

FORTY-THIRD SESSION

JEJU, REPUBLIC OF KOREA

AGENDA ITEM 5

17-22 JANUARY 2011

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**TYPHOON COMMITTEE SECRETARIAT ACTIVITIES  
ANNUAL REPORT 2010**

*(Item 5 of Provisional Agenda-The Committee's activities during 2010)*

*(Submitted by Typhoon Committee Secretariat)*

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**Summary and Purpose of Document:**

**This document reviews the principal activities of Typhoon  
Committee Secretariat during 2010.**

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**Action Proposed**

The Committee is invited to:

Take note of the major activities of the Typhoon Committee Secretariat during 2010



## **SUMMARY REPORT ON ACTIVITIES OF TCS SINCE THE 42<sup>nd</sup> SESSION**

### **1. PARTICIPATION OF TCS REPRESENTATIVES IN INTERNATIONAL MEETINGS**

Since the 42<sup>nd</sup> Session of TC, held in Singapore, 25-29 January 2010, the Typhoon Committee Secretariat was represented in the following events:

- **66<sup>th</sup> Session of ESCAP - Senior Officials segment - Incheon, Republic of Korea, 13-19 May 2010**

The Secretary of TC, Mr. Olavo Rasquinho, attended the Senior Officials segment, from 13 up to 15 May, of the 66<sup>th</sup> Session of ESCAP which was held in Incheon, Republic of Korea, on 13-19 May. The activities of Typhoon Committee were mentioned as follows:

1. The Secretariat of ESCAP transmitted to the Commission an executive summary of the report of the Forty-second Session of TC, which was held in Singapore, on 25-29 January 2010 (Doc E/ESCAP/66/INF/5);
  2. The Commission, through statements of several Members (Thailand, Russian Federation and Republic of Korea) recognized the importance of ESCAP/WMO Typhoon Committee and WMO/ESCAP Panel on Tropical Cyclones to reduce tropical cyclone-related disaster risks in the region, jointly with WMO and other relevant partners.
  3. Dr. Tokiyoshi Toya, representative of WMO and Regional Director for Asia and the South-West Pacific, informed the Commission that WMO would continue to support the work of the two regional intergovernmental bodies, ESCAP/WMO Typhoon Committee and WMO/ESCAP Panel on Tropical Cyclones, to the fullest extent possible, in further collaboration with ESCAP.
  4. The Secretary of the Typhoon Committee informed the Commission about the recent activities covering meteorology, hydrology and disaster risk reduction, including those to reduce urban flood risk in a changing climate. He also expressed his appreciation to the Government of Macao, China for continuing to host the Typhoon Committee Secretariat until 2014, and the Republic of Korea to host the 43<sup>rd</sup> TC Session, in January 2011.
- **Meeting on Urban Flood Risk Management (UFRM) Project, in Bangkok, 19-20 July 2010**



The Secretary, the Hydrologist (Mr. Jinping Liu) and the Meteorologist (Mr. Leong Kai Hong, Derek) of TCS participated in a meeting on Urban Flood Risk Management (UFRM) Project, in Bangkok, 19-20 July. The main topics of the project were established, including the project overview and information exchange, mechanism of implementing the project, terms of reference of the task force and pilot cities. More than 30 participants took part in the meeting, including representatives from TC Members, ICHARM, JAXA, UNDP, UN/ISDR, UNOCHA, ADPC, ESCAP, WMO and TCS.

- **Asia-Pacific Water Minister's Forum (APWMF) and Singapore International Water Week (SIWW) – Singapore, 28 June - 1 July 2010**

Mr. Liu Jinping was appointed by WGH Chairperson Mr. Okazumi to be representative of WGH to participate in the Asia-Pacific Water Minister's Forum (APWMF) held in Singapore, as decided by TC at its 42<sup>nd</sup> Session. He also has taken the opportunity to participate in the Singapore International Water Week (SIWW) from June 29 to July 1. These participations were helpful to promote TC's visibility, and also to get information on the progresses and achievements in water area in the Asia-Pacific region.





- **Expert Group Meeting and Stakeholder Meeting on Mechanism on Drought Monitoring and Early Warning - Nanjing, China, 14-16 September 2010**

The Secretary participated in the Expert Group Meeting on Mechanism on Drought Monitoring and Early Warning, (Nanjing, China – 14-15 September) and in the Stakeholder Meeting on the same issue (Nanjing, 16 September). The Expert Group Meeting was supposed to discuss the creation of a regional mechanism on Drought Monitoring and Early Warning, but the field of action was enlarged for also covering other natural weather-related disasters, such as typhoons and floods. Main objective: enabling the development of monitoring and early warning systems towards implementing an effective disasters risk management, particularly drought. The Executive Secretary of ESCAP, Dr. Noeleen Heyzer officially launched the Regional Cooperative Mechanism on Disaster Monitoring and Early Warning, Particularly Drought (the Mechanism) at the meeting, with the statement read by Mr. Xuan Zengpei, Chief of the Information and Communications Technology and Disaster Risk Reduction Division of ESCAP. The Secretary of TC, corresponding to a request from ESCAP to the representatives of countries and international organizations, offered the services of TCS to facilitate the first steps of the Secretariat of the Mechanism, upon authorization by the Committee.

