalies as the current flow depth is almost two times higher than the maximum current flow depth. The data from West Jakarta area was reported on 3 January 2020 and has no changes in its value as per latest update on 4 January 2020.

- h. From Figure 5, the most affected regions based on the number of displaced people are in Bekasi City, which according to the satellite imagery analysis, the floods locations are more concentrated in Bekasi Regency, not in Bekasi City (Figure 6). After we compare the flow depth for each location (Figure 7), there is a likelihood most people displaced in Bekasi City are due to the higher inundation depth that could reach up to a maximum of 6 meters. While the flooded areas in Bekasi Regency is wider, some people who did not severely affected by the flood may choose to not be evacuated, while waiting for the water to recede. This is happening in several areas of Jakarta, where people choose to stay in their less severely inundated house, or immediately went back home soon after the water recedes.
- i. It is reported that 256 schools and a total of 8,420 students, ranging from special schools, playgroup, kindergarten, elementary, and high schools, have been affected in Jakarta province. Almost 48% of the affected students are male.
- j. According to the Pacific Disaster Center's (PDC) Hazard Brief Model, within more or less 30 km radius from Central Jakarta, the estimated exposure of these flood events resulted in a total of 18 million people that are potentially affected, direct or indirect, with total residential exposure worth of 145 Billion USD, and educational exposure worth of 121 Billion USD.



## 4. ACTIONS TAKEN AND RESOURCES MOBILISED

### Response by the Government of Indonesia

- a. The National Disaster Management Authority (BNPB) held a flood response coordination meeting at BNPB Headquarters in East Jakarta on 2 January 2020. The meeting Various agencies attended the meeting, non-government, volunteers, and media. Meteorology The, Climatology, and Geophysics Agency of Indonesia (BMKG) foresees that the likelihood of heavy rainfall that caused floods in the Greater Jakarta may be recurring until February 2020.



**Figure 8:** Coordination Meeting with Other Relevant Agencies at Graha BNPB on 2 January 2020. Source: BNPB.

- b. The Agency for the Assessment and Application of Technology (BPPT), along with the BNPB and the Indonesian Military (TNI), deployed two types of aircraft for the weather modification mission (Teknologi Modifikasi Cuaca - TMC). This mission aimed to reduce the high rainfall intensity Greater Jakarta up to 30%, as more heavy rainfall potentially occurs in Jakarta up to 7 January 2020, according to BMKG.



**Figure 9:** Weather modification technology to decrease rainfall intensities in Jakarta Greater Area. Purple line shows the track of cloud seeding that has been conducted on 3 January 2020. Source: BNPB.




- c. BNPB has sent support to the floods victims in the form of dispatching relief items, deploying personnel, disseminating information, and establishing evacuation centres. The Head of BNPB and the Coordinating Minister for Human Development and Cultural Affairs visited this evacuation site in Jati Asih, Bekasi on 4 January 2020 afternoon. The High-level Officials met the BPBD Bekasi and inform that the national on-call budget amounting 1 Billion IDR (*approx. 72,000 USD*) is made available for BPBD Bekasi for the operationalisation of emergency response including clearing the roads.



**Figure 10:** Coordinating Minister for Human Development and Cultural Affairs distributed 1 billion IDR (*approx. 72,000 USD*) for BPBD Bekasi. Source: BNPB.

- d. BNPB together with several partners have created a joint platform to monitor activities and situation on the ground, such as a joint portal for Greater Jakarta floods response ([link](#)) and Desk Relawan BNPB ([link](#)). Both of these platforms available in Bahasa Indonesia.
- e. Health Crisis Center, Ministry of Health (MoH) in Indonesia, has mobilised Emergency Medical Team (EMT) with priority for life saving, deployed rubber boats for evacuation and medical team transportation, developed medical support point on each location of evacuation centre and provided medical and psychosocial services. The Ministry of Health stands ready to support the health sectors, in regards to the floods victims. As of 6 January 2020, most of the preparedness are based in public health centres, which centralised in Jakarta area.
- f. Twelve affected cities and regencies in Banten and West Java Provinces, have declared their emergency response status for floods and landslides. These emergency response status availability, ranging from 1 to 16 January 2020.



