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**Report on Activities of Typhoon Committee Secretariat (TCS) in 2013**  
(Item 8 of Provisional Agenda)

(Submitted by TCS)

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**ACTION REQUIRED:**

This Committee is invited to:

- a) Review the activities of TCS conducted in 2013
- 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 2014

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**APPENDIX I - Report on Activities of Typhoon Committee Secretariat (TCS) in 2013**

## APPENDIX I

### REPORT ON ACTIVITIES OF TYPHOON COMMITTEE SECRETARIAT (TCS) IN 2013

In 2013, under the supervision of AWG of the Committee, the Typhoon Committee Secretariat (TCS) made great efforts on maintaining the Committee mechanism running properly for fulfilling the decisions of 45<sup>th</sup> Session of the Committee which was held in Hong Kong, China from 29 January-01 February 2013. With the strong support and kind cooperation from all Members, Working Groups, ESCAP and WMO, TCS endeavoured to carry out its functions successfully in 2013 as the executive body of the Committee.

This report intends to summarize the 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) Enhancing the regional/international cooperation and the visibility of the committee
- (4) Promoting the internal capacity building of TCS.
- (5) Other issues
- (6) Recommendations

#### PART 1 - EXECUTION OF THE DECISIONS OF THE COMMITTEE

In 2013, 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 made at its 45<sup>th</sup> Annual Session. The Working Sheet 2013 for TCS tracking the progresses of the decisions of the Committee was shown in appendix as attached.

##### ● 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 2013 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, particularly 8<sup>th</sup> IWS/2<sup>nd</sup> TRCG Forum, the biggest events of the Committee in 2013.

##### ● Strategic Plan Mid-term Review

Following the decision of the Committee made at its 45<sup>th</sup> Session to conduct mid-review of Strategic Plan 2012-2016, TCS collected and integrated the inputs and comments from Members as well as TCS staffs. The first updated version of strategic Plan with inputs and comments was reported at 8<sup>th</sup> IWS/2<sup>nd</sup> TRCG Forum. TCS distributed the revised version of SP incorporating all the proposed midterm review changes to the Members for final comments or input before submission to the TC46<sup>th</sup> Session for approval. The revised version was posted at TC website.

##### ● TCS Hosting in the period 2015-2018

Following advice from the AWG at its meeting in Seoul, Republic of Korea, on 28-29 May 2012, TCS issued the circular letter to invite all the interested Members in hosting the TCS for the next four-year period (2015-2018), to submit their candidatures so that the Committee could take the decision

at the 46th Session. TCS had close communication with relevant Members on this issue, and has submitted the working document of Hosting TCS in the Period 2015-2018 to the Session for discussing and approving the offer from Macao, China to host TCS in the period 2015-2018.

- **SSOP Implementation**

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 improvement of policy and institutional arrangements at national and community levels.

This project involves Typhoon Committee and Panel of Tropical Cyclones, several international/regional organizations, and thirteen beneficiary countries in TC and PTC region, and the designated target groups include National Meteorological and Hydrological Services, National Tsunami Warning Centres, and National Disaster Management Offices in TC and PTC Members. The coordination was the most complicate, and the steering committee of SSOP made great efforts to push the implementation of project.

In 2013, TCS was actively and positively involved in following activities related to SSOP (referring to WRD/TC.46/4.2.1):

- Drafting the terms of reference of the Steering Committee, Task Force and Project Manager/(Technical Advisor). Approval of the Implementation Plan;
- Selection of the Project Manager/(Technical Advisor) for the SSOP project;
- Establishment of collaboration contacts with organizations implementing similar projects under ESCAP Trust Fund and others;
- Organizing the SSOP workshop with 13 beneficiary countries participating and ESCAP, ADPC, ABU, RIMES, ADRC, IOCUNESCO, WMO, TC, PTC, JMA, and USNWS;
- Piloting in Philippines, Pakistan and Bangladesh;
- Drafting and submitting progress reports to ESCAP.

- **TC 8<sup>th</sup> IWS/ 2<sup>nd</sup> TRCG Forum**

In cooperation with SMG of Macao, AWG, TRCG, ESCAP and WMO, TCS staffs fully and actively threw themselves into the work of organizing the 8<sup>th</sup> Integrated Workshop (IWS) in conjunction with the 2<sup>nd</sup> Training and Research Coordination Group (TRCG) Forum, which were held in Macao, China from 2 to 6 December 2013.

TCS provided secretariat support to the event, including preparatory, documentation, invitation, session arrangement, financial arrangement and necessary logistic service in cooperation with SMG. TCS also drafted the summary report and Work Plan for 2014 in cooperation with working groups, particularly AWG and TRCG.

- **TC 46<sup>th</sup> Annual Session**

Following the decision of TC 45<sup>th</sup> Session, in kind cooperation with TMD of Thailand, TCS was devoted actively in organizing TC 46<sup>th</sup> Annual Session held in Bangkok, Thailand, from 10 to 13 February 2014, mainly including:

- Preparing the Session in cooperation with TMD of Thailand, including invitation letters to Members and organizations/agencies, information note, participants' registration, agenda and programme;
- Drafting documentation;
- Seeking alternative solutions including eventual postponement and change of Session-hosting Member and venue in order to cope with the unrest political situation in Thailand

- **Kintanar Award 2013**

TCS requested the Members to submit applications for the “Dr. Roman L. Kintanar Award 2013 for Typhoon-related Disaster Mitigation”. TCS submitted the information of two candidates, namely Shanghai Typhoon Institute of CMA nominated by China and Philippine House of Representatives nominated by the Philippines, to the Kintanar Award Selection Working Group (KASWG) for final selection.

