

Third Joint Session
Panel on Tropical Cyclones | Typhoon Committee
(42nd Session of PTC and 47th Session of TC)
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FOR PARTICIPANTS ONLY
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Report on Key Activities of TCS and Publications in 2014
(Item 3 of Provisional Agenda for PTC-TC 3rd Joint Session)

(Submitted by TCS)

ACTION REQUIRED:

This Committee is invited to:

- a) Review the key activities of TCS and publication in 2014
- b) Advise how to improve the efficiency and effectiveness of the performance of the functions carried out by the Secretariat
- c) Approve the recommendations of TCS for 2015

APPENDIX I

REPORT ON KEY ACTIVITIES OF TCS AND PUBLICATIONS IN 2014

In 2014, under the supervision of TC Chair and the AWG of the Committee, the Typhoon Committee Secretariat (TCS) made great efforts on maintaining the Committee mechanism running properly for fulfilling the decisions of 46th Session of the Committee which was held in Bangkok, Thailand, from 10 to 13 February 2014. With the strong support and kind cooperation from all Members, Working Groups, ESCAP and WMO, TCS endeavoured to carry out its functions successfully in 2014 as the executive body of the Committee.

This report intends to summarize the key activities involving TCS in past year on following aspects, and to propose the recommendations to the Committee for review and approval:

- (1) Executing the decisions of the Committee;
- (2) Coordinating and participating in the activities of annual operation plan (AOP) implementation;
- (3) Promoting the internal capacity building of TCS;
- (4) Other issues; and
- (5) Recommendations.

PART 1 - EXECUTION OF THE DECISIONS OF THE COMMITTEE

In 2014, TCS made great efforts on provision of strong and fundamental secretariat support to AWG with effectiveness and efficiency for executing and achieving the general decisions of the Committee at its 46th Annual Session. The **follow-up actions list of the recommendations** by TC46 for TCS tracking the progresses of the decisions of the Committee is shown in Annex I.

● **Secretariat support to TC New Secretary Selection for 2015-2018**

Under the supervision of TC Chair and AWG, following the decision of TC 46th Session, TCS took charge of the provision of the secretariat support to the selection procedure of TC new Secretary for the period of from 2015 to 2018/early 2019. TCS tried its best, in cooperation with TC Chair, AWG members and TC Members to coordinate the diverse opinions and integrate them into executable actions so that the TC Secretary selection process was ensured to have been successfully completed.

TCS drafted the report on the selection and appointment of New TC Secretary (WRD/TC.47/8.1) to the TC 47th Session. TCS assisted the AWG in drafting the proposal on Long-term Appointment Mechanism for TC Secretary (Inf/TC.47/9.1) for information of the TC 47th Session and decision in the TC 48th Session as appropriate and changes as needed.

● **Coordination of SSOP Implementation**

The *Synergized Standard Operating Procedures (SSOP) for Coastal Multi-Hazards Early Warning System* SSOP is the first project of Typhoon Committee to be funded by an international organization like ESCAP. The longer term goal of the project is to promote community resilience to coastal multi-hazards, including impact from land-falling tropical cyclones, through having standard operating procedures for effective multi-hazards EWS which will lead to the improvement of policy and institutional arrangements at national and community levels.

The coordination of the SSOP project has been very complicated and unexpectedly difficult since this project involves two regional bodies of the WMO Tropical Cyclone Programme, namely Typhoon Committee and Panel on Tropical Cyclones, several international/regional organizations, and thirteen beneficiary countries in TC and PTC region. The designated target groups include National Meteorological and Hydrological Services, National Tsunami Warning Centres, and National Disaster Management Offices in TC and PTC Members as well as 6 technical consultants from 6 countries.

It was very important to successfully conduct the implementation plan for achieving the goal of SSOP in 2014. With the support and close cooperation from ESCAP, beneficial countries and target countries, the steering committee of SSOP, the project manager/technical advisor made great efforts to push the implementation of the project. TCS spent a lot of time and efforts on the activities coordination, drafting together with the project manager the progress reports and budget management. TCS drafted the report on SSOP implementation in 2014 and recommendations (WRD/PTC-TC_3JS/6.1) for 3rd joint session.

Based on the experience of implementation of SSOP, TCS together with PTC Secretariat and ESCAP presented a proposal on a Cooperative Mechanism for Coastal Multi-hazard Early Warning Information Sharing and Technical Transferring between the PTC and TC (WRD/PTC-TC_3JS/6.4).

- **Secretariat support to TC 9th IWS and 3rd Joint Session of PTC and TC**

The 9th Integrated Workshop (IWS) of TC with the theme “Synergized, Integrated, Collaborative Standard Operating Procedures Strategies to Improve Early Warning System for Coastal Multi-hazards” was held in UN Conference Center (UNCC) of ESCAP, Bangkok, Thailand on 20-24 October 2014. The Workshop was attended by 79 participants.

The TC 9th IWS was an event without hosting Member. With the kind support from ESCAP, TCS provided its strong secretariat support for the event. After the workshop, TCS drafted the summary report which can be downloaded at :

[http://www.typhooncommittee.org/9IWS 2TRCG/8IWS 2TRCG.html](http://www.typhooncommittee.org/9IWS%20TRCG/8IWS%20TRCG.html).

Following the decision of TC 46th Session, in kind cooperation with ESCAP, WMO and PTC Secretariat, TCS was devoted actively in organizing the 3rd Joint Session of TC and PTC (TC 47th Session and PTC 42nd Session) to be held in UN Conference Center (UNCC), Bangkok, Thailand on 9-13 February 2015, mainly including (1) preparing the Session in cooperation with ESCAP, including invitation letters to Members and organizations/agencies, information note, participants’ registration, agenda and programme; (2) establishing the webpage for the event; and (3) drafting documentation.

Based on the experience of hosting IWSs and annual sessions in the past years, TCS, in cooperation with AWG members, presented a proposal on a Mechanism of hosting IWSs and Sessions (WRD/TC.47/10.1) for discussion and decision.