 <b>Status Tanggap Darurat</b>				
No	Jenis Bencana	Lokasi	Waktu Kejadian	Status Keadaan Darurat
1	Banjir dan Tanah Longsor	Kota Bekasi Prov. Jawa Barat	1 Januari 2020	Tanggap Darurat (01/01/2020 – 07/01/2020)
2	Banjir, Tanah Longsor dan Angin Kencang	Kota Depok Prov. Jawa Barat	1 Januari 2020	Tanggap Darurat (01/01/2020 – 14/01/2020)
3	Banjir dan Tanah Longsor	Kab. Bekasi Prov. Jawa Barat	1 Januari 2020	Tanggap Darurat (02/01/2020 – 08/01/2020)
4	Banjir dan Tanah Longsor	Kab. Bandung Barat Prov. Jawa Barat	1 Januari 2020	Tanggap Darurat (02/01/2020 – 08/01/2020)
5	Banjir dan Tanah Longsor	Kab. Indramayu Prov. Jawa Barat	1 Januari 2020	Tanggap Darurat (02/01/2020 – 08/01/2020)
6	Banjir dan Tanah Longsor	Kab. Bogor Prov. Jawa Barat	1 Januari 2020	Tanggap Darurat (02/01/2020 – 16/01/2020)
7	Banjir dan Tanah Longsor	Kab. Karawang Prov. Jawa Barat	1 Januari 2020	Tanggap Darurat (02/01/2020 – 08/01/2020)
8	Banjir Bandang dan Tanah Longsor	Kab. Serang Prov. Banten	1 Januari 2020	Tanggap Darurat (01/01/2020 - 14/01/2020)
9	Banjir Bandang dan Tanah Longsor	Kab. Tangerang Prov. Banten	1 Januari 2020	Tanggap Darurat (01/01/2020 - 14/01/2020)
10	Banjir Bandang dan Tanah Longsor	Kota Tangerang Selatan Prov. Banten	1 Januari 2020	Tanggap Darurat (01/01/2020 - 14/01/2020)
11	Banjir Bandang dan Tanah Longsor	Kota Tangerang Prov. Banten	1 Januari 2020	Tanggap Darurat (01/01/2020 - 14/01/2020)
12	Banjir Bandang dan Tanah Longsor	Kab. Lebak Prov. Banten	1 Januari 2020	Tanggap Darurat (01/01/2020 - 14/01/2020)

**Figure 11:** Emergency response status list by 12 affected cities or regencies. Source: BNPB

- g. Today (6 January 2020), the Emergency Operations Centre (PUSDALOPS) of National Disaster Management Authority of Indonesia (BNPB) held a floods response coordination meeting in BNPB Headquarters, led by Chief of PUSDALOPS BNPB. The meeting was attended by the representatives of various ministries, governmental and non-governmental agencies.



**Figure 12:** PUSDALOPS BNPB coordination meeting. Source: the AHA Centre.

- h. Ministry of Social Welfare has mobilised over 3000 emergency response units (TAGANA) in 23 locations, as well as psychosocial support in 13 locations due to this situation.



## Response by the AHA Centre

- a. The AHA Centre has expressed condolences to Indonesia on 2 January 2020 and offered reinforcements to the EOC of BNPB in the area of information management and other technical assistance due to massive floods in the Greater Jakarta.
- b. The In-country ASEAN Emergency Response and Assessment Team (ASEAN-ERAT) Indonesia is mobilised to reinforce the Government of Indonesia in providing technical assistance in the management of the evacuation site and provision of minimum services at the Jati Asih evacuation site of BNPB.



**Figure 13:** In-country ASEAN-ERAT Indonesia visited the evacuation site of BNPB in Jati Asih, Bekasi on 4 January 2020. Source: the AHA Centre

- c. The AHA Centre. Emergency Operations Centre (EOC) is on Red alert and is on stand-by to further augment the effort of BNPB since 3 January 2020.
- d. The AHA Centre is in close coordination with partners (Sentinel Asia, EOS ARIA-SG, PDC, UNITAR-UNOSAT) for the satellite imageries, and spatial analysis.



## Response by ASEAN Member States

- a. A letter of condolence from National Committee for Disaster Management (NCDM), the Kingdom of Cambodia has been transmitted through the AHA Centre to Head of BNPB as a form of solidarity in ASEAN region.