Shanghai Typhoon Institute of CMA won the Kintanar Award 2013 in recognition of its active participation in Typhoon Committee projects and activities, particularly in the TC scientific journal Tropical Cyclone Research and Review; assessment reports on the impacts of climate change on tropical cyclone frequency, intensity and track in Typhoon Committee’s region; and the web-based typhoon forum.

- **Publications**

In 2013, TCS was involved in editing and/or coordinating several publications for the Committee since 45<sup>th</sup> Annual Session as following:

- Guidelines of Urban Flood Risk Management (UFRM) (TC/TD-No. 0008)
- Typhoon Committee Newsletters - first and second semesters 2013
- Tropical Cyclone Research and Review (TCRR) – Vol. 2, No.1, 2, 3 and 4

- **TC Website**

Following the decision of the Committee, TCS staffs developed new website for the Committee (<http://www.typhooncommittee.org/>) in 2013 with functions of easy accessing, easy maintenance and updating. The information in the webpages was enriched and reviewed by TCS staffs.

- **In-Kind contributions**

Following the decision of the Committee requesting the AWG and TCS to investigate further improvement of the format of in-kind contribution report, TCS requested the Members to quantify the values assigned to in-kind contributions that their country/region had expended in actions related to TCTF projects in 2013, according to a new table approved by the AWG in its meeting in Bangkok, on 10 May.

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

At the 45<sup>th</sup> Session, the Committee approved the Annual Operating Plan (AOP), which consisted of 31 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 2013. TCS issued 369 official letters in 2013 for coordinating the relevant activities. The main concrete activities in which TCS has been involved in 2013 are described below (ordered by time):

- **Organizing and participating in the Workshop on SSOP Project in May**

ESCAP/WMO Typhoon Committee, the WMO/ESCAP Panel on Tropical Cyclones, the Thai Meteorological Department (TMD) with the kind collaboration of ESCAP jointly conducted a workshop on Standard Operating Procedures for Coastal Multi-hazards Early Warning System as part of the project Synergized Standard Operating Procedures for Coastal Multi-Hazards Early Warning System on May 8-9, 2013. The Workshop was held at the UN Conference Center (UNCC) in Bangkok, Thailand.

TCS provided most secretariat support for organizing the Workshop. TC Secretary Mr. Olavo, Rasquinho participated in the event as well as TCS meteorologist, hydrologist and financial officer.

- **Participating in 8<sup>th</sup>WGDRR Workshop in May**

At kindly invitation of NDMI of Korea with funding support, TC Secretary Mr. Olavo Rasquinho, Mr. Derek Leong and Ms. Denise Lau participated in the 8th WGDRR Workshop which was held in Seoul from 29 to 30 May 2013. Mr. Olavo Rasquinho introduced the working action related to WGDRR, Mr. Derek Leong presented the progress of the SSOP and informed the project on Field Experiment proposed by WGM at 45th Session.

- **Participating in WGDRR North Mindanao Project Field Investigation in July**

As a result of the findings of the WGDRR mission dispatched to Mindanao, Philippines, in April 2012, for the assessment of the disastrous consequences of the severe tropical storm Washi, the National Disaster Management Institute (NDMI) of Republic of Korea, with the support of WGDRR, established the Northern Mindanao Project which is intended to propose and to set up a mid-long plan for the countermeasures on the typhoon induced disaster. With the invitation from WGDRR, representative of TCS as well as from ESCAP participated at the field investigation organized by NDMI in the Northern Mindanao for the installation of the Flash Flood Alert System and the Automatic Rainfall Warning System. The field investigation was carried out on 22 – 27 July 2013.

- **Participating in SSOP Piloting in Selected Countries, in October**

In the scope of the activities of the project Synergized Standard Operating Procedures for Coastal Multi-Hazards Early Warning System (SSOP), under the auspices of the ESCAP Trust Fund for Tsunami, Disaster and Climate Preparedness in Indian Ocean and Southeast Asian Countries, successful two-day pilot workshops were conducted in Philippines, Bangladesh, and Pakistan from 3 to 11 October 2013 by an international, multi-agency team. The purpose of the piloting was to identify Standard Operating Procedures (SOP) best practices, gaps and needs, and recommendations, and an action plan to meet the needs of the three countries and of the project for the other 10 beneficiary countries involved.

The team was composed of Mr. James Weyman, project manager/technical advisor, Mr. Ahmed Said Al Barwani, hydrology expert (PTC, Oman), Mr. Atiq Kainan Ahmed, disaster response expert (ADPC), Mr. Nadeem Ahmed and Mr. Walter Welz, media experts (ABU), and Mr. Olavo Rasquinho, as meteorologist (TC). The expert team was efficiently assisted by the Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA), Bangladesh Meteorological Department (BMD) and Pakistan Meteorological Department (PMD).

- **Participating in WGH 2nd Working Meeting in October**

Referring to the decision of the TC 45th Session, the Working Group on Hydrology (WGH) had its second working meeting with the theme of “Extreme Flood and Flood Forecasting System in TC” in Han River Flood Control Office (HRFCO) of Korea, Seoul from 14 to 17 October 2013 at the kind invitation of the Ministry of Land, Infrastructure and Transport (MOLIT), Republic of Korea with generous offering of financial support. TCS hydrologist Mr. Jinping LIU participated in the event.

