

**ESCAP/WMO Typhoon Committee  
Fifty-sixth Session of Typhoon Committee  
27 February to 01 March 2024  
Kuala Lumpur, Malaysia**

**FOR PARTICIPANTS ONLY  
WRD/TC.56/6.1  
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ENGLISH ONLY**

## **Report on TC's Key Activities and Main Events in the Region, 2023**

*(Submitted by TC Chair Mr. Weng Kun LEONG)*

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### **ACTION REQUIRED:**

The Committee is invited:

- a) To take note of the key events in 2023
- 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, 2023



**APPENDIX A:**  
**DRAFT TEXT FOR INCLUSION IN THE SESSION REPORT**

6.1 Report on TC's Key Activities and Main Events in the Region, 2023

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, 2023.

6.1.2 The Committee expressed appreciation to the contributions of Mr. LEONG Weng Kun and Mr. Muhammad Helmi ABDULLAH, as the 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, 2023**

In 2023, the Typhoon Committee was successfully in achieving our mission to integrate and enhance regional activities of Members within international frameworks to reduce the loss of lives and minimize social, economic, and environmental impacts by typhoon-related disasters. Under the contribution, cooperation and support of all TC Members, AWG, working groups, and TCS, the Committee has implemented of the decisions of 55<sup>th</sup> Session of the Committee smoothly. The related issues will be dealt with under the relevant agenda items. Some key activities and events are as follows.

#### **1. Typhoons in the Region**

- 1.1. In 2023, 17 named tropical cyclones of tropical storm intensity or above formed over the western North Pacific and the South China Sea. This number was significantly lower than the climatological average of 25.1 (1991-2020) by RSMC Tokyo.
- 1.2. There were 6 tropical cyclones which made landfall in China in the year, namely Talim (2304), Doksuri (2305), Saola (2309), Haikui (2311), Koinu (2314) and Sanba (2316). Although the number was 1.1 less than the average number (7.1) from previous years, the average landfall intensity was 41.8 m/s and was remarkably stronger by 9.1 m/s compared to the annual average of 32.7 m/s. Among these tropical cyclones, Doksuri, Saola and Haikui brought record-breaking rainfall to the affected areas.
- 1.3. Tropical cyclone Khanun (2306) affected the DPRK in the year. It made landfall at the southern Korean Peninsula, moved north across the Republic of Korea and affected DPRK. It brought gales and heavy rainfall to the country. Over 300mm rainfall was recorded at the KoSong meteorological station.
- 1.4. 5 tropical cyclones affected Hong Kong, China in the year, including Talim (2304), Doksuri (2305), Saola (2309), Haikui (2311) and Koiu (2314). Saola necessitated the issuance of the Hurricane Signal No. 10, the highest tropical cyclone warning in Hong Kong. Haikui brought recording-breaking rainfall of 158.1 mm (hourly) and 605.8mm (12-hourly) at the Observatory Headquarters and caused severe flooding and landslides.
- 1.5. A total of 9 tropical cyclones came within 300 kilometres of the Japanese archipelago in the year, namely Mawar (2302), Guchol (2303), Khanun (2306), Lan (2307), Damrey (2310), Haikui (2311), Kirogi (2312), Yun-Yeung (2313) and Koinu (2314), in which Lan made landfall near Shionomisaki, Wakayama Prefecture. More than 60 people were injured and 100 houses were damaged or destroyed.
- 1.6. There was no tropical cyclone which affected Lao PDR in the year. However, active southwest monsoon brought heavy rain, flooding and landslide with more than 10 casualties and USD 69 million economic loss in the year.
- 1.7. There were 5 tropical cyclones which affected Macao, China in the year, including Talim (2304), Doksuri (2305), Saola (2309), Haikui (2311) and Koinu (2314). Saola brought long period of strong winds and heavy rain to Macao during which the Typhoon Signal No. 10 and the Red Storm Surge Warning were issued.
- 1.8. 4 tropical cyclones entered the designated area of responsibility of Malaysia in the year,

namely Mawar (2302), Talim (2304), Doksuri (2305) and Koinu (2314). None of them made significant impact to Malaysia.