- **Kintanar Award 2014**

TCS issued letters in early August 2014 inviting TC Members to update the composition of the Dr. Kintanar Award Selection Working Group (KASWG) and nominate the candidates for the “Dr. Roman L. Kintanar Award for Typhoon-related Disaster Mitigation-2014”. Despite several reminders, TCS did not receive any submission of candidatures.

TCS proposed the review of the Rules and Procedures of Dr. Kintanar Award (WRD/TC.47/11.1) for discussion and decision due to the fact that the Philippines Typhoon Committee Foundation Inc. has effectively ceased operation which implies that the award is a plaque only without the cash.

In-Kind contributions

Following the decision of the Committee, TCS requested the Members to quantify the values assigned to in-kind contributions that their countries/regions had expended in actions related to TCTF projects in 2014. TCS drafted the information document on the status of in-kind contribution in 2014 (INF/TC.47/12.1).

• TCTF Management

Based on the Committee's decision of budget allocation for AOPs, TCS kept close communication with WMO on the TCTF management. The Work Plan for 2014 was adjusted timely as per the changes of AOPs' implementation plan provided by the working groups to meet the need of WMO financial rules. Effective management of TCTF ensured the Committee implementing and achieving its decisions favorably and successfully in 2014.

For information, discussion and decision, following documents were prepared and submitted by TCS to the TC 47th Session:

- Information report (INF/TC.47/13.1) in cooperation with WMO on the finalized statement of account of TCTF for the period from 1 January to 31 December 2013 and the provisional statement for the period from 1 January to 31 December 2014;
- Information report (INF/TC.47/13.2) on the finalized summary of income and expenditure of years 2012 and 2013 and the provisional summary of income and expenditure for the period from 1 January to 31 December 2014 related to the execution of the Work Plan 2014; and
- TCTF proposal for 2015 (WRD/TC.47/13.1) in cooperation with AWG.

• Publications

In 2014, the Committee published successfully four issues of TCRR Journal, one technical report and two semiannual newsletters since 46th Annual Session as follows:

- Tropical Cyclone Research and Review (TCRR) – Vol. 3, No.1, 2, 3 and 4
- Technical Report of TC WGH Project on Assessment System of Flood Control Measures on Socio-economic Impacts (TC/TD-No. 0009)
- Typhoon Committee Newsletters - first and second semesters 2014

• TC Website

Following the decision of the Committee, TCS staffs continued perfecting and developing its new website for the Committee (<http://www.typhooncommittee.org/>) in 2014 with functions for easy accessing, easy maintenance and updating. The information in the webpages was been enriched and reviewed by TCS staffs.

PART 2 - COORDINATING AND PARTICIPATION IN THE ACTIVITIES OF ANNUAL OPERATION PLAN (AOP) IMPLEMENTATION

At the 46th Session, the Committee approved the Annual Operating Plan (AOP), which consisted of 38 AOPs totally. TCS made efforts to provide strong secretariat support and effective coordination amongst AWG, WGM, WGH, WGDRR and TRCG to successfully implement the AOPs in 2014. TCS issued 455 official letters in 2014 for coordinating the relevant activities. The main concrete activities in which TCS has been involved in 2014 are described below (by chronological order):

- Participating in the field survey of OSUFFIM pilot city of Thailand in February**

The field survey in Chiang Mai, the pilot city of OSUFFIM in Thailand, was conducted from February 6 to 8, 2014 in conjunction with TC 46th Session. The mission was composed of participants from Sun Yat-Sen University (SYSU) of China, Royal Irrigation Department (RID) of Thailand, Department of Irrigation and Drainage (DID) of Malaysia and TCS. The hydrologist of TCS took part in the event with provision of activities coordination and technical support.

- **Participating in the 41st Session of PTC in March**

Following decision of the 45th Session of TC, and invitation from Mr. Shah Alam, Director Bangladesh Meteorological Department, the Secretary of TC, Mr. Olavo Rasquinho, attended the 41st session of this sister organization, which was held in Dhaka, Bangladesh, on 02-06 March 2014.

This session was of great importance to promote cooperation between PTC and TC, to the extent that there was consensus to hold a joint session PTC/TC in 2015, and the Members of PTC committed to collaborate with TC Members under the framework of the project Synergized Standard Operating Procedures for Coastal Multi-Hazards Early Warning System (SSOP).

- **Participation in the mission on Haiyan in April**

The TC Secretary participated in the mission (7-12 April) to Manila and Tacloban. Other organizations were also represented: ABU, ESCAP, JMA, NDMI, NEMA, RSMC-Tokyo, UKMO, ESCAP and WMO. TCS collaborated actively with WMO in drafting the Report, which can be accessed on the WMO Website.

http://www.wmo.int/pages/prog/dra/documents/PHI_Mission_Apr2014_FinalReport.pdf

TCS received a letter from ESCAP, signed by Ms. Shamshad Akhtar, Under-Secretary-General of the United Nations and Executive Secretary of ESCAP (Annex II to Appendix I), thanking the *“Typhoon Committee Secretariat for its role in supporting the Expert Mission on Typhoon Haiyan, which visited the Philippines on 7-12 April 2014, in close collaboration with the WMO and ESCAP”*. The letter also stressed that *“The ESCAP/WMO Typhoon Committee and its sister platform, the WMO/ESCAP Panel on Tropical Cyclones, have a key role to play, in this regard, by galvanizing mutual support among member States and taking forward the findings of the joint missions. Please rest assured that ESCAP will be ready to support these initiatives to increase regional cooperation”*.

TCS was not represented at the mission to Viet Nam which was conducted immediately after the mission to the Philippines.

- **Participating in WGH field survey on Hydrology in China in May**

According to the proposal at TC 46th Session, the Bureau of Hydrology (BOH) of China organized a mission of the WGH on hydrological field survey from 5 to 7 May 2014 in Guangxi, China. The mission was composed of participants from RID of Thailand, BOH of China; Nanjing Automation Institute of Water Conservancy and Hydrology, China; Nanjing Hydraulic Research Institute, China; Guangxi Provincial Bureau of Hydrology and TCS hydrologist. The Mission visited local and provincial offices of flood forecasting Centers and sediment disaster monitoring stations and river hydrological station.

