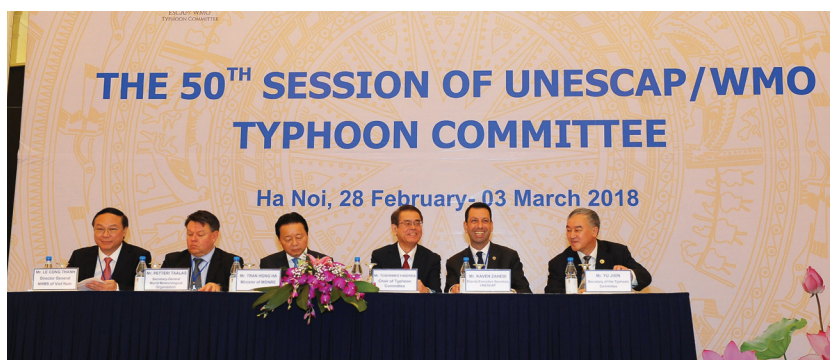




UNESCAP/WMO TYPHOON COMMITTEE TC50

Newsletter

Special Edition



The 50th Anniversary!



The ESCAP/WMO Typhoon Committee (TC) is an intergovernmental regional organization, established by Governments of ESCAP Member Countries (or Member Territory) under the joint auspices of ESCAP and WMO in 1968 to minimize the typhoon-related disaster risk reduction and damage mitigation in the region and to facilitate closer regional and international cooperation.

In the past 50 years, the Committee has been developed into the world's preeminent inter-governmental, regional organization for improving the quality of life of the Members' populations through integrated cooperation to mitigate impacts and risks of typhoon-related disasters and to enhance beneficial typhoon-related effects. The Committee achieved its mission to integrate and enhance regional (Meteorological, Hydrological, and Disaster Risk Reduction) activities of Members within international frameworks to reduce the loss of lives and minimize social, economic, and environmental impacts by typhoon-related disasters.

To celebrate its 50th anniversary as a big and meaningful



event, the Committee decided at its 49th Session, which was held in Yokohama, Japan from 21 to 24 February 2017, to oversee, plan and coordinate the preparation and organization of the TC50 Session and associated celebration activities, including the high-level thematic forum at TC50 Session.

The ESCAP/WMO Typhoon Committee (TC) held its 50th Session in Hanoi, Viet Nam, from 28 February to 03 March 2018. The Session was attended by 153 participants from 13 of 14 Members of the Typhoon Committee, namely: Cambodia; China; Hong Kong, China; Japan; Lao People's Democratic Republic (Lao PDR); Macao, China; Malaysia; Philippines; Republic of Korea; Singapore; Thailand; United States of America (USA); and the Socialist Republic of Viet Nam. Representatives of United Nations Economic and Social Commission for Asia and the Pacific (ESCAP), World Meteorological Organization (WMO) and Typhoon Committee Secretariat (TCS) also attended the Session. The Session was attended by observers from Indonesian Agency for Meteorology Climatology and Geophysics (BMKG) of Indonesia, Joint Typhoon Warning Center (JTWC), Japan International Cooperation Agency (JICA), Weather News Inc., International Centre for Water Hazard and Risk Management (ICHAHM), Mekong River Commission (MRC), International Telecommunications Union (ITU), Inter-governmental Oceanographic Commission (IOC)/UNESCO and Tohoku University of Japan.



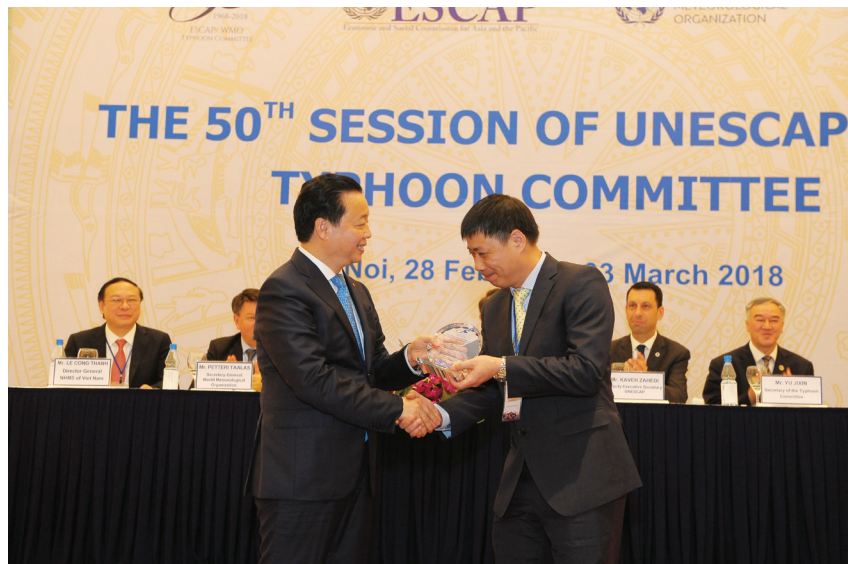


To celebrate the 50th Anniversary of Typhoon Committee, the Secretary General of WMO Mr. PETTERI Taalas, the Deputy Executive Secretary of ESCAP Mr. ZAHEDI Kaveh, the Minister of Natural Resources and Environment (MONRE) of S.R. of Viet Nam, and 9 Permanent Representatives (PR) of WMO from Members attended the Session.



The Kintanar Award

At 50th Session, the Dr. Roman L. KINTANAR Award for Typhoon Related Disaster Mitigation was presented to: (i) The National Centre for Hydro-Meteorological Forecasting of National Hydro-Meteorological Service (NHMS), Viet Nam, in recognition of their outstanding contribution towards the typhoon-related risk reduction and damage mitigation and achievements on their professional tasks, scientific research and international/regional cooperation in 2017; and (ii) National Disaster Management Research Institute (NDMI), the Republic of Korea, in recognition of their commitment and outstanding contribution towards typhoon-related disaster mitigation and WGDRR's activities, particularly in research on Disaster Management sharing on typhoon-related policies and technologies within the Typhoon Committee's Region and international/regional cooperation in 2017.



The High-level Session

The High-Level Session was completed by 13 Heads of Delegation speeches and presentations related to Member Achievements in the past 50 years. Below the speeches and presentations.



By Ms. Peou Phalla, Deputy Director, Department of Meteorology

Ministry of Water Resources and Meteorology, CAMBODIA

Your Excellency, Secretary-General of WMO, Secretary of Typhoon Committee, Distinguished delegates, ladies and gentlemen, it is my honor to be able to participate in such the important event of ESCAP/WMO Typhoon Committee today in Hanoi.

First of all, I would like to express our sincere appreciation on behalf of the Royal Government of Cambodia to the great effort and kind assistance of the Vietnam Government on the hosting of the 50th anniversary and Session of Typhoon Committee.

I would also like to take this opportunity to thank to the ESCAP/WMO Typhoon Committee for organizing this special event.

Ladies and Gentlemen,

I would like to share about our history with the Typhoon Committee. Cambodia has been a member of the Typhoon Committee since 1968. We have been striving in participating the Committees and playing important role to improve the mutual cooperative relationships among the members. But unfortunately in 1975 to 1978, Cambodia was in the political instable, during this period the meteorological and Hydrological Service was stopped. And after the changes of regime in 1979 the meteorological and hydrological service re-established by receiving the technical support from Soviet Union and Socialist Republic of Vietnam.

We could learn about various experiences and the lessons from serious disaster or damages caused by Typhoons or Cyclones hit to the regions in Asia and Pacific.

In this regard, our country, Cambodia, recognizes the

particular importance of participations to the Typhoon Committee as a member and intends to continue to improve our abilities with pursuing the sustainable cooperative relationship to aim the realization of risk reductions against the natural disaster by Typhoon and/or Tropical Storm.

We will continue to pursue our effort to make contribution to the development of the countries in the regions to commit as far as we can.