## Response by Other Partners

- a. Some local NGOs the Government of Indonesia through the BNPB confirms that national capacity and resources remain sufficient to support emergency response and recovery led by BNPB. Hence, only local NGOs can deploy their personnel to the affected area. Accordingly, the incident is within the national capacity and international assistance is not required.
- b. In-country local NGOs have deployed their personnel to some affected areas. MPBI (Masyarakat Penanggulangan Bencana Indonesia) and Desk Relawan BNPB have developed an online form to collect information on local NGOs deployment activities (link). The following is the number of NGOs and their deployed personnel as of 5 January 2020. Based on the available data, most of the deployed personnel and local NGOs are still centralised in Jakarta area, while several available reports show that Bekasi City is the most affected area. Further analysis and ground validation will be necessary to identify gaps during the post-disaster events

	NGOs	Personnel deployed
<b>Jakarta</b>	45	1,056
<b>Bogor</b>	28	280
<b>Tangerang</b>	21	322
<b>Depok</b>	12	169
<b>Bekasi</b>	28	736
<b>South Tangerang</b>	6	53

**Table 4:** Number of NGOs and their deployed personnel.  
Source: Desk Relawan BNPB and MPBI.

- c. The Joint Needs Assessment will be carried out by a consortium of NGOs in Greater Jakarta by this week.
- d. Observation Request for Sentinel Asia activated by the AHA Centre through OPTEMIS system, Advanced Rapid Imaging & Analysis team in Earth Observatory Singapore (EOS ARIA-SG) have helped to analyse flood extents as mentioned in Figure 4 and Figure 10.



## 5. RECOMMENDATIONS AND PLAN OF ACTIONS

### Recommendations

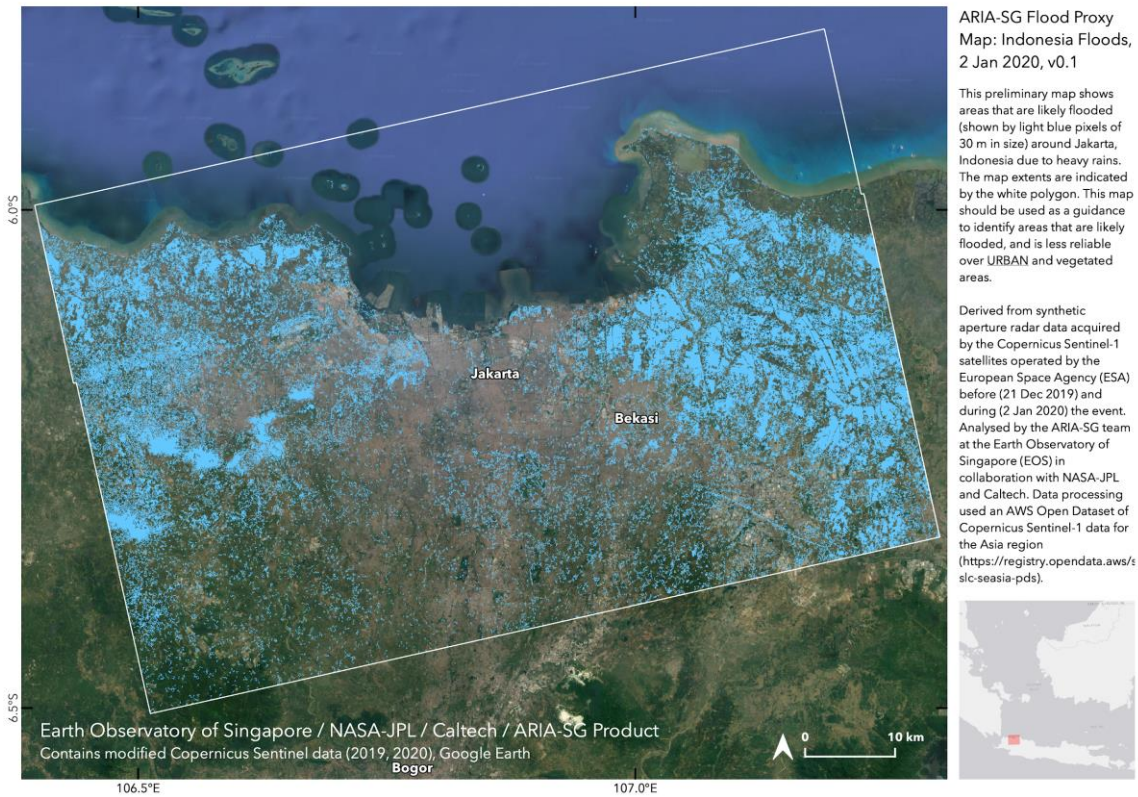
- a. Based on the analysis of the AHA Centre, at least 15 tons of rice and 290 thousands litres of water daily will be ideally fulfilled to cater the evacuees. With more than tens of thousands of people are still in the evacuation centres, assessment of needs and gaps may help to improve the current situation. Direct observation is required to assess the overcrowding situation of the evacuation centres in West Jakarta, Bogor Regency, and South Tangerang.
- b. The limited data and gaps for the assessment may be reinforced by participation of humanitarian agencies and other volunteers in BNPB's joint platform, such as Desk Relawan BNPB ([link](#)) and the BNPB's joint portal for the Greater Jakarta floods response ([link](#)). Both of these platforms are available in Bahasa Indonesia.
- c. As reported by BMKG, the potential recurring massive rains in the Greater Jakarta until February 2020 may need further engagements with several agencies in the form of preparedness and disaster risk reduction. In addition, public education and awareness may need to be taken as considerations to heighten the capacity of the people that is highly exposed to the risk.

