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INDONESIA FLOOD JAN 2020

Heavy rainfall brought on by the Northwest monsoon on 31st December 2019 and 1st January 2020 caused overflowing of **Ciliwung** and **Cisadane** rivers, leading to massive flash floods and landslides in the Jakarta Metropolitan Region (JABODETABEK: Jakarta, Bogor and Depok, Tangerang, Bekasi), as reported by the National Disaster Management Authority of Indonesia (BNPB). A total of 308 villages in 103 sub-districts of 3 provinces, i.e. Jakarta, West Java, and Banten were flooded.

In the metropolitan area floodwaters submerged 74 districts including 12 districts of inner-city Jakarta, many of which had never previously been affected by flooding. Flood depths varied from 0.3 m to 4 m in Jakarta city. Maximum depth was observed in Bekasi city at 6 m. Over 397,000 people were evacuated. Transportation networks including roads, railways, light rail transit and the Halim Perdanakusuma Air Force Base in East Jakarta were disrupted. The power was switched off in 724 power stations by the state electricity provider for safety reasons, leaving many parts of the city dark for over 24 hours. (Sources: BNPB, BMKG, Local News)



Deaths 377 mm/ DAY Rainfall Intensity **US\$79** MILLION Insured Losses



Indonesia's Meteorology, Climatology and Geophysics Agency (BMKG) attributed the extreme rainfall event to a convergence of wind patterns, and warned that with increasing variation brought about by climate change, such events could be more frequent. The recorded intensity, i.e. 377 mm/day of rain was the highest daily rainfall experienced in Jakarta since recordkeeping began in 1866. BMKG predicted extreme weather with high rainfall will continue and repeat until mid-February.





Table 1: Flood and landslide impact data as on 4th Jan 2020 (BNPB)

	AFFECTED NUMBERS			DEATUS
AFFECTED AREA	Sub-District	Village	MAXIMUM WATER LEVEL (M)	DEATHS
Kab Bekasi	18	34	3	1
Kota Bekasi	12	51	6	9
Kab Bogor	13	33	2	16
Kota Tangerang	13	42	2	1
Kota Tangerang Selatan	6	50	2	4
Kab Karawang	1	1	1	0
Jakarta Timur	4	6	3, 1	8
Jakarta Barat	6	18	0, 7	4
Jakarta Selatan	5	10	0, 7-1, 5	1
Jakrata Utara	2	5	0, 7	1
Jakarta Pusat	0	0	-	2
Kab Lebak	6	24	1	9
Kota Bogor	6	16	0, 8	1
Kota Depok	11	18	2	3
Total	103	308		60

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(Image: Jakarta Government)





Figure 3: Images showing the impact of flooding in Indonesia (Credits: Getty - right, BNPB - left, France24 - bottom)

FLOOD ADVISORY | RMSI PVT. LTD. **Previous major flood in Jakarta (2007):** Similar flooding was experienced in Jakarta in 2007 (Figure 4), when 150 mm heavy rains in Bogor, Depok and southern parts of Jakarta causing Ciliwung River and Pesanggrahan River to overflow. The impacts were major in Jakarta and other areas around the city, such as West Java and Banten. The floods killed a total of 80 people and caused Rp 8 trillion (US\$879.12 million) in losses. (WHO)



Figure 4: Comparison of flooded extent in Jan 2020 (left) with that of Feb 2007 (right)

The 2007 flood was a 50 year return period event. The current event of Jan 2020 is observed to be larger than the 2007 event in terms of volume of water. It can therefore be understood to be an event of return period greater than 50 years.

Indonesia is facing the challenge of coping with the effects of climate change in the face of sea level rise and frequent flooding. Adding to that is the alarming issue of subsidence faced by the capital city of Jakarta, which is built on marshy land and is sinking fast.

Table 2: Summary of damages in previous floods in Indonesia

YEAR	2007	2013	2020
Damage (USD)	\$879.12 million	\$775 million	\$1.2billion (estimated)
Deaths	80	47	67
Displaced Population	40,000	20,000	36,000

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