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**REPORT OF THE FORTY-SEVENTH SESSION  
OF TYPHOON COMMITTEE**

**Bangkok, Thailand  
11- 13 February 2015**

**PART I – DECISIONS OF THE COMMITTEE**

1. The Committee decided to:
  - a. Approve the recommendations submitted by Working Group on Meteorology (WGM) as expressed in **paragraph 14**.
  - b. Approve the recommendations submitted by Working Group on Hydrology (WGH) as expressed in **paragraph 39**.
  - c. Approve the recommendations submitted by Working Group on Disaster Risk Reduction (WGDRR) as expressed in **paragraph 48**.
  - d. Approve the recommendations submitted by Training and Research Coordination Group (TRCG) as presented in **paragraph 55**.
  - e. Approve the recommendation submitted by the Advisory Working Group (AWG) as expressed in **paragraph 62**.
  - f. Request TCS improve the communication with the Members using as many communications methods needed, including improvement of the TC Website.
  - g. Request AWG to explore ways to share new information, data and forecast products among Members.
  - h. Request AWG to review the procedures when selecting AWG Members to encourage broad representation and report back in the next Session.
  - i. Approve Mr. Edwin S. T. LAI from Hong Kong, China as the Chairperson of AWG; Mr. Tom EVANS from USA and Mr. Tsukasa FUJITA, from Japan to serve as vice-chairpersons of AWG.
  - j. Approve the recommendations submitted by Credential Committee as provided in the **Appendix I**.
  - k. Request AWG to develop a template for the Credential Letters and review current procedures.
  - l. Approve BARIJAT, MUN, LAN, BAILU and JONGDARI as replacement names for tropical cyclones UTOR, FITOW, VICENTE, HAIYAN and SONAMU, respectively.
  - m. Approve the retirement of RAMMASUN from the tropical cyclone name list and request Thailand to submit candidates for replacement names for approval at the next Session.
  - n. Approve the Typhoon Committee Operational Manual (TOM) with the amendments provided in the **Appendix XVI**.
  - o. Approve changes to the Rules and Procedures for Dr. Roman L. Kintanar Award as described in **Appendix XI**.

- p. Appoint Mr. YU Jixin, nominated by Macao, China, as the New Secretary of Typhoon Committee for 2015-2018/early 2019.
- q. Approve the request by Macao, China for Mr. Olavo RASQUINHO to continue service until the new TC Secretary is available in March 2015 to take office.
- r. Request AWG to circulate a revised proposal based on initial comments made at the Session for the Long-term Appointment Mechanism for TC Secretary to Members and request Members to provide comments and feedback before the 10th IWS.
- s. Approve the Proposal A with amendments for the Hosting Mechanism for Annual Session and IWS as described in **Appendix X** and request AWG to closely monitor the implementation of the Mechanism.
- t. Request AWG to review the need for IWS to be organized on a yearly basis in relation to regular WG meetings/workshops.
- u. Request TCS together with the AWG to come up with a Guideline/Format for reporting the in-kind contributions and circulate to Members.
- v. Approve the 2015 Budget as presented below (see **Appendix XV** for detail):

<b>By Group</b>	2015
	<b>Proposed</b>
TCS	33,000.00
TRCG	23,500.00
WGM	27,000.00
WGH	23,000.00
WGDRR	19,000.00
AWG	5,000.00
<b>TOTAL</b>	<b>130,500.00</b>
<b>Plus</b>	
Special Request Budget for WGs	21,000.00
<b>Total</b>	<b>21,000.00</b>
<b>Total Proposed Budget plus Special Request Budget</b>	<b>151,500.00</b>

- w. Request AWG to review the budgeting process and make reference to the document on Resource Mobilization from the 37th Session for guidance for WG's in doing the special budget request.
- x. Accept the kind offer of Malaysia to host the 10th IWS tentatively on the last week of October 2015. Request TCS to confirm with Malaysia the final dates and circulate to Members. Request TCS to work with WG's Chairs on the theme for the 10th IWS.
- y. Accept the kind offer of USA to host the 48th Session of TC in Honolulu, Hawaii, tentatively on the 1st Week of February 2016. Request TCS to confirm the final dates and circulate to Members.
- z. Request TCS to proceed with confirmation of hosting for the 11th IWS with the Philippines and 49th Annual Session with Japan based on the mechanism

adopted.

## **PART II – PROCEEDINGS OF THE COMMITTEE**

### **I. OPENING OF TC 47th SESSION**

2. The Forty-Seventh Session of the ESCAP/WMO Typhoon Committee (TC) was declared open at 08:30 am on Wednesday, 11 February 2015 in Bangkok, Thailand in the presence of the Members' representatives by Mr. SONGKRAN Agsorn, Deputy-Director-General of TMD.

### **II. ELECTION OF OFFICERS (agenda item 2)**

3. Mr. Alui BAHARI, Malaysia, was elected Chairperson and Mr. Raymond TANABE, Acting Regional Director National Oceanic and Atmospheric Administration (NOAA), National Weather Service, Pacific Region was elected Vice-Chairperson.
4. Mr. LEI XiaoTu, Chairperson of WGM, Mr. Minoru KAMOTO, Chairperson of WGH and Dr. Jaehyun SHIM, on behalf Chairperson of WGDRR were appointed as members of the Credential Committee. Summary report of the Credential Committee is on **Appendix I**

### **III. ADOPTION OF THE AGENDA (agenda item 3)**

5. The Committee adopted the agenda as shown in **Appendix II**

### **IV. REPORTS OF WGM, WGH, WGDRR and TRCG (agenda item 4)**

6. Prior to the plenary session for the Committee, parallel sessions of the Working Groups on Meteorology, Hydrology, Disaster Risk Reduction and TRCG were convened during the 9<sup>th</sup> IWS to review progress of work during the past year, identify priorities for cooperation and make recommendations to the Committee.
7. The outcomes of the parallel sessions of the three Working Groups were reported to the plenary session as given in the following sections.

#### **4.1. Meteorological Component**

8. The Committee took note of the Members activities and major progress and issues in meteorological component in 2014 as reported by Members at the 9<sup>th</sup> IWS.
9. The Committee reviewed the activities of Members in implementing the TC Strategic Plan and its annual operating plan in relation to Meteorological Component during the past year, details of which are presented in **Appendix III**.
10. The Committee took note the outcomes of the parallel session of the WGM on 21-22 October 2014 (**Appendix III**). With the help of WMO/TCP and TCS, and the sincere cooperation of all Members, WGM has successfully completed the tasks in 2014 with the significant outcomes as follow:
  - a. WGM has completed all the action plans (include 4 POPs, 11 AOPs and 3 PPs), which were endorsed at the 46<sup>th</sup> session.
  - b. WGM has made their great contribution for the Synergized Standard Operating Procedures (SSOP) Manual, which would be completed before May 2015.