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

Following its Annual Operating Plan (AOP) of 2013, Working Group on Disaster Risk Reduction (WGDRR) of Typhoon Committee (TC) conducted its expert mission in Laos and Vietnam from 18 to 22 November 2013. Dr. Jitae Kim and Mr. Kyoungjun Kim from National Disaster Management Institute (NDMI) of Republic of Korea, Mr. Leong Kai Hong (Derek) and Mr. Lei Pun Chi (Barrie) from Typhoon Committee Secretariat (TCS) as experts participated in the Mission. The training and meetings were held in the Department of Dike Management and Flood and Storm Control of the Ministry of Agriculture and Rural Development, Hanoi, Vietnam and in the Department of Meteorology and Hydrology, Laos, PDR.

- **Coordinating the WGM Project on Development of Regional Radar Network, in November**

TCS coordinated with TMD and JMA the technical meeting among the experts from the 2 respective organizations to discuss the progress and to follow up the training of producing a radar composite map by TMD covering Thailand as the first phase. The technical meeting was conducted on 25-28 November 2013 with the participation of 2 radar experts from TMD and the counterpart experts from JMA.

- **Coordinating the Typhoon Committee Research Fellowship Scheme**

- a. WGM Fellowship on Typhoon Analysis and Prediction System (TAPS), in May/June

In coordination with Typhoon Committee Research Fellowship Scheme, and with the generous support from KMA and coordination by TCS, the 2013 Typhoon Research Fellowship Programme with the focus on the training and research on optimizing typhoon forecast using TAPS as well as on the development of method of typhoon intensity and track forecast using model ensemble, was conducted from 1 May to 30 June 2013. Three experts from the Philippines, Viet Nam and Thailand participated at the training.

- b. Attachment Training at RSMC Tokyo, in July

TCS coordinated with RSMC-Tokyo to conduct this year's attachment training at RSMC Tokyo from 17 to 26 July 2013, with funding support from TCTF and WMO. Two trainees from Cambodia and Thailand participated at the training, which includes the training on storm surge model and QPE/QPF.

- c. QPE/QPF Training for UFRM, in October/November/December

TCS coordinated with HKO offered a research fellowship to TMD (UFRM participating Member), with funding support from TCTF. The two-month attachment (21 Oct to 20 Dec 2013) arranged with research topic entitled "Development of location-specific severe weather nowcast techniques" was conducted. In addition two-week training for the research fellow on QPE/QPF and nowcasting of severe weather in SWIRLS (HKO's operational nowcasting system) conducted from 21 Oct to 1 Nov. One HKO-supported research fellow from the National Hydro-Meteorological Service of Vietnam (UFRM Member) and two self-funded meteorologists from the Macao Meteorological and Geophysical Bureau also participated in the training workshop.

- **Participating in the Kick-off Meeting for the Project of OSUFFIM in December**

Referring to the discussion at the TC 8th IWS/2nd TRCG Forum, TC WGH held the kick-off meeting for implementation of the project on Operational System for Urban Flood Forecasting and Inundation Mapping (OSUFFIM) in Sun Yat-Sen (SYS) University, Guangzhou, China from 27 to 28 December 2013. TCS hydrologist Mr. Jinping LIU participated in the event.

### **PART 3 - ENHANCING THE REGIONAL/INTERNATIONAL COOPERATION AND THE VISIBILITY OF THE COMMITTEE**

In 2013, TCS took all opportunities to enhance the cooperation and linkage with ESCAP, WMO and other regional and international organizations, and in certain way to promote the visibility of the Committee in the international community. The main concrete activities in which TCS has been involved in 2013 are described below (ordered by time):

- **Participating in the 40<sup>th</sup> Session of the WMO/ESCAP Panel on Tropical Cyclones (PTC) in February**

TC Secretary Mr. Olavo Rasquinho, on behalf of the Committee, participated in the 40<sup>th</sup> Session of PTC which was held in Colombo, Sri Lanka, from 25 February to 1 March 2013. He emphasized in his opening address that the realization of a PTC/TC joint session would be an excellent opportunity to

discuss the enhancement of the cooperation between PTC and TC and the implementation of the joint project Synergized Standard Operating Procedures for Coastal Multi-hazards Early Warning System (SSOP).

- **Participating in 69th Session of ESCAP Senior Officials Segment in April**

The Secretary of TC Mr. Olavo Rasquinho attended the Senior Officials segment of the 69th Session of ESCAP which was held in Bangkok, Thailand from 25 to 27 April 2013, under invitation of Dr. Noeleen Heyzer, UN Under-Secretary-General and Executive Secretary of ESCAP. Taking the opportunity, the TC Secretary, with support of ESCAP, convened a small meeting with participation of representatives of TC, PTC and ESCAP. The small meeting deeply discussed how to push the implementation of SSOP, and how to boost the cooperation between TC and PTC including hosting joint session and representing in workshops.

- **Participating in the EAS Seminar on Risk Management of Major Natural Disasters in June**

At the invitation with funding support of the National Disaster Reduction Center of China (NDRCC), the hydrologist of TCS Mr. Jinping LIU participated in the 'EAS Seminar on Risk Management of Major Natural Disasters' (EAS: East Asia Summit) held from June 24 to 28, 2013 in Beijing, China.

The seminar focused on three units as the construction of risk management and prevention mechanism of serious natural disasters, disaster simulation and loss assessment technologies, disaster response business platform and technologies. More than 40 representatives and experts participated in the Seminar from Brunei Darussalam, Cambodia, China, India, Japan, Malaysia, Myanmar, Philippines, Singapore, Thailand, Vietnam, and ASEAN Humanitarian Assistance (AHA) Center, ADPC, ESCAP/WMO Typhoon Committee, UN-SPIDER Beijing office, UK Environment Agency, Columbia University and Oklahoma University of USA. Mr. Jinping LIU introduced 'Typhoon Committee Strategic Plan and Its Cooperation Mechanism on Typhoon-related Disaster Risk Reduction', and he was invited to address at closing ceremony as representative from the Committee.