- **Regional Workshop on ICT Applications for Disaster Risk Reduction and Sustainable Economic Development – Astana, Kazakhstan, 28-30 September 2010**

Mr. Jinping LIU, hydrologist of TCS, was invited by ESCAP to participate in the Regional Workshop on ICT Application for Disaster Risk Reduction and Sustainable Economic Development which was held in Astana, Kazakhstan from 28-30 September 2010. At the Workshop, Mr. Liu introduced the TC Strategy on Flood Disaster Risk Reduction. The workshop expressed appreciation to Typhoon Committee for offering their support to this initiative on sub-regional network for flood risk reduction in Central Asia and neighboring countries. Mr. Liu was appointed temporarily the contact person of this network in TC.



- **First Anniversary and Workshop of AHMRI of NUIST - Nanjing, China, 15-16 October 2010**

Mr. Jinping LIU, taking the opportunity of being invited by WMO to participate at the 3<sup>rd</sup> WMO International Conference on QPE/PQF and Hydrology, also participated at celebration of the first anniversary and attended a workshop of the Applied Hydrometeorological Research Institute (AHMRI) of the Nanjing University of Information Science & Technology (NUIST), on 15-16 October 2010. He introduced the activities on Sediment-related Disaster Reduction in TC region at the workshop on Extreme Hydro-meteorological Events and Flood-Protection & Disaster Reduction and had the opportunity to exchange information on Typhoon Committee activities with academicians, professors and high level persons from China and other countries/regions.



- **3<sup>rd</sup> WMO International Conference on QPE/PQF and Hydrology, Nanjing, China, 18-22 October 2010**

The Meteorologist and Hydrologist of TCS, respectively Mr. Leong Kai Hong (Derek) and Mr. Jinping LIU, participated at the third WMO International Conference on Quantitative Precipitation Estimation (QPE) and Quantitative Precipitation Forecasting (QPF) and Hydrology which was held in Nanjing, China, 18-22 October 2010. Mr. Jinping Liu, as Hydrologist of the Typhoon Committee Secretariat, was appointed to be a member of International Organizing Committee (IOC) of the conference and invited to give a presentation on “Hydrological Perspective on QPE/QPF”. He convened the session of Hydrologic Prediction and Coupled Hydrology-Atmosphere-Land Models, jointly with Dr. Zhiyu LIU, and he prepared the session summary report for the conference.





- **5<sup>th</sup> WGDRR Working Group Meeting, Incheon, Republic of Korea, 24-25 October 2010**

Mr. Olavo Rasquinho, Mr. Leong Kai Hong (Derek), Mr. Jinping Liu and Ms. Denise Lau participated at the 5<sup>th</sup> DRR Working Group meeting, which was held in Incheon, Republic of Korea, on 24-25 October 2010, under invitation and support of NIDP-NEMA. The Secretary, on behalf of TC, gave a speech at the Opening Ceremony and chaired the session on “How to Cope with Strengthening Typhoons and Cyclones” and Mr. Liu gave a presentation on TC Urban Flood Risk Management project and participated in the drafting of a message for action plan to the 4<sup>th</sup> Asian Ministerial Conference on Disaster Risk Reduction (AMCDRR). The representatives of TCS also attended the opening ceremony of 4<sup>th</sup> AMCDRR.





- **Regional High-Level Expert Group Meeting to Reduce Flood Disaster Risks in Pakistan - Islamabad, Pakistan, 9 -10 November 2010**

The Secretary was invited by ESCAP to participate at the Regional High-Level Expert Group Meeting, which was jointly organized by ESCAP, United Nations Country Team (UNCT) and the Government of Pakistan, on 9 to 10 November 2010, in Islamabad, Pakistan.

The Secretary and the representative of UNICEF, Mr. Gary Ovington, were presenters at Session 5 - Education and Public Awareness. The Secretary, following a request from the organizers to all participants for actively cooperate with Pakistan regarding reducing flood risk, informed that Typhoon Committee is willing to share its experience on urban flood risk management and on other fields related to meteorology, hydrology and disaster risk reduction. Some participants were invited to visit the headquarters of the Pakistan Meteorological Department.