During this decade, we have learned from the fact of the disasters caused by Typhoon and other natural phenomena that could make a million people force back to poverty.

We particularly remember the year 2009 that, several provinces in Cambodia had got affected by the big Typhoon Ket Sana to the large areas including Kampong Cham, Kampong Thom, Preah Vihear, Siem Reap, Stung Treng, Monduliri, Rattanak Kiri and so on.

There were 20 people dead, 48 injured, 702 houses were lost, 211 houses were damaged and 5,693 people must have been evacuated by the Typhoon.

The Cambodian Red Cross national headquarters has received reports from the community leaders and Red Cross volunteers collected in provincial and district levels as the regular situation. But the actual

damages were enormous.

Responses to the urgent needs by those affected disasters have been immediately organized by the national society, using its own methods, material, financial and human resources.

While, in the year 2012, the Super Typhoon Bopha which was occurred in the area of the Philippines Sea caused a large number of deaths as over 1,900 people.

The other tropical cyclones made landfall globally in the same year 2012 and brought huge damages to very wide areas not only in Cambodia but also some areas in Asia, Europe and Oceania that impacted much floods.

However, in Cambodia the major types of flash flood and flood from the tributaries and Mekong River might be usually occurred due to heavy rains caused by Typhoons and Tropical Cyclones from the Monsoon Trough.

It is estimated that about 100 people may be dead annually each year and economic losses will exceed about 100 to 170 million USD.

Through such the past painful experiences in our country, the Cambodia Government has performed an important role to aim risk reduction against natural disaster trying to implement and make modernization of the early warning system in the country.

National Meteorological and Hydrological Services aim to play a greater part than that they have already done in improving preparedness and encouraging governments as well as the roles for the private sectors and civil society groups to address underlying risks which compound the impact of severe events by weather.

Currently, weather forecasting information in Cambodia could be remarkably improved and having better accuracies according to an intensive support and well understanding from the government.

It was also the result of remarkable achievement thanks to a kind assistance by WMO, Typhoon Committee, Japan Government, other non government organization and also kind contribution on the valuable numerical weather predicting products provided by other countries such as, ECMWF, SWFDP, JMA, GFS, KMA, TMD and CMA.

I hope that Hydrological and Meteorological Services will be able to have further success and developments in future with important contributions of continuous and strong support by WMO and the remarkable leadership of Typhoon Committee.

I would like to conclude my speech today by wishing all the member countries success and prosperity, specially for WMO and the Typhoon Committee.

Thank you very much for your kind attention.





By Ms. Liu Yaming

Administrator of the China Meteorological Administration (CMA) - CHINA

Permanent Representative of China with the World Meteorological Organization (WMO)

Dear delegates, ladies and gentlemen,

Good morning!

I am very pleased to be here with you today to celebrate the fiftieth anniversary of the Typhoon Committee. First of all, on behalf of China, I wish to pay tribute to and congratulate on the fantastic job and the achievements that the Typhoon Committee and its Members made over the past half century! I would like to express my appreciations to WMO, UNESCAP and the Typhoon Committee Members for their long-term cooperativeness! I would also like to express my heartfelt thanks to the Ministry of Natural Resources and Environment of Vietnam for hosting this important event!

Ladies and gentlemen, dear friends!

As you know, our region is among the most typhoon prone areas in the world.

In the past 30 years, about seven typhoons landed in China on average each year, leading to more than 10,000 deaths or disappearances and a direct economic loss of 1,150 billion RMB.

The Chinese government attaches great importance to the work related to typhoon and other natural disasters. In order to closely watch an evolving typhoon, we have so far launched 16 FENGYUN meteorological satellites. We boast an integrated observation system including 198 weather radars. By continuously stepping up the typhoon research, we have steadily improved our performance in its prediction and forecasting, with the error of 24-h typhoon track forecast being reduced by about 70% in the past 30 years. We have made great efforts in enhancing typhoon readiness, popularizing typhoon knowledge to the public, and, in particular, devising a typhoon warning and emergency response mechanism that features government leadership, inter-sector coordination and social

engagement.

There has been a significant drop in the number of deaths or disappearances and in the share of direct economic losses in the total GDP due to typhoons in China over the past 30 years.

Ladies and gentlemen!

China is a founding Member of the Typhoon Committee. For 50 years, it has been actively involved in the activities of the Committee. In 1985, China hosted a Typhoon Committee session in Beijing for the first time. Subsequently, it hosted other three sessions in the cities of Zhuhai, Shanghai and Hangzhou.

China is an active participant in the Committee's working groups. It has launched such rewarding projects as the EXOTICCA, urban flood risk management, Tropical Cyclone Research and Review (TCRR), typhoon forecast performance assessment, etc.

Ladies and gentlemen!

Years ago, China proposed the Belt and Road Initiative, the vision of which is consistent with the goal of this Committee, i.e. to promote and strengthen cooperation and exchanges at international and regional levels. I hope that in our big family of the Typhoon Committee, the regional cooperation be discussed by all whilst the results shared by all.

At present, China hosts such global or regional facilities as World Meteorological Centre (WMC) and Typhoon Committee Training Centre. On the strength of these centers plus the meteorological instruments and equipment, technical support, fellowships, and international training that we offer, we have made active contributions to the work of the Typhoon Committee, in particular, as evidenced by nearly 60 international train-



ing workshops on typhoon for more than 800 trainees.

Looking ahead, we will continuously support the work of this Committee. We hope to work with all its Members to further enhance the committee's role of coordination and communication, and further contribute to capacity development of its Members.

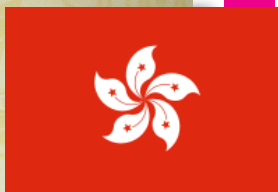
To this end, China will honor its commitment by enabling free and open access to FENGYUN meteorological satellite data and planning donations of the FY-4 meteorological satellite receiving system, to jointly develop and apply meteorological satellite products in the region. China will further strengthen and expand its international education and training components. In response to the needs of the Members, there will be an increase in the number of typhoon forecasters for on-the-job training, the number of typhoon training courses and extensive support for fellowship programme provided by the WMO Regional Training Centre that hosts the Typhoon Committee Training Centre.

In conclusion, I wish this session a complete success. Let's work together to usher in another 50 years of brilliance for the Typhoon Committee! Welcome to China next year. Thank you!



COMMITTEE

March 2018



TC50 Newsletter

Special Edition

By Mr. SHUN, Chi Ming

Director

Hong Kong Observatory

Permanent Representative of Hong Kong, China with the World Meteorological Organization (WMO)

