



UNESCAP/WMO Typhoon Committee

## newsletter

TCS Macao, China

number 19

year 2007

UNITED NATIONS  
Economic and Social  
Commission for Asia and  
the PacificWorld Meteorological  
Organization

# The 39th Session of the Typhoon Committee



The 39th Session - Group Photo

The Government of the Philippines, in cooperation with ESCAP and WMO hosted the thirty-ninth Session of the Typhoon Committee, which was held in the Manila Hotel, Manila, from 4 to 9 December 2006.

The Session was attended by 72 participants from the following 11 Members of the Typhoon Committee: China; Hong Kong, China; Japan; Macao, China; Malaysia; Philippines; Republic of Korea; Singapore; Thailand; the Socialist Republic of Viet Nam; and the United States of America (USA). Five observers were also present: 1 from United Nations International Strategy for Disaster

Reduction Secretariat (UN/ISDR); 2 from Indonesia; 1 from the Asian Disaster Preparedness Centre (ADPC) and 1 from the Asian Disaster Reduction Centre (ADRC).

Participated also in the Session representatives from the Economic and Social Commission for Asia and the Pacific (ESCAP), World Meteorological Organization (WMO) and Typhoon Committee Secretariat (TCS).

At the opening ceremony statements were delivered by Mr Jose Lito L. Atienza, Jr. Mayor of the City of Manila;

continued pag.3-6

## Editorial



The Typhoon Committee gave its first steps in the already distant sixties. The efforts of a group of enthusiastic typhoon experts, under the auspices of the United Nations Economic Commission for Asia and the Far East, the predecessor of UNESCAP, and the WMO, led to the signature of its statutes in 1968, in Bangkok. This important step for the progress of the regional cooperation initiated

continued pag.2&amp;3



the process of creation of more four similar bodies around the world.

For many years the Typhoon Committee has promoted the cooperation among the Members and, sporadically, with the neighbouring WMO/ESCAP Panel on Tropical Cyclones through two joint sessions, the first of which was in 1992, in Pattaya, and the second one in 1997 in Phuket, both in Thailand.

After being sited in Manila for nearly four decades, and further to a decision of the TC in its 38th Session held in Hanoi, in 2005, the TCS headquarters was transferred to Macao, China in the beginning of this year. For this purpose two agreements have been signed, one between the Government of People's Republic of China and the Typhoon Committee (Host Country Agreement) and a complementary one between the Government of the Macao Special Administrative Region of the People's Republic of China and the Typhoon Committee.

The first of these agreements refers, among other items, to the Convention on Privileges and Immunities of Specialized Agencies, approved by the



*The handover ceremony*

Assembly of United Nations on 21 November 1947, guaranteeing privileges and immunities to officials of the TC and other experts performing missions for the TC in the Macao SAR, China. This Agreement was signed on the 7th December 2006, in Manila, by the representative of People's Republic of China with the Philippines, Ambassador Li Jinjun, and the Chairman of the Typhoon Committee Dr Prisco D. Nilo. This Agreement also guarantees that TCS premises shall be inviolable and under the control and authority of the TC.

The second agreement complements the first one in what refers to administrative, financial and related arrangements. It was signed on February 13, 2007, by the Secretary for Administration and Justice, Dr. Florinda da Rosa Silva Chan and Dr. Prisco D. Nilo, on behalf of the Government of Macao and Typhoon Committee respectively.

To celebrate the events of the signing of the agreements and the inauguration of the new premises of the Typhoon Committee Secretariat, TCS organized a series of events on February 13 and 14, 2007, in collaboration with Meteorological and Geophysical Bureau of Macao (MMGB) and co-sponsorship of Macao Foundation. One of these events consisted of the realization of the "High-Level Workshop on the TC Strategic Plan Implementation" with the objective of enhancing the cooperation among the TC Members for a more effective implementation of the TC Strategic Plan.

The transfer of TCS from Manila to Macao has been made smoothly thanks to the support of Macao Meteorological and Geophysical Bureau, the Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) and the efficient assistance of the former staff of TCS.

After some months of operation we noted with concern the abyssal difference between the maximum and minimum values of the Human Development Index (HDI) referring to the TC Members. There is great disparity between the least and the most developed Members of our Committee, whose HDI vary between 7 and 133 (according to UNDP, in 2006 the values of the HDI all over the world were between 1 and 177, corresponding to Norway and Niger, respectively).



*Ambassador of PRC and Dr. Prisco D. Nilo with representatives of ESCAP, WMO and TC members*



Although this index is a comparative measure of life expectancy, literacy, education, and standards of living, the Typhoon Committee, in a modest way, can contribute to its enhancement through the accomplishment of the Strategic Plan, considering that the betterment of the quality of life of the populations is implicit in the mission of TC.

Our commitment, as staff of the Typhoon Committee Secretariat, is to do all our best to conduct the Secretariat to put into practice the decisions of the Typhoon Committee and to help to concretize the cooperation amongst the Members, creating conditions for a more effective participation of experts from the less developed Members in actions associated to know-how transfer. For this purpose TCS counts on the support of UNESCAP, WMO, all Members and on a still greater involvement of the Government of Macao SAR, whose support up to now has been of vital importance. I would not like to finish these words without referring the great loss we had with the passing away of one of the most distinguished members of the group of enthusiastic typhoon experts who were involved on the creation of the Typhoon Committee, the former Coordinator and Interim Secretary of TC, Dr. Roman L. Kintanar.

On behalf of TCS staff,

Olavo Rasquinho

*The handover ceremony*



Dr. Prisco D. Nilo, Officer-in-Charge of PAGASA; Dr. Tokiyoshi Toya, representative of the WMO Secretariat on behalf of Mr Michel Jarraud, Secretary-General of WMO; Mr. Le-Huu Ti, representative of UNESCAP Secretariat, on behalf of Mr Kim Hak-Su, Under Secretary-General of the United Nations and Executive Secretary of UNESCAP and Dr. Estrella F. Alabastro, Secretary of the Department of Science and Technology, who declared the session open.

Dr Prisco D. Nilo and Dr. Yap Kok Seng, Director General of Malaysian Meteorological Department, were elected Chairman and Vice-Chairman of the Typhoon Committee, respectively. The Typhoon Committee discussed in detail the activities carried out by its members in 2006, including important achievements, major issues and future directions by each member related to the Meteorological, Hydrological, and Disaster Prevention and Preparedness components. It also reviewed the activities undertaken on Training and Research.

The Committee also discussed the information provided by the members and the findings of the parallel sessions of the Working Group on Meteorology (WGM), Working Group on Hydrology (WGH) and Working Group on Disaster Prevention and Preparedness (WGDPP).



*Aspects of the 39th TC Session*



*Participants at 39th TC Session*

The Committee decided to change the name of “Typhoon Research Coordination Group” to “Training and Research Coordination Group” (with the same acronym TRCG) and to update the TRCG Terms of Reference.

The Committee also re-established the Working Group on Resource Mobilization with the new designation of Resources Mobilization Group (RMG) and adopted the Typhoon Committee Strategic Plan, which replaces the Regional Cooperation Programme Implementation Plan (RCPIP). Various features were discussed, especially the Key Results Areas (KRAs), the Strategic Goals and the Associated Activities.

## Main Activities of TC members

### Meteorological Component

In what refers the meteorological component, the Committee analyzed the main activities of TC Members. The Committee was informed that during the typhoon season in 2006, China Meteorological Administration (CMA) switched the FengYun (FY) Polar Orbiting Meteorological Satellite FY-2C intensive observation mode to every half an hour. CMA also has developed a microwave Tropical Cyclones analysis system in 2006.

China has successfully launched the stationary meteorological satellite FY-2D on 8 December 2006. JMA, through the Regional Specialized Meteorological Centre (RSMC) of Tokyo continued the provision of tropical cyclone advisories and warnings as well as maintenance of the Numerical Typhoon Predic-

tion Website. Information on Multi-Functional Transport Satellite (MT-SAT) series is available on JMA’s website and Japan, through JMA, started providing satellite imagery of all the channels for registered users through the Internet in 2007. The number of visits to the Severe Weather Information Centre (SWIC) web-

site operated by the Hong Kong Observatory on behalf of WMO amounted to 13 million in the previous 12 months, representing a 50% growth compared with the year before.

Republic of Korea held a Training Course on Information and Communication Technologies for Meteorological Services, which was conducted by the KMA and sponsored by the Korea International Cooperation Agency (KOICA), in April 2006.

The representative of United States of America informed that in 2006 two students from members (Philippines and Viet Nam) had training in the WMO Regional Association V Pacific Desk Internship Programme, together with other students from four countries in the Pacific.

### Hydrological Component

Regarding the hydrological component the Committee noted the importance of activities in some members, such as the ones related to the cooperation between China and international hydrology organizations, bordering countries and members of TC. China has been exchanging and sharing the hydrologic data with other countries and organizations including Russia, Democratic People’s Republic of Korea, Viet Nam, India, Kazakhstan and Mekong River Commission, in 2006.

The Committee also noted that Viet Nam continued its cooperation through its existing agreements with China and the Mekong River Commission for exchanging the hydrological data with the neighbouring countries.



The Committee also expressed its deep appreciation to the Governments of China, Japan, Malaysia, Philippines and Republic of Korea for the active support in the implementation of the nine ongoing projects in 2006 and the financial contribution of the Ministry of Land, Infrastructure and Transport (MLIT) of Japan and the Ministry of Construction and Transportation of Republic of Korea for the implementation of nine projects by WGH.

The Committee also expressed its deep appreciation to MLIT for the intention to extend two projects (Project on Flood Hazard Mapping and Project on Flash Flood Warning including Debris Flow and Landslides) till 2009 and also to the Government of China and Malaysia for the plan to provide in-kind contribution to enable training of experts from other TC members in their countries.

The Committee also endorsed the proposal of WGH to undertake the following two new projects and encouraged members to support in their implementation: Project on Socio-economic Impact Assessment of Typhoon-related Disasters (to be launched and led by the Philippines) and Project on the Management of Floods in Urban Areas (to be launched and led by China).

## Disaster Prevention and Preparedness

Referring to the component on disaster prevention and preparedness, the Committee gave special attention to the priority activities in 2006, especially with respect to the plan to set up a database for the Committee and the preparation of the Committee's first Strategic Plan, 2007-2011.

The Committee noted with interest that the Hong Kong Observatory conducted several courses on weather and geophysics for the public and the year-long public education campaign "Safer Living - Reducing Natural Disasters".

The Committee endorsed the proposal for the "database setup" to be selected as the first DPP project, with the final objective to establish disaster-related database and data sharing system among the members and in the region.

The Committee was informed that the first DPP meeting was held in Seoul, Republic of Korea from May 25 to 26, 2006. Sixteen experts from 10 members and 4 delegates from international and regional organizations (WMO; UNESCAP; UN/ISDR and ADRC) discussed about the database project and future activities of DPP.

The Committee named the database as Typhoon

Committee Disaster Information System (TCDIS) and reviewed respective draft formats.

The Committee noted with appreciation the enhanced coordination and interaction among all the Working Groups during the past year especially in the Macao Workshop.

## Research and Training

A roving seminar, in which more than 70 participants took part, was held in Hanoi, Viet Nam, from 4 to 7 September 2006, on tropical cyclone intensification, movement, and associated heavy rainfall and/or other



*Participants at 39th TC Session*

local impacts.

Two research fellowships were awarded in 2006 by the Hong Kong Observatory (to Shanghai Typhoon Institute, China) and by the Korea Meteorological Administration (to Viet Nam Hydrometeorological Service).

The Committee noted the proposal for the roving seminar in 2007, with focus on topics as proposed in the Hanoi roving seminar. It was also noted that the research fellowship scheme would continue in the current format.

The Committee was informed by the representative of the USA on potential training opportunities in connection with the International Pacific Desk Training Internship, and possibilities for future training initiatives for Typhoon Committee members in this program.

The Committee encouraged TRCG to initiate surveys to measure performance or effectiveness of workshops or seminars supported by the Committee.



## Publications

The Committee took note that the TCS published the 18<sup>th</sup> issue of the Typhoon Committee Newsletter in October 2006 and the 2005 Typhoon Committee Annual Review (TCAR) in October 2006, which were disseminated to the members, ESCAP and WMO in electronic (CD-ROM) format. The Committee appointed the Typhoon Committee Secretary as the Chief Editor.

## Activities of the Typhoon Committee Secretariat (TCS)

The Committee expressed its gratitude to the Government of the Philippines for hosting the TCS and also its gratefulness for the dedication and continuous services extended by Dr. Roman L. Kintanar in his capacity as the Interim Secretary of the Committee for the intersession between the 38<sup>th</sup> and 39<sup>th</sup> sessions.

The representative of Macao, China made a presentation on the new premises of the TCS in Macao. He also explained the different steps to reach an agreement between the host country, People's Republic of China and the Typhoon Committee.

The signing ceremony of the "Host Country Agreement Between the Government of People's Republic of China and the Typhoon Committee Regarding the Typhoon Committee Secretariat" took place in the Manila Hotel, Manila, on December 7, 2006. The Agreement was signed by the Ambassador of People's Republic of China to the Philippines, Mr. Li Jinjun, and by the Chairman of the Typhoon Committee Dr Prisco D. Nilo, Officer-in-Charge of Philippine Atmospheric, Geophysical and Astronomical Services Administration.