Visit to the Pakistan Meteorological Department – 10 November 2010



- Seventh WMO International Workshop On Tropical Cyclones-IWTC-VII, La Réunion, France, 15-20 November 2010

Mr. Jinping LIU, hydrologist of TCS was invited by WMO to participate in the Seventh International Workshop on Tropical Cyclones (IWTC-VII) which was held in La Réunion, France, 15 - 20 November 2010. As one of Rapporteurs of Keynote 3 - TC precipitation (QPE/QPF) and related inland flood modeling, he contributed to the part of the report related to hydrological modeling using QPE/QPF and presented the progresses and challenges on QPE/QPF utilization in hydrology at the workshop.



**Meeting of WMO RA-II (Asia) Working Group on Hydrology (WGH), Seoul, Republic of Korea, 23-26 November 2010**

Mr. Jinping LIU participated in the meeting of WMO RA-II (Asia) Working Group on Hydrology (WGH), held in Seoul, Republic of Korea, from 23 to 26 November 2010. Mr. Liu compiled the Report of UN ESCAP/WMO Typhoon Committee (TC) WGH Activities in 2010 and presented the activities that are being undertaken by TC WGH. Reviewing the work



areas of both working groups, and based on his presentation, the RA II WGH agreed to cooperate in joint activities to the benefit of the Members of RA II and the Typhoon Committee.



- **Workshop on Space Application to Reduce Water-related Disaster Risk in Asia Bangkok, Thailand, 7-9 December 2010**

The Secretary, the Meteorologist and the Hydrologist of TCS participated in the Workshop on Space Application to Reduce Water-related Disaster Risk in Asia, held in Bangkok, Thailand, on 7-9 December 2010, which was co-organized by ESCAP and the International Centre for Water Hazard and Risk Management (ICHARM), in partnership with the WMO and Typhoon Committee. It was supported by the Japan Aerospace Exploration Agency (JAXA) and the Asian Development Bank (ADB). The workshop allowed the exchange of information on the space application to water-related disaster risk reduction measures and to conduct training on how to use the Integrated Flood Analysis System (IFAS). The workshop was attended by experts not only from the TC Members but also from Bangladesh, Indonesia and Pakistan. It was also attended by experts from the Asian Disaster Reduction Centre (ADRC), Asian Institute of Technology (AIT), JAXA, Remote Sensing Technology Centre of Japan (RESTEC), Mekong River Commission (MRC), WMO, ICHARM, and Typhoon Committee.





- **Expert group meeting on Regional Cooperation Mechanisms on Space Applications for Disaster Management and Sustainable Development - Manila, Philippines, 15-16 December 2010.**

The Secretary of TC has taken part of this meeting by invitation of ESCAP. The main objectives consisted of reviewing and developing strategies for building regional cooperative mechanisms on effective access to and applications of space-based products and services for disaster management and sustainable development in the region and reviewing the terms of reference of the Mechanism (TOR). The TOR were discussed in detail so that they could be submitted to the Intergovernmental Consultative Committee (ICC) on the Regional Space Applications Programme for Sustainable Development.

- **14<sup>th</sup> Session of the Intergovernmental Consultative Committee (ICC) on the Regional Space Applications Programme For Sustainable Development (RESAP), Manila, Philippines, 16-17 December**

The Intergovernmental Consultative Committee (ICC) approved the Terms of Reference of the “Regional Cooperative Mechanism on Disaster Monitoring and Early Warning, Particularly Drought” (“the Mechanism”) and discussed the hosting of the Secretariat of the Mechanism. There were the following offers from the participants for hosting the Secretariat: Asia Pacific Space Cooperation Organization (APSCO); Bangladesh; Philippines; Macao, China; Space & Upper Atmosphere Research Commission (SUPARCO) and HE (Pacific Islands Telecommunications Association (PITA). APSCO was selected for hosttracking the Secretariat of the Mechanism, with a sub-secretariat or node specifically for floods in Macao, assisted by TCS, upon concurrence of Typhoon Committee. PITA would host another node in the Pacific Islands. The decision has to be ratified by the respective governments or



competent authorities

- **Visit to Pilot Cities of the UFRM Project (Hat Yai, Manila, Hanoi), 12-19 December 2010**

Mr. Jinping LIU, as representative of TC Task Force (TF) of the cross cutting Project on Urban Flood Risk Management (UFRM), participated in the TF Mission from December 12 to 19, 2010 with the project consultant Prof. Xiaotao CHENG contracted by UN ESCAP. The TF Mission had fruitful discussions with representatives from departments of meteorology, hydrology and disaster risk reduction (DRR) at various levels and conducted field surveys in 3 pilot cities: Hat Yai, Thailand; Manila, Philippines and Hanoi, Vietnam. The Mission has had very strong support and kindest cooperation from the 3 TC Members of Pilot cities. The mission will submit a report which will be discussed as a preliminary guidance material for implementation of the pilot study, at 43<sup>rd</sup> TC Session.



