



**10th**  
Integrated  
Workshop



**TCS**  
Activities



**Members**  
2nd-Semester  
Activities 2015



ESCAP/WMO  
Typhoon Committee



2nd Semester 2015

# Newsletter



Group Photo at ESCAP/WMO Typhoon Committee 10th Integrated Workshop in Kuala Lumpur, Malaysia on 26 – 29 October 2015

## ESCAP/WMO Typhoon Committee Held its 10TH INTEGRATED WORKSHOP

The ESCAP/WMO Typhoon Committee (TC) at its 47th Session decided to convene the 10th Integrated Workshop (10th IWS) in 2015. With the kind offer of the Malaysia Meteorological Department (MMD), the 10th IWS with the theme of *“Innovative Strategy to Improve the Quality of Life for Members’ Population through Mitigating Typhoon-related Impacts”* was held in Berjaya Times Square Hotel, Kuala Lumpur, Malaysia on 26 – 29 October 2015.

IWS is an annual event for TC Members to review TC

activities and work progress through the Advisory Working Group (AWG) and the three TC Working Groups (WGs) on Meteorology, Hydrology and Disaster Risk Reduction (DRR), and to make-work plans for the coming year. Totally around 80 participants joined the Workshop from 12 of 14 Members namely China; Hong Kong, China; DPR of Korea; Japan; Laos; Macao, China; Malaysia; Philippines; Republic of Korea; Thailand; the United States of America (USA); and the Socialist Republic of Viet Nam. The representative

of WMO Mr. Taoyong PENG participated in the Workshop. The Honourable Datuk Seri Panglima Madius Tangau, the Minister of the Ministry of Science, Technology and Innovation, Malaysia delivered the opening address.

Five experts were invited to present keynote lectures on the first day of the 10th IWS, including:

1. Providing flood information centered on "People's life" -Dr. CHA Jun Ho from Han River Flood Control Office, Republic of Korea
2. Tropical cyclone forecast and training in JTWC -- Mr. Robert Falvey from Joint Typhoon Warning Center, Japan
3. Study of Forecasting Techniques and Application on Marine Meteorology in STI -- Prof. Li Yongping, from Shanghai Typhoon Institute, China

4. EXOTICA for Future Benefits -- Mr. Edwin Lai from Hong Kong Observatory

5. Recent water-related disasters in Southeast Asia: Lessons learned and future challenges for disaster risk reduction -- Mr. Shuichi Kure from Tohoku University, Japan

Working Groups reviewed Members' Reports of 2015 and the implementation status of Annual Operation Plan (AOP) in 2015, discussed the implementation plan and success indicators of AOPs and budget request in 2016. The Participants discussed and commented the proposal of SSOP-II for 10<sup>th</sup> round of ECSAP Trust Fund for Tsunami, Disaster and Climate Preparedness in Indian Ocean and Southeast Asian Countries.



Group Photo of WGM Parallel Session at TC 10th IWS



Group Photo of WGH Parallel Session at TC 10th IWS

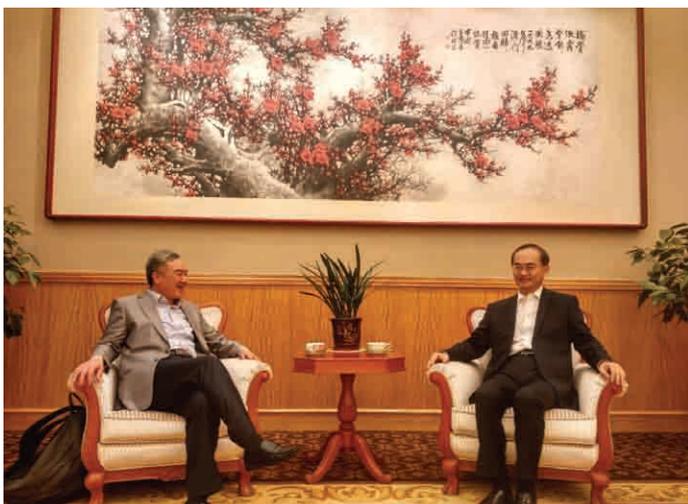


Group Photo of WGDRR Parallel Session at TC 10th IWS

## Official Visit of TC Secretary to the Office of the Commissioner in Macao SAR, China

On January 13, 2016, the Secretary of ESCAP/WMO Typhoon Committee (TC) Mr. YU Jixin made an official visit to the Office of the Commissioner of the Ministry of Foreign Affairs of the People's Republic of China in the Macao Special Administrative Region (SAR). The new Commissioner Mr. YE Dabo met with Mr. YU Jixin.

Mr. YU Jixin made a brief introduction on TC and its Secretariat, and expressed his appreciation to the central government of China and the government of Macao SAR for their generous support in the past years since TC's Secretariat was moved to Macao in early 2007. Mr. YU briefed the current terminated project of Synergized Standard Operating Procedures (SSOP) for Coastal Multi-Hazards Early Warning System funded by ESCAP, and also emphasized the importance of the continuing support from the office of the Commissioner to TC Secretariat.



Mr. YE Dabo pointed out that the work of TC is very important as the first international intergovernmental organization settled in Macao, China for promoting Macao's foreign relations and making a positive contribution on promotion of the development of disaster prevention and reduction in the Asia Pacific region. He believes that the Office of the Commissioner in Macao SAR will continue to provide the necessary support and assistance to the work of TC and its Secretariat.

# The Proposal of SSOP-II submitted to ESCAP for Approval



Under the great support and guidance from ESCAP and WMO, and the close cooperation from Secretariats of TC and PTC, a series of international/regional organizations, beneficiary countries and targets groups, the project of Synergized Standard Operating Procedures (SSOP) for Coastal Multi-Hazards Early Warning System (hereinafter referred to as “SSOP-I”) conducted successfully the proposed activities and achieved the expected outputs including compiling the Manual/Handbook of Synergized Standard Operating Procedures for Coastal Multi-Hazards Early Warning System.

The successful SSOP-I project is regarded as an excellent example on the cooperation on promoting the capacity building of multi-hazards early warning among two regional bodies. However, due to the limitation of budget and time, TC and PTC could not extend the results and achievements of the project to all their Members deeply and widely.

Therefore, it was suggested very strongly at the 3rd joint Session of TC and PTC (TC 47th Session and PTC 42nd Session) to request the Members, after the Manual is complete, to consider ways to make the best use of it, and to develop a proposal for SSOP Phase II, based on the successful completion SSOP-I project, and submit to ESCAP for funding consideration. Following the recommendation, TCS drafted the proposal of SSOP-II and reported at the TC 10th IWS, which was held in Kuala Lumpur, Malaysia in October 2015. Based on the comments from Members, TCS revised the documents and submitted the final version to ESCAP for applying the 10th round of ESCAP Trust Fund for Tsunami, Disaster and Climate Preparedness in Indian Ocean and Southeast Asian Countries.

The SSOP Phase II is proposed to be mainly focused on the training on how to establish an appropriate standard operating procedure (SOP) based on the published SSOP Manual and on promoting the TC and PTC Members’ capacity building on Multi-hazards Risk early warning based on existing technical achievement for National Meteorological and Hydrological Services (NMHSs) in proposed beneficiary countries.