- **Participating in the International Conference of AHMRI of NUIST in October**

At the invitation with funding support from Applied Hydrometeorological Research Institute (AHMRI) of the Nanjing University of Information Science & Technology (NUIST), TC Secretary Mr. Olavo Rasquinho and TCS hydrologist Mr. Jinping Liu participated in the International Conference with the theme of Extreme Hydro-meteorological Events and Flood Control & Disaster Reduction with Risk Analysis from October 26 to 28, 2013 in Xiamen, China. Totally more than 60 participants from China; USA and Taiwan, China attended the Conference.

Mr. Olavo Rasquinho was invited to deliver his keynote speech with title of Typhoon Related Hydro-Meteorological Disaster Risk Reduction, in which he introduced the background information of Typhoon Committee, the strategy on disaster risk reduction and cooperation mechanism among the Committee. Mr. Jinping Liu delivered his presentation with title of Effective Linkage between Meteorological Service and Hydrological Service, in which he discussed how to promote and enhance the cooperation between meteorological component and hydrological component in aspects of research and operation. They had opportunity to learn the latest development and achievement related to PMP and flood risk reduction in dealing with climate change from the Conference.

Taking the opportunity, the Secretary of TC and Mr. Jinping LIU visited the Bureau of Hydrology in Zhangzhou of Fujian Province.

- **Participating in the 1st PTC Integrated Workshop (IWS) in November**

The Secretary of Typhoon Committee, Mr. Olavo Rasquinho, and the Vice-Chair of the Working Group on Hydrology of TC, Dr. Lee Sang-heon, were invited by ESCAP to participate in the first Integrated Workshop of the Panel on Tropical Cyclones, in Bangkok, on 27-29 November, where they had the opportunity to share with the participants their experience related to the activities of the TC working groups, particularly on what refers to crosscutting activities involving meteorologists,

hydrologists and experts in Disaster Risk Reduction. They also gave assistance in drafting of the terms of reference of the working groups of PTC.

The representative of ESCAP in this meeting has encouraged both regional bodies of the WMO Tropical Cyclone Programme to develop a stronger cooperation. The SSOP project was referred as an excellent example of this cooperation.

- **Participating in the 3rd Session of the ESCAP Committee on DRR, in November**

The Secretary of TC, invited by ESCAP, participated at the 3rd Session of the ESCAP Committee on Disaster Risk Reduction, held in ESCAP headquarters, on 27-29 November 2013. As this session and the first PTC Integrated Workshop (IWS) were held at same time, it was not possible to attend all the meeting. Nevertheless there was opportunity to address a short statement on the activities of Typhoon Committee, particularly related to the cooperation between PTC and TC, namely through the SSOP project.

As requested by ESCAP, TCS collaborated in writing of the document E/ESCAP/CDR (3)/INF/5 "Climate information and services: the role of the Typhoon Committee and Panel on Tropical Cyclones"

- **Invitation to participate in a project proposed by IOC/UNESCO to ESCAP Trust Fund**

TCS was informed by Mr. Tony Elliott, head of ICG/IOTWS Secretariat of IOC/UNESCO, that IOC is planning a submission to the 9th round of funding for the ESCAP Trust Fund to assist the government of Philippines in response to the Typhoon Haiyan/Yolanda. Considering the very successful on-going SSOP project, IOC UNESCO feels that there would be technical, administrative and cost benefits in further collaboration with the Committee on the proposed project under the 9th round.

The proposal is related to the provision of technical support for restoring instrumentation for observing sea level for monitoring floods, storm surges and tsunamis, and also to strengthen SOPs at key agencies, between agencies and at community level to deal with extreme sea level events. This proposal will be underpinned by IOC/UNESCO's technical expertise in sea level monitoring and on the experience gained in assisting PHIVOLCS and other agencies in the Philippines to develop SOPs for tsunami warning and emergency response.

IOC UNESCO is looking forward to hearing the response from the Committee.

#### **PART 4- PROMOTING THE INTERNAL CAPACITY BUILDING OF TCS**

TCS has taken the necessary measures on promoting the internal capacity building of the TC Secretariat in order to further improve and enhance the effectiveness and efficiency of Committee. Concretely, the progresses and achievements that TCS has been taking on this aspect could be described as follows:

- Filling a vacancy for a specialist in DRR (Mr. Law Chi Pun (Barrie) due to secondment from the Government of Macao SAR;
- 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 staffs;
- Enhancing TCS internal meetings;
- Updating the contact information of Leaderships and Focal Points in Members;
- Participation of DRR expert Mr. LEI Pun Chi (Barrie) and hydrologist Mr. LIU Jinping in the field survey on the mechanism and emergency response to typhoon-related disaster risk reduction



(DRR), which was conducted in Fujian Province, China from 15 to 19 December 2013, which will assist TCS staffs in promoting their knowledge and enhancing their capacity of coordination.

## **PART 5 - OTHER ISSUES**

- **Action carried out by the TCS in the typhoon Haiyan emergency response**

Following the request from the NMHS of Viet Nam to TC Members, WMO, RSMC Tokyo, NWS and ADPC, for assistance to deal with the approach of the Typhoon Haiyan, TCS maintained e-mail contacts, in the early morning of 9 November, with WMO and TC Members and TC warning services from some Members (China; Hong Kong, China; Japan and USA) and, under request from WMO, also assisted to update e-mailing addresses of staff in the Philippines. The Institute of Disaster Science, of Tohoku University, Japan, also collaborated in the support to the NMHS of Viet Nam.