- **Meeting on Best Track Consolidation, Hong Kong, China, 13-14 December 2010**

The Meteorologist of TCS, Mr. Leong Kai Hong (Derek), participated at the meeting on Best Track Consolidation, in Hong Kong, China, on 13-14 December, which was also attended by representatives from HKO, RSMC Tokyo, JTWC, Shanghai Typhoon Institute and WMO. The methodology and procedures of the determination of best track were presented by the representatives of the attending organizations. The Typhoon Megi was used as a case study to investigate the possible reason behind the discrepancy of the determination of the location and intensity of Typhoon Megi. Among other recommendations it was advised that communications amongst tropical cyclone centers should be enhanced and that all centers



should make their best endeavor to exchange relevant information and data to facilitate the determination of operational and post analysis best tracks.



## 2. COORDINATION OF INTERNATIONAL ON-THE-JOB TRAINING COURSES AND WORKSHOPS

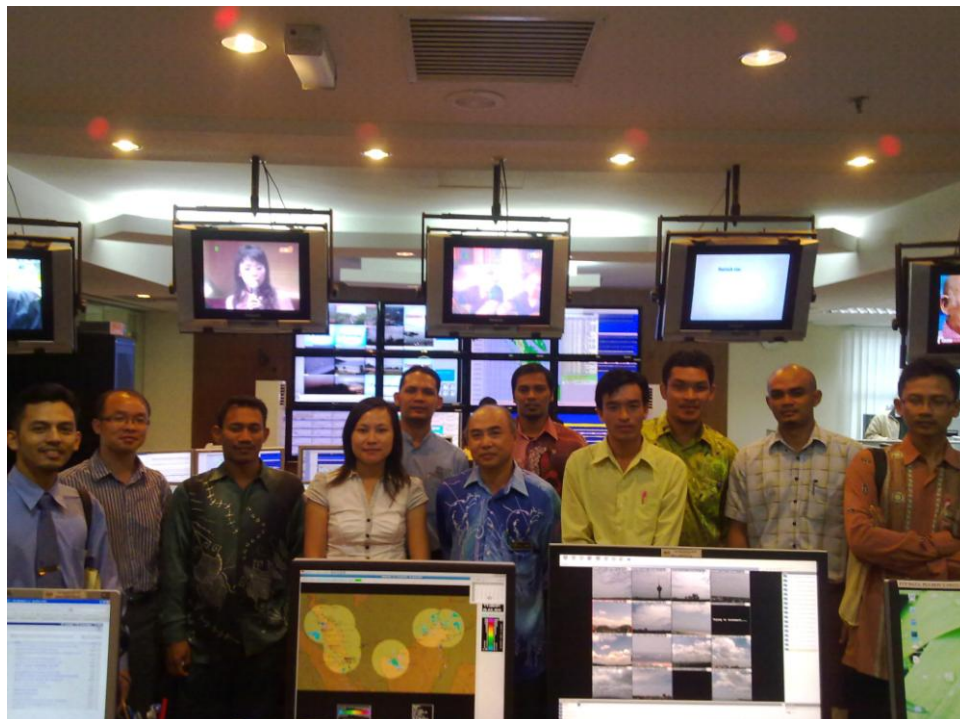
TCS, together with the Working Groups, ESCAP and WMO, coordinated the preparation of the following events:

- **Forth On-the-job Training of Flood Forecasting - Kuala Lumpur, Malaysia, 12 July- 6 August 2010**

The 4<sup>th</sup> On-the-Job training on Flood Forecasting with the title “Configuring an Operational Flood Forecasting System based on the Tank Model”, was held in Kuala Lumpur, Malaysia from 12 July to 6 August 2010. It was attended by 18 participants, in which 15 of the participants are DID Engineers and the 3 other participants are the TC Members from National Hydro-Meteorological Service, Ministry of Natural Resources and Environment of Vietnam; Department of Meteorology and Hydrology, Water Resources and Environment Administration of Laos; and Huaihe River Commission, Ministry of Water Resources of China. This project of OJT was launched in 2002 and led Malaysia. It is closed officially at TC 43<sup>rd</sup> Session. The successful activities and contribution have been observed for the OJT in Malaysia. The OJT project achieved the expected objective, namely, to help TC Members to



