

REPORT ON TCS ACTIVITIES IN 2024

(Submitted by TCS)

ACTION REQUIRED:

The Committee is invited:

- a) To take note of the major TCS activities in 2024
- b) To advise the improvement of the functions carried out by the Secretariat
- c) To review and approve the suggestions of TCS

APPENDICES:

- 1) DRAFT TEXT FOR INCLUSION AT SESSION REPORT
- 2) TCS ACTIVITIES REPORT 2024

APPENDIX A:

DRAFT TEXT FOR INCLUSION IN THE SESSION REPORT

9.1 Report of the Typhoon Committee Secretariat (agenda item 9.1)

9.1.1 The Committee took note of the report of the Typhoon Committee Secretariat (TCS).

9.1.2 The Committee expressed its appreciation for the effective and efficient secretariat services and support provided by TCS in 2024. TCS successfully coordinated the activities of three WGs, AWG, and TRCG, supported Members to host the TC Annual Session and TC 19th IWS/AP-TCRC Forum, supported Members' activities, and executed other decisions of the Committee

9.1.3 The Committee noted that TCS, under the guidance from AWG, has proposed the Typhoon Committee Research Award for Young Scientist. 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.

9.1.4 The Committee expressed its appreciation for the significant efforts made by TCS in 2024 in enhancing the internal capacity of the Secretariat. These efforts included the updating the TC webpage, promoting exchanges and visits to high-level officials from the Members and related agencies, and enhancing the visibility of the Committee across the region. The Committee also appreciated TCS/AWG for reviewing and proposing updated arrangements of releasing meeting documents online based on Members' feedback.

9.1.5 The Committee expressed its gratitude for the efforts undertaken by TCS in 2024 to mobilize resources, including expertise, in-kind contributions, and funding. Such initiatives should be further encouraged in the future to strengthen and support the activities and enhance the visibility of the Committee.

9.1.6 The Committee expressed its high appreciation for the strong support provided by the Macao, China to TCS in the past years. Additionally, the Committee acknowledged the cooperation implementing the Agreement between the Government of the Macao Special Administrative Region of the People's Republic of China and the ESCAP/WMO Typhoon Committee regarding Administrative, Financial, and Related Arrangements for the Typhoon Committee Secretariat

9.1.7 The Committee expressed its appreciation to Members for their contributions to the Typhoon Committee Trust Fund and in-kind contributions. Furthermore, the Committee encouraged Members to sustain their support for the activities of the Committee.

CONCLUSIONS

9.1.8 The Session was noted that, the following items should be highlighted:

- (1) An effective Secretariat is crucial for the Committee to implement decisions, coordinate activities, and achieve its strategic goals. TCS is dedicated to building its capacity, improving efficiency, actively engaging in regional initiatives, and engaging

collaboration with regional and international organizations.

- (2) Resource mobilization is a key focus of the Committee's strategic plan. Since the 44th meeting in Hangzhou in 2012, the Typhoon Committee has decided that TCS will serve as the main implementer of the Committee's resource mobilization efforts. It is essential for TCS to undertake further research and provide clear, actionable recommendations to enhance resource mobilization for the Committee's consideration.
- (3) The Typhoon Committee's "Strategic Plan" (2022–2026) will conclude at the end of 2026, with the new "Strategic Plan" (2027–2031) scheduled to begin in 2027. Under the guidance of the AWG, TCS will continue to support the Committee in preparing the new Strategic Plan.

SUGGESTIONS OF TCS

9.1.9 Based on the experience of routine operation in 2024 and in the past years, and considering needs and potential developments, TCS made the following suggestions to TC 576th Session for consideration:

- To allocate US\$33,500 from TCTF for supporting overall TCS activities next year; US\$5,000 for supporting 20th IWS and related activities.
- To support TCS to enhance resource mobilization efforts.
- To support TCS to communicate and interact with other international organizations to enhance the visibility of the Typhoon Committee
- To promote internship opportunities for TC Members.
- To request WGs, in collaboration with TCS to enhance the effectiveness and efficiency of their activities by monitoring and evaluating their initiatives, including Annual Operating Plans (AOPs), aligning with the stated mission in the Strategic Plans 2022-2026 and UN Early Warning for All initiative.
- To note and endorse the updated arrangements in releasing TC meeting documents online for Members/public's access.
- To express gratitude to Members for their contributions to the TCTF and in-kind contributions, while encouraging ongoing support for the Committee's activities.
- To thanks Macao Government, through SMG, for supporting of TCS in the past years, and thanks for increment of the endowment fund to TCS and for cooperating to implement the Agreement between the Government of the Macao Special Administrative Region of the People's Republic of China and the ESCAP/WMO Typhoon Committee regarding Administrative, Financial and Related Arrangements for the Typhoon Committee Secretariat.