50th Session of ESCAP/WMO Typhoon Committee

High Level Session

Progress in Tropical Cyclone Forecasting and Warning Services Hong Kong, China

28 February 2018

CM Shun
Director of the Hong Kong Observatory

Strengthening of observations

2011

Operational reconnaissance flight

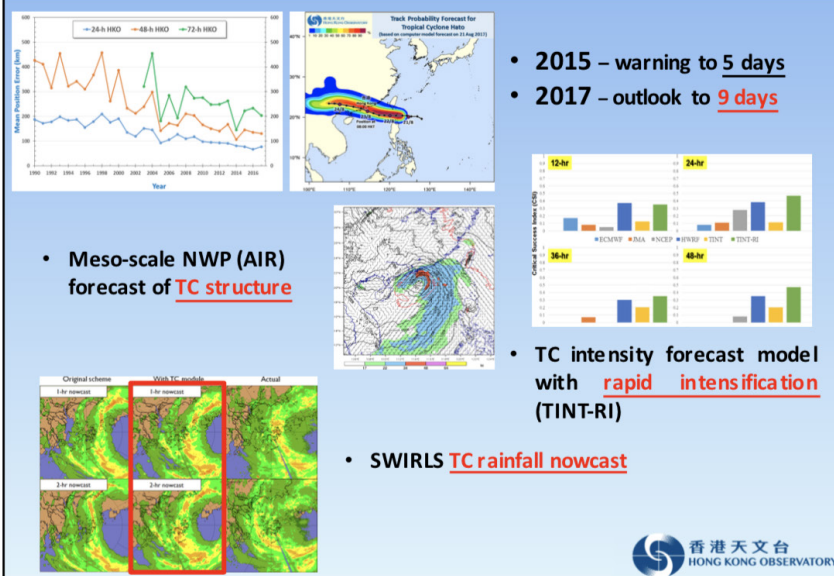
2013

Shipborne AWSs and drifter buoys over South China Sea

2016

Dropsonde mission

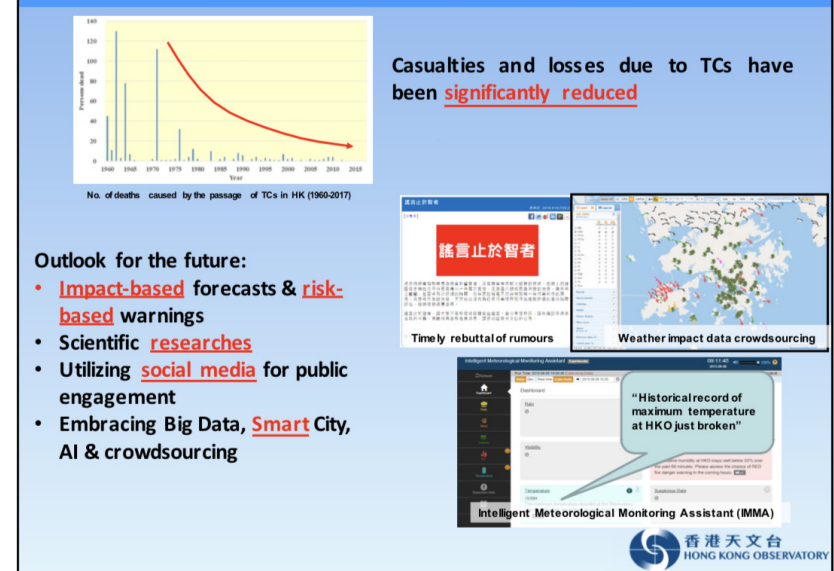
Enhancement of forecasting services



Public & stakeholder engagement



Achievement and future outlook



International cooperation

- Regional initiatives
 - from **SPECTRUM** (1990s) to **EXOTICCA** – transitioning research into operations
 - Global Multi-hazard Alert System (**GMAS**) – strengthening Members capacity in implementing Multi-hazard Early Warning Systems
- Typhoon Committee – **annual** regional platform
- Governance – continual **improvements**
- WMO restructuring – enhancing **relevance** to Members



Thank you



MITTEE

March 2018

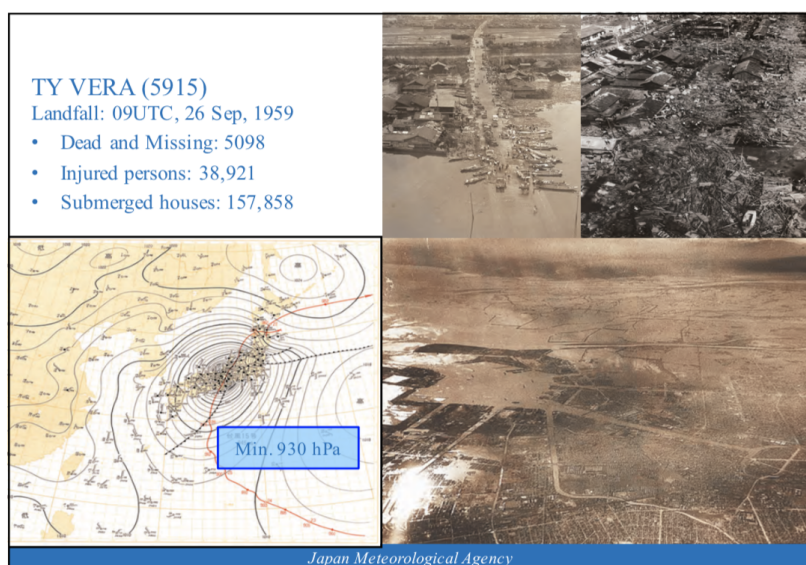
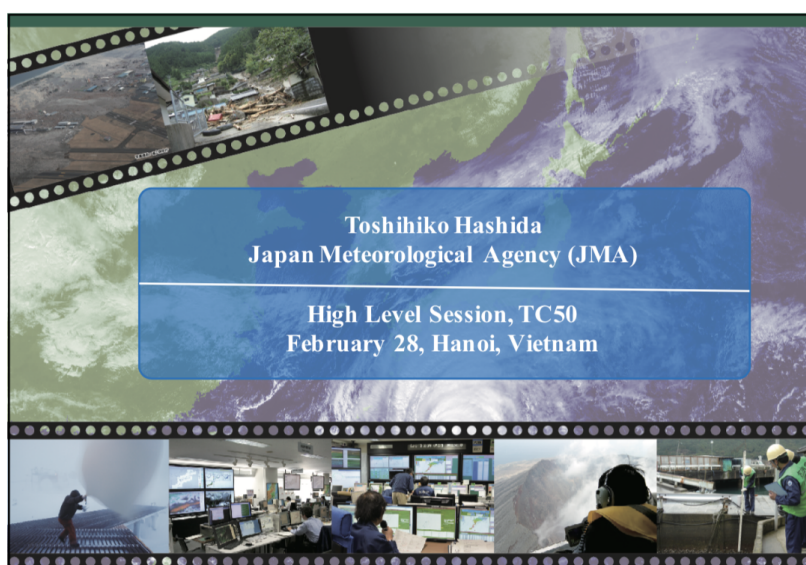


By Dr. HASHIDA, Toshihiko

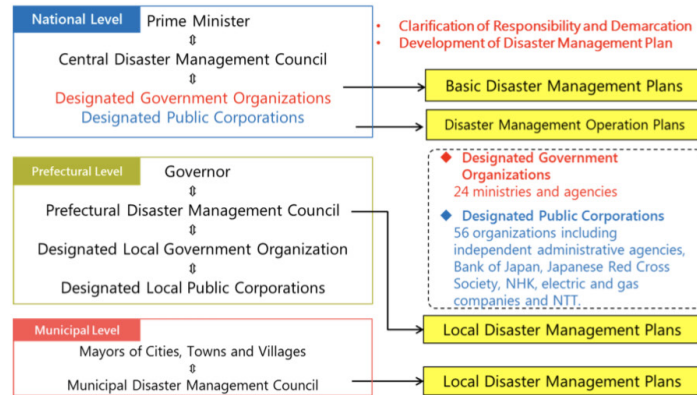
Director-General

Japan Meteorological Agency

Permanent Representative of Japan with the
World Meteorological Organization (WMO)



Disaster Countermeasures Basic Act (Act No. 223 of 15 November 1961)



Japan Meteorological Agency

Mt. Fuji Radar System

- Period : 1964 - 1999
- Altitude : 3776 m
- Coverage : 800 km (radius)



Japan Meteorological Agency

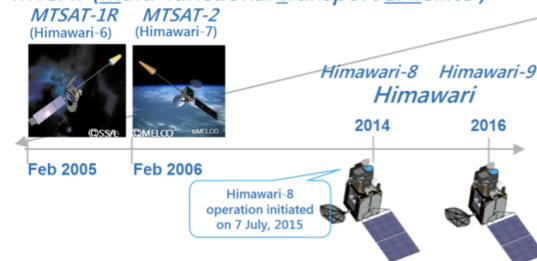
GMS (Geostationary Meteorological Satellite)



(GOES-9)