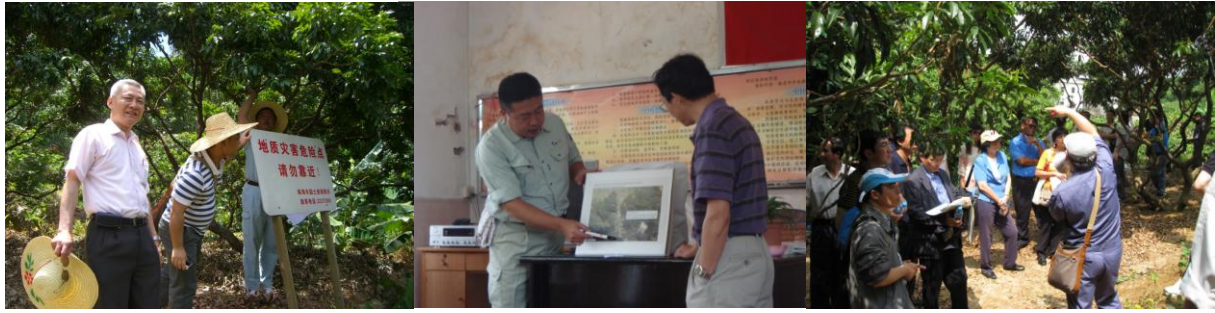
improve flood forecasting capability and accuracy through On-the-Job Training, which will bring a far-reaching benefit to TC Members. The participants have found the training useful and beneficial in their professional work as well as to their institute.



- **Field Training on Hazard mapping of Sediment-Related Disasters - Zhuhai, China - 5 September 2010**

The field training of the project “Hazard Mapping of Sediment-Related Disasters” was conducted by SABO Department of MLIT together with NILIM at a debris-flow site in Zhuhai, China, with cooperation and supporting of TCS, SMG of Macao and the government of Zhuhai of China on September 4 and 5, 2010, prior to the TC Integrated Workshop. A linked indoor lecture of Japanese technique “how to set hazardous area” and “how to make and use hazard map” was held in Macao Science Center. The training was attended by 20 people from 9 TC Members, including Cambodia; China; D.P.R.Korea; Hongkong, China; Republic of Korea; Macao China; Thailand; Philippines and Japan, and 15 local people from government offices of Zhuhai City and village residents. All participants highly commended this field training.





- ESCAP/WMO Typhoon Committee Integrated Workshop on “Urban Flood Risk Management in a Changing Climate: Sustainable and Adaptation Challenges” - Macao, China, 06-10 September 2010

The workshop was held in Macao, China, on 6-10 September 2010, in cooperation with ESCAP, WMO, Macao Meteorological and Geophysical Bureau (SMG), KICT and IDI and was attended by 78 participants: 67 from Typhoon Committee Members, 2 representatives from ESCAP, 1 from WMO, 1 from JAXA, 1 from Kyoto University, 1 from University of Philippines and 5 from TCS. All the TC Members were represented.



- TRCG Roving Seminar 2010 - Ubon Ratchathani, Thailand, 30 November - 3 December 2010



The Roving Seminar 2010 was held with the support of the Thai Meteorological Department and the Typhoon Committee Trust Fund, and It was attended, besides 15 local participants from Thailand, by 10 participants from Cambodia; Hong Kong, China; Lao PDR; Macao, China; Malaysia, Philippines, Singapore and Viet Nam;. The general theme was on tropical cyclone genesis and large scale interaction. Mr. Derek Leong, Meteorologist of the Typhoon Committee, represented the TC at the opening ceremony. The Seminar Programme focused mainly three topics: Mr. S.M. LEE (Hong Kong Observatory) presented Topic A on “Tropical cyclone genesis and seasonal prediction of cyclone activities”; Professor ZHANG Qinghong (Peking University) presented Topic B on “Effects of tropical cyclone interaction with monsoon, with emphasis on enhanced rainfall” and Dr. Mark LANDER (University of Guam) presented Topic C on “Tropical cyclone satellite analysis, including microwave images” and tutorial sessions.



### 3. COORDINATION OF FELLOWSHIP SCHEME

For the year 2010, Typhoon Committee received three research fellowships offered by China Meteorological Administration, Hong Kong Observatory and Korea Meteorological Administration with the duration of the research activities ranged from 2 months to 3 months in the second half of the year. One meteorologist from Viet Nam and one from Thailand were accepted by CMA with the research topic on “TIPS Development”. One meteorologist from CMA attended the fellowship offered by HKO with the research topic on “Can the extreme rainfall associated with Typhoon Morakot (0908) happen in Hong Kong?” and one meteorologist from Viet Nam and other one from Thailand were accepted by KMA with the research topic on “Improvement of typhoon analysis and forecast system with KMA’s typhoon analysis and prediction system (TAPS)”.