The proposed activities for SSOP-II and expected outcomes from SSOP-II include:

**Expected Outcome 1:** Promotion of society response capacity building in TC and PTC regions focusing on

the “mechanics” of preparing and implementing SSOPs

**Activity 1:** Conducting the training courses/workshops on mechanism of establishing and preparing SSOP for coastal multi-hazards EWS, focusing on social scientists, DRR experts and warning experts from NTWCs, NDMOs, and Government sectoral agencies to improve capacity building on social science aspects of EWS, such as risk and impact assessment, warning communication strategies, partnership/stakeholder engagement, society response capability, etc.

1.1 Conducting Training Course on establishment of SSOP for coastal multi-hazards EWS mainly for social scientists with participation of DRR experts and warning experts from 16 beneficiary Countries of TC and PTC

1.2 Conducting Training Course/workshop on performance of SSOP of coastal multi-hazards EWS mainly for warning experts with participation of social scientists and DPP experts from 16 beneficiary Countries of TC and PTC (linked with TC 3rd TRCG Forum and 12th IWS in 2017)

**Expected Outcome 2:** Promotion of capacity building on science and technology of early warning for severe weather in beneficiary Countries of TC and PTC

**Activity 2:** Conducting training courses/workshops on radar/satellite information utilization for Tropical Cyclone EW (tentatively)

2.1 Conducting Training Course on satellite and radar image interpretation and applications, including intensity assessment, structure analysis, high wind and rainstorm nowcasting, etc.

2.2 Conducting Training Course on storm surge/tsunami monitoring

**Expected Outcome 3:** Promotion of capacity building on science and technology of early warning for urban flood risk EW in beneficiary Countries of TC and PTC

**Activity 3:** Conducting training courses/workshops on real-time operational Urban Flood Forecasting and Inundation Mapping (OSUFFIM)

3.1 Conducting Workshop on Innovative Technology for Urban Flood Risk EW

3.2 Conducting Training Course on Real-time Operational Urban Flood Forecasting and inundation Mapping (OSUFFIM)



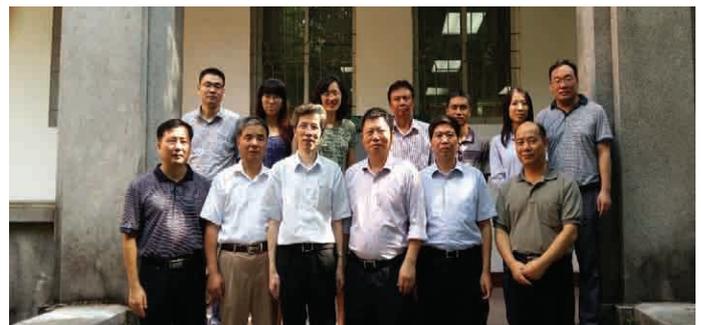
## WGH Project on OSUFFIM Achieved Remarkable Progresses in 2015

Following the decision of Typhoon Committee (TC) at its 47<sup>th</sup> Annual Session which was held in Bangkok, Thailand from 9 to 13 February 2015, The project of Operational System for Urban Flood Forecasting and Inundation Mapping (OSUFFIM), led by Bureau of Hydrology (BOH), China, successfully conducted a series of activities and reached remarkable progresses in 2015, including:

- Applying funding support from China Government for OSUFFIM implementation in early 2015: A proposal for funding application for the OSUFFIM pilot studies in China and Thailand was submitted to the Department of Sciences and Technology of Guangdong Province, China, which is jointly prepared by the team of China led by Prof. Yangbo CHEN, the head of the Laboratory of Water Disaster Management and Hydroinformatics (LWDMH) of SYS University, and the team of Thailand led by Mr. Thada SUKHAPUNNAPHAN. This proposal was approved in May 2015 by Guangdong Provincial Government with total funding of around 84,000USD. The proposal was named as China-Thailand Cooperation Project on OSUFFIM.
- Conducting field survey in southern Thailand: the field survey in pilot cities of Thailand was conducted in early September by Thailand OSUFFIM team led by Mr. Thada SUKHAPUNNAPHAN, and jointed by OSUFFIM chief scientist, Prof. Yangbo Chen. The cities surveyed in this week-long survey in southern Thailand include Phuket, Phangnga, Krabi, Trang, Phatthalung and Hat Yai, and Hat Yai was selected as the Thailand pilot city.
- Conducting kick-off meeting of China-Thailand Cooperation Project on OSUFFIM: the kick-off meeting was held in Sun Yat-Sen (SYS) University, Guangzhou, China on September 23, 2015, organized by SYS University with participants from SYS University and Royal Irrigation Department (RID) of Thailand. 7 Experts were invited to join this meeting and give consultancy to the study plan. Team leader, Professor Yangbo Chen presented the study plan, including the purposes, objectives, methodologies and expected outcomes. The experts gave high assessments to the study plan and gave their own comments and suggestions, that will be very good inputs to this project.
- Conducting field survey in pilot city of China: the field survey was conducted in Dongguan city,



OSUFFIM field survey in southern Thailand



Kick-off meeting of China-Thailand Cooperation Project on OSUFFIM in Sun Yat-Sen (SYS) University, Guangzhou, China

Guangdong, China in middle September 2015. The participates includes Chinese OSUFFIM team led by Prof. Yangbo Chen, and Thailand OSUFFIM team led by Mr. Thada SUKHAPUNNAPHAN.

- Conducting one-month attachment training in SYS University from 15 November to 14 December 2015. Four trainees were from RID, Thailand and DID Malaysia. Prof. Chen and his team provided the courses and the software of Liuxihe river basin modelling and OSUFFIM were initially installed for both Thailand and Malaysia with proper running.



OSUFFIM field survey in Dongguan City, ChinaChina

## HRFCO Organized the Field Survey Wrap-up Meeting for the Project led by Korea



The Field Survey Wrap-up Meeting for the Project on Extreme Flood Forecasting System in HRFCO, Seoul, Korea

The Project on Extreme Flood Forecasting System, which is led by Republic of Korea, has been conducted three field survey events. To summarize the results, Han River Flood Control Office (HRFCO) of the Ministry of Land, Infrastructure and Transport (MOLIT) of the Republic of Korea, in cooperation with KICT successfully conducted the field survey wrap-up meeting from 6 to 8 October 2015 with 10 participants from Korea, Lao PDR, Thailand, and Philippines. Results of the 1st -3rd field survey were shared and synthesized from selected river basins including Chao Phraya River in Thailand, Pampanga River in Philippines, Nam Ngum River in Lao PDR, Nakdong River in the Republic of Korea. And also the participants had the field trip to major facilities in Nakdong River basin. The meeting noted that, the survey reached the expected goals including:

a) to gather additory data set for AOP2 and AOP6 to set an optimal direction for making the guidelines for flood risk management and establishing flood forecasting system in TC region;

b) to understand unique environmental, social and economic characteristics of each member counties for appropriate flood forecasting system;

c) to investigate and discuss the structural and non-structural flood control measures in 3 countries;

d) to strengthen international cooperation to reduce flood damage by typhoon; and

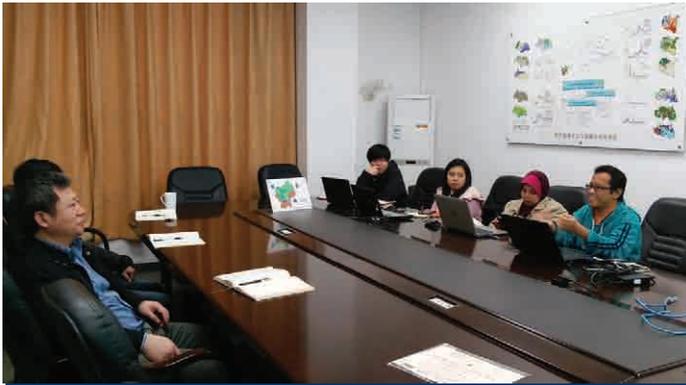
e) to publish the report of field survey.

