

Report on ESCAP/WMO Typhoon Committee Key Activities and Main Events in the Region in 2025

In 2025, the Typhoon Committee successfully achieved its mission to integrate and enhance regional activities of members within international frameworks. This effort aimed to reduce the loss of lives and minimize the social, economic, and environmental impacts of typhoon-related disasters. With the contributions, cooperation, and support of all TC members, AWG, working groups, and TCS, the Committee smoothly implemented the decisions of the 57th Session. Related issues will be addressed under the relevant agenda items. Some key activities and events are as follows.

1. Typhoons in the Region

- 1.1. In 2025, 27 named tropical cyclones of tropical storm intensity or above formed over the western North Pacific and the South China Sea. This number was slightly higher than the climatological average of 25.1 (1991-2020) recorded by RSMC Tokyo.
- 1.2. Cambodia was impacted by 8 tropical cyclones, including Wutip (2501), Wipha (2506), Kajiki (2513), Nongfa (2514), Tapah (2516), Ragasa (2518), Bualoi (2520), as well as the direct passage of Kalmaegi (2525). Their outer rainbands and monsoon enhancement triggered heavy rainfall and strong winds, leading to widespread flash floods and riverine flooding across coastal, lowland, and mountainous regions.
- 1.3. 10 tropical cyclones made landfall in China: Wutip (2501), Danas (2504), Wipha (2506), Co-may (2508), Podul (2511), Tapah (2516), Mitag (2517), Ragasa (2518), Matmo (2521), and Fung-wong (2526). This number was 2.7 more than the multi-year average of 7.1. These systems necessitated the emergency evacuation of over 3.5 million individuals and resulting in 24 fatalities, with Ragasa (2518) causing the highest death toll of 14 in Taiwan and Wutip (2501) causing 7 in southern China. The storms caused the collapse of over 600 houses, varying degrees of damage to more than 7,800 buildings, and impacts to over 224,710 hectares of crops.
- 1.4. There was no tropical cyclone affected the Democratic People's Republic of Korea in 2025.
- 1.5. It was a record-breaking year for Hong Kong, China with 14 tropical cyclones affecting the territory. They were Wutip (2501), Wipha (2506), Danas (2504), Podul (2511), Kajiki (2513), Nongfa (2514), Tapah (2516), Mitag (2517), Ragasa (2518), Matmo (2521), Fengshen (2524), Fung-wong (2526), and two unnamed tropical depressions in June and August. Major damages were primarily caused by Wipha (2506) and Ragasa (2518), both of which necessitated Hurricane Signal No. 10. Wipha (2506) caused at least 33 injuries, over 2,600 reports of fallen trees, flooding, collapsed scaffolds, and over 500 flight cancellations. Ragasa (2518), the strongest storm of the year, caused extensive storm surges and flooding in coastal areas, resulting in at least 101 injuries, over 5,000 reports of fallen trees, landslides, road blockages, and more than 700 flight cancellations. Additionally, the rainbands of Podul (2511) necessitated the issuance of the Black Rainstorm Warning.
- 1.6. 13 tropical cyclones came within 300 km of the Japanese archipelago, namely Sepat (2502), Danas (2504), Nari (2505), Francisco (2507), Co-May (2508), Krosa (2509), Bailu (2510), Podul (2511), Lingling (2512), Peipah (2515), Halong (2522), Nakri (2523), and Fung-wong (2526). Significant damages were reported from the 3 tropical cyclones which made landfall: Nari (2505) struck Hokkaido, causing power blackouts for approximately 3,900 households. Lingling (2512) brought record-breaking

precipitation to Kagoshima Prefecture, resulting in 5 minor injuries, water supply disruptions, and flooding or structural damage to over 100 homes. The most severe impact came from Peipah (2515), which delivered torrential rainfall exceeding 450 mm in Miyazaki Prefecture, causing 2 fatalities, 90 injuries, widespread power outages, property damage and flooding of over 2,000 homes across western and eastern Japan.