The representative of Macao, China nominated Mr. Olavo Rasquinho, former director of the Meteorological and Geophysical Bureau of Macao, China, for Secretary of the Typhoon Committee. Mr Olavo Rasquinho was confirmed by the Committee as Secretary of the TC for four years, from 2007 up to 2010.

The Committee noted with appreciation the proposal of Macao, China to name the Library of the new premises of the TCS as "Roman L. Kintanar Library" in recognition of the long and devoted services rendered by Dr Roman L. Kintanar to the Committee during the past 39 years.

A hand-over ceremony for the transfer of the TCS from the Philippines to Macao, China was held on December 9, 2006, at the Manila Hotel. Mr. Olavo Rasquinho received the archives on behalf of the new TCS from the outgoing Interim Secretary, Dr Roman L. Kintanar.

At the request of the Committee, the Hong Kong Observatory agreed to host the documents for the 40<sup>th</sup> Session.

## Activities of ESCAP and WMO in support of TC

In 2006, ESCAP and WMO continued to extend its technical support to the Committee's activities in several areas of its work, apart from its regular activities related to water resources management.

The Committee was pleased to note the increase of interest of the members in the application of the findings of the project of ESCAP on assessment of socio-economic impacts of flood-related disasters, especially on the application of the ESCAP Disaster Impact Calculator for routine assessment. It encouraged ESCAP to further support TC members in this respect.



**UNITED NATIONS**  
 Economic and Social  
 Commission for Asia and  
 the Pacific



**World Meteorological**  
**Organization**



# ESCAP/WMO Typhoon Committee Natural Disaster Prevention Award

## Dr. Roman L. Kintanar wins top TC Prize 2006



*Dr. Kintanar receives and thanks the Natural Disaster Prevention Award*

**D**r. Roman L. Kintanar was honored with the Typhoon Committee Natural Disaster Prevention Award for 2006 in simple ceremonies held at the Bulwagang Amoranto, City Hall, Quezon City on December 6, 2006. Witnessed by the delegates to the 39th session of the Typhoon Committee, which was being held in Manila, the TC Prize, given annually by the Typhoon Committee Foundation, Inc., was conferred to Dr. Kintanar in recognition of his valuable service as coordinator of the Committee.

Dr. Kintanar, a former director of the Philippine national weather service for 36 years and former president of the World Meteorological Organization from 1979 to 1987, was also cited for his drafting of a resolution which led to the establishment of the Tropical Cyclone Program of WMO in 1970.

Acknowledged as the godfather of the Typhoon Committee, Kintanar was the recipient of the 40th International Meteorological Organization (IMO) Prize in 1995, the WMO's highest distinction given annually to an individual who has made outstanding

work in meteorology and related fields.

In 2007, the International Astronomical Union (IAU) christened Minor Planet No. 6636, a 4-9-km-in-diameter asteroid circling the Sun between the orbits of Mars and Jupiter, in honor of Dr. Kintanar. The Astronomical League of the Philippines proposed the asteroid's name to the IAU in recognition of Kintanar's long service and innumerable contributions to the advancement and modernization of weather forecasting in the Philippines, as well as for inspiring future astronomers.

Dr. Kintanar, a physicist who received his doctorate from the University of Texas in 1958, passed away on May 6, 2007. He was 77 years old. In a message delivered at the World Meteorological Day in Melbourne, Australia, on March 21, 2000, Kintanar said, "We are in an adventure in international cooperation and oneness that has been growing steadily in importance in the last fifty years. We all hope that this growth will continue into this century and new millennium."



# ° The New Premises of Typhoon Committee Secretariat

The Typhoon Committee Secretariat headquarters have been based in Manila, Philippines, since 1971 and its professional staff was supported by United Nations Development Programme (UNDP) up to 1979. From this year up to 2006 the Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) provided the needed administrative and part of the professional personnel to TCS. Also Japan and Republic of Korea have seconded temporarily experts to work at TCS, while in Manila.

Further to a decision of TC, taken in the 38<sup>th</sup> TC Session held in Hanoi, in 2005, Macao Special Region of People's Republic of China became the host Member of TCS. Thanks to the support of PAGASA, especially to the former staff of TCS, the transfer to Macao has been processed in a very smooth way.

Further to the signature of the "Host Country Agreement between the Government of People's Republic of China and the Typhoon Committee Regarding the Typhoon Committee Secretariat", the TCS has its own premises completely



*Representatives of Government of PR of China, Macao SAR, ESCAP, WMO and TC at the inauguration of TCS premises*

independent from any Meteorological or Hydrological Service and the TC officials are eligible to usufruct the privileges and immunities expressed in the *Convention on the Privileges and Immunities of the Specialized Agencies*, approved on 21 November 1947 by the General Assembly of the United Nations.

The Macao Meteorological and Geophysical Bureau and the Typhoon Committee Secretariat

organized a series of events to celebrate the inauguration of the new premises on February, 13 and 14, 2007. The Macao Foundation co-sponsored these ceremonies through financial support to invite lecturers and to support some other activities.

Among these events deserves especial mention the signature of the "Agreement between the Government of the Macao Special Administrative Region of the People's Republic of China and the Typhoon Committee Regarding Administrative, Financial and Related Arrangements for the Typhoon Committee Secretariat". The signature ceremony was held in the Government Headquarters, on February 13, and was presided by the Chief Executive, Dr. Edmund Ho, Ho Haw Wah, and the Agreement was signed by the Secretary for Administration and Justice, Dr. Florinda da Rosa Silva Chan, and Dr. Prisco D. Nilo,

*Representatives of ESCAP, WMO, P.R.of China, Government of Macao S.A.R. and delegates of Members at the Signing Ceremony*





Typhoon Committee Chairman. This Agreement is a complementary document to the “Host Country Agreement” between the Government of People’s Republic of China and the Typhoon Committee.

The ceremony of inauguration of the TCS premises was attended by representatives of the Governments of People’s Republic of China and Macao SAR. Representatives of some TC Members, UNESCAP, WMO, ADRC and high officials of Macao administration also attended the inauguration. Dr. Kintanar, our honourable guest, unveiled a plaque in the library of TCS premises with the following content:

*TCS’s inauguration, signing ceremony was a huge event in the local community and was express in all newspaper in Chinese, Portuguese and English Languages from Macao and abroad.*



## Library Dr. Roman L. Kintanar

*“The Shapers of New Asia are the people who over the last fifty years or so have been doing their share to improve life in this part of the globe. They include YOU and ME. We are the Shapers of New Asia.”*

International Positions:  
President of WMO ( 1979-1987)  
Permanent Representative of the Philippines to WMO (1959-1995)  
President of RA V (1974-1978)  
Coordinator of TCS (1980-2006)



Lion Dance



Inauguration of “ Roman Kintanar Library” was one of the higher parts of TCS inauguration.







*The new premises in Coloane*

The new TCS premises are located in the Coloane's fishing village, in Coloane Island that, together with the Macao peninsula and the Taipa Island, constitute the 28 square kilometres of Macao SAR territory. The building is a classified edifice and was especially adapted for the functions to be performed by TCS. It is sited in an historical place, close to the St. Francis Xavier Church and to the "Combating Pirates Monument", and near the 200-year-old Kun Iam Temple.



*On behalf the Chief Executive of Macao, Ms. Florinda Chan, Secretary of Administration and Justice, unveils the plaque of TCS*

## ● | The New Typhoon Committee Secretariat Staff

### ● Olavo Rasquinho, Secretary

The Secretary (Licenciate Degree on Physics and Chemistry, Faculty of Sciences, University of Lisbon and post graduation Course on Meteorology) is a senior meteorologist with large experience in weather forecasting.

As meteorological expert in aeronautical meteorology and training he accomplished several short missions in Mozambique (ICAO, WMO, FAO and European Union), Guinea-Bissau (World Bank) and Dominican Republic (WMO).

He performed functions as head of the Analysis and Forecast Centre of Institute of Meteorology of Portugal (IMP) and of the International Affairs

Division.

He also performed functions as WMO training expert, with the professional grade P-4 (first officer) in the Regional Meteorological Training Centre, Mulemba, in Angola (1982-1985). As Aggregate Professor of Escola Náutica Infante D. Henrique (Nautical College) he gave courses on Nautical Meteorology, with special emphasis on tropical cyclones, in Paço d'Arcos (Portugal).

Some other functions when in IMP: Chairman of the Steering Group of the EUMETSAT LAND SAF (European Organization for the Exploitation of Meteorological Satellites - Satellite Applications Facility); representative of Portugal with the Technical Committee of the Meteorology Domain of

the European Cooperation in the field of Scientific and Technological Research (COST) and in other programmes and organizations, namely Voluntary Co-operation Programme of WMO, European Meteorological Network (EUMETNET), International Advisers of International Conference of Western Europe Directors of Meteorological Services – INTAD).

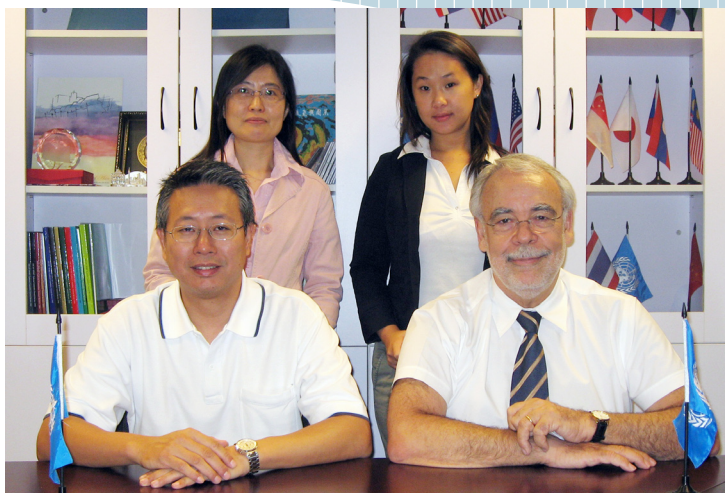
He was Deputy-director (1995-1996) and Director of the Macao Meteorological and Geophysical Bureau (1997-1998) and Permanent Representative of Macao with WMO.

## Derek Leong, Meteorologist

Mr. Leong Kai Hong, Derek graduated with a degree of Bachelor of Science from University of Saskatchewan, Canada in 1988. After completing one year's training program of Portuguese language and public administration, he joined the civil services in the MSAR Government. Then he obtained the qualification of operational forecaster after finishing the training course in Hong Kong Observatory. He has been working in Macao Meteorological and Geophysical Bureau as meteorologist since 1990. From 1995 to 2005, he was the Chief of Airport Meteorological Office in Macao International Airport. From 2007, he works as the seconded meteorologist in Typhoon Committee Secretariat.

## Denise Lau Administrative Senior Secretary

Born in Mozambique, a former african Portuguese colony, Denise moved with her parents to São Paulo, Brazil when she was only 3 years old. In Brazil, she started to work, on part time basis, in the clothes store where she started to design some graphic patterns for the fabrics and became the store manager. After finished high school in São Paulo, her mother decided to return to her homeland, Macau. In Macau, she finished the Bachelor degree in Graphic Communication and she moved all by herself to Lisbon, Portugal. There, she worked in the Institute of Meteorology of Portugal as a webdesigner and computer helpdesk in the IT Department, where she handled the computer process of forecasts coming from ECMWF (European Centre for Medium-Range Weather Forecast), radar system, satellite system and projects related to the LandSAF in Portugal. In Institute of Meteorology she met, again, Olavo Rasquinho, the former Director of the Macao Meteorological and Geophysical Bureau and Head of the International Affairs Division. She has also worked, as a part timer,



*The New TCS staff: from left (upper) Lisa and Denise; (lower) Derek and Olavo.*

in many advertising agencies, organizing events and IT firms in Portugal. Back to Macau since 2005, Olavo Rasquinho invited her to join TCS as a secretary due to her background experience in the administrative, informatics, organizing events and design.

## Lisa Kou Administrative Senior Financial Clerk

Lisa, who was born in Macao, has been employed as a Senior Finance Clerk at the Typhoon Committee Secretariat. She obtained a Certificate of Higher Level of London Chamber of Commerce and Industry in Accounting and a Diploma in Business Administration in Macau Institute of Management. She worked in Accounts Department in the Bank of America for over ten years. During that time, she was promoted from a Supervisor to an Assistant Manager.

## Jinping Liu, Hydrologist

Dr. Jinping LIU has got the PhD degree on Water Resources & Environment Engineering, at Hohai University, Nanjing. Currently he is Deputy Chief Engineer of Bureau of Hydrology under the Ministry of Water Resources of China, taking charge



of scientific and technical issues of hydrology and water resources including data observation, watershed modeling, operational hydrological forecasting, water resources management, water environment assessment, hydrology development planning and international cooperation affairs. As a senior hydrologist, he has extensive experience in promoting cooperation in the field of hydrology among the Typhoon Committee Members over 10 years as a member of the Working Group on Hydrology and later as one of the Vice Chairmen.