## OSUFFIM Attachment Training Held in Guangzhou, China

Following the decision of Typhoon Committee (TC) at its 47<sup>th</sup> Annual Session which was held in Bangkok, Thailand from 9 to 13 February 2015, and the discussion at TC 10<sup>th</sup> Integrated Workshop which was held in Kuala Lumpur, Malaysia from 26 to 29 October 2015, Bureau of Hydrology (BOH) of the Ministry of Water Resources (MWR) of China the Working Group on Hydrology (WGH), in cooperation with Sun Yat-Sen (SYS) University of China, conducted the one-month attachment training for the project of TC Working Group on Hydrology (WGH) on Operational System for Urban Flood Forecasting and Inundation Mapping (OSUFFIM) for pilot cities in SYS University, Guangzhou, China from November 15 to December 14, 2015.

The training course organized by SYS University. The Chief Scientist of the OSUFFIM project Prof. CHEN Yangbo and his team made the arrangement for training course and lectures. Four participants from two participating Members of the project, namely Royal Irrigation Department (RID) of Thailand and Department of Irrigation and Drainage (DID) of Malaysia, joined the training course. The main courses included using ArcHydro to delineate river system, setting up Liuxihe river catchment model and using ENVI to set up urban flood model, etc.. The participants emphasized the benefits of the training and gave much valuable suggestion for the future activities in their summary reports.

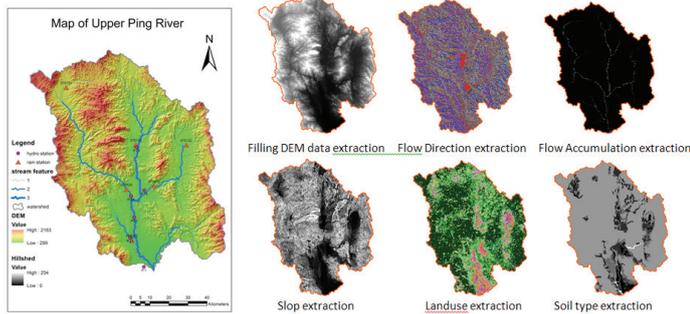
The hydrologist of TCS attended the opening ceremony and the Secretary of Typhoon Committee signed the Certificates for participants.



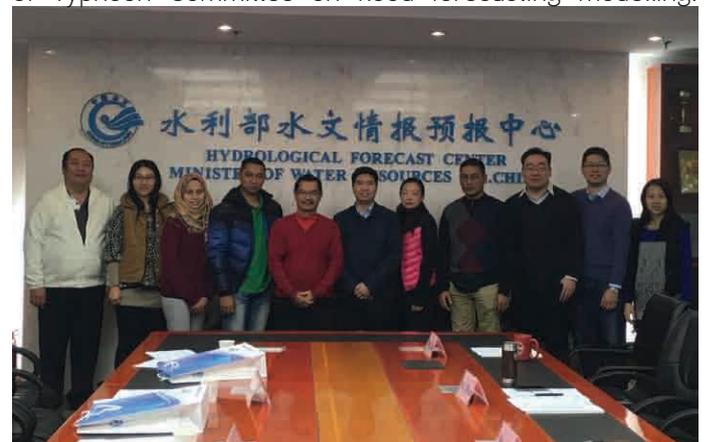
Participants discussing with Prof. CHEN Yangbo in the Course

Five experts from Department of Irrigation and Drainage (DID) of Malaysia attended the job-training. The Director of River Forecasting Center of China appeared the opening.

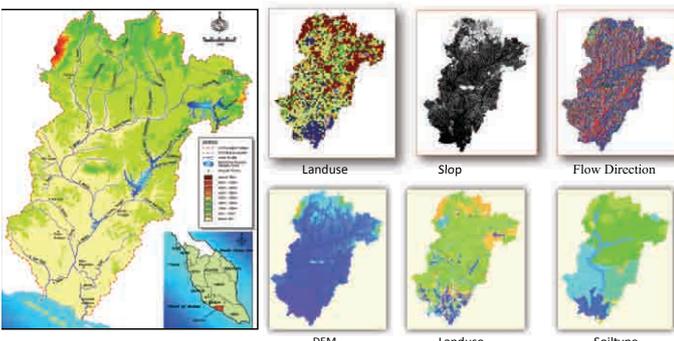
The training course reached expected results in the pilot river basin. Meanwhile, some problems which impacted the accuracy of simulation of Model were found such as the quality of historical data, the input data format and the interface for linkage Model with real-time database. The participants from DID Malaysia highly evaluated the training course and appreciated the kindest cooperation and contribution from colleagues of BOH, and expressed their willingness to have further cooperation with BOH under the framework of Typhoon Committee on flood forecasting modelling.



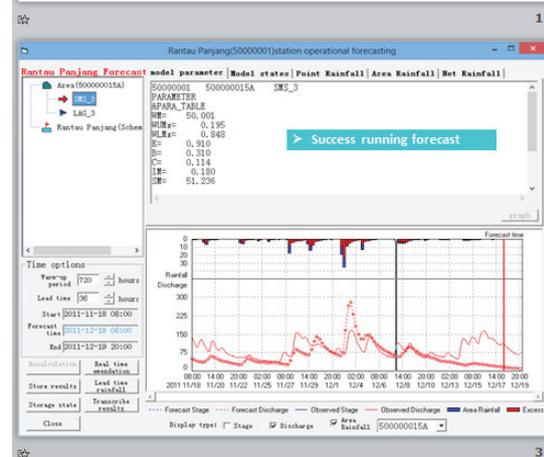
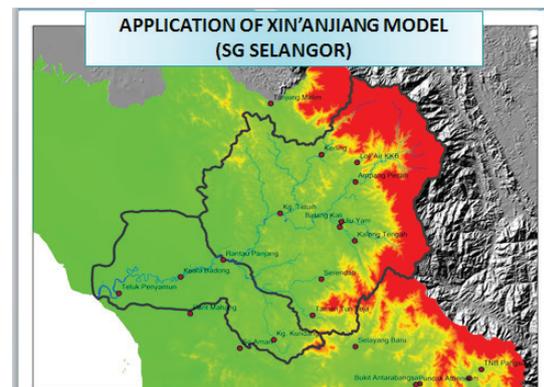
OSUFFIM Pilot City in Upper Ping River Watershed, Thailand



Job-training for Xin'anjiang Model Application in BOH, MWR, Beijing, China



OSUFFIM Pilot City in Melaka River Basin, Malaysia



## Job-training for Xin'anjiang Model Application Held in Beijing, China

Following the decision of Typhoon Committee (TC) at its 47<sup>th</sup> Annual Session which was held in Bangkok, Thailand from 9 to 13 February 2015, and the discussion at TC 10<sup>th</sup> Integrated Workshop which was held in Kuala Lumpur, Malaysia from 26 to 29 October 2015, Bureau of Hydrology (BOH), China is planning organized 4-day job training from December 15 to 18, 2015 in Beijing for solving the problems happened in Xin'anjiang model application in Malaysia.