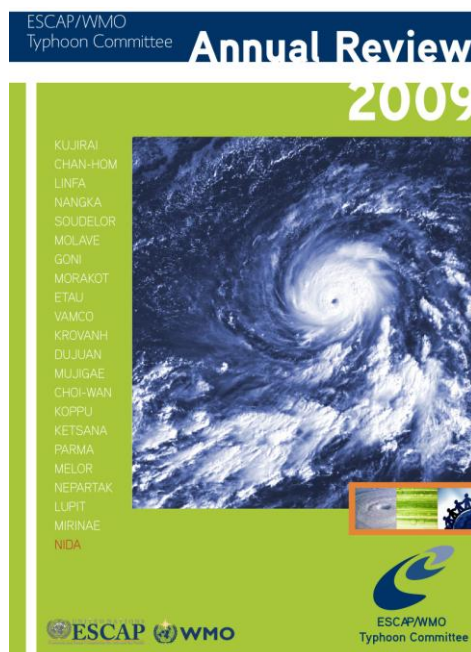


## 4. PUBLICATIONS

### a) Annual publications

In 2010 TCS prepared and published the following publications

#### Typhoon Committee Annual Report-2009

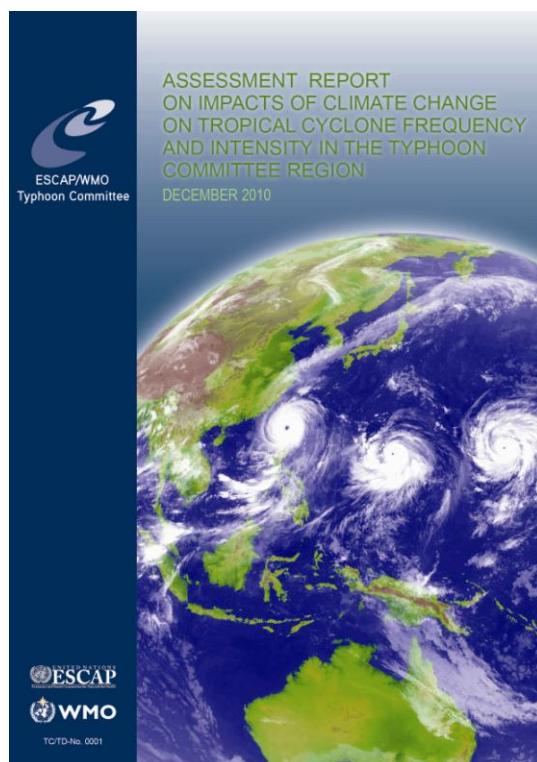


#### Typhoon Committee Newsletter-2010

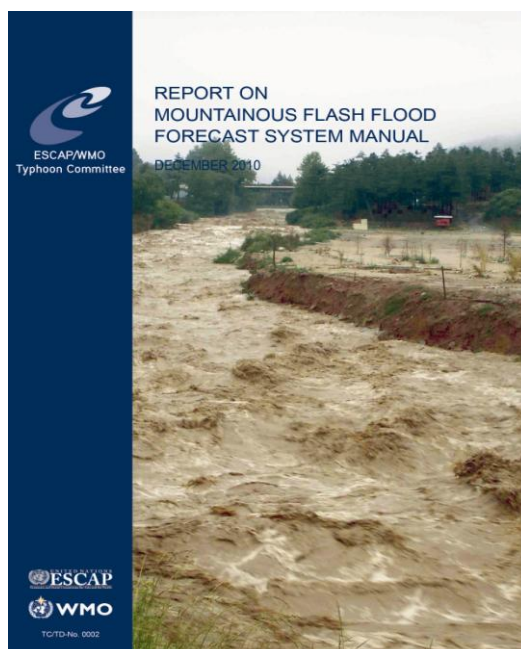




## b) Expert Team Publications



## c) Working Groups Publications



## 5. TYPHOON COMMITTEE IN THE MEDIA OF MACAO



- Interview of the Secretary to the Portuguese Channel of the Television of Macao (TDM) – 23 May 2010

On May 23, the Secretary was interviewed for half an hour by the Portuguese Channel of the Television of Macao (TDM) on the Sunday's programme "TDM Interview". The talk focused the main aspects related to the projects and activities of TC, on the importance to Macao by being the host of the Secretariat of Typhoon Committee.