- c. The expert team (include 6 experts from TC Members) for the 3<sup>rd</sup> Assessment Report on the impact of climate change on tropical cyclone in TC region was established in 2014. The 3<sup>rd</sup> Assessment Report is planned to be published in 2017 or 2018.
  - d. With the support of all Members, the editorial office together with WGM has successfully published the journal Tropical Cyclone Research and Review (TCRR) (Vol.3, No.1-4) under the name of Typhoon Committee in 2014.
  - e. WGM has provided help in the WMO Typhoon Landfall Forecast Demonstration Project (TLFDP) and NW Pacific Tropical Cyclones Ensemble track Forecast Project (NWP-TCEFP) concerning related Members. The forecasts of tropical cyclone from operational forecast agencies and deterministic NWP models in the recent year were assessed. Most TC Member's subjective track errors at 24h are less than 100km. The operational global medium-range ensembles have been found to be capable of providing guidance on tropical cyclone activity forecasts extending into the second week.
  - f. KMA has made significant progress in the development of tropical cyclone seasonal prediction.
  - g. CMA has developed the rocket dropsonde system and established the buoy array in South China Sea as well as the reconnaissance flight of HKO.
  - h. The digitization of CI numbers for the period of 2004-2013 was completed and the best-track datasets including CI numbers of CMA, HKO, JTWC, and RSMC Tokyo were exchanged in June 2014.
11. The Committee was informed that the TCS meteorologist, Mr. Leong Kai Hong, Derek will complete his term of services as seconded meteorologist on 12 February 2015. WGM expressed its appreciation to Mr. Leong for his outstanding contributions to the WGM as well as the efficient and effective coordination among other TC WGs through his dedicated efforts to carry out the function as TCS meteorologist for the past 8 years since TCS transferred from Manila to Macao.
12. The Committee further noted the following activities as reported during the WGM parallel meeting at 9<sup>th</sup> IWS:
- a. The yearly attachment training RSMC Tokyo on storm surge and QPE/QPF was held successfully in Tokyo of Japan on July to August 2014. Three experts from Lao PDR, the Malaysia, and the Philippines attended the Attachment Training.
  - b. The training workshop on SSOP was held successfully in WMO Regional Training Center (RTC) Nanjing in June 2014. Thirty-three participants attended the training workshop.
  - c. The collaboration among TC Members was enhanced in 2014. The 7th China-Korea Joint Workshop on Tropical Cyclone was held successfully in Jeju of ROK on May 2014. The 8<sup>th</sup> Workshop will be held in China in 2015. Two visiting editors from the Philippines and Thailand were invited to visit the editorial office in STI/CMA to provide guidance of improving the editorial procedures, reviewing articles as well as inviting articles to be submitted to the Journal. Three experts from the Philippines, Vietnam and China visited KMA and participated the research fellowship on Typhoon Analysis and Prediction System (TAPS). Two experts from KMA were invited by Lao DPR to carry out a mission for the transfer of TAPS technology. Three experts from Thailand and DPRK visited STI of CMA

and participated in the research fellowship on tropical cyclone genesis. Two experts from Thailand participated in the technical meeting held at JMA in November 2014 on the quality management of radar data and basic calibration technique for QPE. One expert from the Philippines participated the attachment training held at HKO from October to December 2014 and the research fellowship on QPE/QPF and nowcasting. The 2014 TC Roving Seminar was successfully held in Hong Kong, China in November 2014 with 13 participants from Members attending the Seminar.

- d. The Ad-hoc meeting of Task Force on timing of upgrade of Tropical Depression to Tropical Storm was held at HKO in 13 May 2014. Five experts from CMA, JMA, HKO and TCS attended the meeting.
- e. The IWTC-8 and IWTCLP-3 were held successfully at Jeju of ROK on 01-10 December 2014. Some experts from TC Members participated.

### **Conclusions of WGM:**

- 13. On the basis of the information provided by Members and the respective coordinator of the AOPs (refer to **Appendix III**) and on the discussion during the session, the following conclusions were reached:
  - a. WGM action plans in 2014 were successfully completed.
  - b. Members made important progress in the implementation of the TC Strategic Plan during the year 2014.
  - c. Members made significant progress during 2014 in tropical cyclone monitoring and communication systems, data assimilation and numerical weather prediction systems, tropical cyclone forecast-aiding systems, and scientific understanding of tropical cyclone activities.
  - d. The yearly RSMC Tokyo Attachment Training Programme will be reported under TRCG starting in 2015. The in-depth QPE/QPF training organized with the Typhoon Committee Research Fellowship Scheme was much appreciated by the participants. Follow-on technical assistance to participating Members on the adaptation of the QPE/QPF technique is necessary.
  - e. The web-based typhoon forum could be very useful in terms of providing a convenient platform for both forecasters and researchers with more registered users from the Members.
  - f. The publication of the Typhoon Committee Journal “Tropical Cyclone Research and Review” plays an important role in providing an effective way to exchange the knowledge and the latest progress in tropical cyclone research, forecasting technique and warning system as well as to enhance the visibility of Typhoon Committee.
  - g. There are needs from Members to continue the transfer of technology and knowledge of the TAPS among Members as well as the assistances to implement the system.
  - h. The Synergized Standard Operating Procedures (SSOP) Manual to be completed before May 2015. Members of TC and PTC were encouraged to use the Manual and feedback the related information during using to TCS.

- i. JMA has made significant progress in the research on tropical cyclone genesis prediction. The operational global medium-range ensembles have been found capable of providing guidance on tropical cyclone activity forecasts extending into the second week.
- j. Forecasts of tropical cyclone tracks from operational forecast agencies and deterministic NWP models in 2013 and 2014 were assessed by STI/CMA. A remarkable progress has been made by TC Members over last 4 years in the subjective track forecast. Most Members' subjective track errors at 24 hours are less than 100 km since 2013. The accuracy of subjective intensity forecast has not made any progress over last 10 years. The intensity forecast errors from models are much larger compare to subjective methods at each lead-time levels. To make an accurate intensity forecast is still a challenge work for both subjective and objective methods.
- k. The South China Sea Typhoon Model (TRAMS) has been updated the resolution to 9km from 36km in 2014, some model technique schemes have been improved, including the improved calculation of the nonlinear term in model dynamics and the marine boundary layer parameterization technique. The performance of the new version (9km) TRAMS has been improving in 2014. For example of typhoon "Kalmaegi (2014)" 48h track forecast, the forecast error of old (36km) and new version TRAMS are 120km and 98km respectively.
- l. KMA made significant progress on typhoon seasonal prediction and the seasonal activity outlook, and began to provide through the website (<http://typ.kma.go.kr/eng>) in May of 2014. The accuracy rate of tropical cyclone frequency improved by 26% through the correction method, using Linear Regression Method developed by KMA, during the period of 2004-2013.
- m. Significant progress has been made on the improvement of severe weather forecasting and interaction with the user communities of the participating Members through the implementation of the SWFDP-Sea website (<http://www.swfdp-sea.com.vn>) hosted by National Hydro-Meteorological Services of Viet Nam.
- n. With the technical assistances from JMA, TMD has successful applied the lowest level intensity techniques (EIL) to each radar site and created nationwide radar composite map.
- o. The expert team for the 3<sup>rd</sup> Assessment Report on the impact of climate change on tropical cyclone in TC region was established in 2014 with the following six members: Ming YING (STI/CMA), Thomas R. KNUTSON (GFDL/NOAA), Toshiyuki NAKAEGAWA (JMA), Tsz-Cheung LEE (HKO), YUN Wontae (KMA) and WONG Chan Seng (SMG of Macao) as the expert team coordinator. The 3<sup>rd</sup>Assessment Report is planned to be published in 2017 or 2018.
- p. The graphical representation of storm surge model and its improvement (to make the products more user friendly) in 2014 as well as the addition of the stations from Members for storm surge time series forecasting services will further contribute to the early warning capabilities of storm surge in the TC Region.
- q. The technique developing and preparing of field campaign, including the mobile upsonde, unmanned aircraft, rocket dropsonde and the buoy array in South China Sea, as well as the reconnaissance flight conducted by HKO in 2014. Some following national level research project related to the EXOTICA on air-sea interaction under tropical cyclone condition and the high resolution model development are carried out by CMA.