## ◉ Signing Ceremony between TC and Government of Special Administrative Region of Macao



*Signing Ceremony in Macao's Government Headquarters*

The signing ceremony of the “Agreement between the Government of the Macao Special Administrative Region of the People’s Republic of China and the Typhoon Committee Regarding

Administrative, Financial and Related Arrangements for the Typhoon Committee Secretariat” was presided by His Excellency the Chief Executive, Dr. Edmund Ho Haw Wah. The Agreement was signed by Her Excellency the Secretary for Administration and Justice, Dr. Florinda da Rosa Silva Chan, and Dr. Prisco D. Nilo, Typhoon Committee Chairman, in the Government Headquarters on

February 13.

The above mentioned agreement is a complementary document to the “Host Country Agreement between the Government of People’s Republic of China and the Typhoon Committee Regarding the Typhoon Committee Secretariat”, which was signed on the 7th December 2006, in Manila, by Excellency Ambassador of People’s Republic of China to the Philippines, Li Jinjun, and by the Chairman of the Typhoon Committee Dr Prisco D. Nilo, Officer-in-Charge of Philippine Atmospheric, Geophysical and Astronomical Administration.

The “High-Level Workshop on the TC Strategic Plan Implementation” was held on 13th February in the Headquarters of Macao Meteorological and Geophysical Bureau. This work-

## High Level Workshop on the TC Strategic Plan Implementation ◉

shop was intended to enhance the cooperation among the TC Members for a more effective implementation of the TC Stra-

tegic Plan, which had been adopted in December 2006 at the 39th TC Session in Manila. For more detailed information about this workshop, see TC Members News.

## ◉ The Integrated Workshop in Bangkok, Thailand

The ESCAP/WMO Typhoon Committee at its 39th Session, held in Manila from 4 to 9 December 2006, decided to hold an Integrated Workshop on Social-economic Impacts of Extreme Typhoon-related Events in 2007 to enable its Working Groups to discuss achievements in the implementation of the decisions made by the Committee at its 39th Session and to identify future directions in the coming years for consideration by the Committee at its 40th Session.

The Typhoon Committee also called on its Members in cooperation with the Typhoon

Committee Secretariat (TCS), the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) and the World Meteorological Organization (WMO) to assist in the organization of the Workshop. In response to this request, the Thai Meteorological Department (TMD), UNESCAP and TCS in cooperation with WMO, the Ministry of Construction and Transportation of Republic of Korea (MOCT) together with the Korea Institute of Construction Technology (KICT) and the Korea Water Resources Corporation (K-Water); and the Ministry of Land, Infrastructure and Transport of Japan (MLIT) together with the Infrastructure Development Institute – Japan (IDI) and the National Institute for Land and Infrastructure Management



Group photo with all participants member

(NILIM) organized an Integrated Workshop on Social-economic Impacts of Extreme Typhoon-related Events. The Workshop was held at the United Nations Conference Centre, Bangkok, Thailand from 10 to 14 September 2007. The Workshop was aimed to achieve the following objectives:

- To exchange information on priorities and key areas related to assessment and mitigation of social-economic impacts of extreme typhoon-related disasters as part of the implementation of the Strategic Plan of the Typhoon Committee.
- To review progress in the implementation of the programme

of work of all the Working Groups endorsed by the Committee at the 39th Session, especially Working Group on Meteorology (WGM), Working Group on Hydrology (WGH), Working Group on Disaster Prevention and Preparedness (WGDPP), Training and Research Coordination Group (TRCG), Resource Mobilization Group (TCRMG) and Advisory Working Group (AWG).

- To consolidate achievements of priority projects of all the Working Groups, especially those opera-

tional projects of WGH, namely:

- (i) The Development of Flood Hazard Maps,
- (ii) The Establishment of Flash Flood and Sediment Disaster Forecasting and Warning Systems,
- (iii) Evaluation and Improvement of Operational Flood

Forecasting System Focusing on Model Performance, and (iv) Development of Guidelines for Reservoir Operation in Relation to Flood Forecasting;

- To identify priority needs of the TC Members in promoting an integrated multi-hazard early warning system for the Typhoon Committee Area so as to formulate a common strategy for the establishment of a better operational plan for the Committee as a basis to guide the annual budgeting process.

Guest and Lectures at the Roving Seminar



## 7th TC Roving Seminar held in Manila

The Seventh Roving Seminar of the Typhoon Committee was held at the Diamond Room of Tiara Hotel in Makati City, Philippines, from 5 to 8 September 2007. The TC Roving Seminar 2007 was attended by a total of 43

participants, which included 2 from China; 2 from Hong Kong; 2 from Malaysia; 3 from Viet Nam; 1 each from Singapore, Republic of Korea and Thailand; 27 from Philippines; as well 3 lectures from USA and Japan. For more detailed news, see TC Members News from Philippines.



## ° OFFSIA training in Beijing, China

With the aim to accelerate the progress of the project on Extension of flood forecasting systems to selected river basins, and share the Chinese good practice of developing and application of flood forecasting system, China proposed to organize an international training course on flood forecasting system

in 2007, in cooperation with the Typhoon Committee Secretariat (TCS) the course on Operational Flood Forecasting System and Its Application (OFFSIA). For more detailed information about the course, see TC Members from China.

### TCchanges

## ° Dr. Zheng Guoguang is the new China Meteorological Administration



Dr. Zheng Guoguang was appointed the Administrator of China Meteorological Administration. Dr. Zheng got his PhD. in the Department of Physics, University of Toronto, Canada and over the past 12 years, his professional experience in the China Meteorological Administration covers a wide range of scientific and administrative activities. He has been engaged in WMO activities for many years and undertaken or been undertaking a few international assignments.



## Sasaki appointed as NTC-JMA Head °



Kiichi Sasaki, 51, was appointed as the new head of the National Typhoon Center of the Japan Meteorological Agency (JMA), succeeding Nobutaka Mannoji on 1 April 2007. Sasaki graduated from the Meteorological College (a JMA training institute) in 1978, and started his career as a technical staff member at the Akita Local Meteorological Observatory.

From 1996 to 1999, Sasaki was in charge of technical cooperation at JMA's International Affairs Office. He served as a coordinator for the Group Training Course in Meteorology offered by the Japan International Cooperation Agency (JICA) for four years before transferring to the National Typhoon Center and working as a forecaster for the RSMC Tokyo-Typhoon Center from 2000 to 2002. In his role as Deputy Director of the Aeronautical Meteorology Division from 2002 to 2005, Sasaki worked toward the improvement of aviation weather services including the recent restructuring of JMA's aviation weather forecasting system. In 2006 as Deputy Director of the Administration Division of the Observations Department, Sasaki worked toward renewing JMA's weather radars by replacement with Doppler radars.

## ◉ Rellin appointed as acting director of PAGASA



Engr. Martin F. Rellin, Jr. was appointed as acting director of the Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA), effective last February 2007.

Rellin, who was the deputy-director for Administration and Field Services of PAGASA prior to his appointment, served as meteorologist of the Typhoon Committee Secretariat (TCS) from



Eng. Martin Rellin

May 2003 to December 2006 when the Philippines turned over its hosting to the Macau government.

Rellin graduated with a degree of Bachelor of Science major in Mechanical Engineering from the University of Mindanao in 1984. He received his diploma on Meteorology Engineering Course (MEC) with merits from on Meteorological Office College in England in 1991, and also finished his Master of Science in Management Engineering at the University of Santo Tomas in 2001, *Magna Cum Laude*.

## Mr. Pheng Piengpanya new director of DMH Laos



Mr. Pheng PIENGPANYA Completed secondary school since 1969.

From 1970 to 1976 graduated from Hydrometeorological Institute of Odessa ( Russia ) as Diploma on Agrometeorological.

From 1980 to 1992 was deputy Head of technical Division.

From 1992 to 1996 was Head of Agrometeorological Division.

In 1998 , he become deputy director general of Department of Meteorology and Hydrology ( DMH ).

On 27 April 2007, Mr.

Pheng PIENGPANYA become Director general of DMH as ( Representative of Lao PDR with WMO).



Mr. Pheng Piengpanya



## News from TC Members



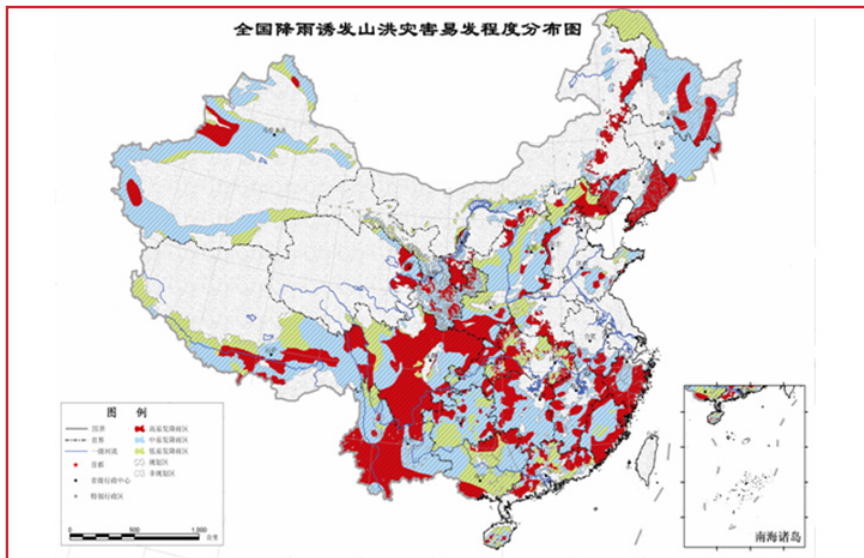
China

### ◉ China achieves the National Mountain Disaster Monitoring and Prevention Planning

The mountain disasters including landslide, mudflow and Flash Flood are the severest natural disaster in China that causes huge property damage and life losses every year. The proportion of the life losses caused by mountain disasters to the total death caused by flood disaster is appearing a tendency of increasing up to 77% in 2007. The governments at

all levels pay more closer attention to the monitoring and prevention of mountain disasters. The center government approved a National Mountain Disaster Monitoring and Prevention Planning proposed by the Ministry of Water Resources (MWR) in conjunction with Chian Meteorology Adimistration (CMA) and other concerned Ministries.

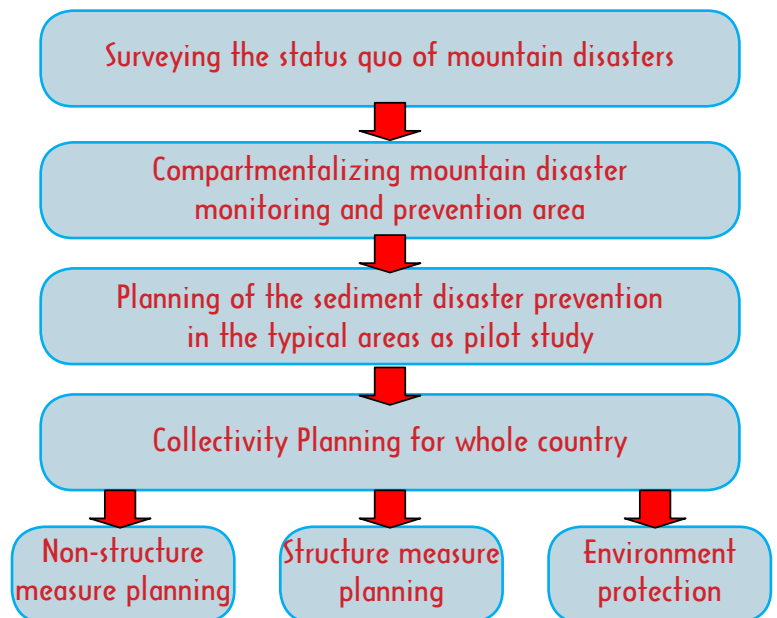




## Rainstorm Triggered Mountain Disaster Prone Area Map

The Planning covers 29 provinces and focuses on the small-scale river basins whose area is less than 200 square meters. Mountain disaster monitoring and prevention will content three parts ie non-structure measure, structure measure and environment protection. Total investment is estimated about 25 billion US dollar.

The priority measure in the Planning is non-structure measure including disaster prevention propaganda, risk monitoring, communication and prediction and warning system, emergency countermeasure, relocating dwellers in risk area and policy and law. The Planning considers people's safety at most priority and emphasizes harmonious and sustainable development.



## ◉ Flood hazard mapping progressing in China

A flood hazard map is a kind of map which can reflect the flood hazard degree and spatial distribution in a certain area. It integrates comprehensive information about historical flood, flood risk and flood disaster reduction strategy. Flood hazard maps can be used to floodplain management, flood insurance, evacuation, flood and drainage planning, flood emergency response and flood risk education and so on. Thus, flood hazard map is not only very important for decision makers but also very practical for local communities.