1st OC Meeting for EXOTICCA

## First Organization Committee Meeting for EXOTICCA

The first Organization Committee (OC) meeting for EXOTICCA was held in Shanghai on 9 October 2015. Establishment of various committees and the corresponding terms of reference were discussed, with summaries on the progress by CMA, HKO and JMA. A technical lecture by USA on the current progress of the field campaign on hurricane intensity change in USA was also delivered. A web site has been set up in TC website: <http://www.typhooncommittee.org/EXOTICCA>.

## Roving Seminar 2015

The Roving Seminar 2015 was held in Lao PDR from 4 to 6 November 2015 with the support of Department of Meteorology and Hydrology and the topic was "Flash Flood and Landslides". It was the first time that Members from Panel on Tropical Cyclones (PTC) were invited to the Seminar and there was a total of 22 participants from Bangladesh, Cambodia, China, Myanmar,

Pakistan, Philippines, Lao PDR, Sri Lanka and Thailand. The lecturers came from China, Japan and Republic of Korea and the Seminar was warmly appreciated by the participants.

## WMO International Training Workshop on Tropical Cyclone Forecasting and Warnings

With the kind invitation of government of China, an international training workshop on tropical cyclone forecasting and warnings was held in Nanjing from 7 to 11 December 2015 for TC Members. Members from China, DPRK, Republic of Korea, Lao PDR, Malaysia, Philippines, Thailand and Vietnam as well as Meteorologist of TCS attended the workshop. The workshop was to assist Members in their efforts to improve operational tropical cyclone forecast and warning through providing training and knowledge updates to its forecasters.



Roving Seminar 2015



# TC NEWS FROM MEMBERS



## Secretary-General Designate of the World Meteorological Organization visited the Hong Kong Observatory

Prof. Petteri Taalas, Director-General of the Finnish Meteorological Institute and Secretary-General Designate of the World Meteorological Organization, visited the Hong Kong Observatory on 19 December 2015. During the visit, he was introduced to the latest development of the Observatory. Present and future challenges in the operational forecasting and warning of tropical cyclones were also discussed.



Figure 1 Prof. Petteri Taalas (third from right), Director-General of the Finnish Meteorological Institute and Secretary-General Designate of the World Meteorological Organization, and to his right Mr. Shun Chi-ming, Director of the Hong Kong Observatory, with senior staff of the Observatory.

## Training Workshop on Community Weather Station Project 2015

Under a Typhoon Committee Working Group on Disaster Risk Reduction (WGDRR) initiative, a training workshop to promote the setting up of community weather stations among Typhoon Committee Members for raising public awareness on

weather was conducted during 2 - 4 November 2015 in Hong Kong, China. As part of the international Community Weather Information Network (iCoWIN) project, technical knowledge and information were

shared with participants from DPR Korea and Thailand. Vietnam that participated in the workshop in 2014 installed an iCoWIN weather station at An Hai Secondary School at Ly Son Island and conducted a campaign to promote it to the students in November 2015.



Figure 2 Mr. Tam Kwong-hung, Senior Scientific Officer of the Hong Kong Observatory (left), showing the observation equipment set-up at the Observatory headquarters to participants from DPR Korea and Thailand.



Figure 3 Mr. Feng Wen (centred) with Observatory colleagues during his fellowship attachment in Hong Kong, China.

### Typhoon Committee Research Fellowship Scheme 2015

It remains a challenge for global numerical weather prediction models to accurately predict tropical cyclone (TC) genesis potential in short to medium terms. The Hong Kong Observatory hosted the Typhoon Committee Research Fellowship 2015 on a topic entitled “Development of Objective Guidance on Tropical Cyclone Genesis Forecast using Global Models”. Mr FENG Wen from the Hainan Meteorological Bureau of the China Meteorological Administration undertook the research project for two months starting from mid-November. He verified the performance of several global models for short-range TC genesis prediction and worked on the development of numerical algorithms to provide objective guidance on TC genesis for operational application.



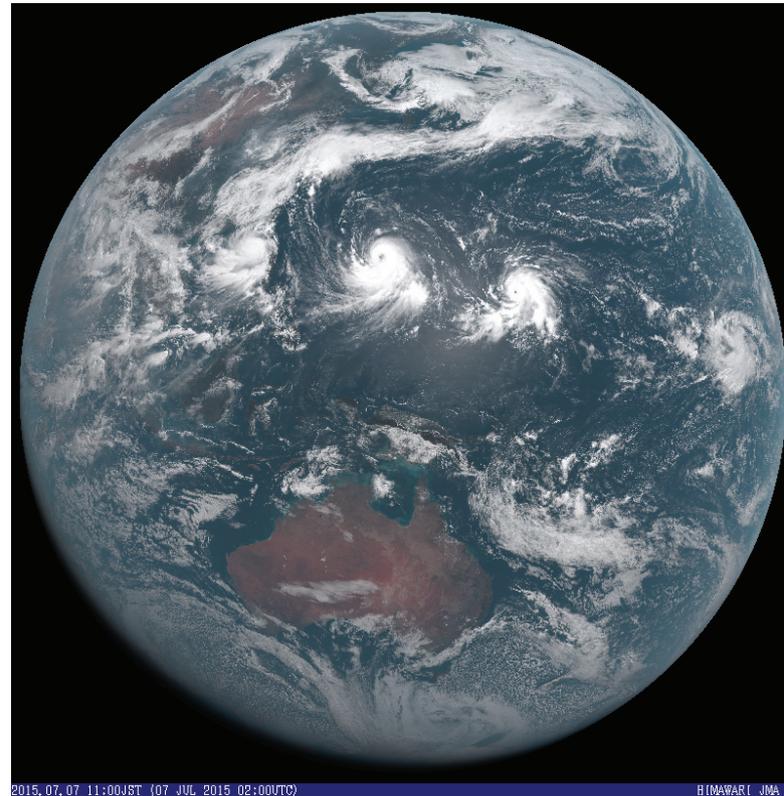
## Himawari-8 opens the door to a new era

The Himawari-8 geostationary meteorological satellite managed by the Japan Meteorological Agency (JMA) began operation on 7 July 2015, replacing the previous MTSAT-2 operational satellite.

Himawari-8 has 16 bands, which is more than three times the 5 bands of the previous MTSAT series. Three of these are visible bands corresponding to red, green and blue, enabling the creation of true-color images. Full-disk imagery is obtained every 10 minutes, and target-area observation is conducted at 2.5-minute intervals. The horizontal resolution is also double that of the MTSAT series. As a pioneer in the new generation of geostationary meteorological satellites, Himawari-8 is expected to show great capability for superior earth monitoring.