- r. Significant progress has been made on the high resolution (3km) tropical cyclone model based on the Global/Regional Assimilation and Prediction System (GRAPES) by STI/CMA, including vortex initialization scheme, hybrid system based on GSI and the implicit Rayleigh damping for the vertical velocity. Compared with HWRF on typhoon “Fitow (2013)” forecast, the high resolution GRAPES-TCM and its vortex initialization scheme seem to be more effective.
- s. The digitization of CI numbers for the period of 2004-2013 was completed and the best-track datasets including CI numbers of CMA, HKO, JTWC, and RSMC Tokyo were exchanged in June 2014. The exchanged datasets were checked through, and cyclone by cyclone analysis will be continued in 2015 to identify reasons for CI number difference between four centers.
- t. Early issuance of warning bulletins from JMA would greatly facilitate warning operation of Members. JMA would strive to issue TCs bulletins as early as possible, while keeping the current T+90 minutes deadline for issuance of bulletins. Members to paid attention to Dvorak analysis by JMA – CI of 2.0-2.5 could be a precursor of soon upgrade of TD to TS.
- u. Exchange of more observational data (e.g. buoy, island station and oil rig data over the South China Sea), along with metadata, and the all available observational data used in operational analysis for tropical cyclone track and intensity, encouraged.
- v. It is recognized that the SSOP project of ESCAP Trust Fund is a very good example to closely link two regional bodies (TC and PTC) together.
- w. Based on the discussion on the action plans for 2015 and according to the new structure of the action plans, it was also concluded that:
  - i. POP1, on attachment training, will be moved to TRCG from 2015. POP item 2-4 will be continued in 2015.
  - ii. AOP1, on SSOP, which was completed in 2014 and closed. AOP item 2 – 4 and 6- 10 will be continued in 2015 except AOP5 which will be moved to POP as POP item 1 in 2015.
  - iii. PP item 1-2 will be continued in 2015. PP3 of “Harmonization of timing of upgrade of TD to TS by various warning centers’ which was completed in 2014 and closed.
  - iv. Establish the new AOP item 9 on Development of tropical cyclone forecasting competency, in order to develop an outline of tropical cyclone forecasting competency. The project of Available data used in operational tropical cyclone analysis will be undertaken as the new PP item 3 in 2015.
  - v. The total budget proposed by WGM, which was also concurred at the AWG meeting after the 9<sup>th</sup> IWS, for undertaking the actions plans (AOPs, POPs and PPs) in 2015 is **USD16000**. In addition, the budget of **USD11000** will be allocated for the support of WGM attendance at the next Integrated Workshop. Thus the total budget for WGM for year 2015 is **USD27000**. The financial support of USD5000 for AOP-EXOTICA will be allocated through the “Special funding request”.

#### **Recommendations of WGM:**

14. On the basis of the outcomes of the WGM parallel session at 9<sup>th</sup> IWS in Bangkok, Thailand and subsequent discussion, the WGM made the following recommendations:



- a. To request RSMC Tokyo and the WMO Regional Training Center (RTC) Nanjing to continue the collaboration with TRCG to conduct the yearly training (including attachment training) for operational forecaster from TC Members.
- b. To report RSMC Tokyo yearly attachment training programme under TRCG from 2015.
- c. To promote the web-based typhoon forum among members and to encourage more forecasters and researchers from Members to register to the forum
- d. To request STI/CMA to further improve the editorial procedures of the TC Journal *Tropical Cyclone Research and Review*.
- e. To request WMO and ESCAP to promote the TC Journal *Tropical Cyclone Research and Review*, and to encourage more contributions from the TC Members, WGs and the Typhoon Committee Research Fellowship Scheme.
- f. To request KMA to continue supporting TAPS 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 technical assistance on the implementation of TAPS as requested by Members.
- g. To encourage TC and PTC Members, in particular the SSOP beneficiary Members to use the SSOP Manual and provide feedback to the TCS.
- h. To request RSMC Tokyo to examine multi-center grand ensemble TC genesis prediction skills to identify potential of its operational use in the future. To prepare for provision of ensemble tropical cyclone guidance of major NWP centers in the western North Pacific through the Numerical Typhoon Prediction website of JMA if necessary NWP data are provided.
- i. To request STI/CMA to continue the post-season verification and reliability analyses on the operational forecast and numerical model prediction of tropical cyclones and report to Committee Session, to further improve the evaluation system for tropical cyclone forecast in conjunction with WMO-TLFDP and to continue providing the real time verification information on genesis, track and intensity forecast through WMO-TLFDP website.
- j. To request CMA to further improve the operational process of the high resolution (9km) TRAMS model in South China Sea as well as to provide more prediction products through its website.
- k. To request KMA to further develop the technique of seasonal typhoon prediction and the web-based system to provide the product of seasonal typhoon prediction for TC Members.
- l. To request National Hydro-Meteorological Service Vietnam to develop very-short range convective cloud forecasting system based on satellite, to provide more special products for tropical cyclone forecast through the SWFDP-SeA website, and to establish a FTP server at NCHMF for NMCs to download or exchange data.
- m. To request TMD to apply quality control technique using statistical method to each of the TMD radars, and to develop the source codes of radar data calibration for QPE by TMD with technical assistance of JMA. To request TMD and JMA to hold a technical meeting to follow up with the progress and to identify a way forward.