There are two phases for flood hazard mapping in China. The phase

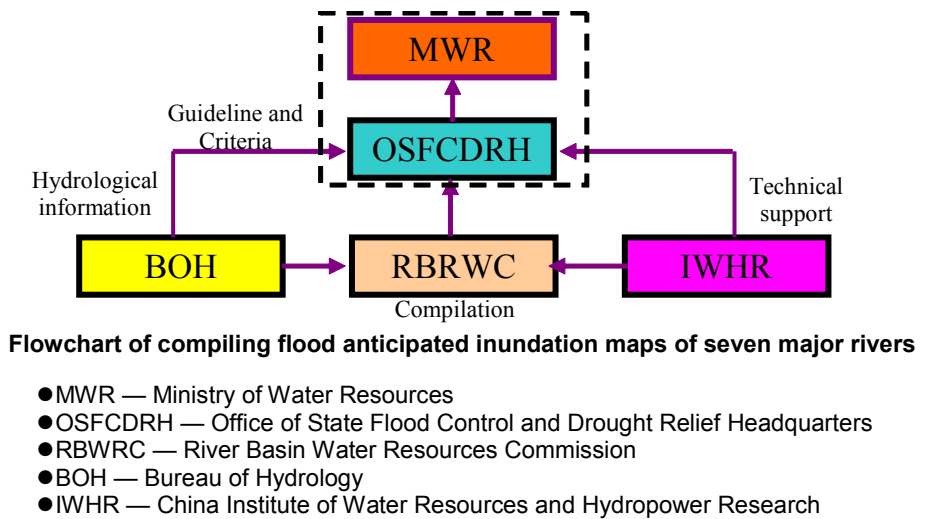
one was initiated from 1996 with the issuing of 'General outline for flood hazard mapping'. The Office of State

Flood Control and Drought Relief Headquarters (OSFCDRH.) launched the project at the beginning of 1997 and put forward 3 steps strategy to organize flood hazard mapping in the whole country. Beijiang dyke including Guangzhou urban area and Jingjiang flood detention area in Guangdong province were selected as experimental units.

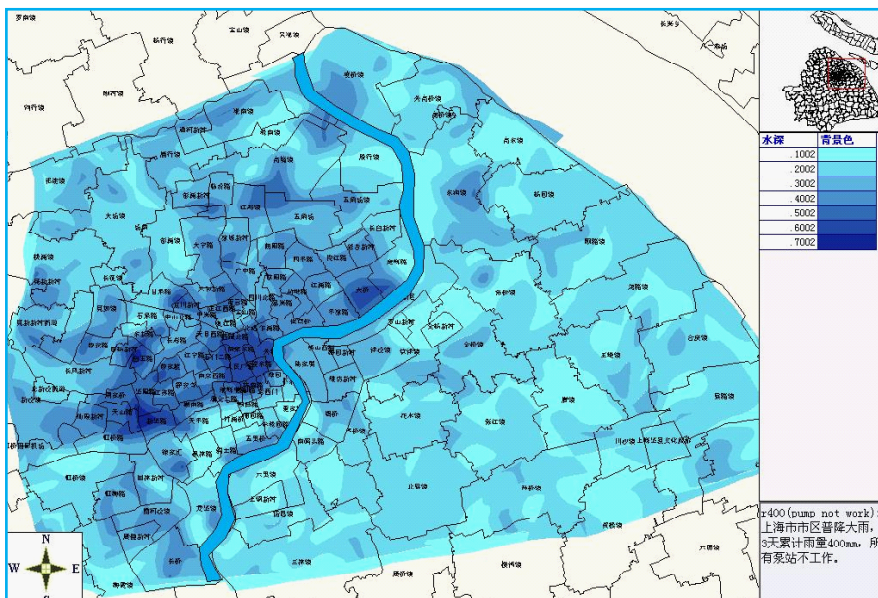
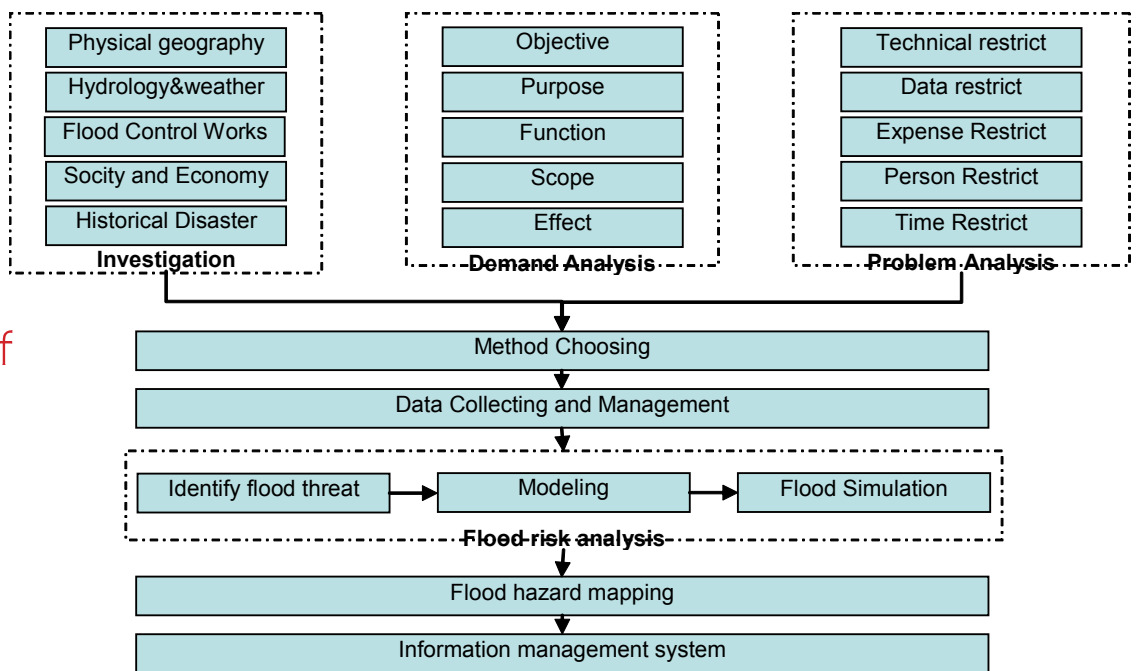
The phase two was initiated in 2003 by OSFCDRH based on the experience of phase one. The Proposal of National Flood Hazard Mapping was approved in 2006. Pilot studies were carried out in 36 experimental units in 7 big river basins and almost finished at present. Most pilot studies were investigated

at the end of 2006 and some problems were found such as lack of data, lack of analysis software and so on.

Therefore, the key technology researches on flood hazard mapping will begin in 2007 which contain standard flood analysis software development, flood hazard maps management platform and criteria for flood hazard mapping is still on going. Country-wide flood hazard mapping will be carried out very soon in China.



## Procedures of flood hazard mapping



Flood Hazard Map in Shanghai city



## Region-Focused Training Course on Operational Flood Forecasting System and its Application (OFFSIA), Beijing, China, 15-21 October 2007



With the aim to accelerate the progress of the China-led project on Extension of flood forecasting systems to selected river basins, and share the Chinese good practice of developing and application of flood forecasting system, at the thirty-ninth session of the Typhoon Committee held in Manila, Philippines, from 4 to 9 December 2006, the Delegate from China has informed the Committee that it would organize the training on “Operational Flood Forecasting System and its Application (OFFSIA)” inviting trainees from selected TC members. TC decided to allocate US\$5,000 to support international travel for trainees from selected TC members to participate in the training. China side mobilized about US\$25,000 to support the training course including accommodation, facilities and human resources.

At the kind invitation of Bureau of Hydrology, Ministry of Water Resources (MWR-BOH), China, in cooperation with the TCS, the training on OFFSIA will be held in Beijing, China from 15 to 21 October 2007. The objective of this training course is to enable the trainees to learn the technology, knowledge and experience, especially the good practice of developing the application of flood forecasting system. Subsequently the trainees can share the knowledge acquired in the training course among the officials and engineers who engage

*Group and training photo of OFFSIA participants*

in the flood forecasting and disaster management in their own countries. To achieve the above mentioned objective, trainees are expected to produce the following outputs by the end of this course:

(1) Understanding the concept and effectiveness of flood forecasting system in disaster mitigation and integrated flood management;

(2) Acquiring the general knowledge of flood forecasting components, and flood forecasting systems in the world/ in Europe/ in Asia/ in China

(3) Acquiring the professional knowledge of GIS, DEM, configuration of real-time rainfall and hydrological data base, flood forecasting methods or mathematical models, which are necessary to develop an operational flood forecasting system

(4) Acquiring the techniques to develop a flood forecasting scheme for the participant's own case study, following a Chinese example of Demonstration of developing a flood forecasting system

(5) Understanding the ways of developing and applying flood forecasting systems for their own countries/regions, and making the action plan (draft) along which they can improve flood forecasting after they go back to their country.

This training course will accommodate 15~20 trainees, among which 10 foreign participants are invited from 7 TC members, namely DPR of Korea, Laos, Malaysia, Philippines, Singapore, Thailand and Vietnam, who are currently engaged in flood forecasting or disaster management issues in the public sector.

The training on OFFSIA will consist of 1-2 days of lectures, 3 days of exercise and presentations. In addition, the trainees are to have a technical visit to MWR-BOH and national computer network center of the ministry. 8 professors or senior engineers from national institution and universities are to give lectures and practical instruction.

As the first such training course held in China, the MWR-BOH is aimed to provide high level training in flood forecasting system and application by making use of its good practice of developing and application of national flood forecasting system.

To express the support to the training course, TC decided at its The Integrated Workshop on Social-economic Impacts of Extreme Typhoon-related Events held in Bangkok, September 2007 to send the Secretary of the Typhoon Committee Mr. Olavo Rasquinho to present at the training course.

## ● Typhoon Committee launched the project on flood-related disaster risk management in urban areas

Economic growth and urbanization are inextricably linked. Economic growth often implies the conversion of rural land to urban uses, massive inflows of capital transformed and more people concentrated in urban areas. An important effect of urbanization is to increase the sensitivity of urban watersheds to the distribution of short-duration rainfall rates and flood. That creates high sensitivity of urban watersheds to rainfall which causes flash flood phenomena and high fragility to flood disaster which causes much larger potential flood-related damage especially in the Asia and the Pacific region influenced by typhoon.

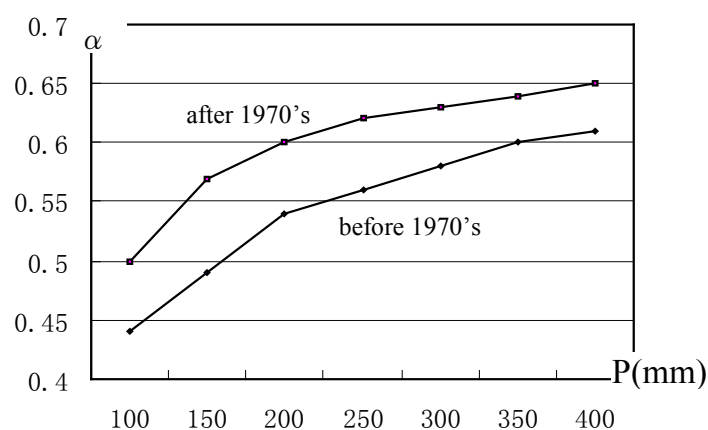


Fig. 1 The change of runoff coefficient in Beijing urban area

A successful 'urban flood mitigation and management' require proper understanding of the problem, long-term planning, availability of resources for taking immediate action during flood events and coordination between different public and private agencies. To promote capability of urban flood mitigation and management ESCAP/WMO Typhoon Committee (TC) approved its Working Group on Hydrology (WGH) to initiate the project on flood-related disaster risk management in urban areas on its thirty-ninth session held in Manila, Philippines, December 2006.

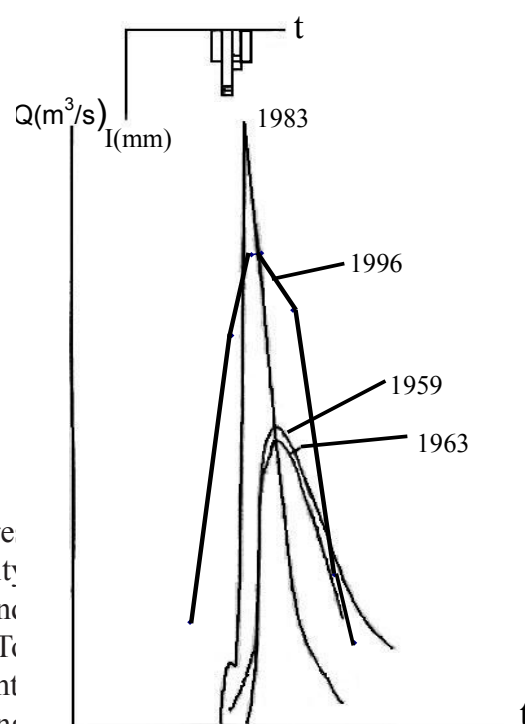


Fig. 2 Comparing hydrographs at Yuejiahuayuan station in Beijing



Fig. 3 Severe flood disaster caused by heavy rainfall in Jinan, capital city of Shandong province, China on July 18, 2007, which caused 37 peoples died and 171 injured.

This new project was proposed by China. The purposes to launched this project are to exchange the experiences on management and mitigation of floods and typhoon-related disaster in urban area between TC Members; to share the technology of urban flood monitoring and methodology of urban flood

forecasting and prediction, early warning and disaster assessment between TC Members and to promote management of urban flood and other typhoon-related disasters in TC area.

