



ONE ASEAN  
ONE RESPONSE

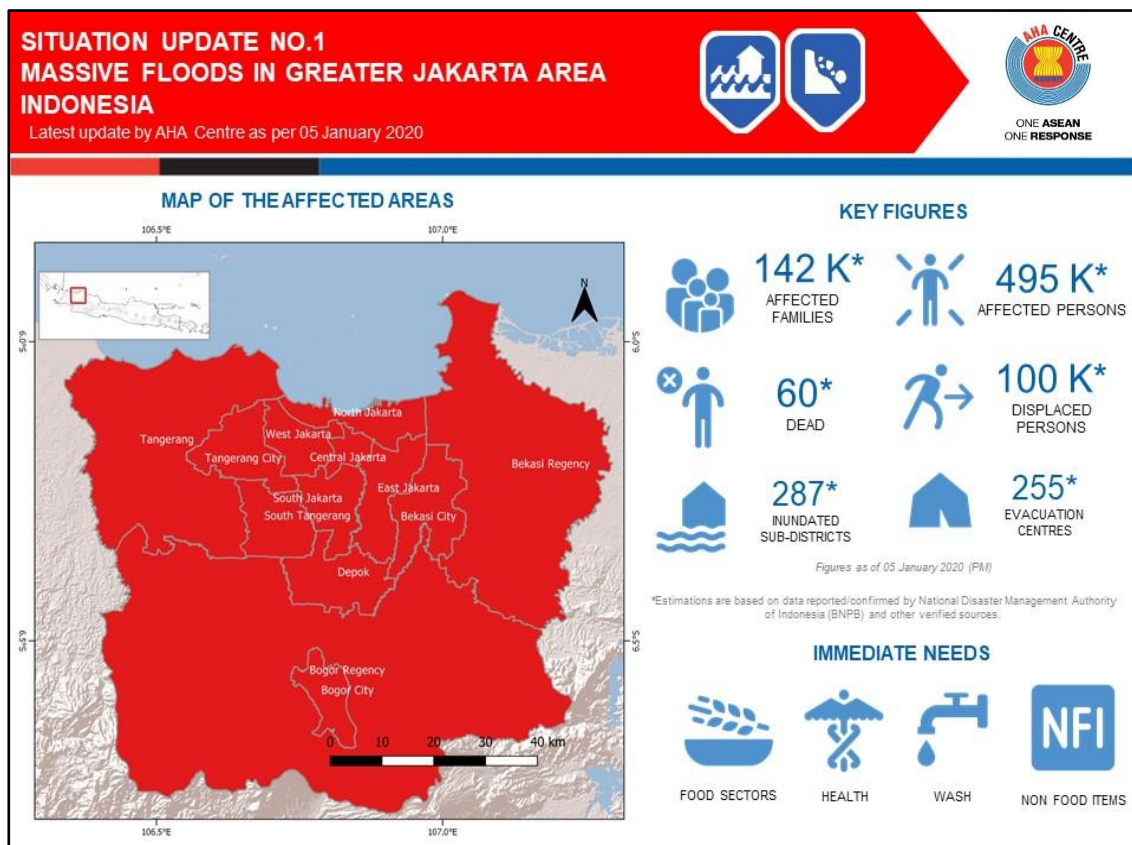
## SITUATION UPDATE

### MASSIVE FLOODS IN GREATER JAKARTA AREA INDONESIA

Sunday, 5 January 2020, 20:00 hrs (UTC+7)

No. **1**

*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.*



## 1. HIGHLIGHTS

- a. Due to the monsoon season and heavy rainfall since 31 December 2019, the Greater Jakarta area was affected by massive floods and landslides reported. As of 4 January 2020, a total of 308 sub-districts in 103 districts of 3 provinces, i.e. Jakarta, West Java, and Banten, are flooded since 1 January 2020. The AHA Centre has issued Flash Updates on the situation, which available here ([Flash Update No.1](#), [Flash Update No.2](#), [Flash Update No.3](#)).
- b. The National Disaster Management Authority of Indonesia (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.