- n. To request the 3<sup>rd</sup> assessment report expert team to accumulate findings from CMIP5 results and Event Attribution (EA) studies, to summarize and assess related emerging research, and to collect data of progress of work and make a draft outline.
- o. To request RSMC Tokyo to add stations for storm surge time series forecasts if so requested by Members, to encourage Members to provide tidal data and to prepare for multi-scenario storm surge forecasts.
- p. To request CMA to host the EXOTICA organization committee (OC) meeting for preparing the implementation of the field campaign and demonstration research, including establishing the Scientific Steering Committee and Research Groups and confirm the tasks of participating Members. To request CMA, HKO and the participating Members to pilot the field campaign by using dropsonde as well as the reconnaissance flight.
- q. To request STI/CMA to continue the research through the coordination with WMO-TLFDP, comparison of (semi-) operational model and to further improve the High Resolution Tropical Cyclone Model based on GRAPES (G-TCM) coordinating with EXOTICA.
- r. To request RSMC Tokyo to continue the study on cyclone-by-cyclone comparison analysis to identify reasons for CI number difference among RSMC Tokyo, CMA, HKO and JTWC.
- s. To endorse the WGM new AOP of “Development of tropical cyclone forecasting competency” and the new PP of “Available data used in operational tropical cyclone analysis”, and to encourage the active participation of the Members.
- t. To endorse the action plans (including the 4 POPs, 9 AOPs and 3 PPs) as listed in Annex II of the Appendix – Summary report of the WGM Parallel Meeting at the 9<sup>th</sup> IWS, which summarizes the above recommendations with additional action items.
- u. To endorse the WGM budget request which is included in the budget proposal to be submitted by AWG.
- v. To request WMO to publish the 2015 edition of TOM on the Tropical Cyclone Programme (TCP) website by March 2015.
- w. To re-appoint Mr. Tsukasa Fujita (Japan) as the TOM Rapporteur.
- x. To re-appoint Mr. Lei Xiaotu (China) as Chairperson of WGM, Dr. Vicente Malano (Philippines) and Ms. CheGayah Ismail (Malaysia) as vice-chairpersons of WGM.
- y. To take measures to cover the vacant period of the seconded meteorologist at TCS after the 47<sup>th</sup> Session to ensure the smooth coordination and implementation of the WGM activities.

#### 4.2. Hydrological Component

- 15. The Committee reviewed the activities of the Members related to the implementation of the TC Strategic Plan and its annual operating plan (AOP) for the hydrological component during the past year. Details can be found in the **Appendix IV**.
- 16. The Committee noted with pleasure that, the great efforts and progresses on effective hydrological monitoring and flood early warning have been made in some Members in 2014, such as the application of downscaling method on studying the

coupling calculations between atmospheric numerical models and hydrological models has been initiated in China; the Integrated Flood Forecasting and River Monitoring (IFFRM) for Sg. Kerian has been completed in Malaysia; the remarkable progresses on establishment of Flood Forecasting Warning System (FFWS) in Major River Basins has been made in Philippines; the smartphone application for water front flood information provision has been developed in Korea; the telemetering system to the rural area has been improved in Thailand and developed the communication system to disseminate flood information; and Hydrologic Services Manual has been completed in USA.

17. The Committee was informed with pleasure that, the WGH successfully held its third 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 Han River Flood Control Office (HRFCO), Ministry of Land, Infrastructure and Transport (MOLIT), Republic of Korea with generous offering of financial support. The Committee expressed its appreciation to the Government of Republic of Korea for hosting WGH working meeting annually starting from 2012.
18. The Meeting was informed that HRFCO in cooperation with KICT upgraded the webpage (<http://tcwgh.hrco.go.kr>) for WGH which will focus on the purposes of enhancing the technical and information exchange related hydrological component.
19. The Committee was informed on the progresses in 2014 and future activities of on-going projects (AOPs):
  - a. Assessment System of Flood Control Measures on Socio-economic Impacts (ASFCM)
  - b. Extreme Flood Forecasting System (EFFS)
  - c. Estimation for Socio-economic Impact of Sediment-related Disaster
  - d. Development and Application of Operational System for Urban Flood Forecasting and Inundation Mapping (OSUFFIM) for Selected Pilot City
  - e. Extension of Xin’anjiang Model Application in Selected River Basins in TC Members
  - f. Guidelines for Extreme Flood Risk Management in TC Region
  - g. Study on Prediction of Debris flow and Shallow Landslide by the Satellite Rainfall Data
20. The Committee was informed with pleasure that the technical report of the project on Assessment System of Flood Control Measures (ASFCM) led by HRFCO, which was launched in 2008 and closed in 2014, was published as TC/TD-No. 0009 in December 2014 and distributed at PTC/TC 3rd Joint Session. The report is divided into two parts including Guidelines for Structural Flood Control Measures Assessment and Manual for application of assessment system which guide you to understand the mechanism of structural flood control measures assessment including flood damage cost estimation and the assessment procedure as well as the practical application of ASFCM step by step. The Committee expressed its sincerest appreciation to all experts of HRFCO, KICT and K-water of Republic of Korea and all related hydrologists of TC Members for their kind cooperation and contribution to this successful project during past 7 years.
21. The meeting noted with pleasure that the progresses have made in 2014 for EFFS (AOP2), led by HRFCO, including (a) conducted the investigation of the structural

flood control measures in selected Members; (b) confirmed the establishment direction for EFFS.

22. The Committee was informed with appreciation that HRFCO, in cooperation with KICT and K-water successfully conducted the third field survey from 13 to 20 July 2014 with 8 participants from Korea, Laos, Thailand, and Philippines. The necessary data was collected from selected river basins including Chao Phraya River in Thailand, Pamanga River in Philippine, and Nam Ngum River in Lao PDR.
23. The Committee was informed that this project of EFFS will be extended one more year to 2017 and the plan for 2015 including: (a) to initiate the computational design of the suitable extreme flood forecasting system with PC-version; and (b) to conduct the summary meeting of field survey to wrap-up the results of field survey and publish the report.
24. The Committee noted that the implementation plan in 2014 for the project on Estimation for Socio-economic Impact of Sediment-related Disaster (AOP3) was postponed by the driver namely SABO Center, National Institute for Land and Infrastructure Management (NILIM) of Japan. Also, the Committee was informed that the project will be extended one more year to 2016 and the implementation plan of AOP3 in 2015 mainly as (a) providing the draft format to Members for collecting the record of sediment-related disasters and deciding the format; and (b) collecting the record of sediment-related disasters by the format from Members.
25. The Committee was noted that, based on the kick-off meeting for implementation of the project on Development Operational System for Urban Flood Forecasting and Inundation Mapping (OSUFFIM) for TC Members (AOP4) led by Bureau of Hydrology (BOH) of China which was held in Sun Yat-Sen University (SYSU), Guangzhou, China from 27 to 28 December 2013, a series of activities have been conducted and on-going in the past year, including:
  - The national working groups, project leaders and focal points at 3 Members of pilot study have been established.
  - The Dongguan and Foshan in China, Chiang Mai and Hat Yai in Thailand, and Shah Alam in Malaysia were proposed as pilot cities.
  - Field survey in Chiang Mai, the pilot city of Thailand, was conducted from February 5 to 9, 2014.
  - Professor Yangbo Chen, the Chief Scientist of OSUFFIM visited the Department of Irrigation and Drainage (DID) of Malaysia On September 12, 2014 and had meeting with the OSUFFIM working group of Malaysia.
  - The development of English version of operational system is on-going in SYSU.
  - A joint training course for this project was held in SYSU, in conjunction with the training course of AOP5 (Xin'anjiang Model application) from 1 to 7 December of 2014 for selected TC Members, and SYSU provided the logistics support for this training. The 10 participants from the Members of pilot cities including Malaysia, Thailand and Vietnam attended the training course. Total 4 experts and professors from SYSU took part in the course as lectures for OSUFFIM. All participants were delivered the certificates signed by TC Secretary Mr. Olavo RASQUINHO.
26. The Committee noted with pleasure that, China proposed Dongguan and Foshan as pilot cities for OSUFFIM and Prof. CHEN Yangbo, the chief scientist of OSUFFIM, is trying to apply the budget from the Government of Guangdong Province of China for supporting the project. Also the Committee was informed the implementation plan for the project in 2015 as below:
  - Organizing the seminar on pilot study of Thailand;

