Heavy rainfall in and around Southeast Asia in November 2025

25 December 2025
Tokyo Climate Center (TCC), Japan Meteorological Agency (JMA)
https://www.data.jma.go.jp/tcc/tcc

- In November 2025, broader Southeast Asia and its vicinity experienced disastrous heavy rainfall, causing widespread disruption. Total precipitation at certain stations exceeded 1,500 mm.
- This event was attributable to intense moisture convergence associated with higher-than-normal sea surface temperatures in the region.

Southeast Asia's wintertime rainy season, which climatologically begins in second half of November, brought heavy precipitation to the broader Southeast Asian region and parts of South Asia in 2025, causing widespread flooding, landslides and other forms of disruption. Stations in Vietnam, Thailand, Malaysia, Indonesia and Sri Lanka recorded precipitation totals exceeding 300 mm in late November. In a severe station, daily precipitation reached 600 mm/day and the overall totals reached 1,500 mm during the period (Fig. 1, Table 1).

Large-scale convergence of moist air flows around Southeast Asia contributed to the heavy rainfall, in association with higher-than-normal sea surface temperatures (SSTs) in surrounding regions and the onset of the wintertime rainy season (Figs. 2, 3).

Tropical cyclone genesis over the Strait of Malacca and southeast of Sri Lanka also enhanced moisture convergence over these regions, further contributing to the rainfall (Fig. 4). The genesis of a tropical cyclone over the Strait of Malacca was a notable rarity.

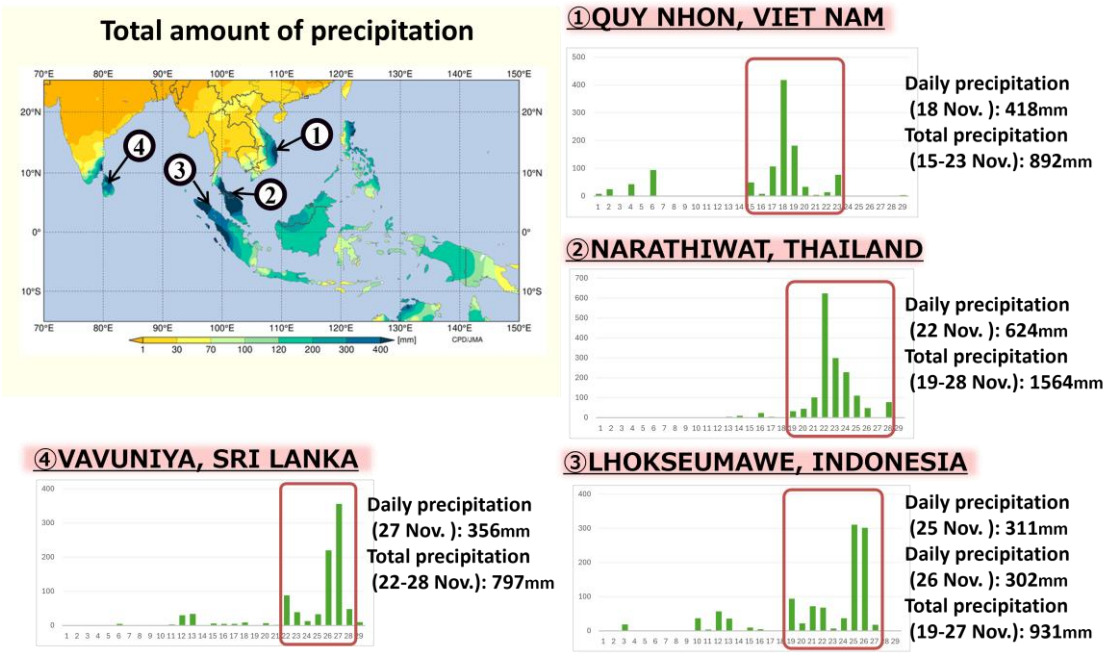

Figure 1. Precipitation over Southeast and South Asia in late November 2025
Top left: Total precipitation (unit: mm) from 15 to 29 November 2025. Right/bottom left: Time-series representation of daily precipitation at individual observation stations, together with observed precipitation amounts. Red boxes: periods of approx. 10 mm+ precipitation. Days based on 00:00 UTC. Based on SYNOP reports submitted from NMHSs around the world.

Table 1. Observed precipitation

Based on SYNOP reports submitted from NMHSs around the world.