- c. 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.

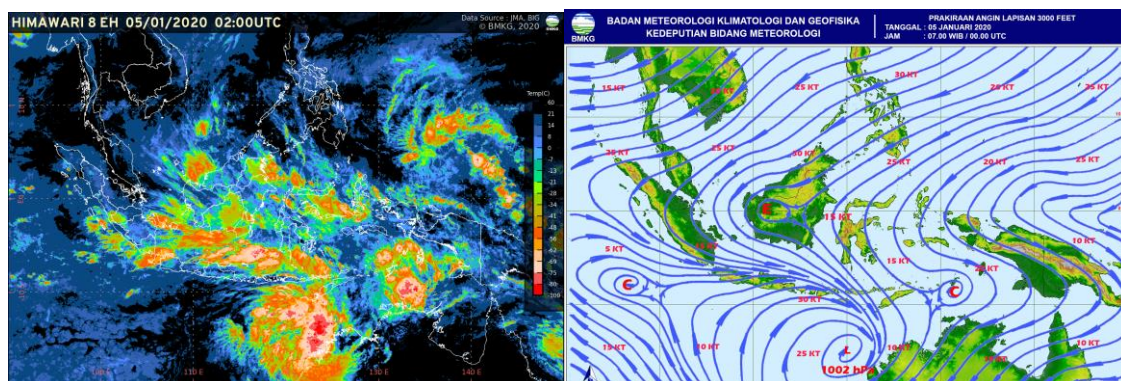
## 2. SUMMARY OF EVENTS, FORECAST AND ANTICIPATED RISK

### *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.
- 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.

### *Forecast and anticipated risk*

- c. 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 5 January 2020.



- d. BMKG also stated 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.