### The AHA Centre's plans

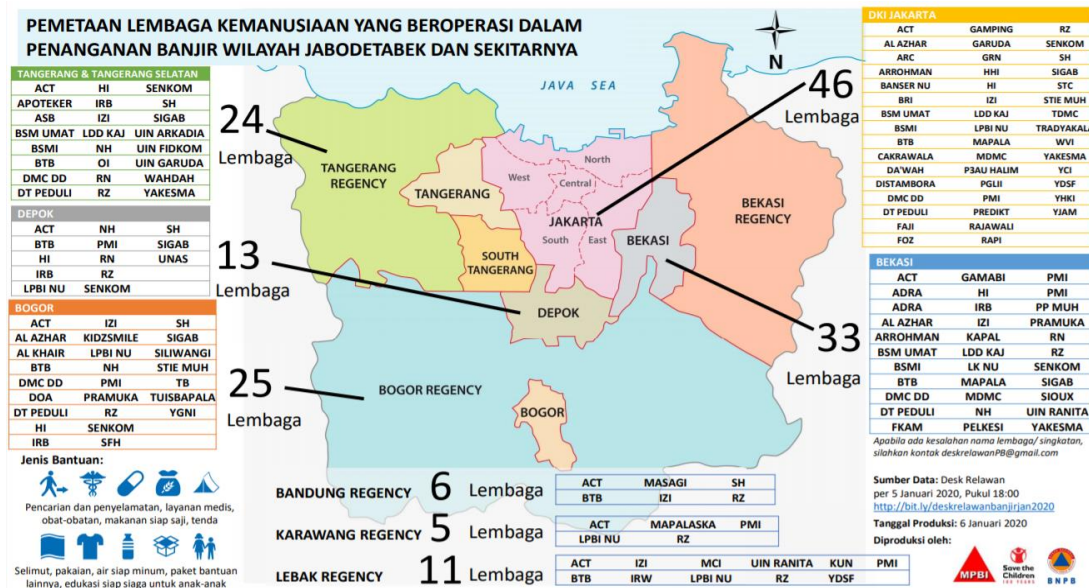
- a. The AHA Centre will closely coordinate with BNPB Emergency Operations Centre (EOC) to stands ready if any support in scope of information management will be required.
- b. The AHA Centre will not release the situation update tomorrow. The next situation update will be made available upon the completion of the assessment.



## 6. IMAGERY



**Figure 15:** Map of affected areas in Greater Jakarta showing the likely flooded areas (light blue pixels), based on synthetic aperture radar satellite data before (21 December 2019) and during (02 January 2020) the flood event. The analysis was a done by the ARIA-SG team at the Earth Observatory of Singapore (EOS), member of Sentinel Asia.



**Figure 16:** Infographics of deployed personnel by local NGOs. Source: Desk Relawan BNPB





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**Prepared by:**

The AHA Centre - Emergency Operations Centre (EOC)

**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.

The ASEAN Coordinating Centre for Humanitarian Assistance on disaster management (AHA Centre), Graha BNPB 13<sup>th</sup> Floor, JL Raya Pramuka Kav 38, East Jakarta, 13210, Indonesia  
Phone: +62-21-210-12278 | [www.ahacentre.org](http://www.ahacentre.org) | email: [info@ahacentre.org](mailto:info@ahacentre.org)

**Contact:**

- 1) Grace Endina, Preparedness and Response Officer, [grace.endina@ahacentre.org](mailto:grace.endina@ahacentre.org)
- 2) Shahasrakiranna, Disaster Monitoring & Analysis Officer, [shahasrakiranna@ahacentre.org](mailto:shahasrakiranna@ahacentre.org)