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

APPENDIX B:

TCS ACTIVITIES REPORT 2024

1. Introduction

In 2024, TCS made great efforts on maintaining the Committee mechanism running properly for fulfilling the decisions of 56th Session of the Committee with the strong support and kind cooperation from all Members, TC Chairs, AWG, Working Groups (WGs), ESCAP and WMO. TCS endeavored to carry out its functions successfully.

2. Execution of the Decisions of the Committee

TCS played a key role in coordinating and supporting the activities of the AWG, WGs, and Members to implement the decisions made during the 56th Session of the Committee. TCS provided support for coordination activities within the various working groups.

- **The implementation of AOPs.** In 2024, 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. The WGM introduced one new AOP and one new PP, while concluding one POP.
- **Research report on resource mobilization.** The TCS conducted research on resource mobilization following the decision made at the post-TC56 Session meeting held on March 1, 2024, in Kuala Lumpur, Malaysia. This decision tasked TCS with providing background research on opportunities on various sponsorship opportunities for resource mobilization, with findings to be reported to the AWG later. In response to this request, TCS undertook several actions, including reviewing the history of resource mobilization within the Typhoon Committee, collecting information on resource mobilization, particularly focusing on contributions and donations from non-member entities in various agencies and researching potential contributors to support TC activities.
- **Typhoon Committee Research Award for Young Scientist.** 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. The document includes Guidelines for the awards, Criteria for granting awards, Method of submission of candidatures, Method of selection, Nature of awards, Awarding ceremony, administrative support and Cost implications
- **Participating in the 80th UN ESCAP Session.** The TCS participated in the 80th UN ESCAP Session, presenting a comprehensive report on the key activities and major achievements of the Typhoon Committee in 2023. The report highlighted the Committee's significant progress in implementing the United Nations 2030 Sustainable Development Strategy, enhancing efforts in typhoon disaster prevention and mitigation across the Asia-Pacific region, and expanding the international influence and visibility of the Typhoon Committee.
- **Supporting AWG.** The TCS supported the AWG in organizing and conducting a serious meeting (including of online meeting), ensuring effective implementation and follow-

up of the decisions made at the 56th Session of the Typhoon Committee.

- **TCTF Management.** The Work Plan-2024/2025 was executed according to the AOPs' implementation plan made by the working groups to meet the need of WMO financial rules.
- **Preparing the 57th Session.** Coordination and support, in partnership with PAGASA, Philippines, for the 57th Typhoon Committee Annual Session to be held from 17–20 February 2025. This involved preparation for the Session rundown, Tentative Programme and Working Documents.

3. Coordination and Participation in the Activities of WGs 2024

- TCS provided secretariat support and coordination for hosting of the following activities:
 - The 19th IWS/AP-TCRC Forum was successfully held in Shanghai, China, from 19 to 22 November 2024. The event was co-hosted by the AP-TCRC, STI/CMA, China Meteorological Administration and the ESCAP/WMO Typhoon Committee, with the participation of 181 experts from 11 TC members, international organizations, and observers. The forum's theme was "Embracing New Technologies for Achieving Early Warnings for All" and featured three main topics: (1) New Observation and Forecasting Techniques for Typhoons, (2) Typhoon Risk Reduction and Early Warning and (3) "Typhoon Plus" Industry Risk Management. Thirteen experts from National Meteorological and Hydrological Services, universities, research institutes, and enterprises delivered invited talks on these topics. A plenary discussion was held on "Typhoon Early Warnings for All and International Cooperation," resulted in the issuance of the "Shanghai Initiative", which strongly supported enhanced international cooperation to mitigate the increasing threat of tropical cyclone activities in the Asia Pacific Region. The theme of the 19th IWS was "Strengthening the Value Chain within the UN EW4All Framework for the Typhoon Committee Region." The WGM, WGH and WGDRR Parallel Sessions took place during the 19th IWS/AP-TCRC Forum.
 - RSMC Forecaster's Training Attachment hosted by WMO RSMC Tokyo Typhoon Center, JMA, Japan was held from 15 to 26 January 2024 with participants from Hong Kong China; Lao PDR; Macau China; Malaysia; the Philippines; Republic of Korea; Saudi Arabia; Sri Lanka and Vietnam.
 - The Roving Seminar 2024 hosted by TMD, Thailand 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 with 7 lecturers and 82 participants from 9 TC Members.
 - 7th Annual Meeting of WGM hosted by JMA, Japan was held in Tokyo, Japan from 30 to 31 October 2024 with 33 participants from 11 TC Members, including China, Hong Kong, China, Japan, Laos, Macau, China, Malaysia, the Philippines, Republic of Korea, Thailand, Vietnam, and the United States, and WMO.
 - Attachment Training on Radar Integrated Nowcasting System (RaINS, WGM AOP4) hosted by Met Malaysia Department, Malaysia was held in Kuala Lumpur, Malaysia