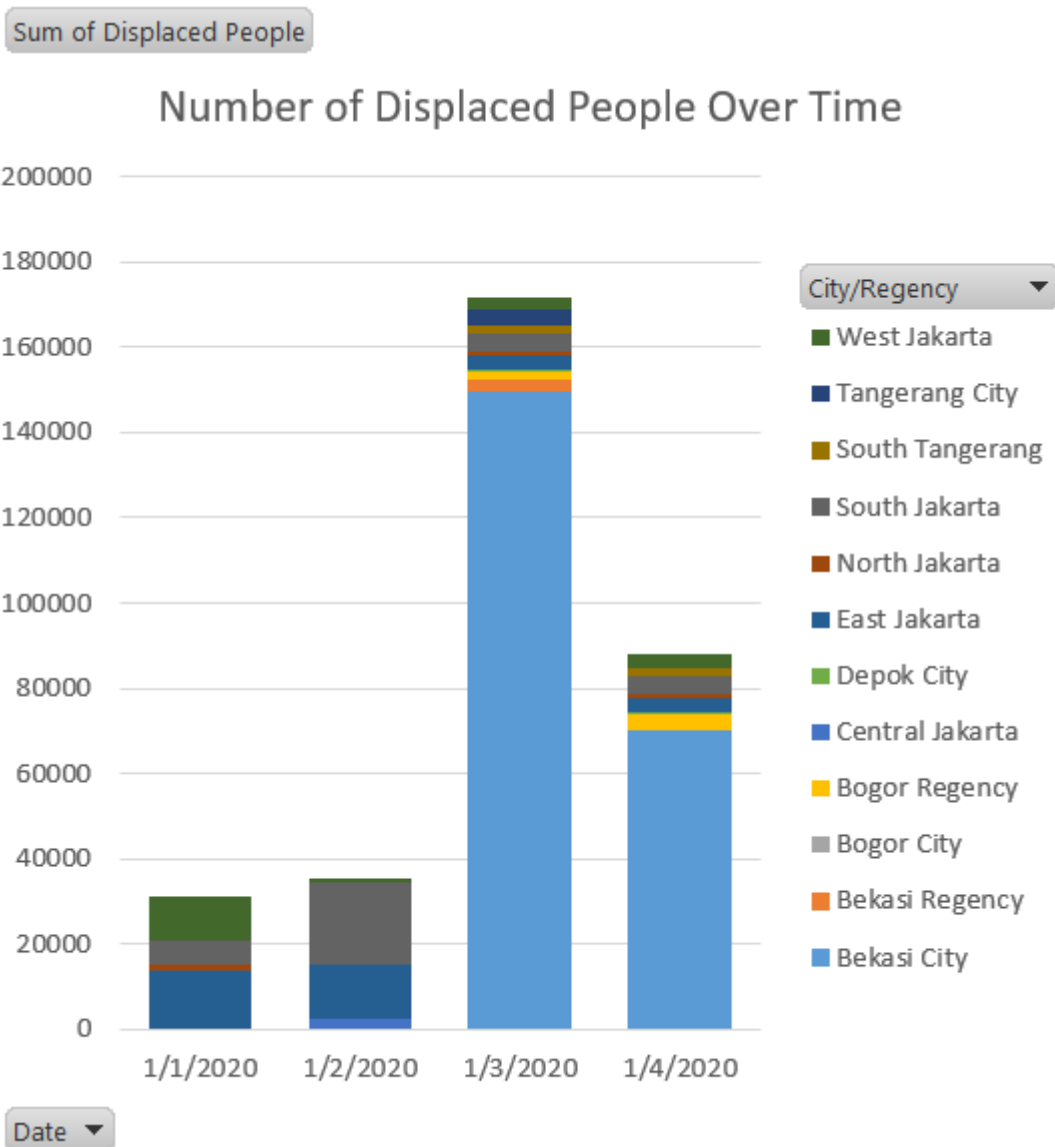
### 3. ASSESSMENT OF DAMAGE, IMPACT, AND HUMANITARIAN NEEDS

- a. According to National Disaster Management Authority (BNPB), the immediate needs at this point of time are the following:
- Essentials: Food, drinking water, clean water, latrines, clothes, and blankets.
  - Health: Rescue teams, paramedics, medicine, and trauma healing.
  - Others: Rubber boats, tarpaulins, and generator sets.
- b. The emergency status alert has been declared by mayor in affected cities and regencies. The Indonesia's National Disaster Management Authority (BNPB) is actively responding to this event to augment the efforts of the local disaster management authorities (BPBDs) in managing the emergency response.
- c. The breakdown of total impacts by location can be seen below. The data is valid as of 4 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	Affected Sub-Districts	Affected Districts	Evacuation Centres	Displaced People	Death Tolls
<b>Banten</b>	<b>92</b>	<b>19</b>	<b>3</b>	<b>2125</b>	<b>5</b>
South Tangerang	50	6	3	2125	4
Tangerang City	42	13	0	0	1
<b>Jakarta</b>	<b>39</b>	<b>17</b>	<b>70</b>	<b>11474</b>	<b>16</b>
Central Jakarta	0	0	0	0	2
East Jakarta	6	4	26	3640	8
North Jakarta	5	2	10	738	1
South Jakarta	10	5	29	4209	1
West Jakarta	18	6	5	2887	4
<b>West Java</b>	<b>152</b>	<b>60</b>	<b>108</b>	<b>74212</b>	<b>30</b>
Bekasi City	51	12	75	70002	9
Bekasi Regency	34	18	0	0	1
Bogor City	16	6	0	0	1
Bogor Regency	33	13	27	4146	16
Depok City	18	11	6	64	3
<b>Grand Total</b>	<b>283</b>	<b>96</b>	<b>181</b>	<b>87811</b>	<b>51</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 04 January (Saturday) 2020.