- **Participating in 9th WGDRR Workshop in May**

The 9th International workshop of WGDRR was successfully held on 26-27 May 2014 at Intercontinental Seoul COEX Hotel in Seoul, Republic of Korea. The main theme for this year's workshop was “Past, Present, and Future of WGDRR.”. There were 22 participants from 6 Members.

TC secretary, meteorologist and DRR expert of TCS participated in the working meeting with secretariat support.

- **Organizing and participating in the training course of SSOP Project in June**

The Training Workshop under the SSOP project was carried out in the WMO RTC Nanjing, China, on 9-11 June 2014, in conformity with the Activity 2.1 - "Conduct training of users and issuers in the interpretation and preparation of EWS SOPs and products for decision-making, media, and communications". The training consisted of lectures, presentations and training scenarios followed by very active discussions among participants, representatives of the beneficiary countries, and lecturers/ trainers. The Workshop was attended by 33 participants 12 Members of TC and PTC. The lectures were delivered by nine specialists from ABU, ADPC, CMA, IOC/UNESCO, Shanghai Typhoon Institute (STI), Shanghai Meteorological Service (SMS), University of Tohoku, TCS and WMO.

The secretary of TC and financial officer of TCS participated in the training course with provision of secretariat support.

- **Participating in the 70th session of ESCAP in July**

Under invitation from Dr. Shamshad Akhtar, Under-Secretary-General of U. N. and Executive Secretary of UNESCAP, the Secretary of TC participated at Senior Officials Segment of the 70th Session of ESCAP, held in Bangkok, Thailand, on 4-6 August 2014. A Report of the Typhoon Committee activities in 2013 was submitted by TCS to the Session.

- **Participating in TC WGDRR Expert Mission in September**

The expert mission of WGDRR 2014 was successfully conducted on 22-24 September at Guam Homeland Security Office of Civil Defense in Guam. This was implemented according to the plan of AOPs 2014 of WGDRR. This mission was led by National Disaster Management Institute (NDMI) and coordinated by Typhoon Committee Secretariat (TCS). DRR expert of TCS took part in the mission.

- **Organizing and Participation in the Working Meeting on Cooperative Mechanism between PTC and TC under SSOP project in October**

The Working Meeting on Cooperative Mechanism for Coastal Multi-hazard Early Warning Information Sharing and Technical Transferring between the Panel on Tropical Cyclones (PTC) and the Typhoon Committee (TC), following the established in the Activity 2.2 of the Work Plan of the project "Synergized Standard Operating Procedures for Coastal Multi-hazards Early Warning System (SSOP)", was held in Bangkok, Thailand on 9-10 October 2014.

The Meeting was attended by 22 participants from Members of TC and PTC regions, three RSMCs, ADPC of ESCAP, WMO, PTCS and TCS. TC Secretary, meteorologist, hydrologist, DRR expert and financial officer of TCS participated in the meeting with provision of secretariat support.

With the collaboration of PTC Secretariat and ESCAP, TCS prepared the document on the Cooperative Mechanism for Coastal Multi-hazard Early Warning Information Sharing and Technical Transferring between the PTC and TC (WRD/PTC-TC_3JS/6.4), in which recommendations were submitted to the PTC/TC 3rd Joint Session.

- **Participating in the 3rd WGH Working Meeting in October**

The third WGH working meeting with the theme of “Extreme Flood and Structural Flood Control Measures in TC” was held in Seoul, Korea from 13 to 16 October 2014 at the kind invitation of the Ministry of Land, Infrastructure and Transport (MOLIT), Republic of Korea with generous offering of financial support. The meeting was attended by around 20 participants from 7 Members and TCS hydrologist. Taking the opportunity, the participants of working meeting were invited to attend the 40th anniversary ceremony of HRFCO. On behalf of TC Secretariat and WGH, Mr. Jinping LIU was invited to deliver a congratulation speech, as one of three invited speakers.

- **Participating in the Roving Seminar of WGM in November**

The Typhoon Committee Roving Seminar 2014 was successfully held on 3-5 November 2014 in Hong Kong, China. The seminar was jointly coordinated by TCS and TRCG and hosted by the Hong Kong Observatory of Hong Kong, China. The Secretary of TC expressed his gratitude on behalf of TC for the very active collaboration of the HKO with TC in his opening remarks and stated that the topics of Roving Seminar 2014 are of great importance for improving the relationship between the warning issuers and the media professionals. TCS meteorologist also attended the Seminar. Certificates signed by the Director of HKO and the TC Secretary were delivered to the participants.

- **Participating in the Joint Training Course of WGH AOP4 and AOP5 in December**

Following the decision of TC 46th Session and 9th IWS, BOH of China, in cooperation with SYSU and TCS, organized the joint training course for WGH AOP4 (project on real time Operational System for Urban Flood Forecasting and Inundation Mapping) and AOP5 (project on Extension of Xin’anjiang Model Application in Selected River Basins in TC Members) from 1 to 7 December 2014 in SYSU, Guangzhou, China. The 10 participants from the Members of pilot cities including Malaysia, Thailand and Vietnam attended the training course. TCS Hydrologist participated in the training course with provision of secretariat and technical support, and delivered the certificates signed by TC Secretary to participants.

- **Participating in the 8th International Workshop on Tropical Cyclone in December**

With the kind support from Korea Meteorological Administration (KMA), TCS Meteorologist and DRR Expert were invited to participate in the 8th IWTC on 2 -10 December hosted by KMA in Jeju, Republic of Korea, which provided the opportunity for TCS to follow up with the recent advances in the field of research on tropical cyclones as well as the challenges faced by the operational forecasters.

PART 3- PROMOTING THE INTERNAL CAPACITY BUILDING OF TCS

As executive body of the Committee, the capacity building of TCS is very important to achieve KRA 7 of TC Strategic Plan, namely Enhanced Typhoon Committee’s Effectiveness, Efficiency and International Collaboration. In the past years since the Secretariat of TC was transferred from Manila to Macao, TCS never stopped enhancing its internal capacity building. Nowadays, TCS is a solidary and collaborative team with sound professional knowledge and good relationship with Members, working groups and internal/regional organizations.