In response to the support given, the Vietnamese Deputy Minister of Natural Resources and Environment, Mr. Tran Hong Ha, sent a letter to the Secretary of TC(Annex II), thanking all the support given by the Members. TCS forwarded this letter to WMO, AWG and services involved in the support to Viet Nam.

- **Visit of a delegation from NDMI, in February**

Dr. YEO WoonKwang, President of NDMI, and some staff of this institute (Dr. Chihun Lee, Dr. KIM Yun Tae, Dr. SHIM Jaehyun) visited TCS office, on 2 February, 2013. This visit was a good opportunity to discuss matters relating to the activities WGDRR in particular future actions involving NDMI and TC, such as expert mission to the Philippines, under the Northern Mindanao Project, and to other Members related to TCDIS.

- **Visit of the Counsellor of the Commissioner of MFA of China in Macao SAR, in October**

Ms. Zhang Yunfei, the Counsellor of the Commissioner of the Ministry of Foreign Affairs (MFA) of People's Republic of China in the Macao SAR, her successor Ms. LI Nan visited TCS office on October 18 2013 at the moment when she is going to leave Macao for Beijing. Both sides exchanged information and discussed closely the cooperation in future.

## **PART 6 - RECOMMENDATIONS**

On the basis of the experience of routine operation of TCS in 2013, and considering 2014 is the last year of 2<sup>nd</sup> term of TCS in Macao, TCS made the following recommendations:

- To allocate US\$28,000 from TCTF for supporting overall TCS activities; US\$3,000 for supporting IWS hosting in 2014 and US\$2000 for other IWS related activities;
- To thank the kind offer from Macao Government for continuing to host TCS for the 3<sup>rd</sup> four-year term from 2015 to 2018;
- To thank the Macao Government for continuing to second the meteorologist of TCS, Mr. Leong Kai Hong (Derek), through the Macao Meteorological and Geophysical Bureau (SMG), and for seconding, through the Macao Fire Service Department (MFSD), the DRR expert of TCS Mr. Lei Pun Chi (Barrie);
- To thank the Government of China, through the Bureau of Hydrology (BOH), for providing Mr. Jinping Liu serving with TCS as seconded hydrologist, and request BOH to continue seconding Mr. Jinping Liu to work in TCS for the 3<sup>rd</sup> term from 2015 to 2018 with a letter of agreement between BOH and TCS.
- To submit to ESCAP the no cost extension of the SSOP project until 31 December 2014, instead 31 July 2014;

- To encourage Members continuing cooperation on SSOP in 2014 including appointing focal points for SSOP purposes and assisting the manual drafting and training workshop;
- To request AWG 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;
- To encourage AWG members to continue playing their active role on the issues of the Committee.

**ANNEX I TO APPENDIX I:  
FOLLOW-UP ACTIONS LIST OF THE RECOMMENDATIONS BY TC45  
(Hong Kong, China, 29 January-01 February 2013)**

Para. No.	Subject	Action Required	Responsible	Current status
Para. 1 g)	Survey Typhoon related websites	<ul style="list-style-type: none"> <li>Request the TCS, in consultation with Advisory Working Group (AWG) survey Typhoon related websites, and those under WG's projects, with the objective of integration for better use by Members, and report results and recommendations to the 46th Session.</li> </ul>	TCS/AWG	Done
Para. 1 h)	Procedures to be used for urgent expert missions for the assessment of the damages caused by tropical cyclones	<ul style="list-style-type: none"> <li>Request AWG develop procedures to be used for urgent expert missions for the assessment of the damages caused by tropical cyclones, taking into consideration the Mission to the Philippines on Tropical Storm Washi.</li> </ul>	AWG	In progress Discussed in the AWG meeting in Bangkok (10 May) and in Macao (7 December)
Para. 1 l)	Executive Summary of the Session Report and Summary of Members Report	<ul style="list-style-type: none"> <li>Request the AWG provide an Executive Summary of the Session Report and Summary of Members Report for wide distribution by the TCS at the conclusion of the AWG post-meeting.</li> </ul>	AWG	Done
Para. 1 n)	Replacement names	<ul style="list-style-type: none"> <li>Request TCS issue the letter to Cambodia requesting the replacement names for Bopha in accordance with the Committee's procedure.</li> </ul>	TCS	Done (Cambodia proposed 3 names)
Para. 1 p)	In-kind contribution report.	<ul style="list-style-type: none"> <li>Request the AWG and TCS investigate further improvement of the format of in-kind contribution report.</li> </ul>	AWG/TCS	Done, but still necessary a new consensus