The expected achievement of the project is to prepare "Guidelines on flood mitigation and management



for urban planning and development in the Typhoon Area".

The Integrated Workshop on Social-economic Impacts of Extreme Typhoon-related Events held in Bangkok, September 2007 recognized that to carry out cooperation and research on urban flood disaster

management is very important and necessary to TC members. Since the urban flood management relates to meteorology, hydrology and disaster prevention and preparedness and other aspects, this will be the first one to integrate WGM, WGH and WGDPP and other TC working groups into one project.



## • New findings about Typhoon activity in the South China Sea

A recent study by the Hong Kong Observatory revealed a decline in the annual number of typhoons over the South China Sea since the mid-1990s. In the western North Pacific, typhoon activity has gone through relatively “active” and “quiet” periods indicating modulations by inter-decadal oscillations.

The period since the mid-1990s appeared to be a “quiet” period. Since a large proportion of typhoons in the South China Sea originate from the western North Pacific, this could have a direct bearing on the trend in the South China Sea. The study also found a change in typhoon tracks. More typhoons moved towards the vicinity of East China and Japan than into the South China Sea in recent years, which contributed to the recent decline of typhoon activity in the South China Sea. Preliminary analysis reveals that the change in typhoon tracks might have been due to a shift in the mid-tropospheric flow pattern which was well correlated to a faster rate of increase in sea surface temperature over the South China Sea than that part of the western North Pacific to the east of the Philippines.

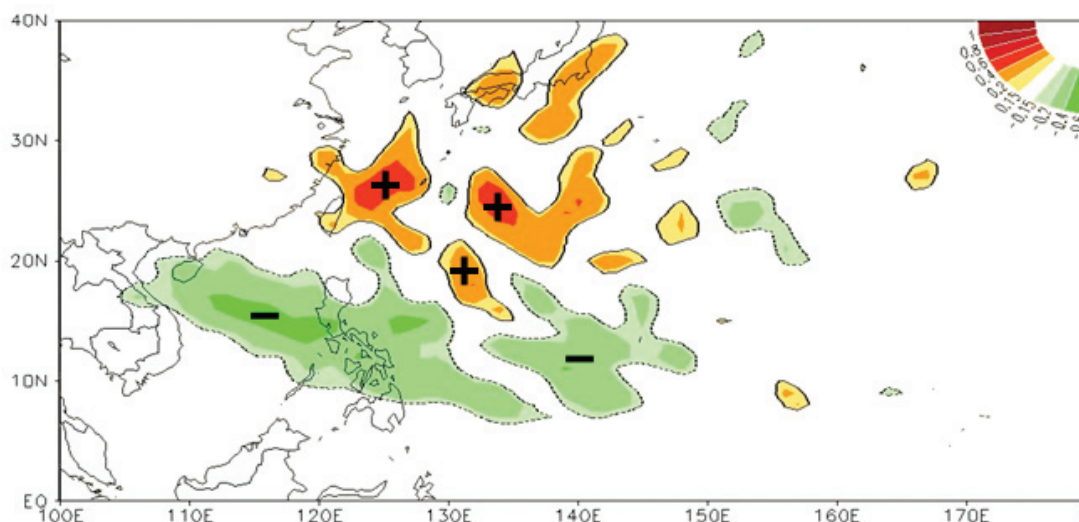
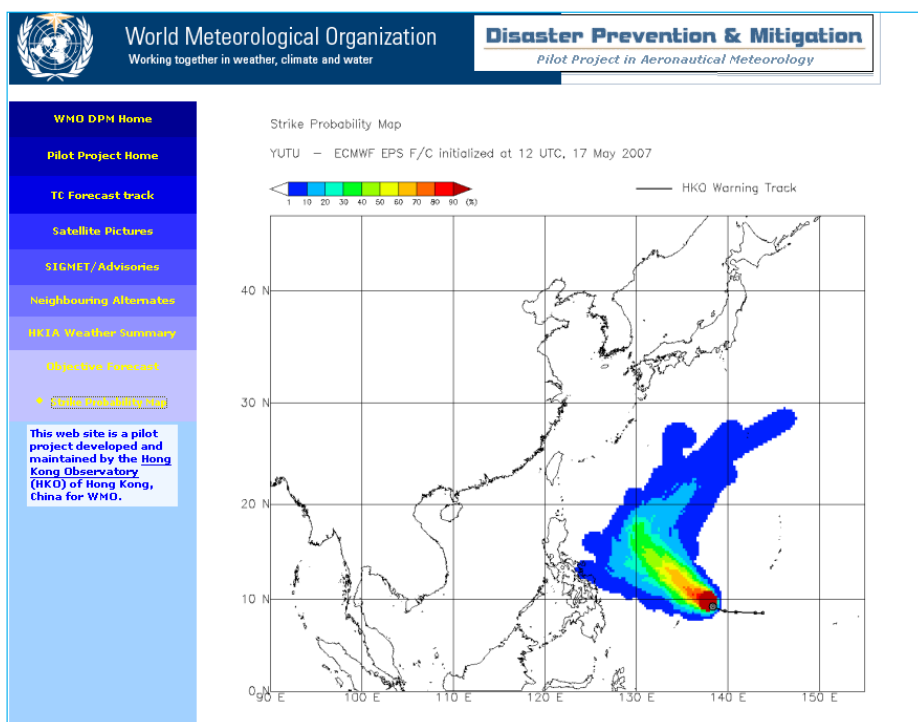


Fig. 1 Typhoon track density (in number per year) in 1995-2005 relative to 1961-1995. (+ and - signs in the figure represent positive and negative anomalies respectively.)

## • Tropical Cyclone Website for Disaster Prevention and Mitigation under WMO Aeronautical Meteorology Programme

The Hong Kong Observatory, Hong Kong, China, takes lead in establishing a Pilot Project on Disaster Prevention and Mitigation (DPM) under the WMO Aeronautical Meteorology Programme. Endorsed by the 13th session of the WMO Commission for Aeronautical Meteorology (CAeM) in November 2006, the project would study the feasibility, skill and benefits of providing aviation stakeholders extended aviation weather forecasts and warnings, in particular for tropical cyclones and severe convection, 24-48 hours ahead.



A dedicated website for this project, initially focused on tropical cyclones with products ranging from forecast TC tracks and intensities to experimental products, such as strike probability forecast, would be launched in the summer of 2007 for evaluation by participating Members and aviation stakeholders on their usefulness in aviation-related planning and decision making.

Fig. 1 Strike probability forecast on the pilot project website hosted by Hong Kong, China

## Public Education on Tropical Cyclone Warning System



During the approach of tropical cyclones, the wind strength in different parts of Hong Kong could be markedly different, as a result of the complex terrain, sometimes taking people by surprise. In early 2007, the Hong Kong Observatory, Hong Kong, China, produced a set of video and radio announcements to raise public awareness to take necessary precautions and to make full use of the Observatory's real-time weather information. These announcements are broadcast in local TV and radio stations during the typhoon season.

Fig 1: A still shot of the TV announcement to increase public awareness of regional differences of wind strength during a typhoon.

## A New Forecast and Warning Preparation and Dissemination System at the Hong Kong Observatory

Whenever Hong Kong is under the threat of a tropical cyclone, the workload of the bench forecaster increases significantly. Weather information and warning advisories are issued every hour. Also many additional reports and forecast bulletins are to be prepared and disseminated to the public, the media, government departments as well as special



clients. To maintain consistency among the various bulletins and to disseminate essential information in time are major challenges to the operation of the forecasting office.

To meet these challenges, a workflow engine has been built into the new generation of forecast and warning preparation and dissemination system deployed by the Hong Kong Observatory, Hong Kong, China, in 2007. This engine automatically keeps track of the overall status and alerts forecasters of existing or emerging tasks according to the current situation, thus minimizing manual intervention. With the help of database technology, many common fields in various bulletins can be automatically filled by the system and consistency among these warning bulletins and advisories can be achieved. Forecasters are now better equipped with tools to help them meet the operational deadlines.

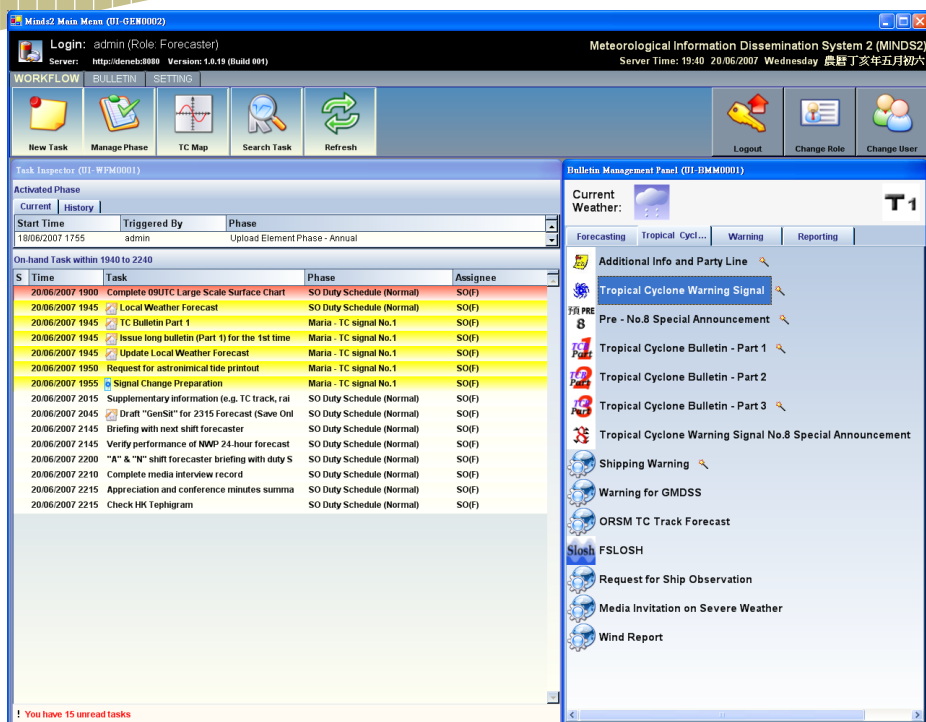


Fig. 1 The Workflow Engine alerts each forecaster of his outstanding tasks (in red) and tasks that are due for action (in yellow).

## • Typhoon Committee Research Fellowship at the Hong Kong Observatory

Ms. CHEN Pei-yan from the Shanghai Typhoon Institute (STI), visited the Hong Kong Observatory, Hong Kong, China, and undertook a

2-month research project in late 2006. The objective of the project was to improve the skills in forecasting the changes in tropical cyclone (TC) intensity through the development and application of post-processing techniques for ensemble prediction system (EPS) products. Ms. Chen designed an artificial neural network (ANN) that aimed to reduce the forecast errors of the EPS outputs to a level useful for operational applications. Based on JMA's medium-range EPS products, the calibrated model forecasts showed superior skills when compared against forecasts based purely on statistical methods.

Following the rank-histogram re-calibration method as derived from EPS forecasts, an attempt was also made to categorize TC intensity [tropical depression (TD), tropical storm (TS), severe tropical storm (STS) and typhoon (TY)] in a probabilistic sense. It was found that forecast reliability in the TS, STS and TY categories was generally improved. The promising findings would lead to the exploration of more EPS-based forecasting tools, and the post-processing procedures so developed would be fine-tuned and tested in operational settings.

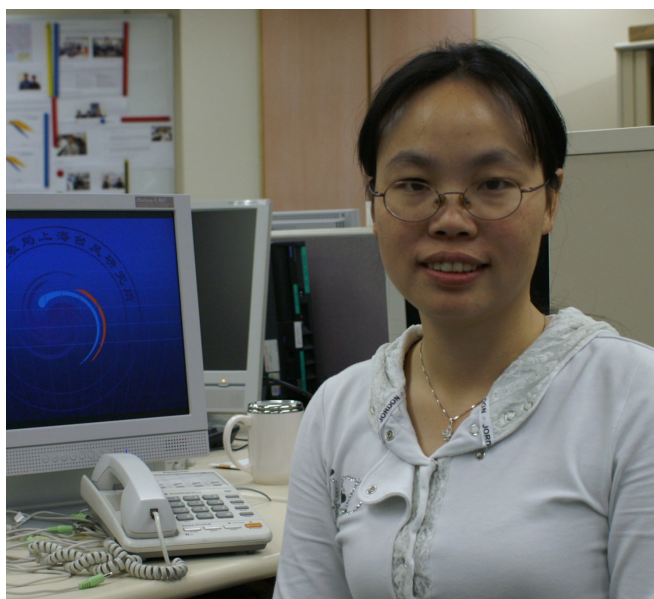


Fig. 1 Ms. CHEN Pei-yan working at HKO.