Prior to the start of Himawari-8's operations, JMA established two new services known as HimawariCast (by which primary sets of imagery are provided via a communication satellite) and HimawariCloud (by which full sets of imagery are provided to National Meteorological and Hydrological Services (NMHSs) via an Internet cloud service). Most NMHSs in the Asia and Pacific regions currently incorporate Himawari-8 data from these services into their tropical cyclone monitoring and other activities.

To fully leverage the significant new capabilities of the satellite, Himawari-8 data utilization technology needs to be developed and shared with users in the Asia and Pacific regions. As a first step in this regard, JMA is conducting training for NMHS capacity development. Such events have included a training course held in conjunction with the 6th Asia/Oceania Meteorological Satellite Users' Conference in Tokyo, Japan, in November 2015. The Agency also plans to develop Himawari-8 products such as RGB composites in collaboration with the relevant NMHSs.



Himawari-8's first operational image (0200 UTC, 7 July 2015)

## 15th Typhoon Committee Attachment Training course at the RSMC Tokyo – Typhoon Center

The 15th ESCAP/WMO Typhoon Committee Attachment Training 2015 course was held at JMA Headquarters from 22 to 31 July 2015.

The RSMC Tokyo – Typhoon Center has organized ESCAP/WMO Typhoon Committee Attachment Training courses every year since 2001 with the support of the WMO Tropical Cyclone Programme (TCP) and the Typhoon Committee to enhance the capacity of Committee members in typhoon analysis and forecasting. In accordance with a decision passed at the 3rd Joint Session of the Panel on Tropical Cyclones and the Typhoon Committee held in February 2015 in Bangkok, this training was attended by six experts from the Typhoon Committee and the Panel on Tropical Cyclones. These were Mr. Soim Monichoth from Cambodia, Ms. Praphasri Udjai

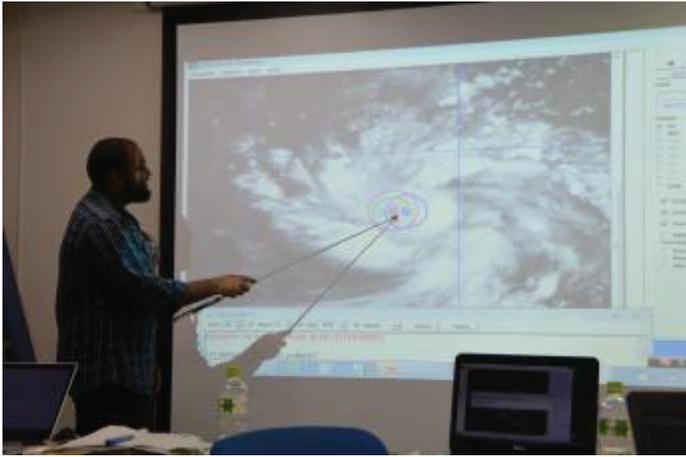


Courtesy visit to JMA Director-General Mr. Noritake Nishide with Tokyo Typhoon Center staff (22 July 2015, Director-General's office)

from Thailand, Mr. Tran Van Hung from Vietnam, Mr. Md. Azizur Rahman from Bangladesh, Mr. Hussain Afshal from the Maldives, and Mr. Hla Tun from Myanmar.

The training focused on imparting practical information and skills on tropical cyclone analysis and forecasting through lectures and exercises using the Satellite Analysis and Viewer Program (SATAID). The teaching covered a range of areas including Dvorak analysis, interpretation of microwave data, quantitative precipitation estimation (QPE), quantitative precipitation forecasting (QPF) and storm surge forecasting. All attendees gave presentations to help JMA staff understand the current status of their meteorological and hydrological services. Prof. Yuichi Ono (the Assistant Director of the International Research Institute of Disaster Science (IRIDeS) at Tohoku University) also gave an introductory lecture on the Sendai Framework for Disaster Risk Reduction 2015 – 2030 to enhance related understanding and promote the use of the framework for the enhancement of such services.

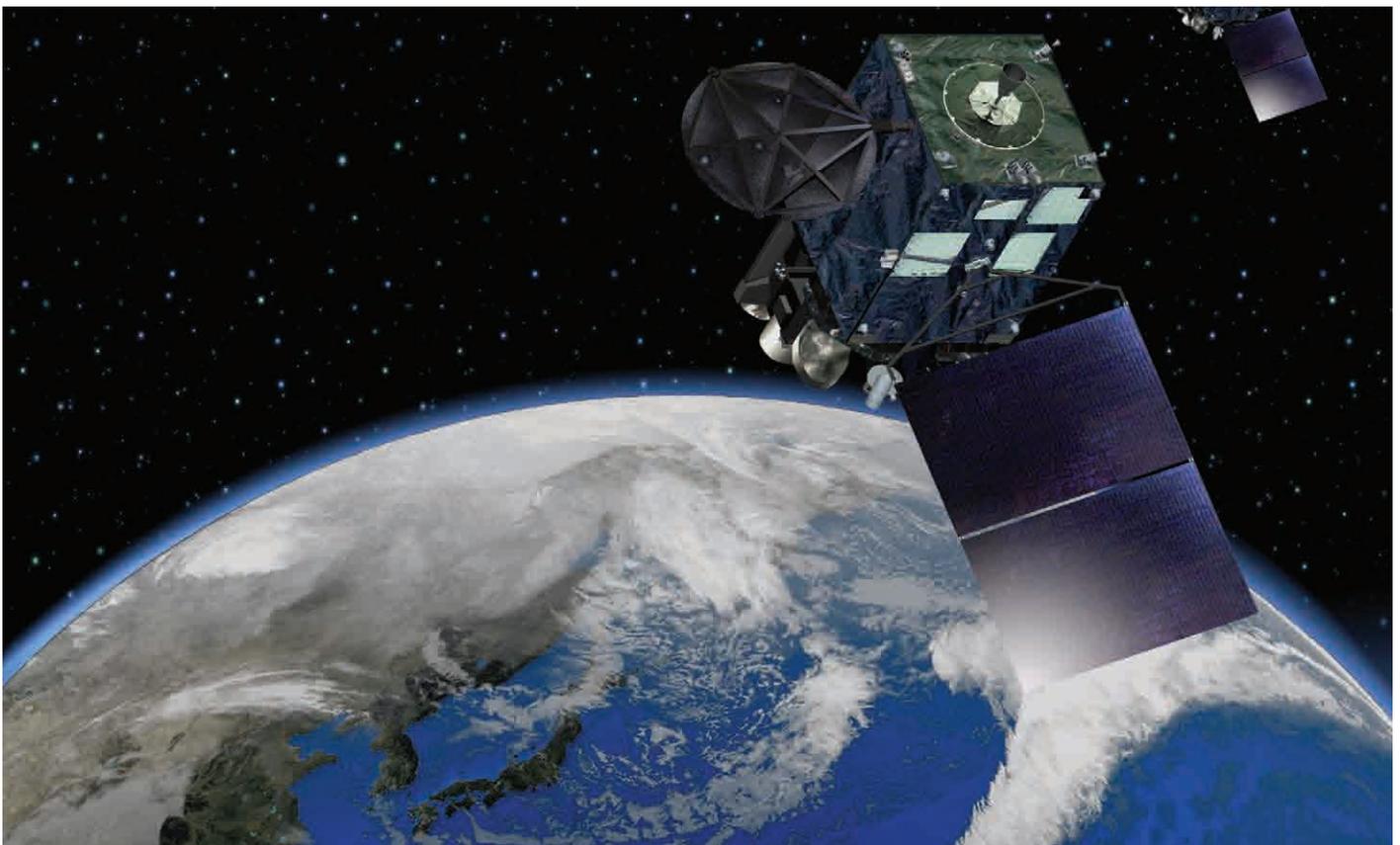




Training lectures and exercises



Left: presentation; right: tour of JMA's operation rooms





### Hosting Eighth Meeting on Meteorological Technology - CMA, SMG, IPMA

The eighth meeting on Meteorological Technology among China Meteorological Administration (CMA), Macao Meteorological and Geophysical Bureau (SMG) and Portuguese Institute of Ocean and Atmosphere (IPMA) was held in Macao from 8th to 10th July 2015.