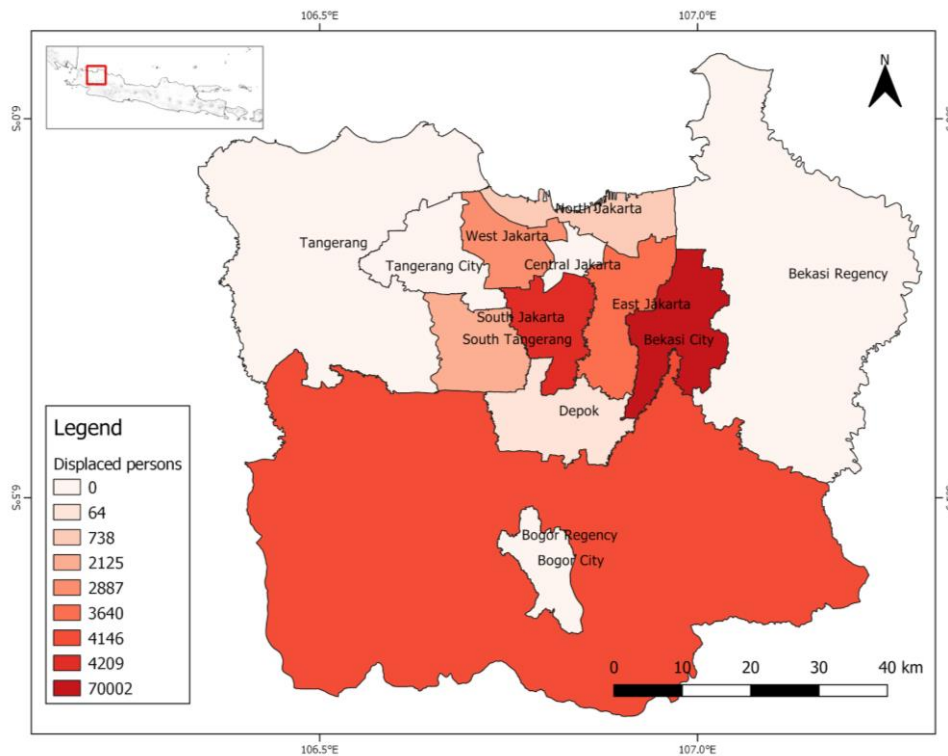




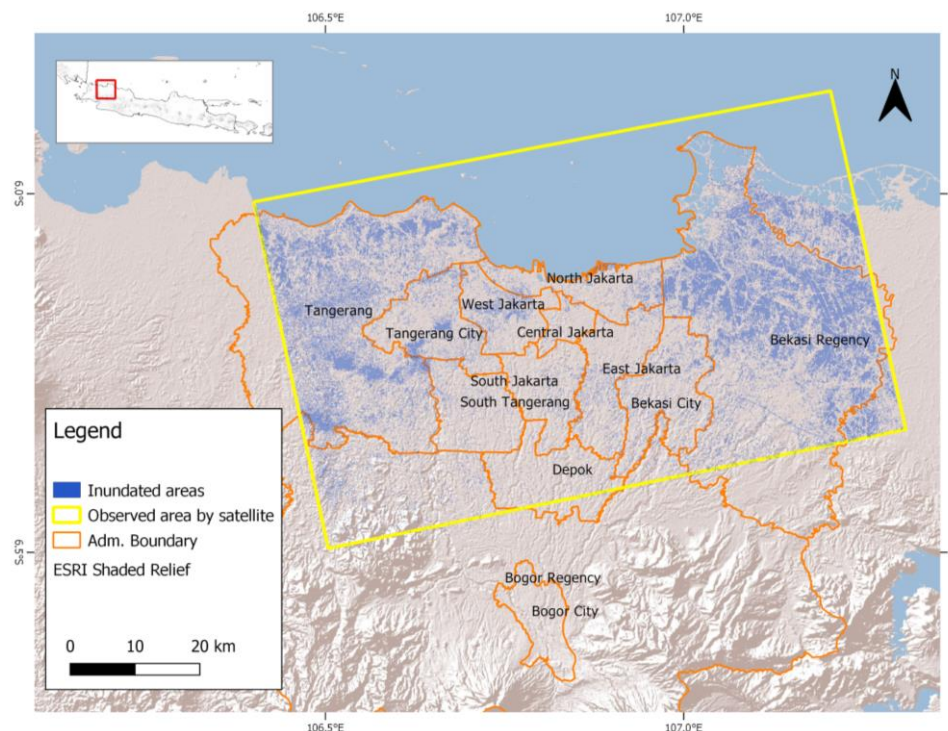
**Figure 2:** Stack bar graph of total displaced people over time. It shows that on 1-2 January the collected data only gathered from Jakarta area. The data from Bekasi was received on 3 January 2020 and increased the total displaced persons to more than 100.000. As per yesterday (4 January 2020), Bekasi 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.