- 1.9. There were 10 tropical cyclones occurred within the Philippine Area of Responsibility (PAR) in the year, namely Mawar (2302), Guchol (2303), Talim (2304), Doksuri (2305), Khanun (2306), Saola (2309), Haikui (2311), Yun-Yeung (2313), Koinu (2314) and a tropical depression in April. Among them, Talim made landfall over northern Luzon, while Doksuri and Saola passed very close to the island. The combined effect of tropical cyclone and southwest monsoon caused 35 people dead, 175 people injured with economic loss USD308.8 million for the year.
- 1.10. The Republic of Korea was affected by Khanun (2306) in the year. It lasted for more than 16 days and underwent rapid intensification, with two unusual track transitions that led to large forecast errors. Khanun brought more than 200 mm of rainfall to the southeastern Korean Peninsula and a peak gust of 34.9 m/s was recorded at Gadeokdo.
- 1.11. Singapore was indirectly affected by tropical cyclone Talim (2304) in the year. Although it made landfall over Guangdong, China on 17 July, two spells of widespread heavy thunderstorm affected Singapore on the next day.
- 1.12. There were 2 tropical cyclones which affected Thailand in the year, namely Talim (2304) and a tropical depression in September. Both tropical cyclones brought heavy rain to the country with more than 100mm rainfall recorded. Flooding was also reported.
- 1.13. 4 tropical cyclones affected the islands in the Guam Area of Responsibility (AOR) in 2023, namely Sanvu (2301), Mawar (2302), Bolaven (2315) and a tropical depression in November. Mawar approached the northern part of Guam as a category 4 super typhoon in May and delivered much devastation and flooding to central and northern Guam.
- 1.14. Viet Nam was affected by 7 tropical cyclones in the year, including Talim (2304), Doksuri (2305), Saola (2309), Koinu (2314) and Sanba (2316) and 2 tropical depressions. With the combined effect of ITCZ and the tropical depression in September, more than 500mm of rainfall was recorded in various locations and caused flooding.

## **2. Improvement of TC Activities**

### **2.1. WGM&TRCG**

- (1) Implementing WGM's Annual Operating Plans in 2023. WGM has successfully completed the action plans in 2023 endorsed at TC55 (4 POPs, 10 AOPs and 2 PPs) with the assistance of TCP/WMO and TCS as well as the strong support from all Members.
- (2) Conducted the 6th Annual Meeting of WGM. The 6th Annual Meeting of WGM was hosted by the AP-TCRC, Shanghai, China from 31 October to 2 November 2023. The Meeting successfully reviewed the progress of the WGM Annual Operating Plans in 2023 and proposed new plans for 2024.
- (3) RSMC Forecaster's Training Attachment. The RSMC Forecaster's Training Attachment was held online from 11 to 13 January 2023 with 51 participants from 8 TC Members.
- (4) Roving Seminar 2023. The Roving Seminar 2023 with the theme "Advances in Tropical Cyclone Monitoring and Prediction for Impact-based Forecasting" was held in hybrid mode in Hai Noi, Viet Nam from 28 to 30 June 2023. Nine speakers delivered lectures

with 39 participants from 6 TC Members.

- (5) The Senior Management and Operation Course on Tropical Cyclone Monitoring and Forecasting was held in Guangzhou, China from 20 November to 1 December 2023 with 35 participants from 30 countries, and 6 of them were TC Members.
- (6) The 4th TRCG Forum, focused on the theme "Towards a Typhoon Resilient Society," took place in Bangkok, Thailand, from 28 to 29 November 2023. The event was attended by 12 members and had a total of 130 participants, coinciding with the 18th IWS.

## 2.2. WGH

- (1) WGH implemented the scheduled activities for all 9 on-going AOPs in 2023. Mostly achieved the success indicators which were approved at TC 55<sup>th</sup> Session. The achievements and outcomes of AOPs are shared among Members through training courses, technical documents, etc.
- (2) The Ministry of Land, Infrastructure, Transport and Tourism (MLIT) of Japan proposed one new AOP for 2024 and beyond; and the Ministry of Water Resources (MWR) of China is considering to propose two new AOPs for 2025 and beyond.
- (3) WGH successfully had its 12th working meeting which was co-hosted by the Royal Irrigation Department (RID), Thailand and MLIT, Japan on 20-22 September 2023 and attended by more than 60 participants from TC Members and regional organizations.
- (4) China government will host 13<sup>th</sup> working meeting of 2024 for WGH with funding support.