Concretely, the progresses and achievements that TCS has been taking in 2014 on this aspect could be described as follows:

- Continuing the enhancement of the communication and cooperation with Chair/Vice-Chairpersons and focal points of working groups in Members;

- Specifying the role of reporting the activities participated by TCS staff;
- Enhancing TCS internal meetings;
- Updating the contact information of Leaderships and Focal Points in Members;

PART 4 - OTHER ISSUES

- **Visit to TCS of High Officials of ESCAP**

Dr. Shamika Sirimanne, Director of Information and Communication Technology and DRR Division of ESCAP and Mr. Wang Keran, Chief of Space Applications Section of ESCAP, visited TCS office in 30 October 2014, where conversations were taken about the current status and the future cooperation between ESCAP and TC, mainly in what refers the enhancement of the cooperation between TC and PTC. Both representatives of ESCAP, Dr. Fong Soi Kun and Ms. Leong Ka Cheng (respectively Director and Deputy Director of Macao Meteorological and Geophysical Bureau - SMG) and the TC Secretary had a work lunch offered by SMG in which it was reaffirmed the commitment of the Macao SAR Government to continue providing financial support for the operation of TCS in Macao, China.

- **Assisting KMA in its International Internship Programme**

Following request from Korea Meteorological Administration (KMA), TCS accepted one intern from September 2014 to February 2015 working in TCS, and other from March to August 2015. The TCS Meteorologist was appointed as supervisor of the interns. TCS provided and will continue the necessary assistance as far as possible.

PART 5- RECOMMENDATIONS

On the basis of the experience of routine operation in 2014 and in the past years, and considering that 2015 is the first year of 3rd four-year term of TCS stationing in Macao, TCS made the following recommendations to TC 47th Session:

- To allocate US\$28,000 from TCTF for supporting overall TCS activities; US\$3,000 for supporting IWS hosting in 2015 and US\$2000 for IWS related activities;
- To request the Committee to take measures for the smooth transfer of the work of TCS from the current Secretary to the new one, Mr. YU Jixin;
- To thank Macao Government for strong support to TCS in the past years and for continuing hosting TCS for the 3rd term from 2015 to 2018. To request SMG of Macao in cooperation with TCS to review 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.
- To request the Committee to consider the possibility of keeping the financial officer of TCS Ms. Kou Meng Kit (Lisa) and the administrative secretary of TCS Ms. Denise Lau to continue working in TCS for maintaining the TCS running properly.
- To thank Macao Government for seconding Mr. Leong Kai Hong as TCS meteorologist for past eight years, and considering the period of secondment of Mr. Derek LEONG will expire on February 13, 2015, to request SMG to provide the support of a meteorologist for TCS until the recruitment of new TCS meteorologist is completed.

- To thank the Ministry of Water Resources (MWR) of China for seconding Dr. Jinping LIU as TCS hydrologist for past seven years. Since his period of secondment will be expired on February 13, 2015, to request MWR to continue supporting Dr. Jinping LIU working for TCS as hydrologist for the 3rd term from 2015 to 2018/early 2019 with a contract of employment.
- To thank Macao Government for seconding Mr. LEI Pun Chi (Barrie) as TCS DRR expert, and considering that his period of secondment will be expired on July 17 2015, request the Committee to consider the renewal of TCS DRR expert before the deadline.
- To thank ESCAP and WMO for their strong support to and close cooperation with TCS in past years, and to request ESCAP and WMO continue their support to TCS.
- To thank Members for their cooperation with TCS in 2014 and encourage Members to continue their support to and cooperation with TCS.
- To thank Malaysia and USA for their kind offer of hosting TC 10th IWS in 2015 and 48th Session in 2016, respectively, and encourage Members to offer hosting TC IWSs and annual sessions.
- To thank AWG members for their constructive advice and great contribution to the important affairs of the Committee and encourage AWG members to continue playing their active role on the issues of the Committee.
- To thank Members for their donation for the Typhoon Committee Trust Fund and encourage Members to continue their support to TCTF.
- To thank Members for their in-kind contribution and encourage Members to continue support WG's activities.
- To thank Members for their cooperation on SSOP project and encourage continuing the support in 2015 and further SSOP phase II if the Committee plans to conduct it under assistance of ESCAP

ANNEX I

FOLLOW-UP ACTIONS LIST OF THE RECOMMENDATIONS BY TC46 (Bangkok, Thailand, from 10 to 13 February 2014)

WGM

Para. No.	Subject	Action Required	Responsible	Current status
Para. 48 a)	EXOTICA	<ul style="list-style-type: none"> • To endorse the WGM project proposal of EXOTICA as shown in Appendix X (Appendix II - EXOTICA), to encourage the active participation of the Members and WGs, and watch for opportunities to collaborate with other field experiments in the area. 	WGM	Endorsed at the 46 Session and experimental field campaign was conducted which includes mobile sounding, unmanned aircraft, rocket sounding as well as reconnaissance flight.
Para. 48 b)	3 rd Assessment Report	<ul style="list-style-type: none"> • To establish the expert team on the impact of climatic change on tropical cyclone in TC region; and to carry out a preliminary review on the latest research development on the impacts of climate change on tropical cyclones 	WGM	Expert team was established in 2014 with 5 renowned experts as members of the team. Outline of the working plan for the