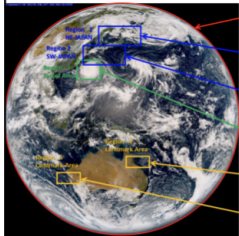
Back-up operation of GMS-5 with GOES-9 by NOAA/NESDIS from May 22, 2003 to June 28, 2005

MTSAT (Multi-functional Transport Satellite)

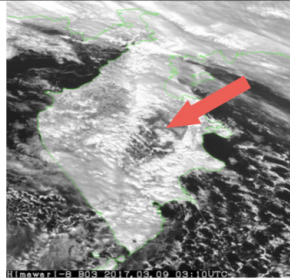


Japan Meteorological Agency

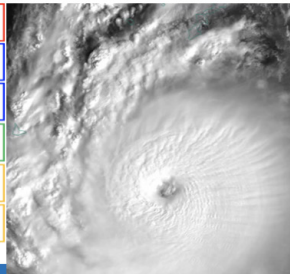
- HimawariRequest
- New International Service
 - Launched by JMA at Jan. 2018



Full disk
Interval: 10 minutes (4 times per hour)
Region 1 JAPAN (North-East)
Interval: 2.5 minutes (4 times in 10 min)
Observation: EVI & NIRS (1000 x 1000 km)
Region 2 JAPAN (South-West)
Interval: 2.5 minutes (4 times in 10 min)
Observation: EVI & NIRS (1000 x 1000 km)
Region 3 Target Area
Interval: 2.5 minutes (4 times in 10 min)
Observation: EVI & NIRS (1000 x 1000 km)
Region 4 Landmark Area
Interval: 0.5 minutes (12 times in 10 min)
Observation: EVI & NIRS (1000 x 1000 km)
Region 5 Landmark Area
Interval: 0.5 minutes (12 times in 10 min)
Observation: EVI & NIRS (1000 x 1000 km)



Mt. Shiveluch
in Kamchatka
Peninsula,
Band 03
(0.64 μm , visible)



13, Oct. 2016
Typhoon Chaba
Band 03
(0.64 μm , visible)



Thank you for your attention



Toshihiko HASHIDA

Japan Meteorological Agency





By Mr. KHOUNPHONH, Khanmany

Director-General

Department of Meteorology and Hydrology

**Permanent Representative of Lao PDR
with the World Meteorological Organization
(WMO)**

Your Excellencies
Honorable Guests, Friends, Ladies and Gentlemen,
very good morning.

It's a great honor to be invited to join the 50th Typhoon Committee Session, especially to celebrate the 50th Anniversary of Typhoon Committee, on behalf of Lao's delegates I would like to express our gratitude and sincere thanks to Government of Viet Nam and WMO for providing a chance for us to participate this importance event.

As you may have known that floods, droughts, and extreme weather are the dominant hazards in Lao PDR and cause loss of life, damage agricultural production, and threaten livelihoods. The number of significant flood events has been increasing over the years. Furthermore, climatic variability is expected to exacerbate food insecurity and result in an increase in food prices.

Lao PDR's population is predominantly rural based and most of the population is subsistence farmers or fishers. As a result natural hazards have drastic affects on the poor and vulnerable and pose a serious challenge for water resources management and poverty alleviation in the country. Consequently, flood and drought proofing to reduce risk is a priority for sustainable development and for protecting the population.

Due to the serious impacts of recent weather and climate events in the region which affected economic and business operations, the various sectors in the country area beginning to demand for improving of increasing hydro-meteorological products and services. The frequent occurrence and increasing severity of extreme weather and climate events in the country are seen as indications of changing climate.

For generations, the people of Lao PDR especially those living in remote areas with no access to information and warnings have used traditional knowledge and beliefs to anticipate and cope with environmental hazards.

Scientific weather forecasting was formalized in the country in 1955 with the establishment of the National Meteorological Service (NMS) under Ministry of Transport and Public Work and NMS has been registered as a member of the World Meteorological Organization (WMO) in 1st June 1955. The NMS was mandated to provide weather and climate-related services for the country, from 1955 to 1975 there were only 5 SYNOPTIC Stations whereas located in big cities and all of them were manual type.

In 1976, the NMS received an additional mandate of providing operational hydrological work and it was accordingly renamed as the Department of Meteorology and Hydrology (DMH) under Ministry of Agriculture and Forestry (MAP) and some number of hydrology station have been established as well as some more new SYNOPTIC and CLIMATE stations in some provinces.

Later in 1997 the DMH also took charge of earthquake monitoring activities, it also provides weather services to aviation and land transportation, there were 2 earthquake stations established and one earthquake data center.

Due to the government strategy to reform agencies dealing with environment, water resources, climate change and weather, in July 2007 the DMH was transferred from MAF to the Water Resources and Environment Administration (WREA) under Prime Minister's Office. Due to date 2007, DMH has expanded hydro-meteorological networks over the country in totally: 17 synoptic stations, 49 climate stations, 110 hydrological stations, 2 agro-meteorological stations, 119 standalone rain gauge posts, 12 of 17 synoptic stations have been served as aeronautical station for domestic and international airports.

In 2011, Water Resources and Environment Administration renamed as the Ministry of Natural Resources and Environment (MONRE) whereas DMH belongs to.



Since DMH has been registered to WMO's member in 1955, WMO provided great supports for strengthening the capacity building such as short-medium and long term training in the country and overseas, and also provided some facilities for improvement hydro-meteorological services in Lao PDR, especially the improvement of data sharing among the WMO's members by establishing the Global Telecommunication System (GTS) in 2002 and also the improvement of weather analysis tools, sharing the hydrological data with sub-Mekong River countries through the Mekong River Commission (MRC) project.

During the last two decades, Lao PDR has been facing with the severe natural disasters such as the severe flooding and devastation in 2008, Typhoon Ketsana in 2009, and Typhoons Haima and NokTeng in 2011, the Government of Lao PDR has increased its effort to improve natural disaster preparedness.

The World Bank, with funding from the Global Facility for Disaster Reduction and Recovery (GFDRR), and from different donors such as Asian Development Bank, JICA, KOICA, CMA, IMA, FAO, China, Japan, Republic of Korea, Viet Nam have been supporting Lao PDR in these efforts. With these support the Government of Lao PDR has strengthened early warning by developing a National Early Warning Strategy. To complement the strategy Standard Operating Procedures (SOP) were developed, which clearly define roles and responsibilities of departments and organizations at all levels of government involved in the warning dissemination process. To implement the Early Warning Strategy and the SOPs, a National Implementation Plan was developed. The plan makes recommendations on network design, field instrumentation, data management, reporting, training requirements, modeling, and forecasting approaches. Due to date, hydro-meteorological services have been improving such as: upgrading

hydro-met stations and new installation from manual type to automatic stations, and improving the facilities which meet to WMO's standard. So we have 22 manual stations, 50 climate stations, 110 hydrology stations, 119 standalone rain gauges, 43 Automatic weather Stations, 38 Automatic Water Level Stations, 3 Earthquake stations, 3 Ground Receiving Satellites, 1 Doppler Radar, 1 National Early Warning Center, 1 National Water Resources Data Information Center. Specially, the hydro- meteorological has endorsed and will be published during this year, and by cooperation with Lao's national University to develop the curriculum of hydro-meteorological degree. Under big supports from WMO, UNESCAP and Typhoon Committee, to strengthening of the capability of our staff, which are improving the knowledge, experiences and confidents for hydro-met services.

Distinguish, Ladies and Gentlemen,

Since last 50 years, Department of Meteorology and Hydrology of Lao PDR has a big changing and big improvement, especially the improvement of hydro-met networks, the improvement of the exchange among the WMO's country member, the improvement of equipment and facilities on meteorological and hydrological services, the improvement of the accuracy of weather forecast and warning system, the improvement the dissemination system and the strengthening the capacity building, these all improvement can be reduce the loss of life and properties of the people of Lao PDR. Without supporting from WMO, UNESCAP, Typhoon Committee, all WMO's member countries and donors we cannot success and achieve.