from 14-25 October 2024. Mr. Lim Zheng Liang from Meteorological Service Singapore and Mr. Phapasit Khamphoumy from Department of Meteorology and Hydrology Lao PDR attended the attachment training.

- International Workshop of WGM AOP8 hosted by National Meteorological Center/CMA was successfully held in Shanghai from 29 to 30 May 2024. The workshop was dedicated to operational TC monitoring and aimed to enhance regional early warning capabilities. The event was attended by 12 representatives from 8 TC members, including China, Hong Kong China, Macao China, Republic of Korea, Malaysia, the Philippines, Thailand and Vietnam. The workshop was instrumental in enhancing the application effects of multi-source satellite data in precise typhoon monitoring.
- A kick-start workshop for the Preliminary Project (WGM PP1) “Promoting Technical Exchange of AI Applications in Tropical Cyclone Analysis and Forecasting” hosted by the Hong Kong Observatory, was held at Hong Kong, China, on 21-22 May 2024. 29 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 in the workshop, Chair of TRCG as well as TC Secretariat participated in the workshop. The workshop also invited leading AI development teams from WMO World Meteorological Centre, academia and information technology company to share the latest advancements in AI applications in weather forecasting.
- WGH 13th working meeting hosted by Information Center of the Ministry of Water Resources, China in cooperation with Nanjing Research Institute of Hydrology and Water Conservation Automation in Nanjing, China with the theme as “Strengthen Standardization for Better National Hydrological Services” was held on 22-23 October 2024. The meeting was attended by around 70 participants from 9 Members and regional organizations.
- The training courses for WGH AOP1 on Knowledge Sharing on Pacific Ocean Storm Surge Inundation Modeling hosted by Nanjing University of Information Science and Technology and WMO Regional Training Center (Nanjing) in Nanjing, China was held from 23 to 27 September 2024. Nine trainees in total from 4 TC Members, namely China; Macao, China; Philippines and Thailand, attended the training course.
- The training courses for WGH AOP8 on Flood Control and Early-Warning and Forecasting and Hydrological Monitoring for Developing Countries in Nanjing, China, in conjunction with the Training Course on Water Ecosystems Protection and Restoration Technologies for Developing Countries from 6 to 26 November 2024 in Hangzhou/Nanjing, China, organized by Nanjing Research Institute of Hydrology and Water Conservation Automation in cooperation with the National Research Institute for Rural Electrification /Hangzhou Regional Center (Asia-Pacific) for Small Hydro Power, the Ministry of Water Resources of China, with financial support. The training course attended by 34 participants in total from 10 developing countries, including 6 participants from 3 TC Members.
- The technical workshop on Hydrological Data Quality Control and Flood Forecasting with AI Technique hosted by Han River Flood Control Office under the

Ministry of Environment of ROK and Korea Institute of Civil Engineering and Building Technology at Department of Meteorology and Hydrology of Lao P.D.R was held on 6-8 November 2024. 16 participants in total from 4 TC Members were invited to attend this workshop with funding support from Republic of Korea.