- 1.7. Lao PDR was affected by 6 tropical cyclones: Wipha (2506), Kajiki (2513), Ragasa (2518), Bualoi (2520), Nongfa (2514) and Matmo (2521). The most severe impacts were caused by Wipha (2506), Kajiki (2513) and Bualoi (2520). Wipha (2506) caused widespread flooding and landslides across northern and central provinces, resulting in 4 fatalities, 7 missing persons, and damages estimated at over 1.2 billion Lao Kip in Hinboun District alone. Kajiki (2513) triggered flash floods that collapsed power grids in Houaphan Province and cut off access routes in Khammouane, while Bualoi (2520) inundated homes and riverbank agriculture in Houaphanh, contributing to extensive cumulative damage to the nation's infrastructure, power networks, and irrigation systems.
- 1.8. Macao, China also experienced a record-breaking typhoon season with 14 tropical cyclones affecting the territory, including Wutip (2501), a nameless tropical depression in June, Danas (2504), Wipha (2506), Podul (2511), a nameless tropical depression in August, Kajiki (2513), Nongfa (2514), Tapah (2516), Mitag (2517), Ragasa (2518), Matmo (2521), Fengshen (2524) and Fung-wong (2526). Wipha (2506) necessitated the hoisting of Signal No. 10 and resulted in 2 injuries along with over 120 reported incidents involving fallen trees and damaged billboards. Ragasa (2518), also a Signal No. 10 event, caused the issuance of Red Storm Surge Warning, and flooding reached 1.51 meters in the Inner Harbour. Over 200 incidents involving damaged buildings, windows, and scaffolding were reported. Podul (2511) triggered severe flooding in low-lying areas due to heavy rainfall.
- 1.9. 12 tropical cyclones entered Malaysia's Area of Responsibility in 2025, including Wutip (2501), Danas (2504), Wipha (2506), Co-may (2508), Kajiki (2513), Nongfa (2514), Tapah (2516), Mitag (2517), Ragasa (2518), Bualoi (2520), Matmo (2521) and Fengshen (2524), causing strong winds, rough seas, and localized heavy rainfall. Among these storms, Wutip (2501), Wipha (2506), Kajiki (2513) and Nongfa (2514) generated the most notable impacts through maritime warnings, high winds (up to 60 km/h), rough seas (up to 4.5 m), and moderate rainfall. An area of low pressure developed in the Strait of Malacca in late November and was subsequently named Senyar by the RSMC New Delhi. Senyar hit the northeastern Sumatra of Indonesia, re-emerged over the Strait of Malacca and moved eastward into RSMC Tokyo AOR before made a second landfall in central west coast of Peninsular Malaysia and later dissipated over the inland.
- 1.10. 9 tropical cyclones made landfall over the Philippines in 2025, including Co-may (2508), Kajiki (2513), Mitag (2517), Ragasa (2518), Bualoi (2520), Matmo (2521), Fengshen (2524), Kalmaegi (2525) and Fung-wong (2526). Among these systems, heavy rain associated with Kalmaegi (2525) caused flooding in Central Visayas, resulted in 253 deaths and over 500 injuries. Ragasa (2518) and Fung-wong (2526) were also highly destructive, with Ragasa (2518) causing PHP 5.0 billion in damages in Northern Luzon, and Fung-wong (2526) causing PHP 4.4 billion in losses alongside landslides and storm surges in the Bicol Region.
- 1.11. There were no tropical cyclones affected the Republic of Korea in 2025, which marked the first such occurrence since 2009. The reason was due to the persistent high-pressure system which blocked the northward movement of typhoons.

- 1.12. Singapore was affected by Wutip (2501) in early June. While the storm tracked through the South China Sea affecting other regions, its presence induced Sumatra squalls over Singapore on June 8 and 10, resulting in strong winds and heavy rain. No damages or casualties were reported.
- 1.13. Thailand was directly impacted by the passage of Kalmaegi (2525) and indirectly impacted by the remnants or monsoon enhancement of 6 other tropical cyclones: Wipha (2506), Kajiki (2513), Nongfa (2514), Tapah (2516), Ragasa (2518) and Bualoi (2520). These tropical cyclones triggered severe flash floods, landslides, and river overflows, affecting the Northern, Northeastern and Central regions. In particular, Bualoi (2520) caused 12 fatalities and 1 missing, followed by Kajiki (2513) with 8 fatalities and 3 missing, and Wipha (2506) with 7 fatalities and 1 missing.
- 1.14. 3 tropical cyclones over the Western North Pacific affected the United States of America in the year. Krosa (2590) formed near Guam and brought a damaging monsoon surge after passage, causing one injury, coastal inundation and erosion in Saipan. Podul (2511) developed near the far northern Mariana Islands, prompting Tropical Storm Watches and bringing heavy rainfall. Further north, ex-Halong (2522) moved from the northwest Pacific to strike the Alaskan West Coast in mid-October, causing catastrophic impacts including gusts up to 93 knots, record-breaking coastal flooding in the Yukon-Kuskokwim Delta, widespread infrastructure damage, and 1 person was dead.
- 1.15. Vietnam was affected by 8 tropical cyclones including Wutip (2501), Wipha (2506), Kajiki (2513), Bualoi (2520), Matmo (2521), Kalmaegi (2525), Nongfa (2514), and Ragasa (2518). Wutip (2501) caused early-season devastation with 9 fatalities and extensive agricultural flooding, while Wipha (2506) resulted in damage to schools and over 1,400 homes. Kajiki's (2513) slow movement led to 6 deaths, the sinking of over 100 boats, and damage to more than 31,000 houses. The most severe impacts were inflicted by Bualoi (2520) and Matmo (2512), in which the former claimed 51 lives and damaged over 172,000 homes, and the latter triggered the collapse of the Bac Khe 1 Hydroelectric Dam which flooded nearly 235,000 houses, and left 18 people dead or missing. These cyclones resulted in trillions of VND in economic losses.