- One-month attachment Training on data processing and model set up in middle March to April in SYSU, China. DID Malaysia and RID Thailand will nominate one candidate, respectively, to TCS and SYSU;
  - OSUFFIM system installation in pilot cities in pilot cities of China, Malaysia and Thailand from May to August;
  - Operational OSUFFIM system maintenance in pilot cities from September to December;
  - Participating and reporting the progresses in 10th IWS of TC to be held in Kuala Lumpur, Malaysia in November/December, 2015.
27. The Committee noted that the project on Xin'anjiang Model Application in Selected River Basins in TC Members (AOP5) led by BOH of China has made the progresses including: (a) an English version of flood forecasting system using Xin'anjiang model has been updated by BOH, China for this project; and (b) a joint training course was held in SYSU, Guangzhou, China in conjunction with the project of OSUFFIM from 1 to 7 December of 2014 for three selected TC Members. Total 4 experts from Bureau of Hydrology (BOH) of China took part in the course as lectures for this training.
28. The Committee was informed that the implementation plan for this project in 2015 will be focus on the application of Xin'anjiang Model included in the National Flood Forecasting System (NFFS) of China in selected river basins in TC Members. China-side is willing to send experts to the Members for providing expertize assistance to resolve the problems in needed.
29. The Committee noted that the progresses of the project on Guidelines for Extreme Flood Risk Management in TC region (AOP6), led by HRFCO, in 2014 including: (a) confirmed the guideline contents for extreme flood risk management is on-going; and (b) Organized the workshop in conjunction with 3rd TC WGH Meeting in Seoul, Korea. Also the Committee was informed the implementation plan for AOP6 in 2015 includes: (a) drafting the guideline for extreme flood risk management will be accomplished and distributed to Members for comments; and (b) hosting the 4th TC WGH Meeting in connection with 7th World Water Forum which will be held in Daegu&Gyeongbuk, Republic of Korea in April 2015.
30. The Committee noted the implementation plan in 2014 for project of Study on Prediction of Debris flow and Shallow Landslide by the Satellite Rainfall Data (AOP7) led by International Centre for Water Hazard and Risk Management (ICHAHM) of Japan was postponed. Also the Committee was informed the project will be extended one more year to 2017 and the draft implementation plan for the project was discussed as:
- Selecting pilot project areas among member countries from 2015.
  - The study will conduct to identify dangerous areas on debris flow and shallow landslide in the selected pilot project areas.
  - Also the study will conduct to propose near real time warning information by using the Critical Line Concept in the selected pilot project areas.
  - Drafting manual for prediction on the disasters
31. The Committee noted with pleasure that the participation of WGH in AOP8: Project of Synergized Standard Operating Procedures for Coastal Multi-hazard Early Warning System (SSOP) in 2015 and WGH reaffirmed its commitment to contribute the project of SSOP, as cross-cutting project of TC.
32. The Committee took note that the proposal of WGH to link its 4th working meeting with the 7th World Water Forum (WWF) to be held on 12-17 April 2015 in Daegu,

Korea. Also the Committee noted with appreciation that Korea-side Korea has proposed a high level panel session with funding support for WGH on 'Leadership for National Water Management to Contribute to Economic Growth' as one of the thematic specification session in the Thematic Process during the 7th WWF which will contribute sharing the best practices with stakeholders, especially developing countries and proposed a side-event on 7th WWF with 120 minutes related WGH activities.

33. The Committee noted the comments of that, one of the innovations that the WGH must pursue is the use or application of satellite based information (SBT) for promoting the accuracy and extending the leading-time of flood forecasting.
34. The Committee noted the discussion on that, WGH should consider one AOP for dealing with addressing medium to long-term hydrological forecasts in conjunction with WMO's CHy and Climate and Water Programme.
35. The Committee was informed that, the current Chairperson of WGH Mr. KAMOTO Minoru from ICHARM of Japan expressed his willingness to retire from his position after TC 47th Session and the nomination of his colleague Mr. Yoshio TOKUNAGA from ICHARM to be his successor to serve WGH as Chairperson for next term of 2 years starting from TC 47<sup>th</sup> annual Session. The Committee expressed its gratitude to Mr. KAMOTO Minoru for his valuable contribution to WGH during his term in past 4 years.
36. The Committee expressed its appreciation to Mr. LI Yan, from BOH of MWR, China for her remarkable contribution as Vice Chairperson of WGH in the past year and her commitment to serving for WGH as Vice Chairperson for next term of 2 years starting from TC 47<sup>th</sup> annual Session.
37. The Committee noted the current Vice Chairperson Dr. LEE Sang-Heon from HRFCO has being not available since 2014. And the Committee also was informed that Korea nominated Mr. CHO, HyoSeob, the Director of River Information Centre of HRFCO to serve WGH as Vice Chairperson for next term of 2 years starting from TC 47<sup>th</sup> annual session.