- The 19th WGDRR annual meeting hosted by NDMI, ROK in Seoul was held on 25 to 28 June 2024. The meeting topic was “Towards EW4All: Bridging Gaps for Effective Disaster Risk Reduction”. 42 participants from members, and representatives from ESCAP, WMO, TCS and AWG, participated in the meeting. WG reviewed the AOPs implementation with the budget expenditure in 2024 and proposed the plans for 2025.
 - A cross-cutting program between WGH and WGDRR, 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 (ICHARM), Japan Meteorological Agency, and Tohoku University. Participants included representatives from NDMI, Macao China, Vietnam, and TCS.
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- Research Fellowship to TC Members was offered by Hong Kong, China in 2024.
 - Benefit Evaluation of Typhoon Disaster Prevention and Preparedness hosted by STI/CMA. One representative from Malaysia applied for this program and worked in STI/CMA from 21 November to 20 December 2024
 - NDMI launched the project for strengthening capabilities of disaster risk reduction with the Philippines in 2024 in Olongapo and La Paz after conducting the prefeasibility study. NDMI inspected the Early Warning and Alert System and conducted an educational program in October 2024.
 - A video named “Typhoon Hazards: Strong Winds, Heavy Rain, High Seas” was translated into English with voiceover and subtitles as the education video related to DRR. The video is available in the Typhoon Committee website for members to download for use on public education on DRR.
 - Attended in the Macao International Environmental Co-operation Forum and Exhibition (MIECF) on 28-30 March 2024, which was organized by Macao SAR, China with attendance with more than 1000 participants.
 - Participation in United Nation University (UNU) Macau AI Conference 2024——AI for ALL: Bridging Divides, Building a Sustainable Future on 24-25 April 2024, which was organized by UNU International Institute attended for Software Technology and attended by more than 500 participants.
 - At the request of the Vietnam Hydrological and Meteorological Administration, the Secretariat has produced a video to congratulate the 70th birthday of the Professor Tran Thuc, the former Director of the Vietnam Institute of Hydro-meteorology and Climate Change (IMHEN)
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4. The Internal Capacity Building of TCS

To further strengthen the capacity on the provision of secretariat support and service to the Members, and to further enhance the visibility of the Committee, TCS took a series of the efforts

on its internal capacity building, including:

- Enhance high-level visits and communication efforts to secure increased support from the host member for TCS:
 - Visited Mr. LIU Xianfa, the Commissioner of the Ministry of Foreign Affairs of the People's Republic of China in Macao SAR on 4 December 2024. Discussions with seeking further support for the Secretariat of the Typhoon Committee
 - Visited Dr. Weng Kun LEONG, the Director of SMG, Macao, China. As the host member of the Typhoon Committee Secretariat, the TCS has a mechanism to frequently meet the Director of the Macao Geophysical and Meteorological Bureau to communicate on the operation of the Secretariat and matters that require SMG support.
 - On December 19-20, 2024, Dr. Yihong DUAN, the Secretary of Typhoon Committee, was invited to participate in a series of activities celebrating the 25th anniversary of Macau's return. This invitation underscores the significant importance that the Macau SAR government places on the TCS.
 - Ms Denise Lau, Senior Secretary of the TCS, represented the Secretariat at the "New Achievements, New Opportunities, New Actions: Symposium on External Legal Affairs of the Macao SAR," held on 17 May 2024 in Macao, China. Organized by the Macao SAR Government to commemorate the 25th anniversary of Macao's return to the Motherland. High-level officials praised the Secretariat as an exemplary model of international collaboration.
- Strengthening the linkage with ESCAP, WMO and other international organizations
 - Participating the 80th Session of ESCAP and submit the TC annual summary report.
 - Consulting with WMO and ESCAP on Resources mobilization policies, special for the utilization of third part fund.
 - Recommending experts from the Typhoon Committee members to participate in technical conferences hosted by WMO and other international organizations.
 - Strengthening ties with the WMO Regional Association II (Asia), and explore possible ways for the Typhoon Committee to further play its role in the WMO Regional Association II (Asia).
- Visits to TC Members to enhance cooperation:
 - Visited Dr. Pak Wai CHAN, the Director of HKO, Hong Kong, China on 20 May 2024 during the period of AI workshop in Hongkong.
 - Visited Dr. YOO Hee Dong, the Administrator of KMA, Republic of Korea on 24 June 2024 during the period of WGDRR Annual Meeting in Seoul.
 - Visited Dr. CHEN Zhenlin, the Administrator of CMA, China on 26 July 2024.
 - Visited Dr Mori Takashi, Director General of the Japan Meteorological Agency (JMA), Japan on 30 October 2024 during the period of WGM Annual Meeting in Tokyo.

- Met Mr. Mohd Hisham Mohd ANIP, the Director General of Malaysian Meteorological Department, Malaysia, on behalf of the Chair of TC 56th Session in Shanghai during the period of IWS19/AP-TCRC Forum.
- TCS welcomed the following guests to its premises:
 - Dr. Pak Wai CHAN, the Director, HKO, Hong Kong, China on 28 October 2024. The application of AI technique on typhoon monitoring, forecasting and warning.
 - Mr. Miao Qingwang, Vice Chairman of the Autonomous Region, China, led a delegation to visit TCS on 28 March 2024. The two sides held discussions and exchanges on strengthening cooperation in the field of meteorology.
 - Mr. Wang Weiren, Deputy Secretary General of Shanghai Municipal People's Government, Chairman of the Asia Pacific Typhoon Collaboration Research Center Council, led a delegation to visit TCS on 29 April 2024. Both sides discussed continuing to support the development of the AP-TCRC.
 - Mr. Xiong Shaoyuan, the Vice-administrator, CMA, China, led a delegation to visit TCS on 5 December 2024.