Para. No.	Subject	Action Required	Responsible	Current status
		to identify key areas that needed to be addressed in the 3rd Assessment		assessment report has been developed.
Para. 48 c)	SSOP Project	<ul style="list-style-type: none"> To encourage Members, in particular the SSOP beneficiary Members to collaborate with the SSOP project. 	WGM	Reviewing of the SSOP Manual is now undertaken by Members.
Para. 48 d) and e)	Storm Surge	<ul style="list-style-type: none"> To request RSMC Tokyo to provide storm surge time series forecasts if so requested by Members, and to enhance training contents on storm surge forecasts during the annual TC attachment training responding to requests from Members. To request Members to provide tidal data archive to RSMC Tokyo for verification of the storm surge time series forecasts and further improvement of the storm surge model. 	WGM/RSMC	<p>3 trainees from Members participated at the RSMC Tokyo attachment training</p> <p>Ongoing which is upon the providence of data from Members</p>
Para. 48 f) and o)	QPE/QPF	<ul style="list-style-type: none"> To further improve QPE/QPF techniques of Members and request RSMC Tokyo to conduct QPE/QPF training during annual TC attachment training. To collaborate with TC Research Fellowship Scheme to provide QPE/QPF training to Member. 	WGM/RSMC	<p>3 trainees from Members participated at the RSMC Tokyo attachment training</p> <p>1 expert from the Philippines participated the Scheme hosted by HKO on QPE/QPF</p>
Para. 48 g)	Guidance on tropical cyclone ensemble forecasts	<ul style="list-style-type: none"> To request RSMC Tokyo to explore possible ways to enhance guidance on tropical cyclone ensemble forecasts over the western North Pacific for Members including those of the SWFDP-SeA, based on the success of NWP-TCEFP in order to further promote the operational use of such ensemble guidance. 	RSMC	RSMC Tokyo plans to examine a multi-center grand ensemble (MCGE) for TC genesis prediction in 2015.
Para. 48 h)	TC genesis prediction skills	<ul style="list-style-type: none"> To request RSMC Tokyo further examines TC genesis prediction skills to identify potential of its operational use in the future. 	RSMC	RSMC Tokyo plans to examine a multi-center grand ensemble (MCGE) for TC genesis prediction in 2015.
Para. 48 i)	TAPS of KMA	<ul style="list-style-type: none"> To request KMA to further improve the typhoon information processing system (TAPS of KMA) project; and to collaborate with the Typhoon Committee Research Fellowship Scheme to provide training for the typhoon forecasters on the use of TAPS as well as to provide follow-on 	KMA/WGM	Completed. Three experts from Members attended the training and research programme hosted by KMA incorporated with the Research Fellowship Scheme.

Para. No.	Subject	Action Required	Responsible	Current status
		technical assistance on the implementation of TAPS as requested by Members.		
Para. 48 j)	Web-based typhoon forum	<ul style="list-style-type: none"> To promote the web-based typhoon forum among members and to encourage more forecasters and researchers from Members to register to the forum. 	WGM	On-going
Para. 48 k)	Radar composite technique	<ul style="list-style-type: none"> To request TMD to apply radar composite technique provided by JMA to the nationwide radar network in Thailand and to conduct preliminary works on the application of QPE techniques with technical assistance of JMA. To request TMD and JMA to hold a technical meeting to identify a way forward on the submission of a progress report by TMD. 	TMD/JMA	Completed. A technical meeting hosted by JMA among the experts from JMA and TMD was held in late November 2014 at JMA Headquarters.
Para. 48 l)	Post-season verification and reliability analysis on the operational forecast of tropical cyclones	<ul style="list-style-type: none"> To request STI/CMA to carry out post-season verification and reliability analysis on the operational forecast of tropical cyclones and to further improve the evaluation system for tropical cyclone forecast with special attention on genesis and ensemble forecast in conjunction with WMO-TLFDP. 	CMA/WGM	Forecasts of TC tracks from operational forecast agencies were evaluated. 1 month visit of 2 experts from DPRK for the implementation of TC genesis products in real time based on STI's Typhoon Forecast Evaluation and Assessment System (TFEAS).
Para. 48 m) and n)	TC Journal Tropical Cyclone Research and Review.	<ul style="list-style-type: none"> To request STI/CMA to further improve the editorial procedures of the TC Journal Tropical Cyclone Research and Review. To request WMO and ESCAP to promote the TC Journal Tropical Cyclone Research and Review and to encourage Members and WGs to submit articles to the Journal 	CMA/WGM WMO/ESCAP	2 visiting editors from the Philippines and Thailand visited editorial office and provided guidance of improving the editorial procedures as well as reviewing articles.
Para. 48 p)	TRAMS model	<ul style="list-style-type: none"> To request CMA to further improve the numerical prediction system TRAMS model of the project of Improvement of South China Sea Typhoon Forecast as well as to provide more related products through its website. 	CMA	Some model technique schemes have been improved and updated in TRAMS. Higher resolution version: 9-km is developed.
Para. 48 q)	Typhoon seasonal prediction	<ul style="list-style-type: none"> To request KMA to further develop the techniques of typhoon seasonal prediction as well as to improve the web portal web page to provide the products of typhoon seasonal prediction to Members. 	KMA	KMA began to provide the seasonal typhoon activity outlook on May 2014

Para. No.	Subject	Action Required	Responsible	Current status
Para. 48 r)	SWFDP-Sea portal web page	<ul style="list-style-type: none"> To request National Hydro-Meteorological Service of Viet Nam to further improve the SWFDP-Sea portal web page to include more products. 	NHMS Viet Nam	Completed SWFDP-Sea webpage is operational now with a lot of products available.
Para. 48 s)	High Resolution Tropical Cyclone Model (HTCM)	<ul style="list-style-type: none"> To request STI/CMA to carry out the preliminary study on the High Resolution Tropical Cyclone Model (HTCM). 	CMA/WGM	Progress has been made and a 3-year project of "Development and implementation in High-resolution Modelling of TC" was developed.
Para. 48 t) and u)	Best track datasets	<ul style="list-style-type: none"> To continue the study on the methodology to compare the best track datasets based on the recommendations of the best track consolidation meeting with the consideration on the progress of digitization of CI numbers in hardcopy. To exchange best-track datasets including digitized CI numbers for the period 2004-2013 by the end of June 2014. To conduct cyclone-by-cyclone comparison analysis of CI numbers with preliminary report of findings, if digitization of CI numbers of the said period are completed. 	WGM	Completed Digitization of CI numbers for 2004-2013 was completed and cyclone by cyclone analysis was carried out and will be continued in 2015. Completed
Para. 48 v)	Taskforce on TC Intensity Analysis	<ul style="list-style-type: none"> To continue the work of the Taskforce on TC Intensity Analysis for upgrading TD. 	WGM	Completed. The project was closed
Para. 48 w)	Tropical Cyclone Programme (TCP)	<ul style="list-style-type: none"> To request WMO to publish the 2014 edition of TOM on the Tropical Cyclone Programme (TCP) Website by March 2014. 	WMO	Completed
Para. 48 x)	WGM AOP	<ul style="list-style-type: none"> To endorse the action plans (including the 11 AOPs, 4 POPs and 3 PPs) as shown in Appendix X (Annex II of Appendix I - Summary report of the WGM Parallel Meeting) at the 8th IWS, which summarizes the above recommendations with additional action items. 	WGM	Endorsed at the 46 Session and the respective WGM AOPs endorsed was completed.
Para. 1 k)	TC Journal Tropical Cyclone Research and Review	<ul style="list-style-type: none"> Urge all WGs to submit articles for TC Journal <i>Tropical Cyclone Research and Review</i>. 	Members	Ongoing
Para. 1 p) and q)	Retire of Tropical Cyclone names	<ul style="list-style-type: none"> Approve AMPIL as the replacement for BOPHA in the list of the names of tropical cyclones. Approve retirement of FITOW, SONAMU, HAIYAN and UTOR and 	WGM/TCS	Approved at the 46 Session. Approved at the 46 Session and