## **Conclusions of WGH**

38. On the basis of the outcomes 3rd WGH working meeting and the discussion of the WGH Parallel Session of 9th IWS, the following conclusions were reached:
  - The working meeting of WGH is very important to review hydrological activities and implementation status of WGH AOPs and to prepare IWS and annual session. The meeting should be continued.
  - World Water Forum (WWF) is a significant event related water issues in the world every 3 years. It definitely could benefit the Committee on enhancing its visibility in the region and world to be involved in 7<sup>th</sup> WWF to be held in Daegu, Korea from 12 to 17 April 2015. WGH shall take this advantage of its annual working meeting to present its achievements on 7<sup>th</sup> WWF.
  - The Project of Synergized Standard Operating Procedures for Coastal Multi-hazard Early Warning System (SSOP), under the ESCAP Trust Fund for Tsunami, Disaster and Climate Preparedness in Indian Ocean and Southeast Asian Countries, is a very successful example to closely link the two regional bodies together. The outcomes of this project, which could benefit TC and PTC regions as well as other regions, should be transferred into application in practice of disaster risk reduction for promoting the capacity building in Members. This kind of cooperation activities should be encouraged in future under umbrella of ESCAP

- How to promote the capacity of forecasting, early warning and risk management for urban flood is still a hot spot among TC Members, especially urban flood forecasting and inundation mapping. As the subsequent activity of TC Cross-cutting project of UFRM, development and application of operational system for urban flood forecasting and inundation mapping (OSUFFIM) could be a tangible measure on this aspect and it could play very meaningful and important role for TC Members to promote the capacity on the technique of urban flood forecasting and warning. Also, technical training courses on urban flood forecasting, inundation mapping and damage assessment should be considered as subsequent activities of project of UFRM in the Committee.
- WGH webpage, which focuses on the hydrological technical issues, will be a complementary to TC webpage and a good platform for Members for sharing information and enhancing technical exchange.
- Enhancement of the close collaboration with the AWG of WMO CHy, WMO RA II Working Group on Hydrological Forecasts and Assessments and RA V Working Group on Hydrological Services in several themes of common interest provides significant benefit to the Committee.

### **Recommendations of WGH**

39. On the basis of the outcomes of the 3rd WGH Working Meeting in Seoul, Republic of Korea; WGH parallel session at 9th IWS in Bangkok, Thailand and subsequent discussion, the WGH made the following recommendations:
- a. To appoint Mr. Yoshio TOKUNAGA, Chief Researcher of ICHARM of Japan as Chairperson; and to re-appoint Ms. LI Yan, Deputy Division Director, Bureau of Hydrology (BOH) of China, and to appoint Dr. CHO, HyoSeob, the Director of River Information Center of HRFCO of MOLIT, Republic of Korea as Vice Chairpersons of WGH.
  - b. To endorse the WGH budget request which is included in the budget proposal to be submitted by AWG.
  - c. To approve extending one more year for WGH AOP2 to 2017 and for AOP3 and AOP7 to 2016.
  - d. To request HRFCO to host WGH fourth working meeting with funding support in linkage with 7th WWF to be held in Daegu, Korea from 12 to 17 April 2015.
  - e. To request HRFCO to perfect and maintain the WGH webpage and to set up the linkage with TC website in cooperation with TCS and Members.
  - f. To request ESCAP and WMO to continue supporting the implementation of on-going project of real-time Operational System for Urban Flood Forecasting and Inundation Mapping (OSUFFIM), which can be used in PTC and TC region.
  - g. To request ESCAP to consider the possibility to support conducting SSOP phase II after the current SSOP project is closed and to encourage Members to contribute TC cross-cutting project of SSOP.
  - h. To request WMO continue taking actions to facilitate involvement of WGH through the TC in the activities of WMO water and hydrology programme.

- i. To designate the hydrologist of TCS and Ms. Ji-Youn SUNG, Republic of Korea as the liaisons for the WMO RA II and RA V WGHs for the Committee.
- j. To continue to make linkages between the TC WGH and WMO RAI WGH in the following areas:
  - RA II theme of Disaster Mitigation - Implementation of the WMO Flood Forecasting Initiative including Flash Flood Forecasting Capabilities, and UFRM and flash flood/debris flow/landslide prediction/warning.
  - RA II theme of Water Resources Assessment, Availability and Use (surface water and ground water) - Assessment the variability of water resources in a changing climate.
- k. To continue to promote the activities focusing on improving the ability of Members to forecast hydrological phenomena and improve measures effectiveness.

#### **4.3. Disaster Risk Reduction Component**

- 40. The Committee took note of the activities as presented in WGDRR Report 2014 and reviewed the outcome of the Parallel Session of the WGDRR during the 9th IWS that was held in Bangkok, Thailand from 20 to 24 October 2014. (Refer to **Appendix V**)
- 41. The Committee reviewed the activities related to the implantation of the TC Strategic Plan and its AOPs of WGDRR during the past year, details of which are presented in **Appendix V**
- 42. The Committee was informed that WGDRR successfully held its 9th WGDRR annual meeting with the theme of "Past, Present and Future of WGDRR" that was conducted by NDMI in Seoul, Republic of Korea from 26 to 27 May 2014. Totally 7 members participated in the meeting including Hong Kong, China, Macao, China Malaysia, Republic Korea, Thailand, USA (Guam) and Vietnam. Also there were participants from international organizations such as ADRC, UNESCAP and Tohoku University. After the meeting, some suggestions were made namely 1) Long-term development strategy for WGDRR annual meeting; 2) Expansion of TCDIS; 3) International Cooperation.
- 43. The Committee was informed that the visual impact (video) was successfully produced by the great effort of Hong Kong Observatory for the Project of raising general public awareness of danger associated with tropical cyclones and storm surges. It is certain that this video could increase the public awareness of the danger of storm surges in order to minimize the loss of life during the passage of tropical cyclone.
- 44. The Committee expressed its appreciation to Dr. YEO Woonkwang from NDMI, Republic Korea for his remarkable contribution as Chairperson of WGDRR in the past years and he agreed to continually serve for WGDRR as the Chairperson for next term of 2 years starting from 47th TC Session.
- 45. The Committee expressed its appreciation to the great contribution from Ms. LEONG Fong Peng as the Vice Chairperson of WGDRR in the past years and her commitment to continually serve for WGDRR as Vice Chairperson for next term of 2 years starting from 47th TC Session.



46. The Committee was informed that Dr. SHIM Jaehyun was nominated as the Vice Chairperson of WGDRR as well to deputize for the Chairperson in absence of Dr. Yeo Woonkwang. Dr SHIM will also start his service from 47th TC Session.

### **Conclusion of WGDRR**

47. On the basis of the information provided by the Members and findings of the parallel session on WGDRR, the following conclusions were reached:
- a. WGDRR recognized the necessity of continuous collection of disaster information from the member countries for the WGTCDIS. Encouragement to the Members to collect and share disaster information will be continued in 2015.
  - b. National Disaster Management Institute (NDMI) will upgrade and expand the WGTCDIS in 2015.
  - c. The expert mission was successfully conducted in Guam, USA in 2014 to provide updated information on the operation of WGTCDIS and exchange information regarding new technology and policy related to the field of DRR by NDMI and TCS. The expert mission will be conducted upon requests of the member countries in 2015. Member countries in WGDRR agreed to collect the demands of expert mission from the Members.
  - d. The project to promote international cooperation research for disaster risk management, which is led by NDMI, will be continued in 2015. The NDMI will dispatch the experts of Republic of Korea to the Philippines for installing the Automated Weather Station (AWS) and Flash Flood Alert System (FFAS) in Cagayan de Oro, Mindanao Island in Philippine. NDMI welcomed the other TC members to join this project, but it was proposed to submit their proposal two years in advance.
  - e. WGDRR acknowledged the achievement of the AOP 6 led by Hong Kong, China, including its effort to raise public awareness on weather through community weather observing scheme and the training workshop which was held at Hong Kong Observatory in early November 2014. Lao and Vietnam participated in the training workshop and found it very useful. DPR Korea expressed interest in taking part in the project in 2015 and Thailand also requested such training opportunities be made available for other Members as well. Hong Kong, China, can arrange further training in Hong Kong for other Members subject to funding available. Regarding the AOP 4, not much progress was made and there might be a need to review whether this AOP should continue given the evaluation of other warning dissemination technology. As for AOP 9, prototype video for raising public awareness of danger associated with tropical cyclones or storm surges is ready in January. Subject to comments from TCS, the video will be shared among Typhoon Committee Members and the project will be completed in first quarter of 2015.
  - f. As no representative from China that is responsible for the AOP 5 attended the Session, China will send the information related to the progress of the AOP 5 until the next Session. In addition, China requested for the continuity of AOP 5 but without the necessity to claim for the budget in 2015, and the Members agreed on it.
  - g. The Cooperative Mechanism Meeting for the SSOP Project was held in Bangkok, Thailand on 9-10 October 2014. The WGDRR noted that there was a demand for an extension of the expert mission and the CO-Win project to