Para. 45 a)	Climate change	<ul style="list-style-type: none"> <li>To carry out the preliminary studies on published papers and relevant documents on climate change with the aim to publish the third assessment report on impact of climate change on tropical cyclone in TC Region.</li> </ul>	WGM	Done and to be continued as AOP in 2014
Para. 45 b)	SSOP Project	<ul style="list-style-type: none"> <li>To encourage Members to collaborate with the SSOP project</li> </ul>	WGM	Done (Members were encouraged to continue supporting SSOP in 2014)
Para. 45 c) d)	Storm surge model for expansion of the region	<ul style="list-style-type: none"> <li>To request RSMC Tokyo develop the storm surge model for expansion of the region, provide storm surge time series charts at more than one point if so requested by Members, and conduct training on storm surges during the annual TC attachment training,</li> <li>To request Members provide additional points and tidal data archive to RSMC Tokyo for verification and further improvement of the storm surge model.</li> </ul>	RSMC Tokyo Members	Done  Done and to be continued in 2014
Para. 45 e)	Improve the WMO North Western Pacific Tropical Cyclone Ensemble Forecast (NWP-TCEFP)	<ul style="list-style-type: none"> <li>To request RSMC Tokyo improve the WMO North Western Pacific Tropical Cyclone Ensemble Forecast (NWP-TCEFP) home page upon feedback from Members through WMO questionnaire and SWFDP-Sea.</li> </ul>	RSMC Tokyo	Done and to be continued in 2014
Para. 45 f)	TAPS	<ul style="list-style-type: none"> <li>To request KMA further improve the typhoon information processing system (TAPS of KMA) project including to upgrade the user-compatible version of the TAPS and to provide training for the typhoon forecasters on the use of TAPS upon Member's request.</li> </ul>	KMA, Members	Done and training will be continued in 2014.
Para. 45 g)	Web-based typhoon forum	<ul style="list-style-type: none"> <li>To promote the web-based typhoon forum among Members and to request more forecasters and researchers from Members to register in the forum.</li> </ul>	WGM	In progress
Para. 45 h)	Radar composite map project	<ul style="list-style-type: none"> <li>To request TMD make a progress report on radar composite map project based on the outcome of the training course at JMA in November 2012. To request JMA the</li> </ul>	TMD JMA	Done and to be continued in 2014

		assistance to provide attachment training to TMD radar expert or to dispatch an expert mission to TMD upon the receipt of the progress report.		
<b>Para. 45</b> i)	Operational forecast of tropical cyclones	<ul style="list-style-type: none"> <li>To request STI/CMA carry out post-season verification and reliability analysis on the operational forecast of tropical cyclones and further improve the evaluation system for tropical cyclone forecast with special attention on probabilistic and genesis forecast.</li> </ul>	CMA	Done and to be continued in 2014
<b>Para. 45</b> j) k) x)	TC Journal TCRR	<ul style="list-style-type: none"> <li>To request TCS to promote the TC Journal TCRR as well as to encourage Members to send experts to the editorial office as visiting editors of the Journal.</li> <li>To request STI/CMA further improve the editorial procedures of the TC Journal TCRR.</li> <li>To request WMO and ESCAP to promote the TC Journal TCRR as well as encourage Members, WGs and TRCG to submit articles to the Journal.</li> </ul>	TCS CMA WMO/ESCAP	Done
<b>Para. 45</b> l) m)	QPE/QPF	<ul style="list-style-type: none"> <li>To further improve QPE/QPF techniques of Members and request RSMC Tokyo to conduct QPE/QPF training during the annual TC attachment training.</li> <li>To collaborate with TC Fellowship Scheme to provide QPE/QPF training to Members participating in the UFRM pilot project upon request.</li> </ul>	RSMC Tokyo, Members, WGH	Done Done
<b>Para. 45</b> n)	System TRAMS model	<ul style="list-style-type: none"> <li>To request CMA 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.</li> </ul>	CMA	Done and to be continued in 2014
<b>Para. 45</b> o)	Typhoon seasonal prediction	<ul style="list-style-type: none"> <li>To request KMA further develop the techniques of typhoon seasonal prediction as well as to establish the semi-operational web-based products of typhoon seasonal prediction to provide Members.</li> </ul>	KMA	Done and to be continued in 2014
<b>Para. 45</b> p)	SWFDP-SeA portal web page	<ul style="list-style-type: none"> <li>To request National Hydro-Meteorological Service of Viet Nam to continue to play a central role as the Regional Forecasting Support Center, and to further improve the SWFDP-SeA portal web page to provide more products in real time and to investigate interpretation of EPS products as well as its NWP guidance.</li> </ul>	Hydro-Meteorological Service of Viet Nam	Done and to be continued in 2014
<b>Para. 45</b> q)	Best track datasets	<ul style="list-style-type: none"> <li>To continue the study on the methodology to compare the best track datasets based on the recommendation of the best track consolidation meeting with the consideration on the progress of digitization of CI numbers in hardcopy.</li> </ul>	WGM	In progress
<b>Para. 45</b> r)	Taskforce on Tropical Cyclone Intensity Analysis for Upgrading Tropical Depressions	<ul style="list-style-type: none"> <li>To continue the work of the Taskforce on TC Intensity Analysis for upgrading TD.</li> </ul>	Concerned Members	In progress
<b>Para. 45</b> s)	Retire of the tropical cyclone name	<ul style="list-style-type: none"> <li>To retire the name of Typhoon Bopha considering the damages reports from the Philippines and request Cambodia provide a suggested replacement name in accordance with TC procedures.</li> <li>Approve HATO as the replacement for WASHI in the list of the names of tropical cyclones</li> </ul>	WGM/RSMC/ Member	Done
<b>Para. 45</b> t)	Tropical cyclone field experiment	<ul style="list-style-type: none"> <li>In conjunction with other WGs and TRCG, to take the lead in designing and formulating a tropical cyclone field experiment within the region, in particular by making use of the available opportunity in collaborating with the Southern China Monsoon Rainfall Experiment (SCMREX) planned by the WGTMR of WMO for implementation in 2013</li> </ul>	WGM/WGH/ WGDRR/TRCG	Done