Country	Observation Station	Period	Total Precipitation (mm)	Maximum Daily Precipitation (mm)
VIET NAM	QUY NHON	15-23 Nov.	892	418
	NHA TRANG	15-21 Nov.	537	172
THAILAND	NARATHIWAT	19-28 Nov.	1564	624
	PATTANI	18-28 Nov.	1510	338
	HAT YAI AIRPORT	19-26 Nov.	1282	370
MALAYSIA	KOTA BHARU	19-25 Nov.	1188	486
	KUALA LUMPUR	20-28 Nov.	374	128
INDONESIA	LHOKSEUMAWE	19-27 Nov.	931	311
	BANDA ACEH	21-27 Nov.	290	147
SRI LANKA	VAVUNIYA	22-28 Nov.	797	356
	TRINCOMALEE	20-27 Nov.	583	236

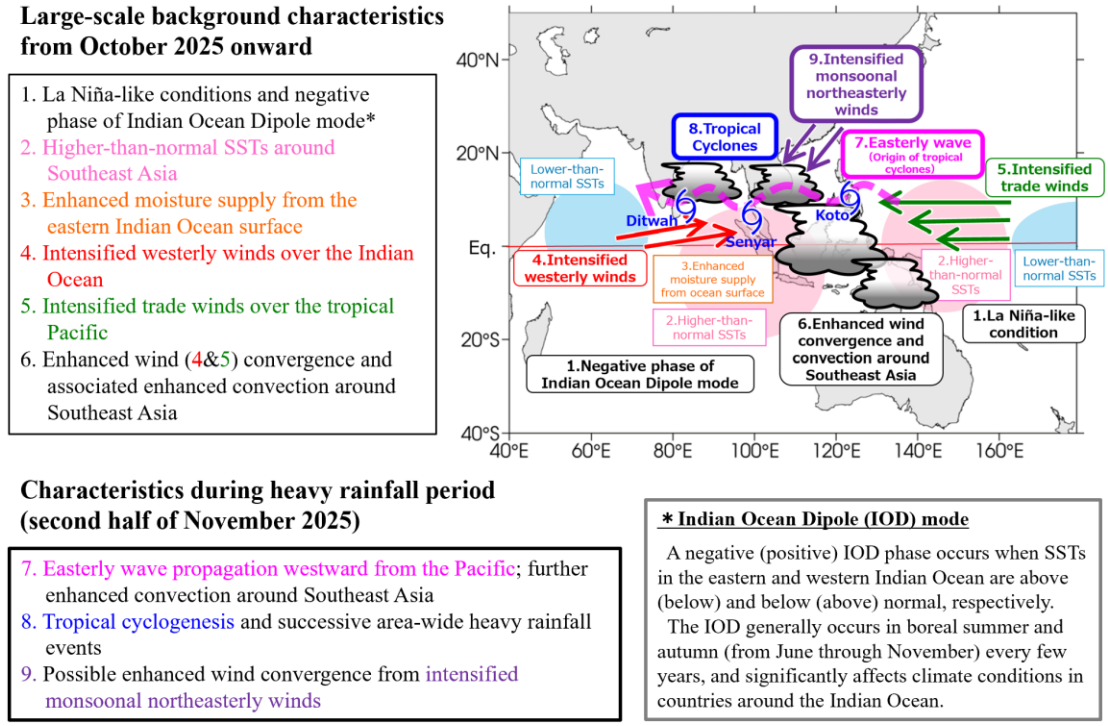

Figure 2. Atmospheric and oceanic characteristics behind heavy rainfall over Southeast Asia, November 2025

Produced in collaboration with the JMA Advisory Panel on Extreme Climatic Events. Based on JRA-3Q (Kosaka et al. 2024) and MGDSST (Kurihara et al. 2006).

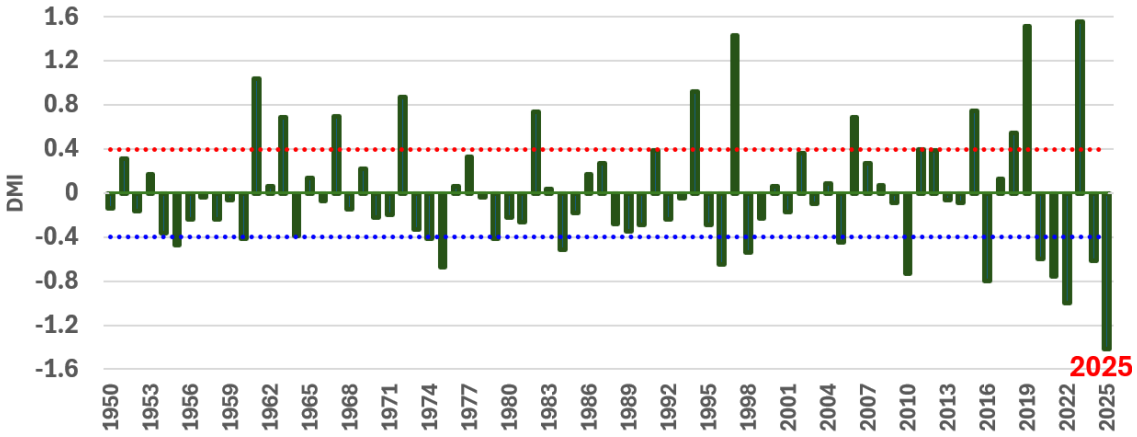

Figure 3. Interannual time-series representation of three-month (September – November) mean Indian Ocean dipole mode index (DMI)

The DMI is based on differences in area-averaged monthly-mean SST deviations between the tropical western Indian Ocean [50 – 70ºE, 10ºS – 10ºN] and the southeastern tropical Indian Ocean [90 – 110ºE, 10ºS – Equator]. Positive (negative) Indian Ocean dipole events are identified when the three-month running mean DMI is +0.4ºC or above (−0.4ºC or below) for at least three consecutive months between June and November. For details of DMI calculations, see https://www.data.jma.go.jp/tcc/tcc/products/elnino/iodevents.html.