In the occasion of celebrating 50th Anniversary of Typhoon Committee, on behalf of Lao's delegates, I would like to express my sincere thanks to WMO/ Typhoon Committee for all supports for strengthening our capabilities to be stronger and stronger, and also thanks for all donors to provide funding for the improvement of hydro-meteorological services. I do hope that you will continue to support us

Thank you!





By Dr. TAM, Vai Man

Director

Macao Meteorological and Geophysical Bureau

Permanent Representative of Macao, China
with the World Meteorological Organization
(WMO)

Honorable Director General of NHMS Viet Nam, **Mr. Le Cong Thanh**,

Honorable Secretary-General, World Meteorological Organization, **Prof. Petteri Taalas**,

Honorable Deputy Executive Secretary, United Nations Economic and Social Commission for Asia and the Pacific, **Mr. Kaveh Zahedi**,

Honorable Chair of Typhoon Committee, **Dr. Toshihiko Hashida**,

Honorable Secretary of the Typhoon Committee, **Mr. Yu Jixin**,

Honorable Minister of MONRE, **Dr. Tran Hong Ha**,

Dear Colleagues and Old friends of TC,

Distinguished guests, ladies and gentlemen.

On behalf of Macao Meteorological and Geophysical Bureau, it is my honor to attend the 50th Anniversary Session of Typhoon Committee.

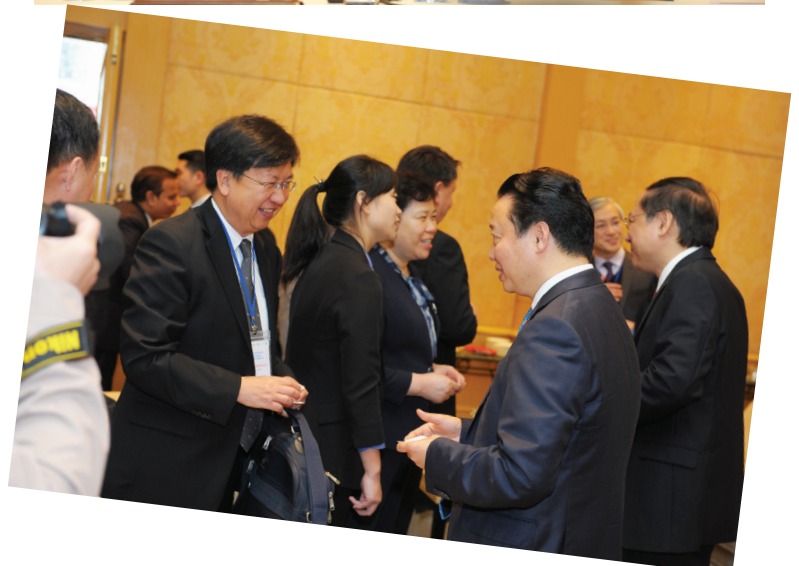
Macao, China became a full Member of the Typhoon Committee in 1992. We have the honor in hosting 3 Typhoon Committee Sessions in 1994, 2000 and 2007. And starting from February, 2007, the Typhoon Committee Secretariat succeeded in moving to host in Macao. I would like to take this opportunity to express my gratitude to Mr. Antonio Viseu (former Deputy Director of SMG), and Mr. Olavo Rasquinho (former Secretary of Typhoon Committee, WMO/ESCAP) for their contribution in hosting TC Secretariat in Macao.

Countries in Asia and the Pacific are vulnerable to natural disasters, such as typhoons. Macao as member of TC and WMO has been actively taking part in programs, seminars and training activities organized by Typhoon Committee. Macao also nominates focal points in different components of activities that depicted in commitment and thorough support to the WMO programs. In addition, we are honor to continuous hosting the Typhoon Committee Secretariat in Macao, China in coming 4 years. We believe that Macao can

provide a good platform on promoting activities related to tropical cyclone.

Today, I wish to thank all members and experts that work in the mitigation of typhoon damage, technical development such as forecasting, warning and modeling system, on the implementation of improving the technology for meteorological, hydrological and disaster risk deduction. All work should be acknowledged.

Ladies and Gentlemen, once again, I would like to express my congratulations to TC session on its 50th anniversary and my sincere thanks to our host. I wish you all every success in your deliberations. Thank you very much!





By Mr. ALUI, Bin Bahari

Director-General

Malaysian Meteorological Department

**Permanent Representative of Malaysia with
the World Meteorological Organization
(WMO)**

TC Chair, TC Secretary, TC Members, Ladies and Gentlemen.

Assalamualaikum and good morning.

First and foremost, I would like to express my sincere gratitude and appreciation to the Government of Viet Nam for hosting the 50th Session of the Economic and Social Commission for Asia and the Pacific and the World Meteorological Organization (ESCAP/WMO) Typhoon Committee and the excellent arrangements.

I am indeed glad to be here today in this important and special meeting of the ESCAP/WMO Typhoon Committee as the Committee celebrates its 50th year.

Ladies and Gentlemen,

Over the past five decades, Malaysia was struck by two tropical cyclones namely Tropical Storm Greg that hit State of Sabah in December 1996 and Typhoon Vamei that hit State of Johor in December 2001.

The Tropical Storm Greg reported had claimed 230 lives while 70 people were missing and more than 25,000 people left homeless. The associated economic losses was amounting to RM150 million. As for Typhoon Vamei, five lives were lost and RM7 million was estimated for the economic losses.

Ladies and Gentlemen,

Over the past 50 years, the Malaysian Meteorological Department (MMD) has taken continuous efforts in order to further improve its capability in the provision of weather services for wellbeing of the people and nation of Malaysia. The efforts taken include development of the High Performance Computing (HPC) System and Radar Integrated Nowcasting System (RaINS).

MMD has successfully developed and commissioned the HPC System in June 2017. Through HPC, the operation of MMD weather modelling, MMD-WRF (Weather Research and Forecasting) has been improved with higher resolution, that is, from four (4)

kilometres to one (1) kilometre and longer forecast period, that is, from three (3) days to seven (7) days.

MMD also has successfully customised the Short-range Warning of Intense Rainstorms in Localized Systems (SWIRLS) developed by Hong Kong Observatory (HKO) for Malaysia, following the attachment training of MMD officers at HKO in 2012 and 2015, and thank you to HKO. In addition, with the guidance from HKO, MMD has been able to develop RaINS in 2017. The RaINS provides the combination of radar and NWP nowcast up to three hours in advance with 10 minutes interval. This product can be assessed by public through mobile application. Today, further development is being carried out by MMD to improve the performance of RaINS.

Ladies and Gentlemen,

To end my remarks, I wish to take this opportunity to express my deep appreciation to the Local Organising Committee and the Secretariat for their kind assistance in organising this 50th Session of ESCAP/WMO Typhoon Committee. I am confident of a successful and fruitful meeting with the excellent facilities provided by the host country, Viet Nam and the enthusiasm as well as commitments of all the delegates.

Thank you for your attention.





By Mr. BADILLA, Roy

Office-in- Charge

Hydro-Meteorology Division

Philippine Atmospheric, Geophysical and
Astronomical Services Administration

(PAGASA)

Mr. Chairman, my dear colleagues in the Typhoon Committee, our Typhoon Committee's Old Friends who are in attendance today, Ladies and Gentlemen

A very pleasant greetings for every one and all!

First of all, allow me to congratulate the Typhoon Committee for its Golden Anniversary. For the information of the body, the Typhoon Committee Secretariat (TCS) was based in the Philippines for about 35 years. That was from 1971 to 2006 under the able leadership of Dr. Roman Kintanar before it was transferred to its present location in Macao. During that time, a full-time Meteorologist and administrative support staff were assigned by PAGASA to the TCS, later on joined by a full time hydrologist from Japan.