the PTC members. The WGDRR members will take it into consideration in 2015.

- h. Regarding the AOP 8, NDMI reported that there was a positive action taken by the Media in the Republic of Korea. The WGDRR acknowledged the difficulty of building trust with the Media on the disaster-related reports. The AOP 8 will not be continued in 2015.
- i. WGDRR acknowledged that the TCS and the NDMI submitted application of participating in Public Forum at the WGDRR. As there was a consensus among the WGDRR Members about significance of the UNWCDRR, the WGDRR agreed to request special budget for this participation in 2015. The organizing cost for holding public forum to the Committee for the 3rd UNWCDRR has been paid by TCTF at the end of November.

### **Recommendations of WGDRR**

- 48. On the basis of the outcomes of the 9th WGDRR Annual Meeting in Seoul, Republic of Korea; WGDRR parallel session at 9th IWS in Bangkok, Thailand and subsequent discussion, the WGDRR made the following recommendations:
  - a. To endorse the WGDRR budget request which is included in the budget proposal to be submitted by AWG.
  - b. To support the community based weather station pilot project in providing a training workshop in Hong Kong, China for interested Members to install the weather stations and to provide technical documentation on installation, maintenance and data processing and display;
  - c. To support TCS participation in WGDRR expert mission;
  - d. To support WGDRR, TC Members and TCS staff participation in the 3rd UN World Conference on Disaster Risk Reduction;
  - e. To encourage the TC Members to collect and share the disaster information for extending TCDIS; the TCDIS will be continually upgraded and extended in 2015;
  - f. To conduct expert mission in Lao PDR and confirm VietNam participation; upon request by PTC DRR Members, NDMI will dispatch experts;
  - g. To continue the promotion of international cooperation research through the Northern Mindanao Project in Philippines;
  - h. To request HKO to continue the community based weather station project and to provide relevant training in 2015;
  - i. To explore opportunity for PTC Members to take part in the iCo-Win project and to exchange experience in engaging community to be aware of weather threats and climate change;
  - j. To hold the 10<sup>th</sup> DRR Annual Workshop in June 2015 in Seoul, Republic of Korea, and encourage TC WGDRR Members to participate and to seek the possible participation from PTC WGDRR Members;

- k. To appoint Dr. SHIM Jaehyun to serve as acting chairperson pending the appointment of the new Chairperson. To reappoint Ms LEONG Fong Peng as the vice chairperson.

#### **4.4. Training and Research Coordination Group**

49. The Committee took note of the progress made in training and research activities as presented in the TRCG Report 2014 (**Appendix VI**)
50. The Committee expressed its appreciation to the Hong Kong Observatory for hosting the Roving Seminar in Hong Kong, China. The Committee also appreciated the support of resource persons provided by USA and Hong Kong, China..
51. The Committee thanked China, Hong Kong, China and Republic of Korea for hosting research fellowship programs in 2014.
52. The Committee took note of the successful RSMC Tokyo training attachment of forecasters from Lao PDR, Malaysia and the Philippines in July-August 2014, and thanked JMA and WMO TCP for continuously supporting this capacity-building initiative.
53. The Committee was informed of the proposed plan for the arrangements of the forecasters' attachment to RSMC Tokyo in 2016-17.
54. The Committee appreciated TRCG's input in support of training and research activities in connection with TC's crosscutting projects.

#### **Recommendations of TRCG:**

55. On the basis of the conclusions reached by the deliberation of Members, the TRCG made the following recommendations:
  - a. To re-appoint Dr. T.C. LEE (Hong Kong, China) and Mr. Roger EDSON (USA) as Chairperson and Vice Chairperson of TRCG, respectively.
  - b. To request Members to confirm their respective focal points as members of TRCG and update the list of resource persons as appropriate. TCS will send correspondence to Members for confirmation and deadline.
  - c. To endorse the priority training and research areas as proposed in TRCG Report 2014.
  - d. To approve the proposed plan for the arrangements of the forecasters' attachment training at RSMC Tokyo in 2016-17.
  - e. To endorse the organization of Roving Seminar in Lao PDR in 2015 and consider participation of PTC Members in the Roving Seminar and Research Fellowship Scheme subject to availability of extra funding support and hosting venue capacity.
  - f. To endorse the TRCG AOP and budget request which is included in the budget proposal to be submitted by AWG.

#### **V. REPORTS OF AWG (agenda item 5)**

56. The Committee was informed of the activities of the AWG as presented in the AWG Report 2014. (**Appendix VII**).
57. The Committee was informed of the preparation of the budget for 2015, including the non-recurring items put up separately for special funding consideration.
58. The Committee was briefed on the plans to set up the hosting arrangements for annual session and IWS in a systematic and transparent manner.
59. The Committee was presented with proposals on the long-term mechanisms for appointing the TC Secretary.
60. The Committee was informed on the need to update the rules and regulations of the Kintanar Award.
61. The Committee expressed its sincere appreciation to AWG for offering advice and support to TC Chairperson and TCS on the appointment of the new TC Secretary, and in organizing and coordinating key TC activities, in particular the planning of the 3rd Joint Session of PTC and TC.

### **Recommendations of the AWG**

62. Based on the outcomes of the AWG meeting in Bangkok in October 2014, AWG recommended the Committee to:
  - a. To take note of the progress and recommendations made in the planning and implementation of TC activities, including the preparation of the budget for 2015, and endorse WG's, TRCG AOPs 2015 and TCS activities plan.
  - b. To consider the proposed long-term appointment mechanism of the TC Secretary and provide feedback and comments before IWS-10 (refer to Agenda item 9).
  - c. To approve and adopt the proposed plan and mechanism for the future hosting of annual session and IWS (refer to Agenda item 10).
  - d. To approve the changes proposed in the Rules and Procedures for Dr. Roman L. Kintanar Award (refer to Agenda item 11).