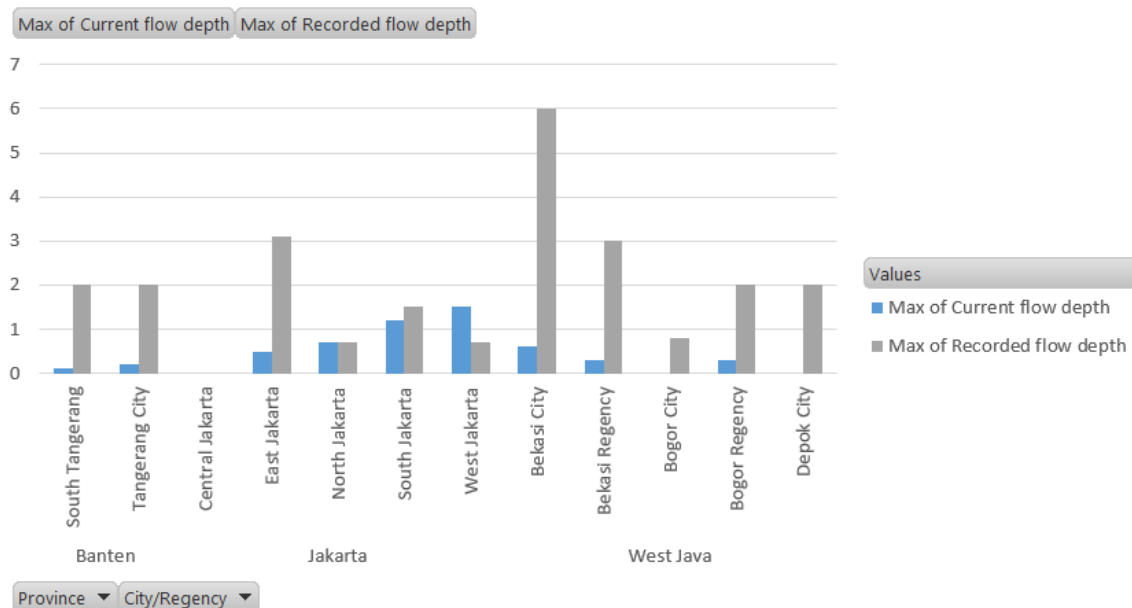


**Figure 3:** Map from the least to the most displaced people as per 4 January 2002 data.



**Figure 4:** Map of 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 5:** 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.

From the Figure 3, 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 4). After we compare the flow depth for each location (Figure 5), there is a likelihood that of the 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 happens 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 recede.

- d. It is reported that 256 schools and a total of 8,420 students, coming from special schools, playgroup, kindergarten, elementary, and high schools, have been affected in Jakarta province. Almost 48% of the affected students are male.
- e. 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 indirectly, 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 was attended by various agencies from government, non-government, volunteers, and media. The Meteorology, 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 6:** 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) 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 the Greater Jakarta up to 30%, as more heavy rainfall potentially occurs in Jakarta up to 7 January 2020, according to BMKG.