These visits and communications have deepened the understanding of the needs of TC Members. This understanding is crucial for enhancing the services provided by TCS to its Members.

- Efforts on resource mobilization
 - The Secretariat continues to maintain communication with ESCAP, WMO, SMG, and other associated organizations regarding available funding contributions to support the activities of the Committee. These ongoing discussions aim to secure the necessary resources to effectively implement the Committee's initiatives and projects.
- Upgrading TC Website
 - TCS successfully completed the revamp of the TC website, making significant improvements to its design and functionality. The Secretariat is committed to continually updating and refining the website to ensure it provides better, more efficient services to both Members and the wider community. These ongoing updates aim to enhance user experience and facilitate easier access to relevant information and resources.
 - TCS acknowledged the feedback from TC Members regarding the needs both to conveniently browse the committee's documents for members and public, and to secure sensitive information (such as participants' contact details and the TC's financial status) on the new TC website. To address those, TCS/AWG conducted a review and proposed the updated arrangements of releasing meeting documents online for Members/public's access. It was agreed that all working documents, excluding the meeting program and agenda, should be secured prior to the annual sessions and integrated workshops. After the event, these working documents and finalized reports can be made publicly accessible, with the exception of the online registration/nomination forms, information notes, and participants' contact details, which will remain password protected for Members only.

5. Other Activities

- International Internship
 - In 2024, TCS accepted 3 interns, including:
 - (1) Mr. LI Zijun, nominated by Macao City University (MCU), worked as an intern in TCS under supervised by meteorologist Mr. Clarence FONG from January 15 to April 15, 2024. Mr. LI conducted a comprehensive literature review on tropical cyclone publications and proposed further research topics, such as using machine learning methods to forecast the number of typhoons and sea level height.
 - (2) Ms. YUAN Jing, nominated by the Asia-Pacific Typhoon Collaboration Research Center (AP-TCRC), worked as an intern in TCS under supervised by senior secretary Ms. Denise LAW from May 2 to July 30, 2024. Ms. YUAN learn about the structure, network, governance of the Typhoon Committee and assisted the daily operations at the Secretariat.
 - (3) Ms. Miji KANG, nominated by Korea Meteorological Institute (KMI), worked as an intern in TCS under supervised by DRR expert Mr. Michael FU from June 1 to August 31, 2024. Ms. KANG conducted an analytical study on recent heavy rainfall disasters in Korea, gaining insight into the various stages of the government's disaster prevention and mitigation measures.

6. Conclusions

- (1) An effective Secretariat is crucial for the Committee to implement decisions, coordinate activities, and achieve its strategic goals. TCS is dedicated to building its capacity, improving efficiency, actively engaging in regional initiatives, and engaging collaboration with regional and international organizations.
- (2) Resource mobilization is a key focus of the Committee's strategic plan. Since the 44th meeting in Hangzhou in 2012, the Typhoon Committee has decided that TCS will serve as the main implementer of the Committee's resource mobilization efforts. It is essential for TCS to undertake further research and provide clear, actionable recommendations to enhance resource mobilization for the Committee's consideration.
- (3) The Typhoon Committee's "Strategic Plan" (2022–2026) will conclude at the end of 2026, with the new "Strategic Plan" (2027–2031) scheduled to begin in 2027. Under the guidance of the AWG, TCS will continue to support the Committee in preparing the new Strategic Plan.

7. Suggestions

Based on the experience of routine operation in 2024 and in the past years, and considering needs and potential developments, TCS made the following suggestions to TC 57th Session for consideration:

- To allocate US\$33,500 from TCTF for supporting overall TCS activities next year; US\$5,000 for supporting 20th IWS and related activities.

- To support TCS to enhance resource mobilization efforts.
- To support TCS to communicate and interact with other international organizations to enhance the visibility of the Typhoon Committee
- To promote internship opportunities for TC Members.
- To request WGs, in collaboration with TCS to enhance the effectiveness and efficiency of their activities by monitoring and evaluating their initiatives, including Annual Operating Plans (AOPs), aligning with the stated mission in the Strategic Plans 2022-2026 and UN Early Warning for All initiative.
- To express gratitude to Members for their contributions to the TCTF and in-kind donations, while encouraging ongoing support for the Committee's activities.
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