		(spin-up phase) and 2014 (field phase), and hold a small expert meeting to draft the proposal if necessary.		
<b>Para. 45 w)</b>	2013 edition of TOM	<ul style="list-style-type: none"> <li>To request WMO publish the 2013 edition of TOM and upload it on the Tropical Cyclone Programme (TCP) and Committee's website by March 2013.</li> </ul>		Done

Para. No.	Subject	Action Required	Responsible	Current status
<b>Para. 70 e)</b>	QPE/QPF, hydrological/hydraulic modelling, inundation mapping and flood disaster assessment	<ul style="list-style-type: none"> <li>To request Members continue providing the training and expertise on QPE/QPF, hydrological/hydraulic modelling, inundation mapping and flood disaster assessment for TC Members as in-kind contribution.</li> </ul>	Members	In progress
<b>Para. 70 f) g)</b>	OSUFFIM	<ul style="list-style-type: none"> <li>To request Members of Pilot Cities exploring mobilization the self-funding support for the pilot studies of development and application of OSUFFIM and application of Xin'anjiang model in selected river basins;</li> <li>To request WGH conduct case study on real-time QPE/QPF application linked in with development and application of OSUFFIM, in cooperation with WGM;</li> </ul>	WGM/WGH/WGDRR/TRCG	In progress
<b>Para. 70 h)</b>	Training and research	<ul style="list-style-type: none"> <li>To request TRCG continue coordinating with WGH when planning related manners training and research.</li> </ul>	TRCG	In progress
<b>Para. 70 i)</b>	WGH second working meeting	<ul style="list-style-type: none"> <li>To request MLTM of Republic of Korea to host WGH second working meeting in appropriate time with funding support.</li> </ul>	MLTM/WGH	In progress
<b>Para. 70 k)</b>	Hydrology issues	<ul style="list-style-type: none"> <li>To request WMO take actions to facilitate involvement of WGH in the activity of WMO water and hydrology issues.</li> </ul>	WMO	In progress
<b>Para. 70 l)</b>	Linkages between the two working groups of WMO RAI and the Committee	<ul style="list-style-type: none"> <li>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</li> <li>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).</li> </ul>	WGH/WMO	In progress
<b>Para. 70 m)</b>	Forecast hydrological phenomena	<ul style="list-style-type: none"> <li>To request WGH focus on improving the ability to forecast hydrological phenomena and provide measures for the effectiveness of the improvements</li> </ul>		In progress

Para. No.	Subject	Action Required	Responsible	Current status
<b>Para. 75 b)</b>	WGTCDIS Project	<ul style="list-style-type: none"> <li>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 2013.</li> </ul>	WGDRR	In progress Will be continued 2014. The benefits of its application will be promoted to Members through Expert Mission in order to encourage them to participate in data collection.
<b>Para. 75 c)</b>	Expert Mission	<ul style="list-style-type: none"> <li>To send expert mission for WGTCDIS, disaster prevention technologies, and policies to 4 TC Members namely Guam, Lao PDR, Thailand, and Viet Nam in 2013.</li> </ul>	WGDRR, Guam, Laos, Thailand, Viet Nam	Done (partially) Expert visited Lao PDR and Viet Nam in November. Guam could not participate in the Mission due to the U.S Federal Government shutdown last year. The arrangement of the Mission for Thailand could not be made due to their late reply.
<b>Para. 75 d)</b>	Urban disaster risk assessment system	<ul style="list-style-type: none"> <li>To develop the urban disaster risk assessment system, the research results of urban disaster forecast and rainfall runoff reduction system will be introduced in 2013 expert mission</li> </ul>	WGDRR	Done The training had been provided to Laos and Vietnam in November through Expert Mission.

Para. No.	Subject	Action Required	Responsible	Current status
Para. 75 e)	International cooperation research	<ul style="list-style-type: none"> <li>To organize the team with NDMI and TCS to visit Philippines for international cooperation research. The team will:</li> <li>Perform the feasibility study to launch the project successfully.</li> <li>Install Automated Rainfall Alert System and Flash Flood Alert System.</li> </ul>	WGDRR/TCS	Done NDMI and TCS appointed representatives to set up related system in Philippines in September. This will be followed up in 2014
Para. 75 f)	Benefit Evaluation of Typhoon Disaster Prevention and Preparedness	<ul style="list-style-type: none"> <li>To start new project namely "Benefit Evaluation of Typhoon Disaster Prevention and Preparedness" led by China to evaluate the different disaster prevention and preparedness measures and provide the result as the basis of decision making policy.</li> </ul>	CMA	In progress This project will be continued promoting to Members in 2014 aiming to encourage them to participate.
Para. 75 g)	Community based weather stations	<ul style="list-style-type: none"> <li>To set up additional community based weather station project in the three interested Members in 2013.</li> </ul>	WGDRR,	Not done (No reply from the Members) This project will continue. During the WGDRR Parallel Meeting, in Macao, DPR Korea and Vietnam expressed their interest to participate in the Project and their decision will be confirmed in 46 <sup>th</sup> TC session
Para. 75 h)	8th WGDRR Workshop	<ul style="list-style-type: none"> <li>To hold the 8th WGDRR Workshop in Seoul, Republic of Korea on 29-30 May 2013 and to follow up on the Vice Chairperson appointment.</li> </ul>	WGDRR	Done The workshop has been held as previously planned.

