

Report on TC's Key Activities and Main Events in the Region, 2024

(Submitted by TC Chair)

ACTION REQUIRED:

The Committee is invited:

- a) To take note of the key events in 2024
- b) To consider the ideas and proposals of the TC Chair in formulating the future AOPs, initiatives and recommendations

APPENDICES:

- 1) DRAFT TEXT FOR INCLUSION AT SESSION REPORT
- 2) TC'S KEY ACTIVITIES AND MAIN EVENTS IN THE REGION, 2024

APPENDIX A:

DRAFT TEXT FOR INCLUSION IN THE SESSION REPORT

6.1 Report on TC's Key Activities and Main Events in the Region, 2024

6.1.1 The Committee took note of the report of the Typhoon Committee Chairperson on the TC's Key Activities and Main Events in the Region, 2024.

6.1.2 The Committee expressed appreciation to the contributions of Mr. Muhammad Helmi ABDULLAH, Mr. Mohd Hisham Mohd ANIP and Mr. Nathaniel SERVANDO, as the chairperson, on behalf of Chairperson and Vice Chairperson of the Committee.

6.1.3 The Committee dealt with related issues under the relevant agenda items.

(Additional text to be added in the light of discussion on this item)

APPENDIX B:

Report on TC's Key Activities and Main Events in the Region, 2024

In 2024, 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 56th 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 2024, 26 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. Eight tropical cyclones made landfall in China during the year, including Maliksi (2402), Gaemi (2403), Prapiroon (2404), Yagi (2411), Bebinca (2413), Pulasan (2414), Krathon (2418), and Kong-Rey (2422). Notably, Yagi made landfall in Hainan with maximum sustained winds of 62 m/s, making it the strongest tropical cyclone to make landfall in China during autumn.
- 1.3. In 2024, seven tropical cyclones necessitated the issuance of tropical cyclone warning signals in Hong Kong, China. These were Maliksi (2402), Prapiroon (2404), Yagi (2411), Trami (2420), Yinxing (2422), Toraji (2423), and Man-yi (2424). Among these, Yinxing, Toraji, and Man-yi all affected Hong Kong, China in November, setting a new record.
- 1.4. Eleven tropical cyclones came within 300 km of the Japanese archipelago. These were Ewiniar (2401), Gaemi (2403), Maria (2405), Ampil (2407), Jongdari (2409), Shanshan (2410), Bebinca (2413), Pulasan (2414), Cimaron (2416), Jebi (2417), and Kong-rey (2421). Of these, Maria (2405) and Shanshan (2410) made landfall, causing river inundation and landslides.
- 1.5. Up to October 2024, three tropical cyclones affected Lao PDR: Yagi (2411), Soulik (2415), and Trami (2420). These cyclones brought heavy rain and strong winds, causing flooding in certain parts of the country.
- 1.6. In 2024, seven tropical cyclones affected Macao, China, leading to the issuance of tropical cyclone warning signals. These were Maliksi (2402), Prapiroon (2404), Yagi (2411), Trami (2420), Yinxing (2422), Toraji (2423), and Man-yi (2424). The Number 8 Gale or Storm Signal was hoisted for Yagi, along with the Blue Storm Surge warning.
- 1.7. In 2024, six tropical cyclones entered Malaysia's designated area of responsibility (0-20N and 95-130E). These were Ewiniar (2401), Maliksi (2402), Gaemi (2403), Prapiroon (2404), Yagi (2411), and Soulik (2415). Heavy rain from Yagi caused flooding.
- 1.8. As of October 2024, eleven tropical cyclones (including tropical depressions) entered the Philippines Area of Responsibility (PAR). These included Ewiniar (2401), Prapiroon (2404), Gaemi (2403), Jongdari (2409), Yagi (2411), Bebinca (2413), Soulik (2415), Pulasan (2414), and Krathon (2418). Among these, Ewiniar, Yagi, and Soulik made

landfall in the country, resulting in over 100 fatalities and agricultural losses exceeding 7 billion PHP.

- 1.9. In 2024, the Republic of Korea was affected by two tropical cyclones: Jongdari (2409) and Shanshan (2410). Jongdari (2409) made landfall over the Korean Peninsula. Both cyclones brought strong winds and heavy rain to the country.
- 1.10. Singapore was affected by three tropical cyclones in 2024: Gaemi (2403), Prapiroon (2404), and a tropical depression. Instead of bringing heavy rain, these cyclones induced a strong cross-equatorial flow, resulting in dry weather conditions. A dry spell of 18 days was observed from 13 to 30 July 2024.
- 1.11. Five tropical cyclones affected Thailand in 2024: Maliksi (2402), Prapiroon (2404), Yagi (2411), Soulik (2415), and Trami (2420). Soulik (2415) entered the country, bringing widespread heavy rain and flooding to northern and northeastern Thailand.
- 1.12. In 2024, six tropical cyclones entered the WFO Guan's Tropical Cyclone Area of Responsibility: Ewinia (2401), Ampil (2407), Shanshan (2410), Bebinca (2413), Pulasan (2414), and Jebi (2417). These cyclones brought strong winds and flooding.
- 1.13. Viet Nam was affected by five tropical cyclones in 2024: Maliksi (2402), Prapiroon (2404), Yagi (2411), Soulik (2415), and a tropical depression in July. Notably, Yagi made landfall in the Quang Ninh-Hai Phong area with winds of force 12-14 and gusts exceeding force 17, making it the strongest tropical cyclone to make landfall in Viet Nam in the past 30 years.