News on the Panel on Risks and Protection against Natural Catastrophes in a Chinese newspaper



News on the Panel on Risks and Protection against Natural Catastrophes in a Portuguese newspaper



Aí, rapidamente se transformou numa manifestação e os especialistas tiveram que conduzir as explicações intercorridas por alguns momentos de constatação como "Governo é poderoso mas não nos presta atenção" ou "lutar até ao fim pela qualidade de vida". Mesmo assim, o CIT reiterou que aparece que tem quase 10 metros, um pouco depois do 4º andar", apontou. Bright Hong disse ainda não ver razão para que uma rua residencial fique "atufalhada" se há ali mesmo ao lado, a marginal da Avenida Sun Yat-sen. Regressados ao ponto de encontro, no quinto andar do

na primeira solução que se cogitou, por carta, os residentes sugeriam que o viaduto passasse pela avenida Sun Yat-sen, na marginal, ou então nas ruas para onde está previsto mas num túnel. Relativamente em túnel precisamos de 290 metros, é preciso abrir buracos profundos, colocar barreira

"imagina-se ou passava" "mesmo" "das a reduzir o ruído", acrescentou. No entender do CIT, a poluição atmosférica é problema que não se coloca porque "o sistema é eléctrico, não emite CO2". No que concerne aos acessos da zona em situações de emergência, o Governo também não

de se encontrar com o cidadão para de ter três apartamentos a andar como é?" O residente disse ainda que agitar os "estudos internacionais" serve para o Governo "levar a sua avante" mas que "todas as realidades são diferentes" e que "a vida dos moradores vai tornar-se menos saudável".

RAEM SÓ "AGUENTA" TEMPORAIS COM NÍVEIS REGULARES

## Sem arcaboijo para tufão violento

Macau está preparada para resistir a grandes tufões, mas se voltasse a ser atingida por um tufão com a dimensão e violência daquele que devastou o território em Setembro de 1874 "não havia nada a fazer", concordaram os intervenientes de um colóquio organizado no Clube C&C

OLGA PEREIRA

Há sempre possibilidade do território ser atingido por um tufão excepcional mas esperemos que não venha a depressa", disse ontem o engenheiro Henrique Novais Ferreira no final do seminário "riscos e protecção contra catástrofes naturais em Macau", que foi organizado por Jorge Morbey no Clube Recreativo, Cultural, Desportivo e de Apoio Social do C&C.

O seminário partiu do exemplo do maior tufão que já atingiu Macau. De 22 para 23 de Setembro de 1874, as inundações de vários metros, rajadas e consequentes incêndios provocados pelo violento temporal deixaram mais de 1.700 casas de famílias chinesas des-



truídas e um número elevado de mortes.

O também chefe do Departamento de Coordenação e Assessoria do Laboratório de Engenharia Civil acredita que não haveria "nada a fazer" num caso semelhante, opinião corroborada pelo painel de intervenientes.

Segundo o engenheiro, no plano ideal poderia "fazer-se uma construção que pudesse resistir a uma catástrofe destas", mas isso seria "economicamente inviável".

No entanto, Henrique Novais Ferreira ressaltou que "Macau está preparada para resistir a tufões dentro das condições de cálculo", isto é, "grandes tufões". "A situação é de segurança, porque os códigos de construção são suficientes para garantir a boa

estabilidade dos edifícios", apontou, acrescentando que com a actual regulamentação não tem "medo de viver em Macau".

Portém, questionado, durante a sua intervenção, se os edifícios antigos teriam a mesma segurança, a resposta já não saiu tão positiva. "Aí não portia as minhas mãos no fogo". Em situações de tufão normal – acrescentou Henrique Novais Ferreira – quando é dado o alerta por parte dos Serviços de Meteorologia "não se tem de fazer nada de especial, só ter cuidado".

Um dos cuidados que as pessoas devem ter nestes casos é colocar fita adesiva nas janelas de vidro, caso não estejam reforçadas, enumerou.

O engenheiro também realçou a "questão extremamente delicada da zona do Porto Interior". "O nível de arruamento é muito baixo e não é possível evitar as inundações [mesmo em caso de tufão regular]. Para resolver a situação era necessário um estudo alargado e uma despesa muito grande".

Portanto, a seu ver, restam apenas algumas medidas de prevenção como o cálculo do risco na construção dos edifícios, na execução de aterros, na modernização do sistema de esgotos, entre outras coisas.

Por seu turno, Olavo Rasquinho, secretário do Comité dos Tufões, defendeu uma coordenação nas áreas da meteorologia, hidrologia e protecção civil, recorrendo a exemplos de alguns países.

O responsável salientou ainda que não é certo dizer-se que um tufão com as dimensões do sentido em 1874 tenha um período de retorno de cerca de 100 anos. "No caso de Macau, o território é tão exigido que é difícil o tufão acertar no alvo. Não se pode dizer com certeza que vai acontecer outro igual, mas pode acontecer", observou.

No entanto, Olavo Rasquinho realçou que há mais probabilidades de um tufão daquela violência voltar a gerar-se, dado o aquecimento global. "A superfície do mar tem vindo a aquecer, portanto, quanto mais quente está mais provável será observar-se fenómenos violentos desse tipo".