## 2.3. WGDRR

- (1) Implementing WGDRR's Annual Operating Plans in 2023. WGDRR hosted the Knowledge Sharing program in the Philippines and Lao PDR on 25 and 27 April 2023 respectively. It contributed to the signing of MOA between NDMI-PAGASA and NDMI-DMH.
- (2) DRR also conducted the field survey to choose sites for setting up Early Warning and Alert System on 16-22 April 2023 in Danao and Argao in Philippines.
- (3) Conducting the WGDRR annual meeting. The 18th WGDRR annual meeting was hosted by NDMI in Ulsan, Republic of Korea on 13 to 16 June 2023 to discuss the issues related to WGDRR activities. Around 30 participants. from members and representatives of ESCAP, WMO and other organization. WG reviewed the AOPs implementation with the budget expenditure in 2023 and proposed the plans for 2024.

## 3. **18<sup>th</sup> IWS/4<sup>th</sup> TRCG Forum held successfully in ESCAP United Nations Conference Center, Bangkok, Thailand**

ESCAP/WMO Typhoon Committee 18th IWS/4th TRCG Forum was held successfully at the ESCAP United Nations Conference Center in Bangkok, Thailand on 28 November to 1 December 2023. A Total 123 experts from 11 TC Members, international organizations and observers participated in the conference.

The theme of the 4th TRCG Forum was "Towards a Typhoon Resilient Society", which was divided into three topics: (1) Artificial intelligence for tropical cyclones related applications, (2) Special target observation over the western North Pacific and (3) Impact based forecasting for tropical cyclones. Nine experts from National Meteorological and Hydrological Services, Universities, Research Institutes and Enterprises gave invited talk on the above three topics. The forum also

set up breakout group discussion sessions. The theme of 18th IWS was “Early Warnings for All Through Enhancement of Typhoon Standard Operating Procedures (SOP)”, and Experts from Members exchanged typhoon monitoring and early warning and forecasting technologies, platforms and systems. And each working group completed all the agendas as required, summarized the main progress in 2023 typhoon season, and planned the work priorities for 2024.

#### **4. AOP Implementation Review**

During the AWG meeting held in Ulsan in June 2023, TCS had proposed the analysis of the AOP implementation and to meet the goal outlined in Item 8 of the Committee's Strategic Plans 2022-2026, which emphasizes improving efficiency and effectiveness, TCS conducted the analysis of the TC AOP implementation questionnaire. This was accomplished with guidance from AWG and collaboration with WGs. The findings from this analysis are fruitful and will help enhance and improve AOP implementation in the future. TCS, as the executive body, is committed to continuing its efforts to enhance the Committee's effectiveness and efficiency.

#### **5. Progress of the Asia Pacific Typhoon Cooperation Research Center**

With the support of the Typhoon Committee, the AP-TCRC established a research team consisting of internationally renowned meteorologists and organized into three research teams: Typhoon Scientific Experiments, Digital Typhoon Technology, and Typhoon Disaster Prevention Strategies. The AP-TCRC welcomed a visit from a Typhoon Committee Member from Thailand as part of the Time-bound Pilot Project in collaboration with the Typhoon Committee.

#### **6. Progress of Cross-cutting Project of SSOP-III**

Following the decision of TC 55th Session on the submission of the Synergized Standard Operating Procedures for Coastal Multi-Hazard Early Warning System (SSOP) phase III project to the UNESCAP Multi-Donor Trust Fund for Tsunami, Disaster and Climate Preparedness, the first version of the proposal of SSOP-III was submitted to ESCAP in October 2023.

The team of SSOP-III is working on the second version of the proposal for SSOP-III referring to the comments and suggestions from ESCAP.