## ○ “Hazard Map Portal Site” is now opened to the public

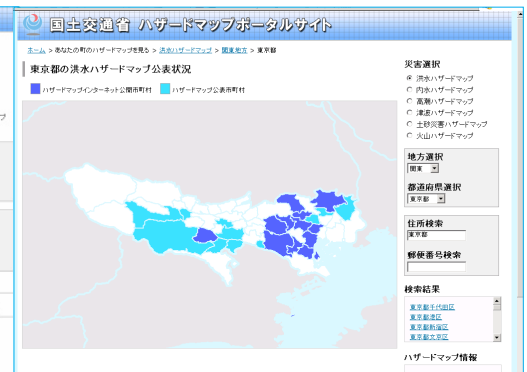
The Ministry of Land, Infrastructure and Transport (MLIT)-Japan opened the hazard map portal site to the public in April, 2007. This portal site contains various hazard maps which are prepared by local authorities (such as cities, towns, and villages) in Japan, and can be searched uniformly on the Internet. As a result, anyone can now access from anywhere the entire hazard map information and the process of opening it to the Japanese public. And therefore, it is expected to strengthen prompt evacuation and awareness of disaster prevention and preparedness.



“Hazard Map Portal Site” top menu



Selection of hazard map type and area



Selection of cities, towns or villages

- The disaster hazard map includes the flood hazard map, the inland inundation hazard map, the storm surge hazard map, the landslide disaster hazard map, and the volcano hazard map. Many of those hazard maps are opened to the public on the local authorities' webpage.
- The MLIT-Japan opened the “Hazard map portal site” to the public on April 27 in 2007, where

people can easily access hazard map information, and use the hazard map more widely.

- As a result, anyone can easily access hazard map information of cities, towns, and villages where they are visiting, or where relatives or friends are living. And it leads to a prompt and appropriate evacuation in disasters, and strengthening of awareness of the disaster prevention and

preparedness.

- This portal site contains all the available information which can be accessed on the Internet based on the results of “the Disaster Hazard Map Inventory Survey in Japan” MLIT-Japan, February, 2007.

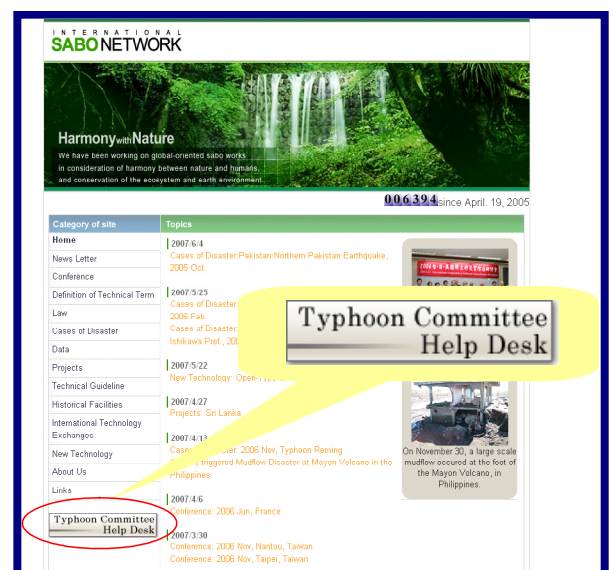
URL: <http://www1.gsi.go.jp/geowww/disapotal/index.html>  
(Japanese version only)

## ○ Technical Help Desk for Early Warning System for Sediment-related disasters (Flash flood)

Technical Help Desk opened in the Website of International Sabo Network (ISNet) (<http://www.sabo-int.org/>). Providing technical assistances, the helpdesk will promote a project of working group of Hydrology “the Establishment of Warning System for Flash Flood, including Debris Flow and Landslides”.

The Help Desk opened in 2006 and now everybody can download files of “Guidelines for Development of

Warning and Evacuation System against Sediment-Related Disasters (Sep. 2003; Ministry of Land, Infrastructure and Transport)”. In addition, if you need technical advises/recommendations send an e-mail message and leader of the project would return advises to not only questioner but all members of the project.





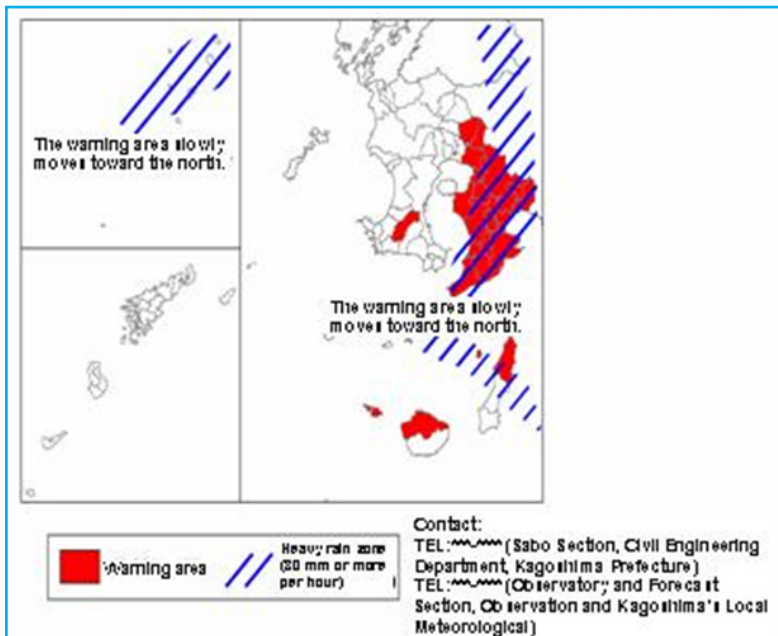
Every year, a lot of sediment-related disasters occur by a typhoon and torrential rain in various parts of the nation, and a lot of human life is lost in Japan. Early evacuation follow the predicted information of risk about outbreak of a disaster is important to reduce damage by the sediment-related disaster. Since the risk of sediment-related disaster rises during and after heavy rainfall, Sabo departments of each prefecture government

## Information Service of "Sediment-related Disaster Warning"

and Local Meteorological Observatory have closer cooperation. They provide the information of "Sediment-related Disaster Warning"

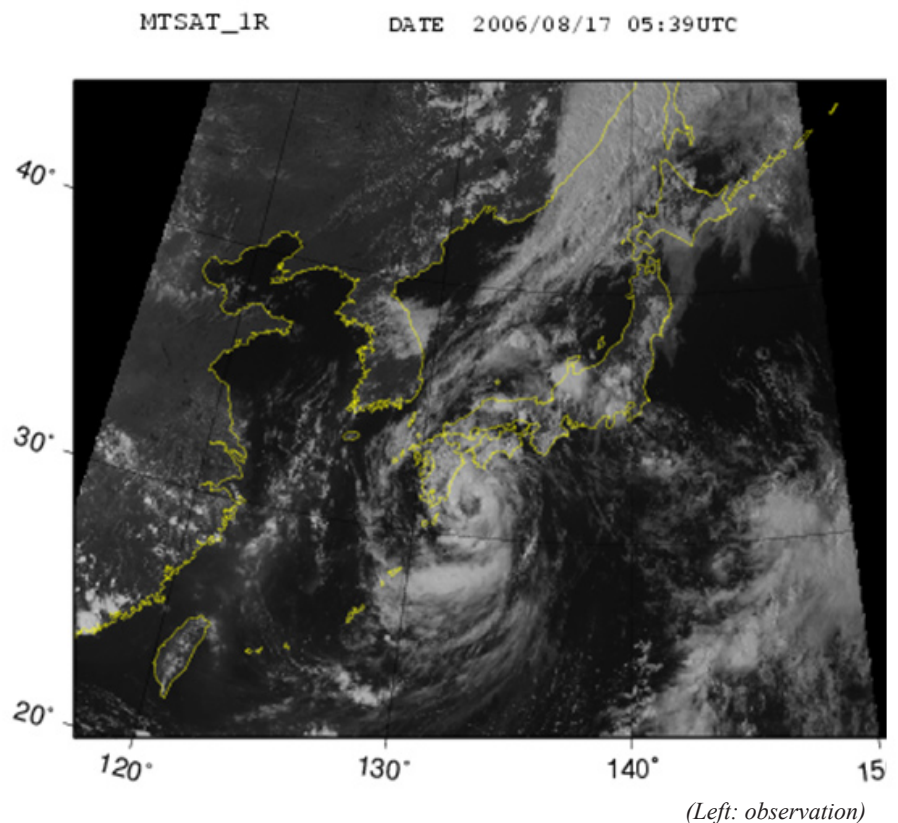
This information is announced to support the judgment that the head of local authority officially announces an evacuation order, and voluntary evacuation of inhabitant when there is likelihood of the sediment-related disaster by the heavy rain. The content of information is comprehensible with a visual map of the warning region and regional name, and the movement direction and area of heavy rainfall. Moreover, detailed information are also provided through the homepage. It combines rainfall condition and sediment-related disaster hazard map to understand necessity of evacuation.

Information services are available in 26 prefectures as of June 1, 2007, and will be available in all administrative divisions (47 prefectures) in Japan by March, 2008.

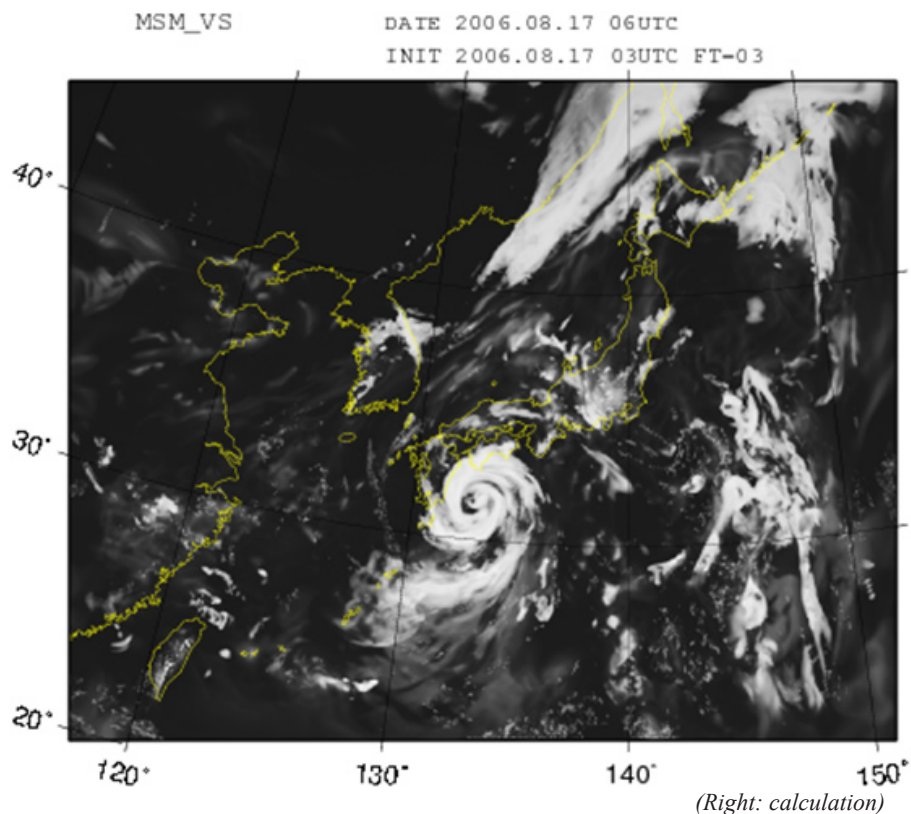


## Refinement of Mesoscale Model (MSM)

On 16 May 2007, the forecast times of the Mesoscale Model (MSM) with initial times of 03, 09, 15 and 21 UTC were extended from 15 hours to 33 hours to meet user requests. At the same time, the dynamical and physical processes of the MSM were refined. The main refinements of the physical processes are described here. First, an improved Mellor-Yamada Level-3 scheme was introduced to describe the boundary layer better. Secondly, the radiation processes were refined. A partial condensation scheme was introduced to improve the diagnosis of cloud amounts (which play a significant role in the calculation of radiation), thereby upgrading the clear-sky radiation



scheme. The refined radiation processes, along with the refined boundary-layer scheme, produce large positive impacts not only on forecasting of the upper air temperature but also on that of the surface air temperature, although these are short-term forecasts in collaboration with the refined boundary-layer scheme. Thirdly, the trigger function of the Kain-Fritsch cumulus convection scheme was refined, which improves forecasting of thunderstorms and alleviates spurious local grid-point storms. Besides improvements in the physical processes, the procedure for preparing the initial field was also refined to mitigate the spin-up problem. The upgrading of the model described above is expected to contribute significantly to enhancing the accuracy of meteorological advisories as well as warnings and aviation forecasts.



*Tropical Storm WUKONG (0610) as captured by the MTSAT-1R (visible) at 03 UTC on 17 August 2006, and the corresponding satellite image (visible) produced from the forecast of the refined MSM.*

## Improving JMA's MTSAT image-data landline service

In March 2007, JMA started to provide all High Rate Information Transmission (HRIT) imagery for registered National Meteorological and Hydrological Services (NMHSs) through the Internet as a backup service for the direct broadcast. This means that all HRIT files (identical to those provided through direct broadcast for Medium-scale Data Utilization Stations (MDUSs)) are now available on the Internet. Seventeen NMHSs are registered for this service as of June 2007. NMHSs wishing to sign up for the service are kindly requested to contact JMA's Satellite Program Division at [metsat@met.kishou.go.jp](mailto:metsat@met.kishou.go.jp).