Para. No.	Subject	Action Required	Responsible	Current status
		request TCS to issue letters to relevant Members requesting the replacement names in accordance with the Committee's procedure.		replacement name will be submitted for approval at the 47 Session

WGH

Para. No.	Subject	Action Required	Responsible	Current status
Para. 79 d) and e)	OSUFFIM/URFM	<ul style="list-style-type: none"> To continue conducting the project of OSUFFIM as one of subsequent activities of TC cross-cutting project of UFRM and request Members of Pilot Cities exploring mobilization the self-funding support for the pilot studies of development and application of OSUFFIM. To request TRCG to consider the possibility of organizing the seminar and/or training course for Members on urban flood forecasting, inundation mapping, PMP/PMF review and study taking into consideration climate change as subsequent activities of TC cross-cutting project of UFRM. 	WGH/Members TRCG	The project was going well on schedule. A joint training course for this project was hosted by BOH of China in SYSU, Guangzhou, in conjunction with the training course of AOP5 (Xin'anjiang Model application) from 1 to 7 December 2014 for selected TC Members, and SYSU provided the logistics support for this training.
Para. 79 f)	Pilot studies and application of Xin'anjiang model	<ul style="list-style-type: none"> To request Members explore mobilization of self-funding support for the pilot studies and application of Xin'anjiang model in selected river basins to promote the capacity of flood forecasting and warning. 	Members	A joint training course for this project was hosted by BOH of China in SYSU, Guangzhou, in conjunction with the training course of AOP4 (OSUFFIM) from 1 to 7 December 2014 for selected TC Members.
Para. 79 g)	3 rd WGH Meeting	<ul style="list-style-type: none"> To request HRFCO, MOLIT of Republic of Korea to host WGH third working meeting in appropriate time with funding support. 	HRFCO, MOLIT of Republic of Korea	The 3 rd WGH working meeting was held in Seoul, Korea from 13 to 16 October 2014 at the kind invitation of HRFCO, MOLIT, Republic of Korea with generous offering of financial support.
Para. 79 h)	WGH webpage	<ul style="list-style-type: none"> To request HRFCO, MOLIT of Republic of Korea to perfect WGH webpage and set up the linkage with TC website in cooperation with TCS and Members. 	HRFCO, MOLIT of Republic of Korea	HRFCO updated WGH webpage http://tcwgh.hrfco.go.kr .
Para. 79 i)	SSOP	<ul style="list-style-type: none"> To encourage Members to contribute the cross-cutting project of SSOP. 	Members	The Colleagues of hydrological component took part in the project partially.

Para. No.	Subject	Action Required	Responsible	Current status
Para. 79 k)	WGH in the activities of WMO water and hydrology issues	<ul style="list-style-type: none"> To request WMO continue taking actions to facilitate involvement of WGH in the activities of WMO water and hydrology issues. 	WMO	TC WGH does not be involved in very much.
Para. 79 l)	WMO RAI and the Committee	<ul style="list-style-type: none"> To request WGH continue taking the action on the closest linkages between the two working groups of WMO RAI and the Committee which were identified at the Committee 43rd Session as: <ul style="list-style-type: none"> UFRM and flash flood/debris flow/landslide prediction/warning under the RA II theme of Disaster Mitigation – Implementation of the WMO Flood Forecasting Initiative including Flash Flood Forecasting Capabilities; and Assessment of the variability of water resources in a changing climate under the RA II theme of Water Resources Assessment, Availability and Use (surface water and ground water). 	WMO/Members	HRFCO involved in activities of RA II WGH in some way. Also hydrologists were involved in RAI WGH workshop and projects.
Para. 1 k)	TC Journal Tropical Cyclone Research and Review	<ul style="list-style-type: none"> Urge all WGs to submit articles for TC Journal <i>Tropical Cyclone Research and Review</i>. 	Members	No paper was submitted to TCRR from TC WGH side in 2014.

WGDRR

Para. No.	Subject	Action Required	Responsible	Current status
Para. 84 c)	Extending TCDIS	<ul style="list-style-type: none"> To collect the disaster information from TC Members for extending TCDIS, the continuity of such collection should be maintained and this project will be continued in 2014. 	Members	In progress There has been difficulty in collecting information from members. Guam is willing to provide the data required. TCS will continue to assist NDMI to promote TCDIS and encourage TC members to provide the relevant data through member report.
Para. 84 d)	Expert Mission	<ul style="list-style-type: none"> To conduct expert missions in Guam and Thailand for WGTCDIS, disaster prevention technologies, and policies in 2014. 	Guam, Thailand	Completed (partially) TCS successfully coordinated the Expert Mission and assigned DRR expert to take part in the mission in Guam with the experts of NDMI.