2. Enhancement of TC Activities

2.1 Implementation of AOPs

In 2025, the Typhoon Committee implemented a variety of plans and projects, including 4 POPs, 11 AOPs, and 1 PP from the WGM, 9 AOPs from the WGH, 6 AOPs from the WGDRR, 2 AOPs from TRCG.

2.2 20th IWS/High-Level Forum

The 20th Integrated Workshop and High-Level Forum were held in Macao, China, from 2 to 5 December 2025, hosted by the Macao Meteorological and Geophysical Bureau (DSMG). The High-Level Forum was convened under the theme "Closing Gaps and Creating Opportunities Together: Developing the Typhoon Committee's Future Strategy", while the Integrated Workshop, held under the theme "Shaping the Future: Applying Innovation to Actions Addressing Typhoon Challenges and Opportunities", focused on technical cooperation and exchanges across meteorology, hydrology, disaster risk reduction, and related fields. The meetings brought together Permanent Representatives, experts, and partners from Typhoon Committee Members, as well as representatives of ESCAP and WMO, to review progress in the implementation of the Committee's programme of work and to exchange views on strategic and emerging priorities. The High-Level Forum also resulted in the endorsement of a Joint Statement, reflecting Members' shared

commitment to strengthening regional cooperation and guiding the future direction of the Typhoon Committee.

2.3 WG's Annual Meeting

The 8th Annual Meeting of WGM, hosted by HKO, was held in Hong Kong China, from 21 to 22 October 2025. The meeting successfully reviewed the progress of the WGM Annual Operating Plans for 2025 and proposed new plans for 2026.

WGH successfully conducted its 14th working meeting, co-hosted by the Guam, USA and MLIT of Japan on 23-25 September 2025 in Guam with funding support. The meeting reviewed the progress of the Annual Operating Plans in 2025 and proposed new implementation plans for 2026.

The 20th WGDRR annual meeting was hosted by NDMI, ROK in Seoul from 27 to 30 May 2025. The WGDRR reviewed the progress of the WGDRR Annual Operating Plans and budget expenditure for 2025, and proposed plans for 2026.

2.4 Roving Seminar 2025

The Roving Seminar 2025 hosted by CMA, China with the theme “Application of Remote Sensing Technologies in Operational Tropical Cyclone Monitoring and Forecasting” was held in Guangzhou, China from 3 to 5 December 2025 with 6 lecturers and 20 participants from 6 TC Members (Cambodia; China; Hong Kong, China; Republic of Korea; Thailand and Vietnam).

2.5 ET-AITC Meeting in 2025

An Expert Team (ET) meeting of the WGM AOP13 Project: “Promoting Technical Exchange of AI Applications in Tropical Cyclone Analysis and Forecasting” was held in JMA from 24 to 26 June 2025 with presentations on latest advancements by ET Members and invited AI teams, summary of and discussion on verification results in 2024, and review of data exchange and further requirements. A manuscript has been submitted to journal for peer review.