## Typhoon Operational Forecasting Training at the RSMC Tokyo-Typhoon Center

Typhoon Operational Forecasting Training has been conducted on an annual basis by the RSMC Tokyo-Typhoon Center since 2001 in line with the decision of the Typhoon Committee. The purpose of the training is to improve tropical cyclone analysis and the forecasting skills of forecasters from the Typhoon Committee Members. In 2007, the training was carried out with the participation of two forecasters from Cambodia and the Philippines from 18 to 27 July at the Center. The training included an introduction to operations at the Center and lectures on tropical cyclone analysis and forecasting.



## THORPEX Pacific Asian Regional Campaign (T-PARC)

THORPEX is a 10-year international global atmospheric research program under the World Meteorological Organization (WMO)/World Weather Research Program (WWRP) to accelerate improvements in the accuracy of 1-day to 2-week high-impact weather forecasts and in society's utilization of weather products. The program was established in May 2003 by the 14th WMO Congress. (see [http://www.wmo.int/pages/prog/arep/thorpex/index\\_en.html](http://www.wmo.int/pages/prog/arep/thorpex/index_en.html)).

One of the goals of THORPEX is to conduct regional campaigns aimed at advancing understanding and improving prediction of high impact events. The Regional Committees of Asian (China, India, Japan, Republic of Korea and Russia) and North American (Canada, Mexico and the United States) are leading the development of a major campaign in 2008 called the THORPEX Pacific Asian Regional Campaign (T-PARC). T-PARC is based on the societal needs of these two regions to improve prediction of (i) the lifecycle of western Pacific and Asian typhoons from genesis to extratropical transition/decay, and (ii) high-impact weather events, over North America, the Arctic and other locations, whose dynamical roots and/or forecast errors are driven by upstream typhoons and other intense cyclogenesis events over east Asia and the western Pacific. Specifically, T-PARC has four major objectives; (i) tropical cyclogenesis, (ii) recurvature, (iii) extra-tropical transition (ET) and (iv) winter storms. Each of these objectives includes both regional prediction goals for Asian and studies of the impacts of these events on the downstream flow. The typhoon related studies will take place from June to October 2008.

This report is an update on T-PARC, which was briefly documented in the last Newsletter (No. 18, page 12) by JMA.

### China

T-PARC-China component is characterized by (i) the observation with balloon-born driftsondes in collaboration with US for sharing the same platform to release the balloons; (ii) observation over South China Sea with the dropsondes by the Chinese aircrafts; (iii) intensified observation over the mainland of China (including the observations over SE surrounding areas

of Tibetan Plateau); (iv) the atmospheric scientific research focusing on the theory and mechanism of high impact weathers (TC genesis, heavy rain, interactions of the synoptic systems between tropical-low latitudes and extra-tropical/middle latitudes); (v) predictability and Numerical Weather Prediction approaches; (vi) applications and societal-economic assessments. The experiments will cover the areas along 200N from Hawaii to South-China-Sea/coast lines of South China.

### Germany

Germany proposes to deploy the Falcon aircraft of the Deutsches Zentrum fuer Luft- und Raumfahrt (DLR) during T-PARC. The operations are planned in collaboration with the Forschungszentrum Karlsruhe (FZK) and the University of Karlsruhe. The aircraft will be equipped with dropsondes, a scanning wind lidar, a novel water vapour lidar, and in-situ instruments. While the aircraft and the wind lidar were already deployed successfully during the Atlantic THORPEX Regional Campaign (A-TReC) in 2003, T-PARC is expected to provide a much larger data set to investigate the value of novel observing systems for numerical weather prediction. The other main focus of German T-PARC research will be studies of the impact of ET on the downstream flow. Through observations of the interaction between a tropical cyclone and the midlatitude flow, German scientists aim to assess what is required to improve numerical weather prediction downstream of an ET event. German scientists will be involved in T-PARC planning and data analysis in collaboration with the European Centre for Medium-Range Weather Forecasts.

### JMA

During the campaign featuring typhoon-targeting observation, JMA will deploy dropsonde operations by manned aircraft, enhanced upper soundings by research vessels and Autosondes, and the MTSAT rapid-scan operations. JMA will also provide sensitive area information for typhoon-targeting observation, typhoon ensemble products and will perform impact experiments with/without observations in sensitive

areas and quantitative prediction of rain/wind by downscaling. In order to support T-PARC operations, JMA will open a web page, with the objectives of giving an overview of the campaign, showing the special observation schedule, providing current atmospheric conditions and supplying guidance for special observation and data/information to THORPEX researchers.

## United States

The US proposed plans include utilization of a Naval Research Laboratory P-3 aircraft equipped with dropsondes, the NCAR ELDORA Doppler radar and a wind lidar. Such measurements will be used to investigate such topics as typhoon genesis which targets for improving predictions of recurvature, intensity and structure, and the dynamics of the ET process and the generation of downstream responses. The US also plan to collaborate with Asian partners to investigate these topics using dropsonde measurements obtained from the deployment of stratospheric carrier balloons in a novel system called Driftsonde. Each carrier

balloon will be released from Hawaii and will carry 40 dropsondes capable of being launched on demand during the ~5 to 7 days trek of the system across the Pacific towards Asia. The US and Canada also plan to contribute to the DLR Falcon aircraft. Finally the US plans a novel targeting study for winter systems that will take measurements in a lagrangian frame of reference as sensitive areas moving from Russia across the Pacific toward the west coast of the US.

## Other Useful Links/Sources

- UCAR site for T-PARC  
<http://www.ucar.edu/na-thorpex/PARC.html>
- NOAA site for T-PARC  
<http://www.emc.ncep.noaa.gov/gmb/targobs/thorpex/>
- US Naval Postgraduate School site for T-PARC  
[http://wiki.nps.edu/TPARC/index.php/Main\\_Page](http://wiki.nps.edu/TPARC/index.php/Main_Page)



## Laos



**N**ew Operational Weather Monitoring and Forecasting at Department of Meteorology and Hydrology of Lao PDR under the Project for Establishment of Disastrous weather Monitoring System, Grant aid from the People of Japan (MTSAT system: receives and displays the cloud image data

transmitted from Multi – Functional Transport Satellite (MTSAT) of Japan and Radar System: radiates the radio wave of 250 KW amplified by the klystron, processes the signal of the echoes reflected from precipitation and detects various weather data (integrating rainfall, wind direction, wind velocity, etc....)



**L**ocal on Job Training on Radar and Satellite analysis at Weather Forecasting room under Technical Cooperation Project (Grant aid from the People of Japan)

**F**lood prone area from Typhoon Xangsane (0615) on 01 October 2006.

Caused damages to national infrastructure, Agriculture production, and human settlement. About 20 districts, 404 Villages, 13.549 households, 89.849 people were affected and result in loss to livestock and 5 human lives. The direct impact to economic about 3 million USD.





## WMO FACT-FINDING MISSION TO TIMOR-LESTE

Dili, 29 January to 2 February 2007

At the invitation of Minister of Transport and Communications, and Minister of Interior of the Democratic Republic of Timor-Leste, a WMO fact-finding mission to Timor-Leste was carried out by a team of representatives and experts from WMO; Australia; Indonesia; Macao, China; Portugal and two collaborating UN Agencies, IOC/UNESCO and UN-ISDR from 29 January to 2 February in order to assist in assessing the basic meteorological infrastructure and to make recommendations for the development of a National Meteorological Service and the setting up of a Meteorological Emergency Management Office. The fact-finding was headed by Dr. Tokiyoshi Toya, Regional Director for Asia and the South-West Pacific.

The delegation of Macao, China was composed of the deputy director, Mr. António Viseu and the senior meteorologist, Mr. Hao I Pan.

Mr. António Viseu was the Co-ordination Meeting chairman that led to more than twenty recommendations for the Timor-Leste Government developing its National Meteorological Service. Mr. Hao I Pan made a presentation on climate data monitoring and prediction.



*Delegates meet the Prime Minister Jose Ramos Horta*

## HIGH-LEVEL WORKSHOP ON THE TC STRATEGIC PLAN IMPLEMENTATION

Macao, China – 13 and 14 February 2007



This workshop was very important considering that it was intended to enhance the cooperation among the Typhoon Committee Members for a more effective implementation of the TC

Strategic Plan.

Two activities of great impact for the future of Typhoon Committee had taken place on the occasion: The signing of the Agreement between Macao SAR Government and Typhoon Committee and

the inauguration of the premises of the Typhoon Committee Secretariat, courtesy provided by Macao SAR Government, with all the legal instruments and hardware in place, which will much contribute to strength the work of TC.

## WORLD METEOROLOGICAL DAY – 23 MARCH 2007 POLAR METEOROLOGY: UNDERSTANDING GLOBAL IMPACTS



*Dr. Fong and Prof. Xu exchanging originals of the agreement*

For the year 2007 was chosen the theme “Polar Meteorology: Understanding Global Impacts”, in recognition of the importance of, and as a contribution to, International Polar Year (IPY) 2007/2008, which is being co-sponsored by WMO and the International Council for Science (ICSU). To ensure that researchers can work, in both polar region during the summer and winter months, the event will actually be held from March 2007 to March 2009. The fundamental concept of the IPY is an intensive burst of internationally coordinated, interdisciplinary scientific research and observations focused on the Earth’s polar regions and their far-reaching global effects.

The first commemoration activity of the “World Meteorological Day 2007”, was “The Tropical Cyclone Name Nomination Contest”. The main objectives of the contest were to promote public awareness of the hazards related to tropical cyclones and to enhance the public understanding of the Tropical Cyclone Signal System in Macao.

Took place at the headquarters of SMG on days 17 to 19 April 2007 an “Atmospheric Remote Sensing and Lidar Workshop” with about 10 specialists from the Asia/Pacific region.

The objective of the workshop was to broaden the cooperation between Meteorological Institutions and Universities and using these meetings to show the importance in cooperating with the universities in the development of interdisciplinary of the technical and scientific knowledge in MSAR besides a more effective implementation of LIDAR network. It was also intention, trough this workshop to promote to the Lidar community in the region to have a Central Lidar Station Network located in Macao.

A celebration ceremony was held at SMG headquarters, on 23 of March, with the presence of the Secretary for Transport and Public Works Eng. Lao Sio Io, who presided, the ceremony for the signing of the “Cooperation Agreement between Meteorological



*Guests and participants*

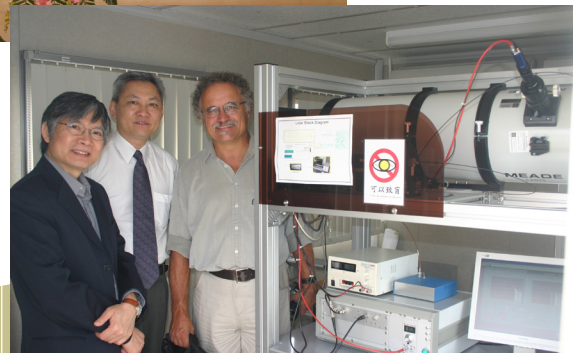
and Geophysical Bureau and the Macao University of Science and Technology in the area of remote sensing”. This ceremony was a good opportunity to promote through media the importance of the cooperation with the university in the development of interdisciplinarity in scientific knowledge in Macao SAR. A presentation for university students about the theme of this year was also included in this occasion.

## ATMOSPHERIC REMOTE SENSING AND LIDAR WORKSHOP April, 17-19 April 2007



*Opening Ceremony*

*The LIDAR*





## 4TH METEOROLOGICAL TECHNICAL CONFERENCE AMONG CHINA, MACAO AND PORTUGAL

Macao, 12 – 14 June 2007

Macao hosted the second round of Meteorological Technical Conference among China, Macao and Portugal that has begun in 2000 as a way for jointly develop our cooperation.

Five Portuguese Speaking countries were also invited to shared their experiences and they were: Angola, Cape Vert, East Timor, Guine-Bissau and Mozambique.

The aim of this meeting was to enhance the cooperation among Meteorological Institutions and give importance of this activities for the development of the technical and scientific interdisciplinary knowledge in the field of meteorology in MSAR, and contribute to the cooperation and exchange among China, Macao and the Portuguese Speaking Countries Meteorological Services.



Philippines

### 7th TC Roving Seminar



The Seventh Roving Seminar of the Typhoon Committee was held successfully at the Tiarra Oriental Hotel, in Makati Ciy, Philippines, from 5 to 8 September 2007, attended by more than 40 participants from members of TC.

Acting Director Martin F. Rellin, Jr. of the Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA), who presided at the opening ceremony, said that the Philippines' hosting of the TC Roving Seminar 2007 was a reiteration of his country's continuous support to the Committee's program on research and training.

Dr. Olavo Rasquinho, Secretary of the Typhoon Committee, delivered



his opening message and also read the message of the chairman of the TC Training and Research Coordinating Group (TRCG), Edwin S. T. Lai. The keynote address was delivered by Under Sec. Carol Yorobe on behalf of Sec. Estrella Alabastro of the Philippine Science and Technology.