Para. No.	Subject	Action Required	Responsible	Current status
Para. 84 b)	Focal Points	<ul style="list-style-type: none"> <li>To request Members confirm their respective focal points as members of TRCG, and to update the list of resource persons as appropriate.</li> </ul>	Members	Done
Para. 84 c)	TRCG Meetings	<ul style="list-style-type: none"> <li>To encourage Members to support the participation of TRCG members in TRCG-related meetings/activities as far as possible so that good continuity in TRCG work can be maintained.</li> </ul>	Members	Done
Para. 84 e)	Research fellowship programmes	<ul style="list-style-type: none"> <li>To request Members to offer or take part in research fellowship programmes.</li> </ul>	Members	Done

Para. No.	Subject	Action Required	Responsible	Current status
Para. 1 m) Para. 95 e)	Strategic Plan	<ul style="list-style-type: none"> <li>Request TCS continue to work with ESCAP and WMO through the formulation, implementation and update of the Strategic Plan, and align with the high objectives and policies of WMO.</li> <li>Request TCS solicit Members for inputs to the Strategic Plan, six months before the next IWS. Request AWG review the Strategic Plan and provide recommendations to the next Session.</li> </ul>	TCS/AWG	Done (ESCAP and WMO were requested to contribute for the Strategic Plan Midterm review. ESCAP already contributed)  Done (Members already contributed)
Para. 95 a)	Amendments Basic Documents	<ul style="list-style-type: none"> <li>To approve the amendments made on the TC basic documents as presented in the WRD/TC.45/10.</li> </ul>	AWG	Done
Para. 95 b)	Decisions and recommendations	<ul style="list-style-type: none"> <li>Adopt the use of decision and action based documents and consistent follow up of decisions and recommendations.</li> </ul>	AWG	Done
Para. 95 c)	Strategic Plan's KRAs	<ul style="list-style-type: none"> <li>Request NDMI to further study effective way to reliably assess the death and economic impact of typhoon-related disasters for performance review under the Strategic Plan's KRAs.</li> </ul>	NDMI/AWG	Done (Already requested to NDMI)
Para. 95 d)	Disaster information data	<ul style="list-style-type: none"> <li>Encourage Members' collaboration in providing the disaster information data to the Committee.</li> </ul>	Members	Done (Already requested) Necessary to remind

Para. No.	Subject	Action Required	Responsible	Current status
Para. 95 e) Para. 1 m)	Strategic Plan	<ul style="list-style-type: none"> <li>Request TCS continue to work with ESCAP and WMO through the formulation, implementation and update of the Strategic Plan, and align with the high objectives and policies of WMO.</li> <li>Request TCS solicit Members for inputs to the Strategic Plan, six months before the next IWS. Request AWG review the Strategic Plan and provide recommendations to the next Session.</li> </ul>	TCS/AWG	<p>Done (ESCAP provided comments and suggestions for the Strategic Plan Midterm review)</p> <p>Done</p>
Para. 95 f)	Evaluation methods and procedures	<ul style="list-style-type: none"> <li>Encourage Chairs of WGs to develop or adapt evaluation methods and procedures with reference to the TRCG's evaluation template on training course.</li> </ul>	WGM/WGH/WGDRR, TRCG	Discussed in the AWG meetings of Bangkok (10 May) and Macao (7 December)
Para. 95 g)	2 <sup>nd</sup> TRCG forum/8 <sup>th</sup> IWS	<ul style="list-style-type: none"> <li>Hold the 2<sup>nd</sup> TRCG forum as part of the 8<sup>th</sup> IWS.</li> </ul>	TC	Done
Para. 95 h)	SSOP Plan	<ul style="list-style-type: none"> <li>Approve the establishment of the Steering Committee, Task Force, Project Manager/(Technical Advisor) and the Implementation of SSOP Plan as presented in WRD/TC.45/7.2.</li> </ul>	AWG	Done
Para. 144	46 <sup>th</sup> Session	<ul style="list-style-type: none"> <li>The final dates for the 46<sup>th</sup> Session will be confirmed in due course by Thailand and later communicated to TCS.</li> </ul>	TMD/TCS	TMD and TCS were in close contact on changing venue for the TC46, and eventually dates, due to political unrest in Thailand

ANNEX II TO APPENDIX I

FROM : UU HOP TAC QUOC TE

FAX NO. : +84438352191

Nov. 14 2013 04:43PM P1



CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM  
BỘ TÀI NGUYÊN VÀ MÔI TRƯỜNG

Ha Noi, 12 November 2013

To: Mr. Olavo Rasquinho  
Typhoon Committee Secretary

Subject: Letter of Acknowledgements  
No: 956/ICD-2013

Dear Sir,

First of all, I would like to inform you that with great efforts of the whole political system of Viet Nam, with the close collaboration of Vietnamese people and the effective cooperation of international and regional meteorological communities, Viet Nam has safely overcome the Super Typhoon Haiyan with minimal losses.

On behalf of the Vietnamese government, I would like to express our sincere thanks and high appreciation to you personally and to all the Typhoon members for your prompt and valuable assistance extended to us. Timely NWP products, storm surge prediction products, recommendations, guidance for prevention and preparedness to meteorological disasters, etc. provided by you have helped us very much in making our decisions in responding to Typhoon Haiyan. We consider it our shared success.

As a member of the UNESCAP/WMO Typhoon Committee, Viet Nam wishes and commits to further strengthen our cooperation with the Typhoon Committee members in pursuing our common goals toward a better, happier and safer world.

Yours Sincerely,

Tran Hong Ha  
Deputy Minister of Natural Resources and Environment of Viet Nam  
Permanent Representative of S.R. Viet Nam with the WMO

Typhoon Committee Secretariat	
<b>ENTRADA</b>	
No.	173/2013
Date	14 Oct 2013

MINISTRY OF NATURAL RESOURCES AND ENVIRONMENT

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