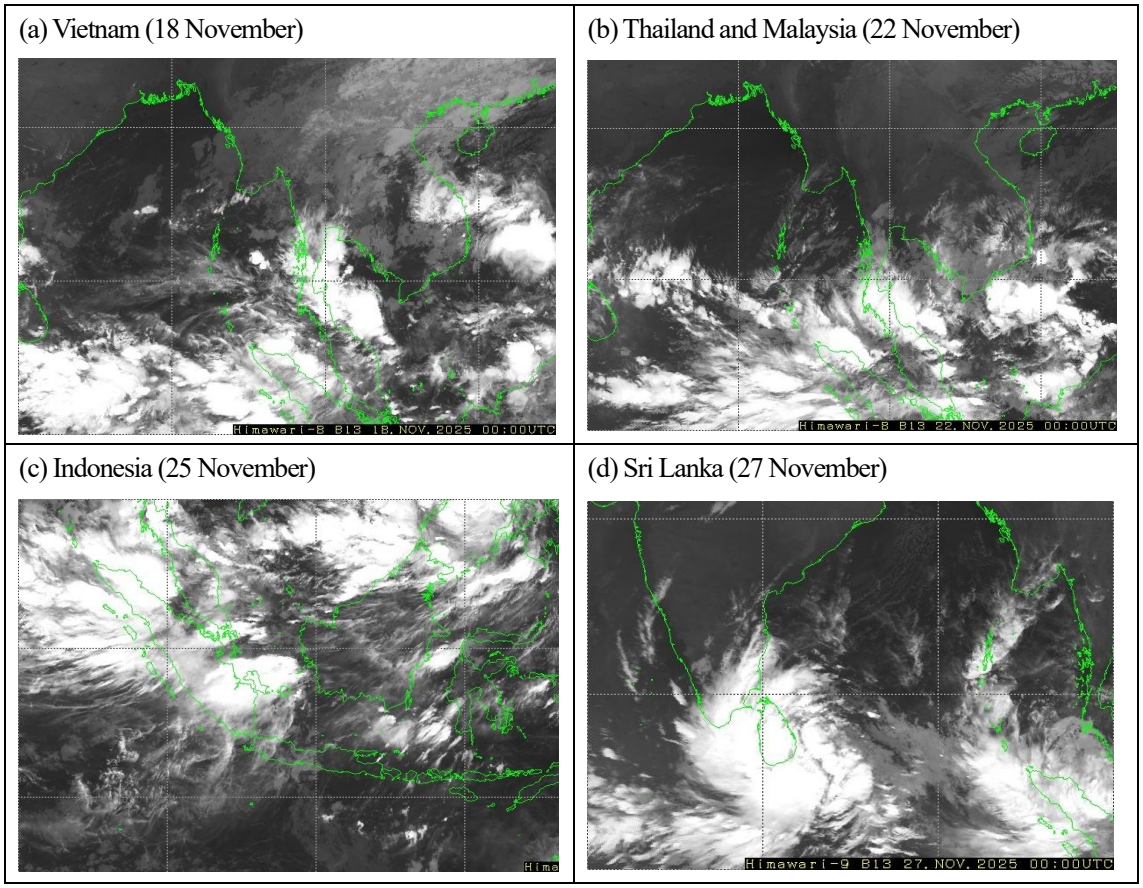

Figure 4. Himawari satellite imagery for high-precipitation days in the region
00 UTC (a) 18, (b) 22, (c) 25, and (d) 27 November 2025.

References

Kosaka, Y., S. Kobayashi, Y. Harada, C. Kobayashi, H. Naoe, K. Yoshimoto, M. Harada, N. Goto, J. Chiba, K. Miyaoka, R. Sekiguchi, M. Deushi, H. Kamahori, T. Nakaegawa, T. Y. Tanaka, T. Tokuhiro, Y. Sato, Y. Matsushita, and K. Onogi, 2024: The JRA-3Q reanalysis. *J. Meteor. Soc. Japan*, 102, 49-109.

Kurihara, Y., T. Sakurai, and T. Kuragano, 2006: Global daily sea surface temperature analysis using data from satellite microwave radiometer, satellite infrared radiometer and in-situ observations. *Weather Service Bulletin*, 73, Special issue, s1-s18 (in Japanese).