The local organizers led by Cynthia Celebre of PAGASA expressed their gratitude to the seminar's lecturers, Dr. Bart Hagemeyer and Dr. Roger Edson of NOAA as well as Dr. Tetsuo Nakazawa of MRI/JMA who shared their

valuable technical expertise. Dr. Hagemeyer lectured on Doppler Radar Analysis (Rain and Wind), while Dr. Edson tackled Satellite Analysis (QuikScat and Microwave Imageries). Dr. Nakazawa gave his lecture on Interaction of Tropical Cyclones with Monsoon Systems. The participants took time-off with a visit to the facilities of the PAGASA Weather and Flood Forecasting Center where lectures were given by local forecasters Robert Sawi and Robert Rivera of the Weather Branch.

Topics recommended for the next

roving seminar were brought forth at the conclusion of the 4-day seminar. TC Chairman Prisco D. Nilo delivered the closing remark in which he emphasized that important topics should always be prioritized and must only be related to TC forecasting. The proposed topics included "Combination of ensemble and numerical forecasting", "Systematic approach to TC forecasting", "understanding of storm surge forecasting", "marine and rainfall forecasting", "QRF (several days in advance)", and "Radar applications to landfalling TCs."



Republic of Korea

## Operational Real-time Analysis of the Typhoon Intensity ○

The Korea Meteorological Administration (KMA) has been monitoring, analyzing and forecasting the track of typhoon and its intensity by using numerical data and observational data particular from the geostationary satellites and polar orbit satellites such as GMS, GOES-9, MTSAT-1R, Aqua, etc.

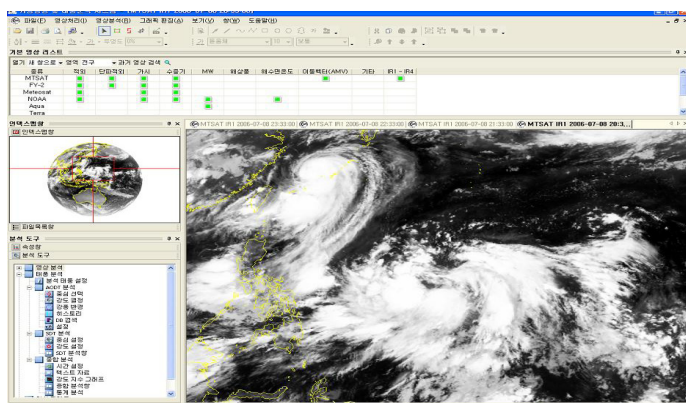
Since 1 July 2005 after GMS-5 and GOES-9 were replaced by MTSAT-1R, KMA has operated the receiving and analysis system of MTSAT-1R satellite's HiRID data. Also KMA is developing new system for typhoon analysis using

the data. This Typhoon analysis system utilizes the Advanced Objective Dvorak Technique of the Space Science Engineering Center/ University of Wisconsin-Madison (SSEC/UW-Madison), which is based on satellite observations (Dvorak Technique).

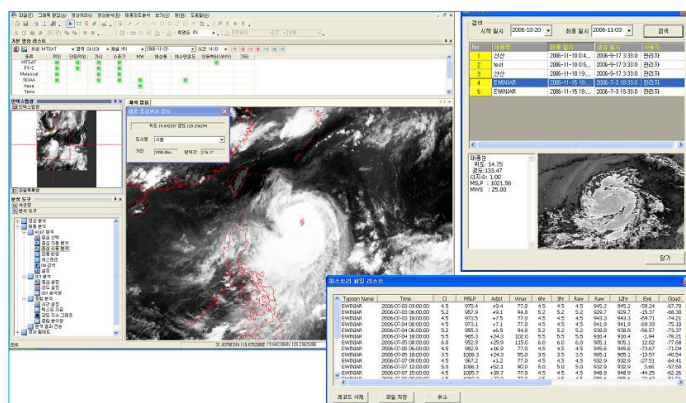
Dvorak Technique (Subjective Dvorak Technique: SDT) relies on image pattern recognition along with analyst interpretation of empirically-based rules regarding the vigor and organization of convection surrounding the storm center. While this method performs well enough in most cases to be

employed operationally, there are situations when analyst's judgment can lead to discrepancies between different analysis centers estimating the same storm. In an attempt to eliminate this subjectivity resulting from analyst interpretation of the standard Dvorak methodology, Velden et al. (1998) of SSEC/UW-Madison developed the Advanced Dvorak Technique (AODT) which has a computer-based algorithm operating objectively on digital infrared information. KMA introduced AODT and has been testing it. However, AODT was developed mainly for Hurricane

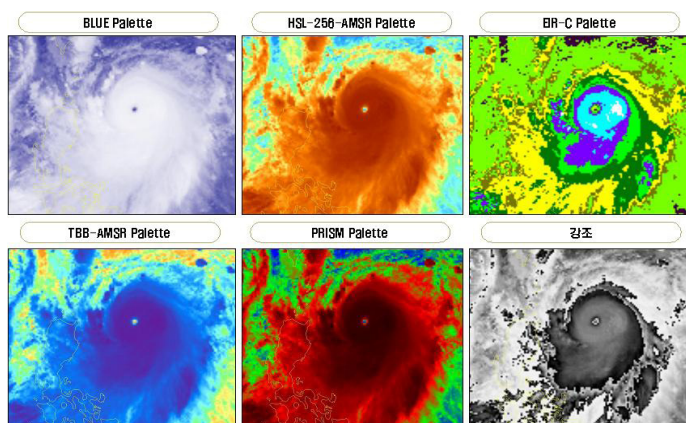




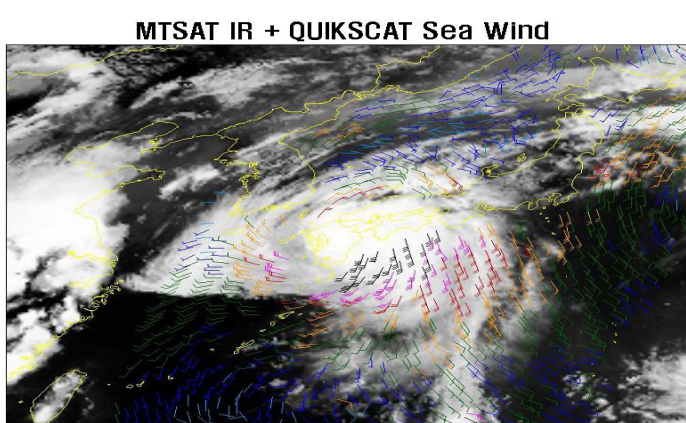
a)



b)



c)



d)

Fig. a) Main menu of Web-based Satellite Image Analysis System b) Determination of Typhoon Center Location, c) Various Palettes, d) Image Overlay

occurred in Atlantic Ocean; therefore, the application of AODT to Typhoon occurred in the North-western Pacific Ocean has some difficulties.

KMA analyzed Current Intensity (CI) number using SDT for 2004 Typhoons, took AODT results from SSEC/UW-Madison for the same events and compared them. The correlation coefficient between SDT CI number and AODT CI number is relatively large, that is, 0.85, and the regression coefficient is 0.7861; moreover the bias is 1.1361 when significant level is 0.95. Although the correlation coefficient is large, the systematic bias is more than 1, so that the results of AODT should be corrected. Additionally, the difference between both indices depends on CI number and KMA tried to analyze the nonlinearity of them. Hsieh (2004) introduced nonlinear multi-variable time series analysis through Neural Network (NN) on meteorology and KMA used that method for seeking applicable correction equation of AODT. As expected, the obvious nonlinearity appears on nonlinear regression analysis and there is the distinct difference between both CI numbers when CI number estimated by AODT is small. Those results represent the systematic bias is relatively large

in the initial and extinct stage of typhoon. Therefore, the cause of the systematic bias is required to be known in order to estimate exact typhoon CI number occurred in the North-western Pacific.

For availability and easy accessibility, KMA developed web-based Satellite Image Analysis System which is included AODT algorithm ver. 6.3. This web-based system can access satellite DBMS system in real-time basis as user friendly system via KMA's intranet and display lots of satellites' data like MTSAT-1R, NOAA QuikSCAT, AMSR-E, etc. on user personal computer screen. In addition, this system is used for image overlay, image and graphic editing, and simple statistical function for comparison with other Typhoon information like that of RSMS, SAREP and JTWC.



## ◦ Launch of the National Typhoon Center (NTC) in 2008

The construction of the National Typhoon Center (NTC) is now under its way in Korea for more timely and effective typhoon forecast. NTC will be located at Jeju Island, Korea and will be completed in December, 2007. Consequently, the Korea Meteorological Administration (KMA) will conduct forecasting and monitoring of typhoons at NTC from early 2008.

The mission of this center is to produce more accurate and appropriate typhoon forecast for all typhoons generated in the Northwest Pacific as well as the typhoons drawing close to the Korean Peninsula.

In addition, it is expected that



*Fig. Bird's eye view of the National Typhoon Center*

NTC will play an important role in mitigation of natural disasters by typhoon through promoting domestic and international research cooperation.

## GEO Training Workshop ◦ on Numerical Weather Prediction



A training workshop in the field of Numerical Weather Prediction was held from 9 to 13 April 2007 in Seoul, the Republic of Korea, named GEO Training Workshop on Numerical Weather Prediction.

KMA organized this workshop in cooperation with the GEO Secre-



tariat, in order to share the NWP techniques with the GEO Members, contribute to the improvement of weather forecasting accuracy of the GEO Members with the advanced use of NWP products, and further enhance the cooperation among GEO Members. During the workshop, KMA provided the fifteen

participants from fourteen GEO Members with both of theoretical lectures and some practical exercises in NWP, including special classes by invited lecturers from the GEO Secretariat and the Environment Canada. The participants enjoyed the experiences in Korean culture as well as the classes. They also had a great opportunity to be affiliated with each other during this event.



## ● 1st JCOMM Scientific/Technical Symposium on Storm Surge

The Korea Meteorological Administration (KMA) held the first JCOMM Scientific/Technical Symposium on Storm Surge from 2 to 6 October 2007 in Seoul, the Republic of Korea. This symposium addressed the importance of enhancing storm surge forecasting capabilities, and the need to complement other international efforts including the series of capacity building workshops on storm surge and wave forecasting organized by JCOMM and the WMO Tropical Cyclone Programme.

The purposes of the symposium are to provide ideas and information related to storm surge forecasting and hindcasting, to develop appropriate input for the dynamic part of the WMO Guide to Storm Surge Forecasting, to provide guidance/technical support for National Meteorological Services, and to discuss priorities for future research and development.

*Fig. Announcement Poster for the Symposium.*

## The 2nd Meeting of Working Group on Disaster Prevention and Preparedness, Typhoon Committee



*DPP members in the 2nd meeting*

The 2nd meeting of DPP component, TC was held from 22 to 24 August 2007 in Seoul, the Republic of Korea, named The 2nd Meeting of Working Group on Disaster Prevention and Preparedness – Typhoon Committee Disaster Information System and Future Activities.

20 participants from Members and international organizations discussed about TCDIS (Typhoon Committee Disaster Information System). On the first day, there were 7 presentations on various topics related with DPP from Mr. Katsuhito Miyake (Chair of WGH), Dr. Yuich Ono (ISDR), Mr. Hajime

Nakano (ADRC), Ms. Matilda Park (Korea Water Forum), Mr. Takeo Murakami (Japan), Dr. Noel L. Lansang (Philippines), and Dr. Jae-Hyun Shim (Korea).

On the second day, members finalized the contents of TCDIS and agreed to provide inputs to the TCDIS by early September (before the joint workshop to be held in Bangkok, 10-15 September). And the future activities on TCDIS were discussed. The meeting was closed with field trip to see local government's disaster management system in Korea.



## WMO CLIPS Training workshop for RA II (Eastern Part)

15 to 27 January 2007

Bangkok, Thailand

Thai Meteorological Department (TMD) in collaboration with the WMO, hosted the WMO CLIPS Training workshop for RA II (Eastern Part) for two weeks in Bangkok from 15 to 27 January 2007. The objectives of the training workshop were to enhance understanding the CLIPS project by the Focal Points, and to improve the capabilities of the

NMHSs in the provision of climate information and prediction services. The workshop was attended by 26 participants, representing the CLIPS focal points from 12 countries in Eastern Asia, and invited resource persons from well-recognized institutes and universities. Mr. Suparerk Tansriratanawong, Director-General, TMD, Dr. Rupa Kumar Kolli, Chief of World





Climate Programme Department, representative of the WMO and Mrs. Muntana Brikshavana, Deputy Director-General of TMD, Chairman of LOC, were jointly delivered addresses in the inaugural ceremony

on 15 January 2007. The outcomes from the meeting will benefit the RA II members particularly in climate-related issues.

UNESCAP/WMO Typhoon Committee

# newsletter

Credits

Editor  
Olavo Rasquinho

Staff Members  
Leong Kai Hong, Derek  
Denise Lau  
Kou Meng Kit, Lisa

The ESCAP/WMO Typhoon Committee Newsletter is published in English by the Typhoon Committee Secretariat Avenida de 5 de Outubro, Coloane, Macao - China.

Phone: +853 8010531  
Fax: +853 8010530  
email: [info@typhooncommittee.org](mailto:info@typhooncommittee.org)

The newsletter is available on request to the Editor at the above address.

## Humour Corner