Typhoon Committee meetings were held in the Philippines in 1969, 1981, 1984, 1991, 1993, 1998, 2006 and 2009.

Our National Meteorological and Hydrological Service, the Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA), has benefited so much from the Typhoon Committee during the past 50 years in terms of the tremendous improvement of its Weather and Flood Forecasting and Warning Services, through its various programs, projects and activities. I will not be enumerating them all because it is numerous and will eat-up our very precious time.

With this, on behalf of Dr. Vicente Malano, Administrator of PAGASA and the Permanent Representative to the World Meteorological Organization (WMO) and the people of the Republic of the Philippines, I would like to thank the Typhoon Committee for its support and assistance. I would also like to thank the Viet Nam Government for hosting this very memorable event and my congratulations to the Local Organizing Committee (LOC) for a job very well done.

To our Malaysian colleague who earlier said that they

only have two (2) Tropical Cyclones a year, don't worry, the Philippines will export tropical cyclones to your country, free of charge. The Philippines is visited by 20 tropical cyclones on the average, a year.

Again, congratulations to the Typhoon Committee for its Golden Anniversary!





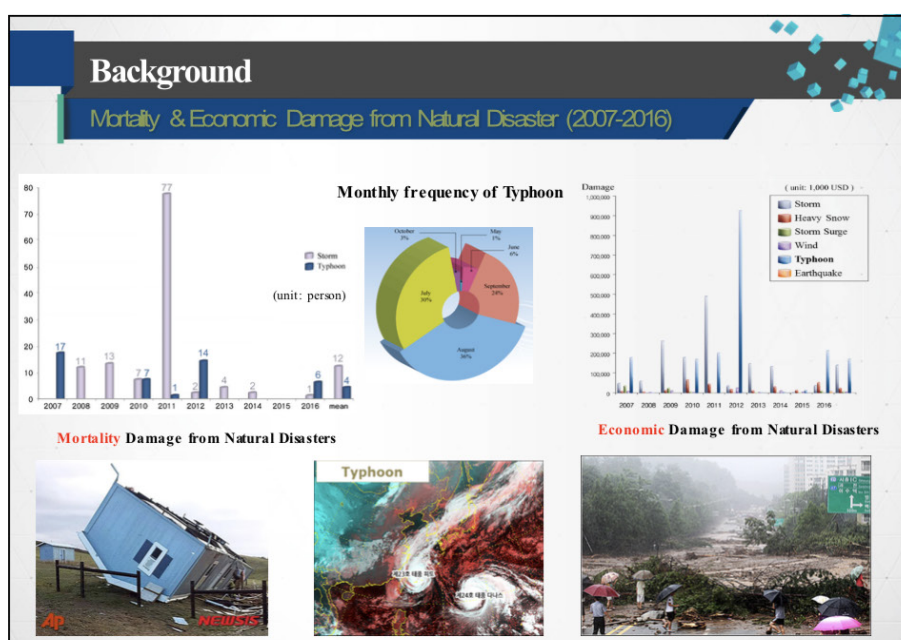
By Mr. NAM, Jaecheol
 Administrator
 Korea Meteorological Administration
 Permanent Representative of Republic
 of Korea with the World Meteorological
 Organization (WMO)

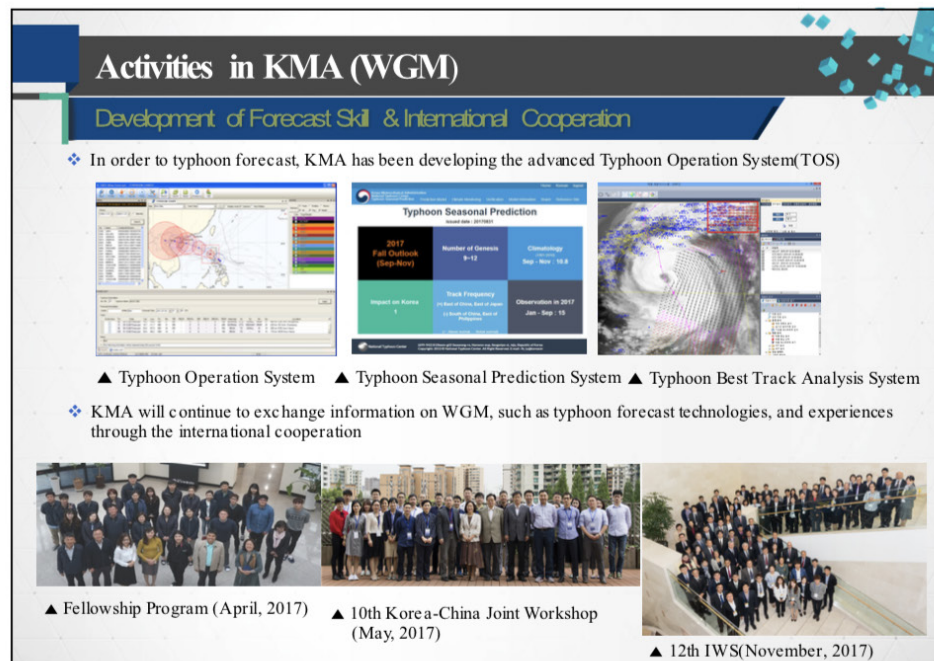
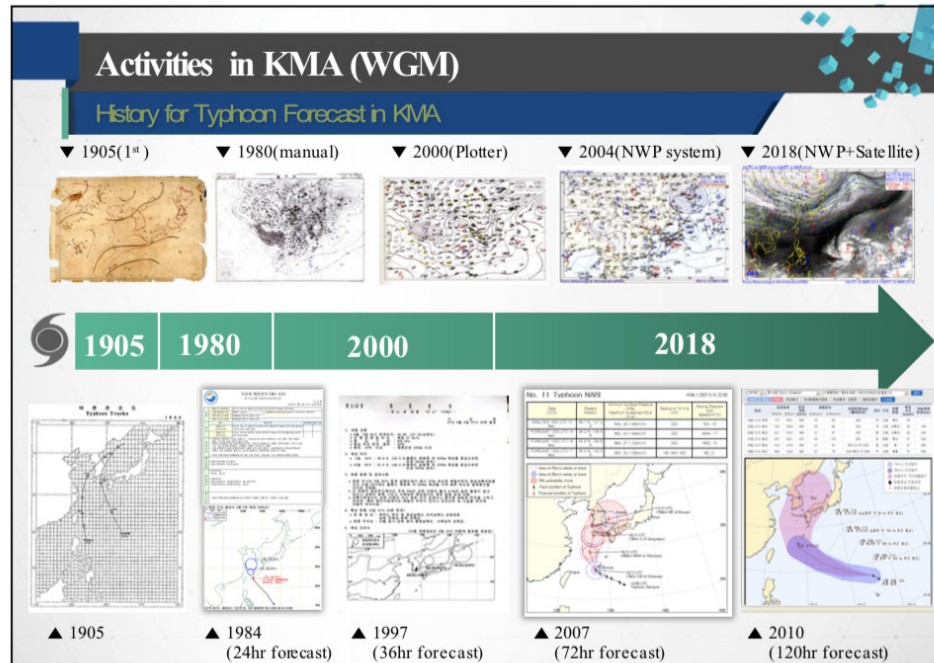
ESCAP/WMO Typhoon Committee Fiftieth Session
 28 February – 3 March 2018
 Ha Noi, Viet Nam

Current understanding and Activities related to Typhoon in Korea

NAM, Jaecheol, Ph.D
 Administrator of KMA
 PR of the Republic of Korea with WMO

Korea Meteorological Administration
 Ministry of the Interior and Safety
 National Disaster Management
 Research Institute
 Division of Risk Information and Forecast
 Han River Flood Control Office





Activities in KMA (WGM)