### **VI. REPORT OF THE CREDENTIAL COMMITTEE (agenda item 6)**

63. The Committee took note the Summary report of the Credential Committee is on **Appendix I**.

### **VII. REPLACEMENT FOR TYPHOON NAMES (agenda item 7)**

64. The Committee noted USA provided KOTO, KITAKor BARIJAT as possible replacements for UTOR. Also the names MUN, YOLYOL or YIICH replacement name for FITOW.
65. The Committee noted the request from the USA to replace the name of the tropical cyclone VICENTE by LAN, WOT or AEET.
66. The Committee also noted the request from China to replace the name of the tropical cyclone HAIYAN with BAILU, BUGU or BANZHU.

67. The Committee noted the request from China to retire the name of the tropical cyclone RAMMASUN and request Thailand to provide replacement names.
68. The Committee noted DPR Korea provided JONGDARI, BIDULGI and OSORI as replacements for SONAMU.

#### **VIII. APPOINTMENT OF NEW TC SECRETARY (agenda item 8)**

69. The Committee took note of the Report by TC Chairperson on the nomination and selection of the Secretary for the period 2015- 2018/early 2019 (**Appendix VIII**), and the result of voting through correspondence for Mr. YU Jixin to be appointed as the new TC Secretary in succession to Mr. Olavo RASQUINHO.
70. The Committee expressed its highest appreciation to Mr. Olavo RASQUINHO for his excellent work and great contribution in the past 8 years during which he served with the Committee as Secretary on earnestly enhancing the capacity building of Secretariat, effectively executing the decisions of the Committee, wisely coordinating the activities of working groups, and promoting the visibility of the Committee in the region.
71. The Committee expressed its appreciation to Mr. Derek LEONG for his outstanding work as seconded meteorologist in TCS in the past 8 years. The Committee also noted that the procedure of recruitment of new meteorologist for TCS is ongoing.
72. The Committee noted the request of Macao, China for Mr. Olavo RASQUINHO to continue until the new TC Secretary is available in March 2015 to take office.
73. The Committee noted the report of TCS and appreciates the dedication of the current TCS staff and request the new TC Secretary work with the host Member to ensure maximum continuity support through the transition.

#### **IX. LONG-TERM APPOINTMENT MECHANISMS FOR TC SECRETARY (agenda item 09)**

74. The Committee was informed by the Chairperson of AWG that the proposal for a long-term appointment mechanism for TC secretary was initially drafted based on views and discussion at the meeting of the AWG, on 24 October 2014 in Bangkok (**Appendix IX**). This proposal was presented to this Session as an info document for Members' consideration, with a view to a decision being made at TC48<sup>th</sup> Session.
75. Initial comments were made during the discussion, including the need for sufficient transparency and relevant information to be shared among Members, the candidates list to be presented in full including any administrative or eligibility issues involved, balance between TC priorities and limitations including legal and financial concerns raised by TCS host member, and the long-term appointment mechanism to be fully considered along with background information and other related issues such as hosting agreement and TCS Terms of Reference. AWG would circulate a revised proposal to Members for their comments and feedback before the 10th IWS.

#### **X. MECHANISM OF HOSTING IWS AND SESSION FOR TC (agenda item 10)**

76. The Committee was informed by TC Secretary that proposals for a long-term mechanism for hosting IWS and annual sessions was drafted as a result of the discussion at the AWG meeting on 24 October 2014 in Bangkok (**Appendix XI**). For the annual session, the Committee noted that the new mechanism aimed to allow Members to plan ahead, and under the current practice of hosting arrangement, allow all Members to have the opportunity to take the TC Chairmanship. It would

also provide opportunities for developing Members to host annual session and IWS in a simple and business-like format, such as those held in ESCAP, without imposing too much financial burden. The Committee also noted that the organization of IWS on a yearly basis in relation to regular WG meetings/workshops might need to be reviewed to ease Members' obligations in hosting and attending meetings.

77. The Committee noted the need to confirm whether the Member is ready to host in turn preferably at the Annual Session two years before the year stipulated in the list.
78. The Committee expressed that is necessary to review and update the hosting list at the annual session.
79. The Committee noted the interest of Japan and VietNam in hosting the 49th and 50<sup>th</sup> Annual Session, respectively.

#### **XI. REVIEW OF RULES AND PROCEDURES OF DR. KINTANAR AWARD (agenda item 11)**

80. The Committee reviewed and discuss the proposal for changes to the Rules and Procedures for Dr. Roman L. Kintanar Award. **(Appendix XII)**

#### **XII. IN-KIND CONTRIBUTIONS (agenda item 12)**

81. The Committee expressed appreciation to the in-kind contributions from Members. **(Appendix XIII)**
82. The Committee also expressed the importance in having Guideline in reporting the in-kind contributions.

#### **XIII. TYPHOON COMMITTEE TRUST FUND (TCTF) (agenda item 13)**

83. The Committee reviewed the statement of account of TCTF for the period of 1 January to 31 December 2013 and the provisional statement for 1 January to 31 December 2014 submitted by the representative of the WMO Secretariat as shown in **Appendix XIV**.
84. The Committee was informed by TCS, the summary of income and expenditure from 1 January to 31 December 2012 and 2013 and the provisional summary of income and expenditure for 2014 related to the execution of the Work Plan 2014. **(Appendix XV)**

##### **13.4. Approval of Typhoon Committee Trust Fund (TCTF) 2015**

85. The Committee discussed the need to have guidelines for requesting special budgets by WG's.
86. The Committee discussed the budget proposal for 2015 **(Appendix XVI)**.

#### **XIV. DATE AND PLACE FOR THE 10<sup>TH</sup> IWS (agenda 14)**

87. The Committee noted the offer of Malaysia in hosting the 10th IWS tentatively on the last week of October 2015. The final dates will be confirmed in due course by Malaysia and later communicated to TCS.

**XV. DATE AND PLACE OF THE FORTY-EIGHT SESSION (agenda 15)**

88. The Committee noted and appreciated the offer of USA to host the Forty-Eighth Session in Honolulu, Hawaii in the first week of February 2016. The final dates will be confirmed in due course by USA and later communicated to TCS.

**XVI. OTHER BUSINESS (agenda item 16)**

89. The Committee noted the amendments of TOM presented on the 3rd Joint Session, for review and approval by the TC 47th Session.
90. The Committee noted there were 2 candidates for the post of TCS Meteorologist.

**XVII. ADOPTION OF THE REPORT (agenda item 17)**

91. The Committee adopted the report of the session at 11:30am, 13 February 2015.

**XVIII. CLOSURE OF THE SESSION**

92. The delegates from the Members of the Typhoon Committee, representatives of ESCAP, WMO and TCS and observers expressed their thanks and appreciation to the ESCAP for the successful hosting he Forty Seventh session of the Typhoon Committee.
93. The Session was closed by the Chairperson at 11:30 am, 13 February 2015.