2. Improvement of TC Activities

2.1 Implementation of AOPs

In 2024, the Typhoon Committee implemented various plans and projects, including 4 POPs, 28 AOPs, and 1 PP from WGM, WGH, WGDRR, and TRCG. These initiatives were supported by TCP/WMO and TCS, as well as strong contributions from all members. The achievements and outcomes of POPs, AOPs, and PPs were shared among members through training courses, workshops, and technical documents.

2.2 19th IWS/AP-TCRC Forum

The 19th IWS/AP-TCRC Forum was successfully held in Shanghai, China, from November 19 to 22, 2024. Hosted by AP-TCRC, STI/CMA, China Meteorological Administration, and the ESCAP/WMO Typhoon Committee. The event saw the participation of 181 experts from 11 TC members, international organizations, and observers. The AP-TCRC Forum's theme was "Embracing New Technologies for Achieving Early Warnings for All." The theme of the 19th IWS was "Strengthening the Value Chain within the UN EW4All Framework for the Typhoon Committee Region."

2.3 Roving Seminar 2024

The Roving Seminar 2024, hosted by the Thailand Meteorological Department with the theme "Artificial Intelligence for Enhanced Tropical Cyclone Prediction and Emergency Response," was held in hybrid mode in Bangkok, Thailand, from 17 to 19 December 2024. The seminar featured 7 lecturers, including experts from WGH and WGDRR, and was attended by 82 participants from 9 TC Members.

2.4 Workshop on AI in Tropical Cyclone Forecasting

The Hong Kong Observatory hosted a workshop titled "Application of Artificial Intelligence in Tropical Cyclone Analysis and Forecasting Technology Exchange" from 21 to 22 May 2024. Twenty-nine experts from 11 Typhoon Committee members, including China, Hong Kong China, Japan, Laos, Macau China, Malaysia, the Philippines, Republic of Korea, Thailand, Vietnam, and the United States, participated. The workshop featured detailed discussions and technical exchanges on the development and application of artificial intelligence in tropical cyclone analysis and forecasting.

2.5 WG's Annual Meeting

The 7th Annual Meeting of WGM, hosted by JMA, was held in Tokyo, Japan, from 30 to 31 October 2024. The meeting successfully reviewed the progress of the WGM Annual Operating Plans for 2024 and proposed new plans for 2025.

WGH successfully conducted its 13th working meeting, hosted by the Information Center of the Ministry of Water Resources, China, in cooperation with the Nanjing Research Institute of Hydrology and Water Conservation Automation (NIHWA), in Nanjing, China, on 22-23 October 2024. The meeting reviewed the progress of the Annual Operating Plans for 2024 and proposed new plans for 2025.

The 19th WGD RR annual meeting was hosted by NDMI, ROK in Seoul from 25 to 28 June 2024. The WGD RR reviewed the progress of the WGD RR Annual Operating Plans and budget expenditure for 2024, and proposed plans for 2025.

2.6 Cross-Cutting Project

A cross-cutting program under WGD RR AOP1, involving both WGH and WGD RR, was successfully held in Japan from 24 to 26 September 2024. The program was co-organized with the International Centre for Water Hazard Risk Management, Japan Meteorological Agency, and Tohoku University, Japan. Participants included representatives from NDMI, Macao China, Vietnam, and TCS.

2.7 Other Activities

- RSMC Forecaster's Training Attachment: Hosted by JMA from 15 to 26 January 2024, this training included participants from 7 TC Members.
- NDMI Disaster Risk Reduction Project: In 2024, NDMI launched a project to strengthen disaster risk reduction capabilities in the Philippines, specifically in Olongapo and La Paz, following a prefeasibility study. NDMI inspected the Early Warning and Alert System and conducted an educational program in October 2024.
- Benefit Evaluation of Typhoon Disaster Prevention and Preparedness: One representative from Malaysia participated in this program, working at the Shanghai Typhoon Institute from 21 November to 20 December 2024.
- Research Fellowship to TC Members: Offered by Hong Kong, China in 2024.

3 Typhoon Committee Research Award for Young Scientists

The TCS, in collaboration with the Advisory Working Group, has drafted the working document for the Typhoon Committee Young Scientist Award. The purpose of this award is to encourage and recognize young scientists in the Typhoon Committee Region who have made distinguished contributions to typhoon-related research, particularly those connected with Typhoon Committee activities. This document will be submitted for approval at this session.

4 Progresses on Journal of Tropical Cyclones Research and Review

In 2024, the TCRR journal achieved an impact factor of 2.4, placing it 66th out of 110 in the JCR Meteorology & Atmospheric Sciences category (Q3). Its CiteScore improved to 4.6, and the journal saw 134,522 full-text downloads in 2023. During 2024, TCRR published 25 articles from authors in 10 different countries and regions, including Typhoon Committee members such as China, Hong Kong China, Japan, Macao China, and the Philippines. Additionally, the journal appointed former World Meteorological Organization senior officer Ms. Nanette Lomarda as the executive editor and added nine internationally renowned experts to the editorial board, enhancing the submission and review process for better manuscript quality and efficiency.

5 Progress of Cross-cutting Project of SSOP-III

The proposal of the project on the Synergized Standard Operating Procedures for Coastal Multi-Hazard Early Warning System (SSOP) phase III is still under updating according to the comments from the panel of UNESCAP Multi-Donor Trust Fund for Tsunami, Disaster and Climate Preparedness. Hopefully, the updated proposal report will be submitted to ESCAP for approval in 2025. WGH submitted two AOPs, namely WGH AOP 1 (Knowledge Sharing on Storm Surge Inundation Mapping) led by USA and WGH AOP 7 (Flood resilience enhancement through Platform on Water Resilience and Disasters) led by Japan, to be involved in the SSOP-III. Those three projects may jointly conduct the potential activities in future.