As a bridge among China and Portuguese speaking countries, the meeting also invited some meteorological experts from the Republic of Cape Verde, the Republic of Mozambique to share experience. A total of 12 papers were presented during this meeting. Topics included: remote sensing technology application, numerical weather prediction technology, quantitative precipitation forecasts, probabilistic forecasts based on the ensemble system,

and the development of meteorological services, etc.

In order to enhance the cooperation and improve the development of the meteorological technology among the tripartite, the meeting was setup since the establishment of Macao Special Administrative Region (MSAR) and held biennially in rotation. Over the past years, the meeting provided frequent conferences and smooth communicating platform in meteorological area. The tripartite have a deeper and wider connection and collaboration. Great achievements gained on the comprehensive meteorological observing technology, the development on numerical weather prediction system and early warning system, the assessments of climate change as well as the application of information technology on meteorological services.



**ESCAP/WMO TYPHOON COMMITTEE 10TH INTEGRATED WORKSHOP  
26-29 OCTOBER 2015  
KUALA LUMPUR, MALAYSIA**



PARTICIPANTS OF 10TH TYPHOON INTEGRATED WORKSHOP WITH SECRETARY GENERAL OF MINISTRY OF SCIENCE, TECHNOLOGY AND INNOVATION (MOSTI), H.E DATO' SRI DR. NOORUL AINUR MOHD. NUR



WELCOMING REMARKS BY DIRECTOR GENERAL OF MALAYSIAN METEOROLOGICAL DEPARTMENT, DATO' CHE GAYAH ISMAIL





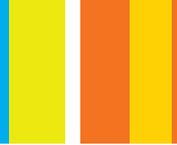
WELCOMING REMARKS BY MR. YU JIXIN - TYPHOON COMMITTEE SECRETARY, TYPHOON COMMITTEE SECRETARIAT



WELCOMING REMARKS BY MR. TAOYONG PENG, CHIEF OF TCP PROGRAMME, WORLD METEOROLOGICAL ORGANIZATION



OPENING ADDRESS BY H.E DATO' SRI DR. NOORUL AINUR MOHD. NUR, SECRETARY GENERAL OF MINISTRY OF SCIENCE, TECHNOLOGY AND INNOVATION (MOSTI)





PLENARY SESSION ON DAY 1



PARALLEL SESSION – WORKING GROUP ON METEOROLOGY



PARALLEL SESSION – WORKING GROUP ON HYDROLOGY



PARALLEL SESSION – WORKING GROUP ON DISASTER RISK REDUCTION



### Typhoon Analysis and Prediction System (TAPS) transfer to the Thai Meteorological Department and Lao PDR Department of Meteorology and Hydrology

The National Typhoon Center/KMA carried out the TAPS technology transfer to the Thai Meteorological Department (TMD) from Oct. 14 to 16, 2015. This activity included four lectures and two practice classes for the staff of TMD in Thailand, which contain typhoon forecast process and the TAPS use skill. During the visit period, the KMA staff introduced the TAPS structure and related programs including data supporting system, helped the members install the TAPS on each machine, and performed a

demonstration of typhoon forecast. And according to the request of the department of Meteorology and Hydrology (DMH) of Lao PDR, the KMA staff also visited DMH-Lao PDR and conducted a short training for knowledge transfer on upgraded TAPS during Oct. 12-13, 2015.

Training Period:  
DMH of Lao PDR (Oct. 12 – Oct. 13)  
TMD of THAILAND (Oct. 14 – Oct. 16)

Training Contents:  
- Typhoon genesis and analysis  
- Installation of TAPS and user education  
- Demonstration on typhoon forecast using the TAPS



Fig. 1. TAPS introduction and typhoon forecast practice at TMD and DMH in Oct. 2015

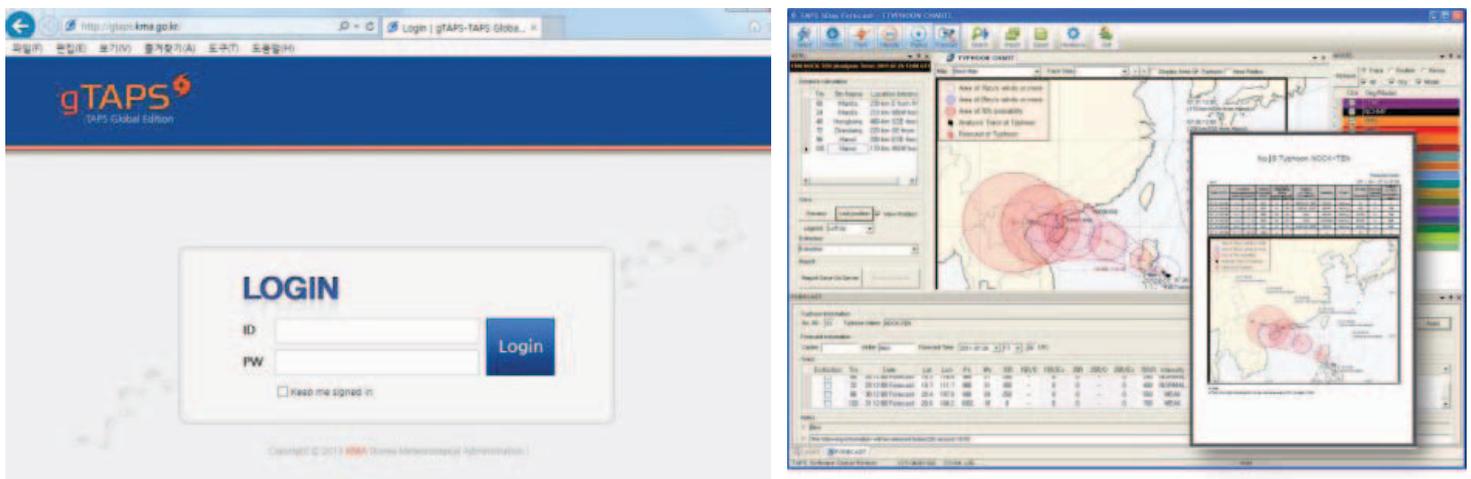


Fig. 2. The Document of TAPS introduction and typhoon forecast using TAPS.