TROG Research Fellowship since 2001

2001	Dr. PENG, Taoyong	China		Ms. Bai Lina	China
2002	Miss YU, Hui	China	2014	Mr. Nguyen Tung Thanh	Viet Nam
2004	Dr. Vicente B. MALANO	Philippines		Mr. Juanito S. Galang	Philippines
2005	Ms. Sugunyanee YAVINCHAN	Thailand		Ms. Akhom THAMALANGSY	Lao PDR
2006	Mr. HOA, Vo Van	Viet Nam		Mr. Aldazar D. Aurelio	Philippines
2008	Ms. YING, Ming	China	2015	Mr. Jose Frivaldo, JR	Philippines
	Mr. TRAN Quang Nang	Viet Nam		Mr. Somprat Snithagon	Thailand
2010	Mr. Kamol Promasakha Na SAKOLNAKHON	Thailand		Ms. DO Thi Thanh Thuy	Viet Nam
2011	Mr. Jori J. LOIZ	Philippines		Mr. Boonthum Tanglumlead	Thailand
	Mr. Chukiat THAJARATSATIAN	Thailand		Mr. Narongpon Thongsang	Thailand
	Mr. Renito B. PACIENTE	Philippines	2016	Mr. Benison Jay N. Estreja	Philippines
2012	Ms. Plaidao KHUMCHAIYAPHUM	Thailand			
	Mr. Bounteum SYSOUPHANTHAVONG	Lao PDR			
2013	Dr. Bonifacio Galt Pajulelas	Philippines	2017	Ms. Pensiri Trisataya	Thailand
	Mr. Nguyen Huu Thanh	Viet Nam		Ms. Chuanpit Ngerchalad	Thailand
	Ms. Prapaporn Wongsaming	Thailand		Mr. Robert B. Badrina	Philippines
				Ms. Hoang Thi Mai	Viet Nam

Activities in NDMI (WGDRR)

International Cooperation Project & Knowledge Sharing

- To build a resilient country towards disaster, NDMI has been conducting International Cooperation Project since 2013
- In flood-area, we installed Automatic Rainfall Warning System and Flash Flood Alert System.

Project with Philippines (2013 ~ 2015)



657
Typhoon WASHI
in 2011
↓
no casualty
Typhoon TEMBIN
in 2017

- Contribute to reduce mortality in Cagayan de Oro City, Philippines

Project with Vietnam and Lao PDR (2016 ~)



Lao Cai in
Vietnam
Vang Vieng
and
Oudomxay in
Lao PDR

- Project with Vietnam and Lao PDR are successfully conducted, and it will be continued until 2019

Annual Meeting on WGDRR

- 12th WGDRR Annual Meeting in Ulsan
- 13th Annual meeting on WGDRR will be held in Ulsan, ROK

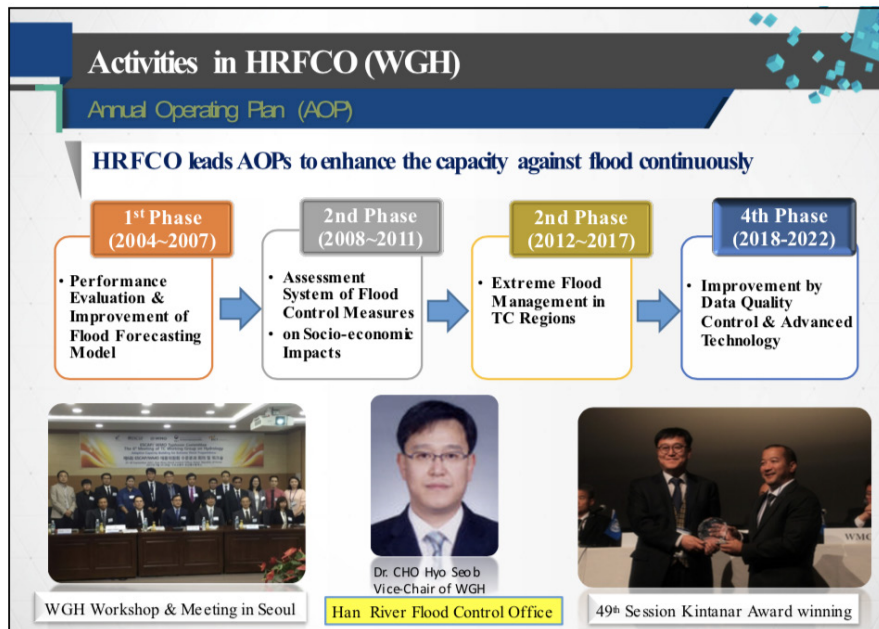


Dr. SHIM Jae Hyun
Chair of WGDRR

Expert Mission on WGDRR

- 2017 Knowledge Sharing in Hawaii
- Expert Mission in 2018 will be announced soon

National Disaster Management Research Institute



Thank you



ch 2018



By Ms. Patricia EE
Director,
Weather Services Department
Meteorological Service Singapore









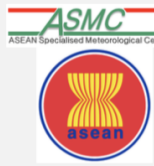

Meteorological Service Singapore's milestones over the last 50 years

Ms Patricia Ee
Director (Weather Services Department)

50th Session
ESCAP/WMO Typhoon Committee

28 Feb 2018

Significant Milestones

		1971 – First weather radar Today – Comprehensive observation network		1997 – National Seismic Network
				2008 – National Tsunami Early Warning System
		1972 – Meteorological satellite data reception Today – Receiving data from an array of meteorological and environmental satellites		
		1993 – 2002 – ASEAN Specialised Meteorological Centre (ASMC) as regional centre for enhancing weather and climate prediction services, and haze monitoring		2013 – Centre for Climate Research Singapore (CCRS), focusing on research on tropical weather and climate systems

Key Weather Services

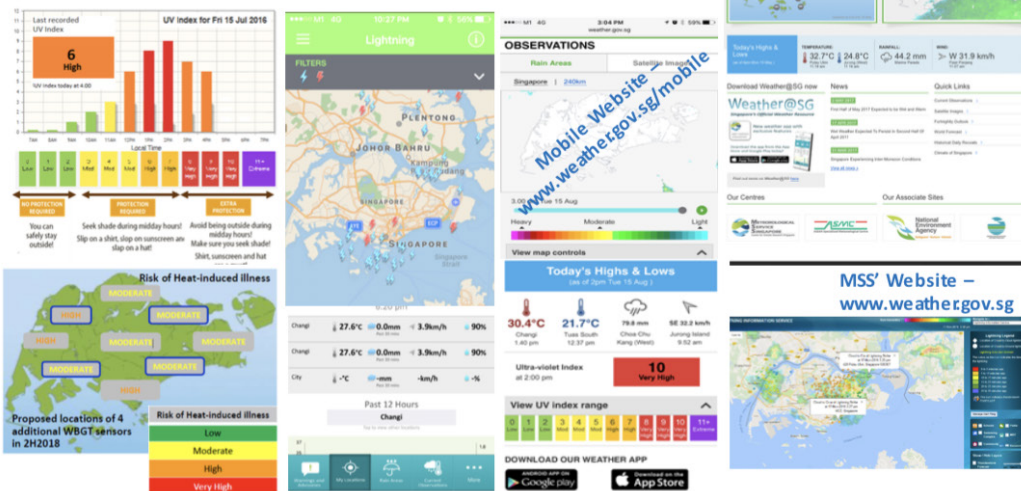
Our services serve a wide spectrum of users/customers and sectors who rely on **time-critical meteorological forecasts and information** to make important decisions in operations and planning



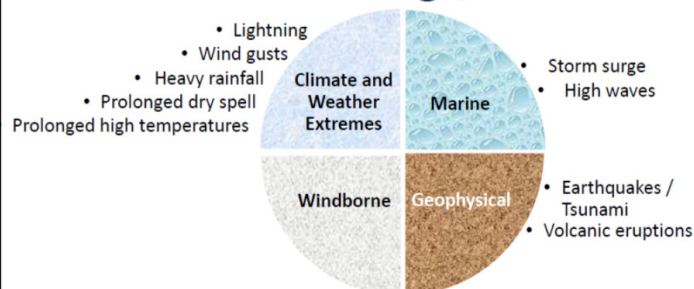
- Weather Forecast and Warning Services
- Monitoring and Early Warning Of Multi-Hazards