Para. No.	Subject	Action Required	Responsible	Current status
				Remark: Thailand was not able to join this mission due to the political situation.
Para. 84 e)	Public awareness	<ul style="list-style-type: none"> To start new project for increasing public awareness led by HKO. 	HKO	Completed HKO has produced videos for raising public awareness on tropical cyclones and storm surges.
Para. 84 f)	Research for building the trust with media	<ul style="list-style-type: none"> To begin the new research for building the trust with media. 	NDMI	Completed (partially) NDMI drafted guidelines, but the finding is that to make the media to follow the guidelines would be very difficult. In the 9 th IWS the WGDRR agreed not continue with this project.
Para. 84 g)	2014 AMCDRR	<ul style="list-style-type: none"> To make the plan for the exhibition booth and side event in 2014 AMCDRR meeting in Bangkok, Thailand. 	WGDRR	Not completed Due to the political situation in Thailand, WGDRR was not able to make contribution to the meeting.
Para. 84 h)	Typhoon disaster prevention and preparedness	<ul style="list-style-type: none"> To continue the benefit evaluation of Typhoon disaster prevention and preparedness led by CMA and start new research of benefit evaluation of disaster risk reduction led by NDMI. 	CMA/NDMI	No information According to discussion at 9 th IWS, China agreed to submit the documents after IWS meeting to report the progress of this project. It will be continued next year but without budget as per suggestion by China.
Para. 84 i)	Automatic weather stations	<ul style="list-style-type: none"> To request HKO to coordinate the setting up of automatic weather stations for the community based weather station project in the 2 interested Members of DPR Korea and Viet Nam in 2014. 	HKO	Completed HKO had provided a training workshop in HK to the interesting member namely Viet Nam and Lao PDR in November instead of dispatching experts to the participating countries due to the political situation in Viet Nam. DPR of Korea was not able to participate in the training.

Para. No.	Subject	Action Required	Responsible	Current status
Para. 1 k)	TC Journal Tropical Cyclone Research and Review	<ul style="list-style-type: none"> Urge all WGs to submit articles for TC Journal <i>Tropical Cyclone Research and Review</i>. 	Members	The WGS were requested to submit articles.

TRCG

Para. No.	Subject	Action Required	Responsible	Current status
Para. 93 b)	Priority training and research	<ul style="list-style-type: none"> Endorse the priority training and research areas as proposed in TRCG Report 2013. 	TRCG	Endorsed at the 46th Session.
Para. 93 c) Para. 1 f)	RSMC Tokyo forecasters' attachment	<ul style="list-style-type: none"> Approve the changes in the arrangements with respect to RSMC Tokyo forecasters' attachment Request TRCG to develop a budgetary feasible plan in consultation with WMO on RSMC Tokyo attachment training for 2016-2017, to be made available for all Members, with higher priority on capacity development of less developed Members, for submission to 47th Session of TC and approve the remaining recommendations submitted by Training and Research Coordination Group (TRCG) 	TRCG WMO/RSMC	<p>The changes in the arrangement for 2014-15 have been approved at the 46th Session.</p> <p>A proposed plan for the arrangement of the RSMC training attachment for 2016-17 has been prepared in consultation with RSMC-Tokyo and WMO TCP for Members' consideration and approval in the 47th Session.</p>
Para. 93 d)	Roving Seminar	<ul style="list-style-type: none"> Approve the changes in the arrangement with respect to the Roving Seminar 	TRCG	Approved at the 46th Session.
Para. 93 e)	TRCG Work Plan for 2014 - 2017	<ul style="list-style-type: none"> Endorse the TRCG Work Plan for 2014 - 2017. 	TRCG	Endorsed at the 46th Session.
Para. 93 f)	AOP 2014	<ul style="list-style-type: none"> Endorse TRCG AOP 2014 	TRCG	Endorsed at the 46th Session.
Para. 1 k)	TC Journal Tropical Cyclone Research and Review	<ul style="list-style-type: none"> Urge all WGs to submit articles for TC Journal <i>Tropical Cyclone Research and Review</i>. 	Members	

TCS

Para. No.	Subject	Action Required	Responsible	Current status
Para. 95 e) and f)	SSOP	<ul style="list-style-type: none"> To submit to ESCAP the no cost extension of the SSOP project until 31 December 2014, instead 31 July 2014. To encourage Members continuing 	TCS/ESCAP	<p>Completed</p> <p>Extension until 31 December was authorized. Another</p>

Para. No.	Subject	Action Required	Responsible	Current status
		cooperation on SSOP in 2014 including appointing focal points for SSOP purposes and assisting the manual drafting and training workshop.		extension until 31 May 2015 was requested due to difficulties on dates and on hiring consultants to participate in the Training Mission six Target Countries.
Para. 95 g)	IOC/UNESCO Project	<ul style="list-style-type: none"> To request TC to cooperate with IOC/UNESCO in the project proposed by IOC under the 9th round of funding for the ESCAP Trust Fund, if the corresponding application is approved. 	Members	Not completed TCS was informed by IOC that due to unexpected difficulties the application was not submitted
Para. 1 h)	IWTC-8	<ul style="list-style-type: none"> Request AWG and TCS to work with WMO in nominating TC representatives to take part in IWTC-8. 	TCS/AWG	Completed TCS represented by meteorologist and DRR expert, under invitation of KMA. Other representatives of Members of TC attended the IWTC-8 invited by WMO.
Para. 1 i)	PTC Session	<ul style="list-style-type: none"> Approve Mr. Olavo Rasquinho to attend the PTC Session in Bangladesh in early March to initiate preparation for the Joint Session in 2015 and to explore other collaboration opportunities where appropriate. 	TCS	Completed The Secretary attended the 41st session of PTC in Dhaka, Bangladesh, on 02-06 March 2014.
Para. 1 j)	WMO expert mission on Haiyan	<ul style="list-style-type: none"> Approve the nomination of representative of TCS and NDMI to join the WMO expert mission on Haiyan organized by WMO/ESCAP. 	TCS/NDMI	Completed TC Secretary participated in the mission (7-12 April) to Manila and Tacloban. Other organizations represented: ABU, ESCAP, JMA, NDMI, NEMA, RSMC-Tokyo, UKMO, ESCAP and WMO. Report produced by WMO: http://www.wmo.int/pages/prog/dra/documents/VIE_Mission_Apr2014_FinalReport.pdf
Para. 1 n)	New TC Secretary	<ul style="list-style-type: none"> Request the TC Secretary to circulate the nomination by Macao, China of Mr. Yu Jixin as candidate for TC Secretary to all Members for comments and other alternative 	TCS/AWG	Completed AWG, TCS, TC Chair, host Member of TCS and Members were involved in a complex