## **National Typhoon Center/KMA appoints new Director**



Mr. Dong-Hyun Shin, 47, was appointed as the new head of the National Typhoon Center (NTC) of KMA on 13 July, 2015, succeeding Won-Tae YUN. After graduating from the Yonsei University in 1993 in Korea, Mr. Shin started his career as a

meteorological officer at KMA. He was in charge of improving the Regional Data Analysis Prediction System of KMA at the Numerical Weather Prediction Division. Especially, He worked for the typhoon initializing and typhoon tracking with NWP of KMA. He was appointed as the chief forecaster of the Forecast Division of Forecast Bureau from 2010 to 2013. In 2013, he served as the KMA Administrator's secretary for 7 months and then director of the Research and Development Division.

The new head has done a brilliant job in improving typhoon forecast with NWP and has had many great achievements as the chief forecaster. With his extensive work experience and commitment, NTC is expected to take a step forward and further increase its capacity.



## 1. TMD sent one staff to join in the Attachment Training at RSMC Tokyo 2015

Miss Praphasri Udjai, Meteorologist, Weather Forecast Bureau, Thai Meteorological Department (TMD) had participated in the Attachment Training at RSMC Tokyo 2015 which was held at the JMA Headquarters in Tokyo, Japan from 22 to 31 July 2015.



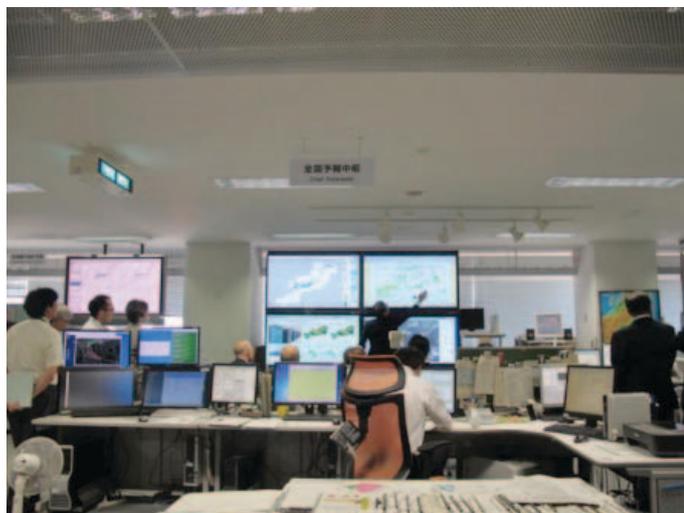
Visiting the Observation Department and getting brief on its operation



Visiting the Seismology and Volcanology Department



Mr. Noritake Nishide, Director-General, JMA kindly took a group photo with staff from RSMC Tokyo, participants from TC and PTC members (Cambodia, Thailand, Vietnam, Bangladesh, Myanmar and Maldives).



Study visited the Open House Exhibition, JMA

## 2. TMD sent two staff to join in the Typhoon Committee Roving Seminar 2015

Mr. Worapojn Khunawiwattanangkun, Meteorologist, Northern Meteorological Center and Mr. Pattara Sukthawee, Meteorologist, Meteorological Development Bureau, Thai Meteorological Department (TMD) had participated in the Typhoon Committee Roving Seminar 2015 which was hosted by the Department of Meteorology & Hydrology, Ministry of Natural Resources and Environment, Lao PDR, Vientiane from 4 – 6 November 2015.



Participants in the Typhoon Committee Roving Seminar 2015 at Vansana Riverside Hotel, Vientiane, Lao PDR, 4 - 6 November 2015

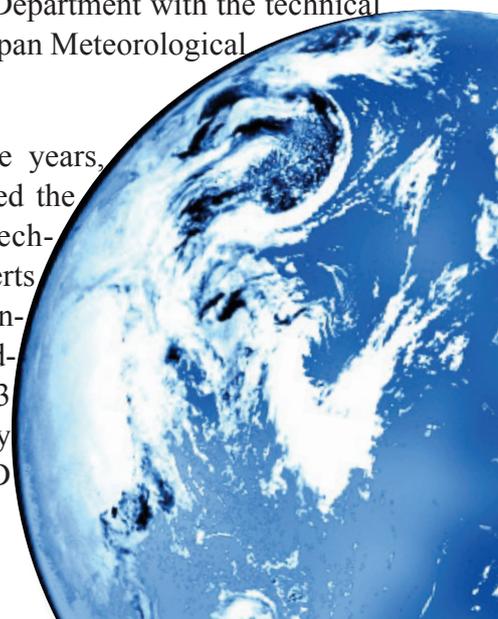


Mr. Pattara Sukthawee, was giving a presentation on flash flood and landslides management strategy of TMD

## 3. TMD held the Technical Meeting on Radar Composite Map Project on 30 November – 4 December 2015, at TMD Headquarters in Bangkok

The Typhoon Committee (TC) had endorsed the Development of Regional Radar Network as a project of the Working Group on Meteorology at its 43rd Session. The project was planned to work on the establishment of radar composite map in Thailand as its first step in 2011. Since then, the radar composite map has been implementing progressively by the Thai Meteorological Department with the technical assistance from the Japan Meteorological Agency (JMA).

During the past three years, JMA kindly transferred the radar composite techniques to TMD experts through the three trainings held at its headquarters in 2012, 2013 and 2014 respectively in order that TMD



acquires the ability to produce a radar composite map on its own. In 2013, TMD could produce the echo intensity at the lowest level of 4 radar sites. In 2014, TMD had worked with JMA on application of the JMA's radar composite techniques to the nationwide radar network in Thailand, and to preliminary work with JMA on application of QPE techniques by TMD. During the year, TMD could develop the nationwide radar composite map of Thailand radar network successfully with the technique provided by JMA.

In 2015, base on the progress made in this project and in accordance to TC Working Group on Meteorology's Annual Operating Plan 2015-item 5 (Development of regional radar network), which was endorsed at the 47th TC Session held in Bangkok, Thailand on 11 – 13 February 2015, TMD and JMA agreed to organize a Technical Meeting on Radar Composite Map among the radar experts between TMD and JMA on 30 November – 4 December 2015 at TMD Headquarters, Bangkok, to discuss the issue on the technical support for applying the Quality Control (QC) and Quantitative Precipitation Estimation (QPE) Technique for TMD experts and discussing on sharing radar composite map among the ASEAN countries.



JMA experts and TMD participants took a group photo with Dr. Songkran Aksom, TMD's Deputy Director-General for Technical Services



The Technical Meeting was formally opened by Dr. Songkran Aksom, TMD's Deputy Director-General for Technical Services in the morning of 30 November 2015



The JMA experts courtesy visited to Mr. Wanchai Sakudomchai, Director-General, TMD



JMA experts presented on Radar Composite Map and QPE for TMD forecasters

During the Technical Meeting, JMA experts additionally gave a series of presentations covering information on Radar Composite Map, QPE, and quality management technique for TMD participants and also provided a technical training on QPE to TMD radar experts.



Site visit to TMD's Weather Radar Station at Samutsongkram Province in the afternoon of 30 November 2015

JMA experts had also made a visit to TMD's weather radar station at Samutsongkram Province, which is a dual-polarization radar, after that JMA and TMD radar experts had discussion on the development of Radar Composite Map, including dual-polarization radars. Besides they also had discussion on telecommunication issues for experimental test of radar data sharing among the region.