JORNAL TRIBUNA DE MACAU, QUARTA-FEIRA, 9 DE JUNHO DE 2010, PÁG. 3

## 6. VISITS TO TCS HEADQUARTERS

### Representatives of the Office of the Commissioner of the Minister of Foreign Affairs in Macao SAR – Macao, January, 21

On 21 January 2010 two representatives of the Office of the Commissioner of the Minister of Foreign Affairs in the Macao Special Administrative Region of China, Ms. Zhang Yunfei, Deputy Director-General, Department of International Organization & Legal Affairs Office, and Ms Shen Yuan, also from the Department of International Organization & Legal Affairs, visited the TCS headquarters. The Secretary of TC and TCS staff gave information on the activities of the Committee.

### Regional Director of ITU Regional Office for Asia and the Pacific - Telecommunication Development Bureau –July, 29

Ms. Eun-Ju Kim, Regional Director of International Telecommunication Union – Telecommunication Development Bureau, visited TCS headquarters on July, 29. A brief explanation of the activities of TC was given by the Secretary and TCS staff.

### Researcher of NILIM and the Chief of International Affairs Division of SABO Technical Center – September, 5



Mr. Shinichiro Hayashi (Researcher, Research Center for Disaster Risk Management – National Institute for Land and Infrastructure Management - NILIM) and Mr. Hiruma Masaki (Chief of International Affairs Division, Planning Department – SABO Technical Center) visited the TCS headquarters, following a preliminary survey of the field in which the Field Training on Hazard mapping of Sediment-Related Disasters, in order to prepare a training event in Zhuhai (China) on September 5, one day before the 5<sup>th</sup> Integrated Workshop.

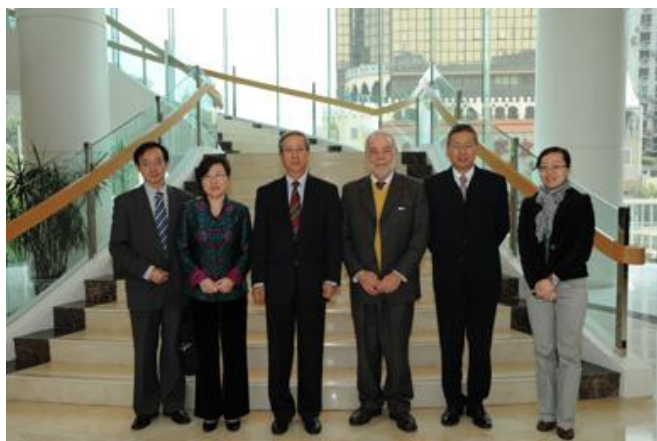
### **Participants at IWS – September, 8**

The participants of the TC Integrated Workshop on “Urban Flood Risk Management in a Changing Climate: Sustainable and Adaptation Challenges” visited the Secretariat on September 8. This visit was integrated at the tour offered by SMG to the participants.

## **7. OTHER ACTIVITIES**

- **Visit to the commissioner’s Office of PRC - 10 March, 10**

On March 10 a delegation of the Typhoon Committee Secretariat composed of the Secretary, the Meteorologist and the Hydrologist visited the Commissioner’s Office of RPC in Macao SAR, following an invitation of the RPC Commissioner, Mr Lu Shumin. This visit followed a previous one of two representatives of the Commissioner’s Office to TCS headquarters, on 21 January 2010. The Secretary, on behalf TC, presented the compliments to Mr Lu Shumin and summarized the resolutions of the 42<sup>nd</sup> TC Session, related to the continued support to the Committee given by Government of Macao Special Administrative Region of China, namely in what refers to hosting of TCS and to the secondment of the Meteorologist. He also referred the resolution thanking China for the secondment of a hydrologist to work at TCS Secretariat, encouraging also the continuation of those services for the second four-year period of the Secretariat in Macao.





- **Panel on Risks and Protection against Natural Catastrophes-Macao, China, 8 June 2010**

The Secretariat was invited to participate at the **Panel on Risks and Protection against Natural Catastrophes**, which was held at the C&C Lawyers, in Macao, China, on 8 June 2010. This panel was organized by Dr. Jorge Morbey, professor at the Macao University of Science and Technology. An interesting recreation made by the Macao Meteorological and Geophysical Bureau of the most devastating typhoon ever recorded in Macao was presented by the meteorologist Ms. Crystal Chang. An interesting discussion was held about the possible consequences of a similar typhoon in Macao today, and what adaptation measures should be implemented. The Secretary of Typhoon Committee had the opportunity to introduce the main activities of the Committee, stressing the importance of efficient early warning systems and the harmonization of the meteorological, hydrological and disaster risk reduction Services for a more efficient struggle against the consequences of the typhoon-related disasters.