Para. No.	Subject	Action Required	Responsible	Current status
		nominations, if any, within one month of the letter.		process for selection of the next TC Secretary.
Para. 1 o)		<ul style="list-style-type: none"> Request TCS and AWG to develop procedures for future selection of TC Secretary. 		Completed AWG drafted an info document on "Appointment Mechanism for the TC Secretary" to TC-47 consideration, with a view to a decision to be made at TC-48.
Para. 1 q)	Replacement names	<ul style="list-style-type: none"> Approve retirement of FITOW, SONAMU, HAIYAN and UTOR and request TCS to issue letters to relevant Members requesting the replacement names in accordance with the Committee's procedure. 	TCS/Members	Completed TCS requested the replacement of names of the removed tropical cyclones from the list.
Para. 1 s)	EXOTICA	<ul style="list-style-type: none"> Request TCS to send letters to Members requesting the nomination of the Organizing Committee (OC) for Experiment on Typhoon Intensity Change in Coastal Area (EXOTICA). 	TCS	Completed TCS tried organize a meeting of OC for EXOTICA in Shanghai, which was not materialized due to logistic issues.
Para. 1 u)	In-kind contributions	<ul style="list-style-type: none"> Request TCS include in-kind contributions in value numbers as an information paper at the next Session. 	TCS	Completed
Para. 1 w)	9 th IWS	<ul style="list-style-type: none"> Request TCS communicate with Malaysia on possibility of hosting the 9th IWS and disseminate to Members. 	TCS	Completed Letters were exchanged between TCS and Malaysia confirmed.
Para. 1 y)	TC Session	<ul style="list-style-type: none"> Request TCS to confirm with ESCAP if the meeting venue and basic technical support still can be provided for a regular TC Session, if PTC is unable to attend the Joint Session 	TCS/ESCAP	Completed. ESCAP Agreed.

AWG

Para. No.	Subject	Action Required	Responsible	Current status
Para. 103 a)	Budget 2014	<ul style="list-style-type: none"> Take note of the progress and recommendations made, including the preparation of the budget for 2015. 	AWG	Completed
Para.	PTC Session	<ul style="list-style-type: none"> Approve and nominate TC 	AWG/Memb	Completed

Para. No.	Subject	Action Required	Responsible	Current status
103 b)		representative(s) to attend the PTC Session in Bangladesh in early March to initiate preparation for the Joint Session in 2015 and to explore other collaboration opportunities where appropriate.	ers	TC Secretary attended PTC-41 Bangladesh (02-06 March 2014) and conversations were held.
Para. 103 c)	WMO expert mission on Haiyan	<ul style="list-style-type: none"> • Approve and nominate TC representative(s) to join the mission on Haiyan organized by WMO/ESCAP. 	AWG/TCS	Completed TC Secretary participated at the mission and collaborated in the drafting of the report.
Para. 103 d)	IWTC-8	<ul style="list-style-type: none"> • Request AWG and TCS to work with WMO to nominate TC representative(s) to take part in the IWTC meeting in Jeju, Republic of Korea in early December and to share findings on the mission of Haiyan where appropriate. 	TCS/AWG	Completed Meteorologist and DRR expert of TCS participated in IWTC-8, financially supported by KMA. A presentation on Haiyan mission is foreseen in TC-47.
Para. 1 l)	Strategic Plan Midterm Review	<ul style="list-style-type: none"> • Approve the Strategic Plan Midterm Review and to request AWG to prepare next cycle with consideration of World Meteorological Organization (WMO) strategic plan and Economic and Social Commission for Asia and the Pacific (ESCAP) comments. 	AWG	Completed The Strategic Plan Midterm Review was approved with comments from ESCAP.

ANNEX II
LETTER FROM ESCAP TO TCS ON TYPHOON HAIYAN MISSION

UNITED NATIONS



NATIONS UNIES

ECONOMIC AND SOCIAL COMMISSION FOR ASIA AND THE PACIFIC
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OES/IDD/TTF

29 April 2014

Dear Dr. Rasquinho,

In light of the serious and rapidly evolving disaster risk in Asia and the Pacific, the sharing of capacities, expertise and experiences through regional cooperation remains essential. In this context, I would like to thank the Typhoon Committee Secretariat for its role in supporting the Expert Mission on Typhoon Haiyan, which visited the Philippines on 7-12 April 2014, in close collaboration with the World Meteorological Organization (WMO) and the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP).

I am particularly pleased with the multi-stakeholder composition of the mission, which benefitted from the broad range of expertise provided by WMO, ESCAP, the Typhoon Committee Secretariat, member States and their partners. I consider such joint missions a very valuable tool to promote collective learning and regional cooperation, particularly with respect to end-to-end early warning, and would like to see them become common practice following major, weather-related disasters in the Asia-Pacific region. The ESCAP/WMO Typhoon Committee and its sister platform, the WMO/ESCAP Panel on Tropical Cyclones, have a key role to play, in this regard, by galvanizing mutual support among member States and taking forward the findings of the joint missions. Please rest assured that ESCAP will be ready to support these initiatives to increase regional cooperation.

I take this opportunity to thank you for your efforts as the Secretary of the ESCAP/WMO Typhoon Committee.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Shamshad Akhtar'.

Shamshad Akhtar
Under-Secretary-General of the United Nations
and Executive Secretary of ESCAP

Dr. Olavo Rasquinho
Secretary of ESCAP/WMO Typhoon Committee
Typhoon Committee Secretariat
Macau, China

cc: Mr. Michel Jarraud, Secretary-General, World Meteorological Organization, Geneva