Furthermore, JMA had provided the JAVA libraries and application programs to TMD in order for

experts to demonstrate essential techniques for the production of a nationwide composite map and QPE acquired through the said meeting. TMD noted the conditions of using such the JAVA libraries and application programs and would like to cordially thank the JMA for the kind cooperation and its great support which significantly contributes to the success of radar composite map and QPE for implementation by TMD, Thailand.

**4. TMD sent two staff to attend the International Training Workshop on Tropical Cyclone Forecasting and Warning, Nanjing, China, 7 – 11 December 2015**

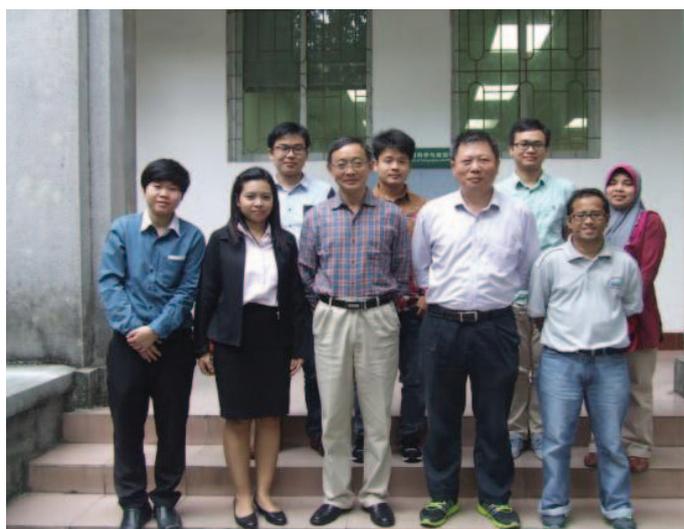
Mr. Worapojn Khunawiwattanangkun, Meteorologist, Northern Meteorological Center and Mr. Sapon Sangkaew, Meteorologist, Southern Meteorological Center (West Coast), Thai Meteorological Department (TMD) had attended the International Training Workshop on Tropical Cyclone Forecasting and Warning which was held in WMO Regional Training Centre (RTC) in Nanjing, China from 7 to 11 December 2015. Its objective was to enhance the trainees' ability in operational tropical cyclone forecasting and warning for Typhoon Committee members.



Mr. Sapon Sangkaew, TMD participant was invited to give a speech on behalf of the representative of participants during the opening ceremony, 7 December 2015



**5. As the representative of the Working Group of Hydrology, the Royal Irrigation Department (RID) of Thailand by Miss Pornpairin Promyou and Miss Kunlaya Jareonkitkaset was invited to participate in the one-month attachment training for the project of TC Working Group on Hydrology (WGH) on Operational System for Urban Flood Forecasting and Inundation Mapping (OSUFFIM), AOP 4, for pilot cities in SYS University, Guangzhou, China from November 15 to December 14, 2015.**



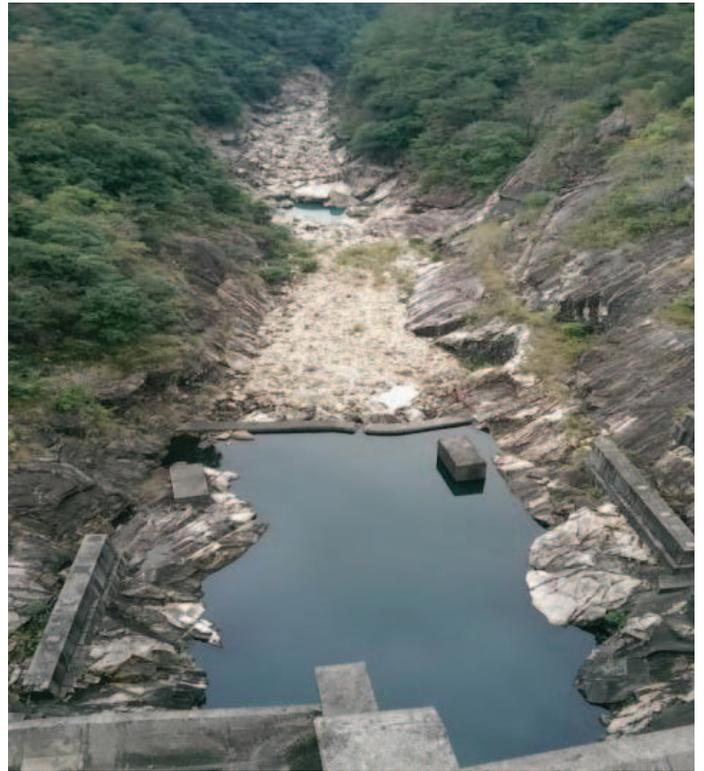
Opening Address on 15 Nov 2015



Group photo



RID Participants gave a presentation



Excursion Trip at Luxinehe Dam on 28 November 2015



Certificate presentation to the participants on 28 December 2015



**6. Department of Disaster Prevention and Mitigation (DDPM), Thailand as a member of Working Group on Disaster Risk Reduction (DRR) of the Typhoon Committee had assigned two participants to attend the Training Workshop for Typhoon Committee Community Weather Station Project : iCoWIN held in Hong Kong from 2 to 4 November 2015.**

UNESCAP/WMO Typhoon Committee organized the Workshop for Typhoon Committee Community Weather Station Project: iCoWIN at the Hong Kong Observatory (Hong Kong, China) from 2 to 4 November 2015.



DDPM assigned Mr. Paitoon Naktae, Director Section of Safety Standard sub bureau to attend this workshop for studying about setting up community weather stations in order to raise public awareness on weather and climate change and also to promote the use of new communication technology and strategies to facilitate sharing of weather information among community.

The ESCAP/WMO Typhoon Committee Newsletter  
is published in English by the Typhoon Committee Secretariat

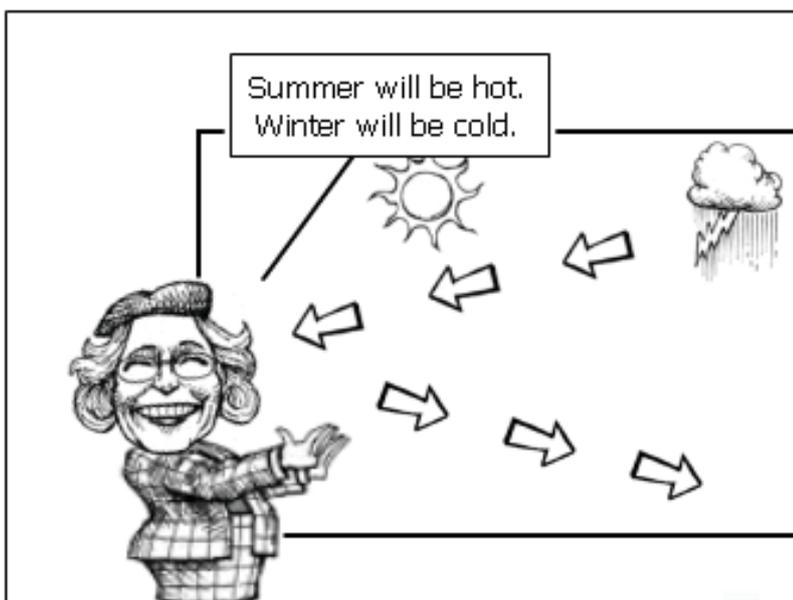
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## Long Range Weather Forecast



Humour Corner