**Figure 7:** 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.

- c. BNPB has mobilised support to the affected people by 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 8:** 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.
- f. Ministry of Health stands ready to support the health sectors, in regards to the floods victims. However, most of the preparedness are based in public health centres, which centralised in Jakarta area. In addition, more than 11,000 health personnel are in standby in Jakarta area, while other affected area have less than 500 health personnel, including Bekasi City, the most affected area, in which allotted 348 personnel as of 03 January 2020 report.





## Response by the AHA Centre

- a. The AHA Centre has expressed condolences to Indonesia on 2 January 2020 and mobilised 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 9:** 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 closely coordination with partners (Sentinel Asia, EOS ARIA-SG, PDC, UNITAR-UNOSAT) for the satellite imageries, and spatial analysis.



## Response by ASEAN Member States

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

## Response by Other Partners

- f. 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.
- g. Some 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.

	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 2:** Number of NGOs and their deployed personnel. Source: the AHA Centre Source Desk Relawan BNPB and MPBI.

Based on the available data, most of the deployed personnel and local NGOs are still mainly operating the assistance 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.

- h. As Emergency 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 supported to analyse flood extents as mentioned in Figure 4 and Figure 10.



## 5. RECOMMENDATIONS AND PLAN OF ACTIONS

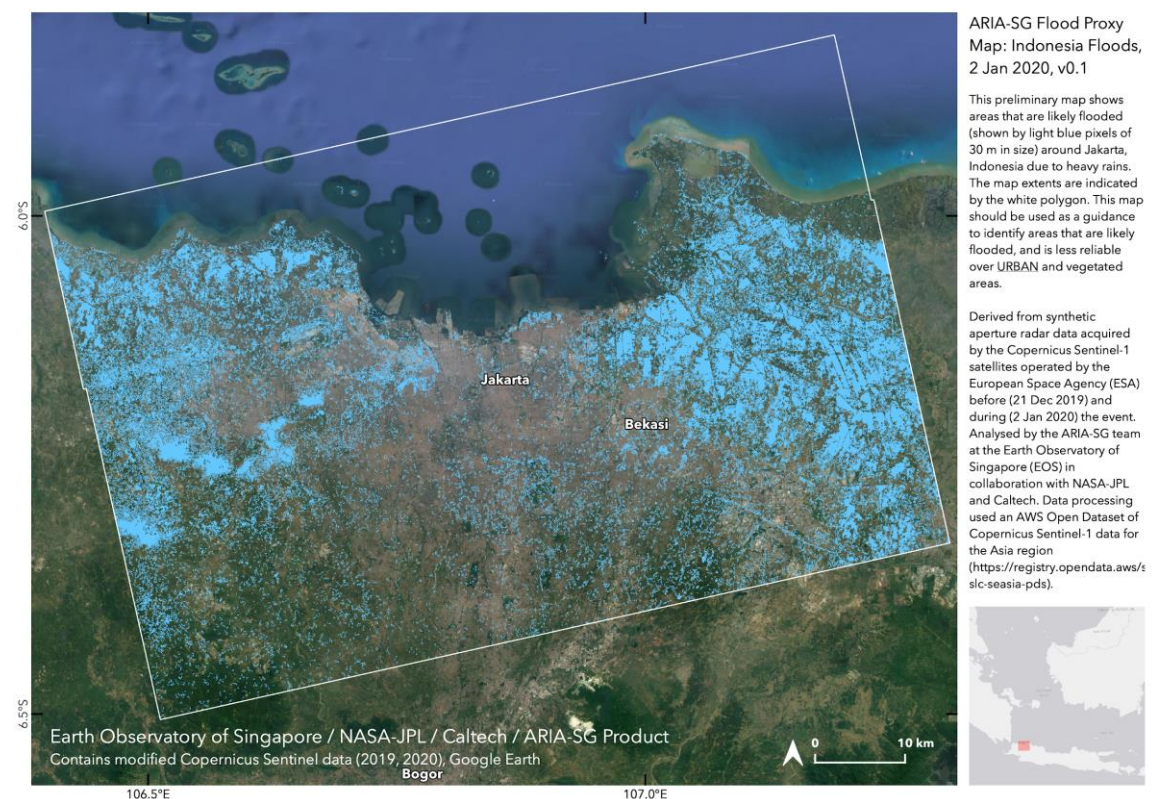
### Recommendations

- a. The limited data and gaps for the assessment maybe 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.
- b. Further observation for understanding gaps analysis will be needed as several analyses show that the most affected area is located in Bekasi City while currently most of the available support by other partners are still mainly in Jakarta area.
- c. As reported by BMKG, the Greater Jakarta will still experience massive rains until February 2020.

### The AHA Centre's plans

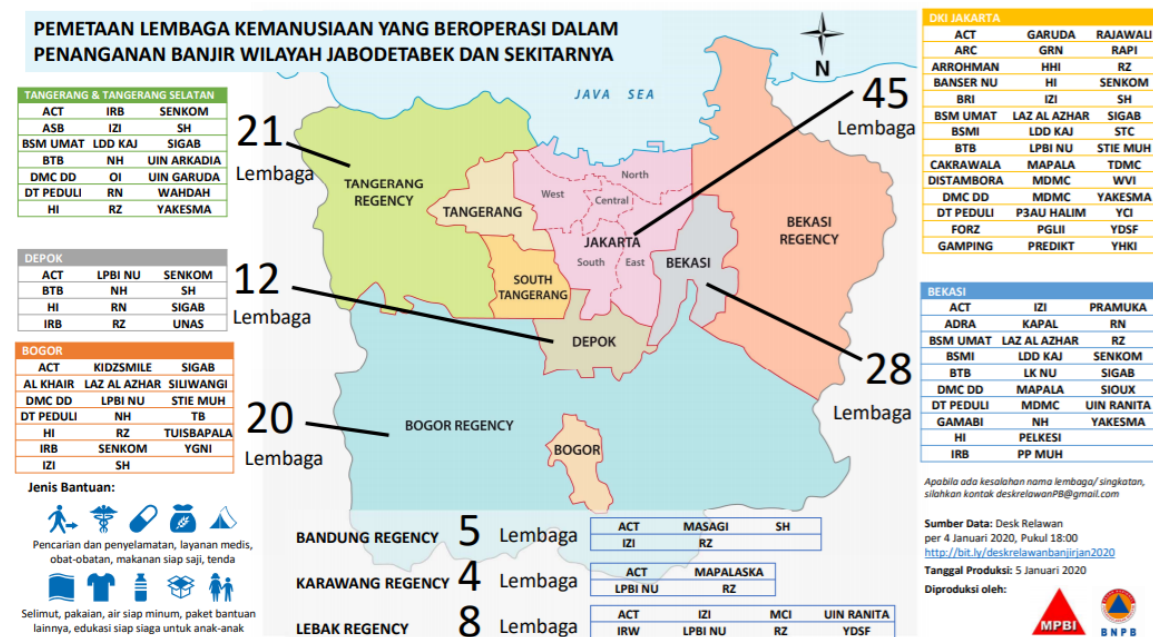
- d. The AHA Centre will join BNPB Emergency Operations Centre (EOC) meeting on Monday, 6 January 2020, to oversee plausible support in the scope of information management.
- e. The AHA Centre will provide further situation updates as the situation progresses and more information is available.

## 6. IMAGERY





**Figure 10:** 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 done by the ARIA-SG team at the Earth Observatory of Singapore (EOS), member of Sentinel Asia.



**Figure 11:** Infographics of deployed personnel by local NGOs. Source: Desk Relawan BNPB

## 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.

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