2.6 Progresses on “Fourth Assessment Report on the Impacts of Climate Change on Tropical Cyclones in the Typhoon Committee Region”

The first face-to-face expert team meeting of WGM AOP11: “Fourth Assessment Report on the Impacts of Climate Change on Tropical Cyclones in the Typhoon Committee Region” was held in Macao, China on 4 December 2025. Experts from China; Hong Kong, China; Japan and Republic of Korea discussed about the contents of the report and formulated a plan for the drafting process. The new report, scheduled to be published by the end of 2026, will be an update of the previous three reports to enhance the understanding of impacts of climate change on tropical cyclones in the Asia-Pacific region.

3 The Joint Statement of the Typhoon Committee High-Level Forum

The Typhoon Committee High-Level Forum was convened ahead of the 20th Integrated Workshop of the Typhoon Committee. Permanent Representatives of the World Meteorological Organization from Cambodia, Hong Kong (China), Lao PDR, Malaysia, Macao (China), the Philippines, and Thailand participated in the forum and shared their views on the challenges and opportunities in early warning of typhoons. Senior representatives from other members of the Typhoon Committee also attended the meeting. The forum resulted in the adoption of the Typhoon Committee Joint Statement. The Joint Statement of the Typhoon Committee High-Level Forum is based on these three pillars. It reaffirms a shared vision to strengthen regional cooperation, more robust collaborative research, and greater openness in data and knowledge exchange. It also underscores Members' commitment to joint projects and training activities that can translate scientific progress into lifesaving action on the ground.

4 Typhoon Committee Research Award for Young Scientists

The TCS, in collaboration with the Advisory Working Group (AWG), prepared the working document for the Typhoon Committee Young Scientist Award, with the objective of encouraging and recognizing young scientists in the Typhoon Committee Region who have made distinguished contributions to typhoon-related research, particularly in areas relevant to Typhoon Committee activities. In accordance with the agreed procedures approved at TC57, nominations were reviewed through consultation within the Young Scientist Award Selection Working Group (YSASWG). Based on the recommendations of the YSASWG and following approval by the TC Chair, the selected Young Scientists were identified, and the Award will be formally presented at the 58th Session of the Typhoon Committee (TC58).

5 Progress Report on the Development of the Typhoon Committee Strategic Plan 2027-2031

The Drafting Group, headed by China Meteorological Administration, established in August 2025 with TCS support, has worked to define the Committee's strategic direction for 2027–2031. Experts from Member countries collaborated through two online meetings and extensive consultations, building on the 2022–2026 plan while adapting to new technologies and evolving regional challenges. Key updates in the draft include: Technological Advancement (KRA 2): Integration of AI, machine learning, and big data to enhance forecasting and early warning. Sustainability & Growth (KRA 3): A new focus on resource mobilization and youth talent development. Strategic Language: Ongoing debate on replacing “climate change” with “shifting weather patterns.” The preliminary draft was presented at the High-Level Forum during the 20th Integrated Workshop in December 2025, generating strong feedback from Member countries. Additional discussions are scheduled for January 2026 to consolidate input, with the goal of finalizing a resilient and forward-looking plan for TC58 in 2027.

6 Typhoon Committee Secretariat new office

Macau China, the hosting member of the Typhoon Committee Secretariat, has further strengthened its support. In 2025, a new Secretariat office was established with dedicated funding for renovation. The office area has been doubled, and all furniture, equipment, and staff computers have been comprehensively upgraded. These improvements have greatly enhanced the Secretariat's capacity to serve its members more effectively. Sincere appreciation is extended to the Government of the Macao Special Administrative Region of China for its generous and continuous support to the Typhoon Committee Secretariat.

7 Progresses on Journal of Tropical Cyclones Research and Review

In 2025, as one of the Web of Science Core Collection, TCRR gained IF of 4.1, jumping from 2.4 to rank 31/111 in Meteorology & Atmospheric Sciences and securing a debut Q2 position among JCR-listed. The >50 % IF surge earned the journal KeAi's “Great Progress Award”. Cite Score rose to 4.8, placing TCRR in Q1 for two and Q2 for three of its five Scopus categories, all rankings sharply improved. Visibility campaigns combined WeChat posts, Scholar One e-alerts to 2000 stakeholders, and GeoBase full-text indexing, consolidating TCRR's rapid ascent. Of the 41 articles published in 2025, 24 feature at least one author from a Typhoon Committee member state.

8 Progress of Cross-cutting Project of SSOP-III

SSOP-III team is still keeping the communication with ESCAP. However, there is no expectation of how things will progress in the future, WGH decided to suspend SSOP-III (AOP9 of WGH) until the feedback from ESCAP confirms that it can be restarted.