Weather Forecast and Information Services

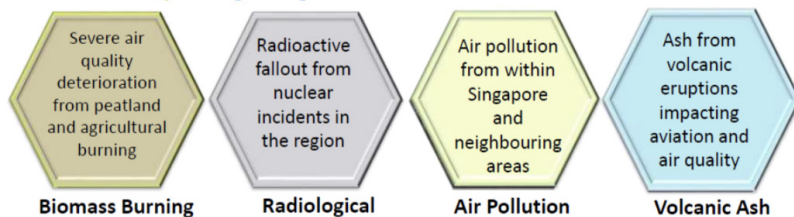
- Updating through online and mobile applications for timely dissemination



Multi-Hazard Warnings/Advisories



Windborne hazards are growing concern



These hazards are characterised by: Sudden onset, Swift transport, Uncertainty at source

Enhancing Capabilities to Improve Forecast Services



Enhanced **Numerical Weather Prediction (NWP) Modelling** capabilities, focusing on the tropics



QUANTITATIVE FORECAST → PROBABILISTIC, IMPACT-BASED FORECAST

Applied Modelling – Downstream applications utilising NWP information



By Dr. Songkran Agsorn
Deputy Director-General,
Thai Meteorological Department (TMD)



Distinguished guests, Ladies and Gentlemen:

I am very pleased to have an opportunity to address in this important session of the 50th Anniversary of Typhoon Committee. As a representative of the Royal Thai Government and an executive of the Thai Meteorological Department, I would like to convey our joys and appreciation of the cooperation among Members which leads to the 50th Anniversary of Typhoon Committee. When we look back to the year 1968 when Typhoon Committee was formed, Thailand was one of seven founder members. At that year, the 1st TC Session was held in Bangkok from 17 to 20 December 1968 by then Vice-Admiral Sanit Vesarajananda, the former Director-General of Thai Meteorological Department (TMD) who presided as the first TC Chair at the Session. Let us also remind that in the year 1960, 8 years before the forming of TC, the first meteorological satellite, NASA- Tiros-1, was launched and followed by the operational NOAA Tiros-N in 1978, leading to tropical storm observations from space that leapfrog how we followed the tropical storms in the vast oceans. The learning curve is further improved with contribution from geostationary satellites, such as GMS, Himawari, and FY series. That remarkable development in technology has pushed more impacts to how we predict the tropical storm's track and intensities. Training in Dvorak's techniques and other satellite interpretations have been offered by more advanced Members through the Typhoon Committee. Apart from such technologies, numerical prediction and basic typhoon physics are also part of technology transfer which many members benefit well. Besides, participating in technology transfers via training and seminars, Thailand also play a crucial role in hosting many of Typhoon Committee's Annual Sessions meetings, or could have said the most frequent host of the TC session. Thailand also hosted joint TC/PTC meetings in 1992 and 1997. Thailand pursues the cooperation in many projects under Typhoon Committee, for example, the SSOP, the regional weather radar composite, and seconded forecasters attached to RSMC-Tokyo.

In the next 50 years, Thailand would like to see the closer cooperation among Members in managing the typhoon's forecast, disaster managements, and the use of the internet or digital technologies to the way we manage in information of the tropical storms reflecting the changing world and climate. Let us be sure that Thailand is willing to cooperate with all TC Members and other international organizations concerned to strengthen our network and collaboration under WMO umbrella for achieving the TC mission "to mitigate the consequences of the impacts of typhoon-related disasters".

As a little special note, I would like also to mention that we are very pleased to know that one of the activities celebrating the 50th years anniversary of TC is the Old Friends invitation. Since many of TMD former executives had strongly contributed themselves to the TC activities, and one of us here, Dr. Patipat Patvivatsiri, the former Deputy Director-General who had been involved in TC activities for more than 10 years before the retirement. Our Old Friends who joined the TC in the past, are the crucial power forming the Committee and made the TC as we are today. I would like to thank all Old Friends of TC who are here with us and also the ones who can't. We sincerely thank you your utmost dedication.

At the end I would like thank the Government of Vietnam and local organizer committee for hosting this important 50th anniversary of Typhoon Committee and wish all representatives of the Typhoon Committee's Member, WMO and UNESCAP well!





By Mr. Raymond Tanabe

Director, Pacific Region USA

NOAA National Weather Service

Minister **Trần Hồng Hà**, Director General Lê Công Thành, heads of delegations, distinguished guests, ladies and gentlemen,

I am delighted and honored to be here as we celebrate 50 years of successful collaboration in typhoon forecasting and mitigation. I specifically want to thank the Government of Vietnam, the National Hydro-Meteorological Service, the U.N. Economic and Social Commission for Asia and the Pacific, and the World Meteorological Organization for hosting this year's meeting. This is both a large and important undertaking and on behalf of the United States Government, I thank you.

The United States has been a member of the Typhoon Committee since 1998 through our Central Pacific Hurricane Center in Hawaii. That center operates under the direction of our National Oceanic and Atmospheric Administration, which I represent along with my colleagues Mr. Tom Evans and Ms. Genevieve Miller. The center serves as America's critical line of defense against Pacific storms. It is through our work that the United States contributes to the Typhoon Committee in ways both large and small. If the United States can use its experience and expertise to help others then our contribution, regardless of its size, will have been well worth it.

We share a common enemy: powerful storms born in the open ocean. Because of your location in the Pacific, you know them as typhoons. We too, are the occasional target of typhoons, but the United States suffers far more from the annual onslaught of hurricanes in the Atlantic. For a victim left amid a storm's destructive wake, however, the label matters far less than the devastation it brings. That is just one reason why the United States so strongly supports the work of the Typhoon Committee.

Our shared vision of mitigating the impact and risks of typhoon-related disasters improves the quality of life throughout the region. Achieving such a vision requires dedicated collaboration between all our governments so that lessons learned can become the foundation of future success. Our work is timely. It is vital. And it saves lives.



The United States suffered a particularly brutal hurricane season last year with 17 named storms, ten of which became hurricanes. Of the seven that made landfall, three were particularly devastating to people and property, from Texas to Puerto Rico. As measured by storm intensity and duration, 2017 ranked as the most active in over a decade.

Thankfully, 2017 also produced the most accurate forecasts. Yet, despite repeatedly knowing well in advance what was coming, when, where, and how, the 2017 hurricane season still recorded upwards of \$200 billion worth of damage and well over 100 deaths in the U.S.

Increasingly, the problem with trying to protect the public from a major storm such as a typhoon or hurricane is not so much the prediction itself, but how the public and local officials use that prediction -- which is one reason why the Typhoon Committee exists.

As storms get bigger and more destructive, how do we convey information in a meaningful way that does not prompt either panic or disbelief? How do we plan for storms? How do we recover from them? These questions still vex us in the United States but they are just as applicable, if not more so, to the Asia Pacific region with its vulnerable coastlines, dense populations and active tropical cyclone basin.

Problems such as storm preparation and recovery do not recognize geopolitical boundaries. Neither should the solutions. This is why the United States so strongly supports the work of the Typhoon Committee. Regardless of where the next storm hits, the work that all of you do will benefit many. For that, the United States of America thanks you.



**By Mr. Tran Hong Thai,
Deputy Director General**

**National Meteorological
Hydrometeorological Service
Viet Nam**

Excellency Mr. Tran Hong Ha, Minister of Natural Resources and Environment of the Socialist Republic of Viet Nam

Excellency Mr. Petteri Taalas, Secretary General of the World Meteorological Organization (WMO)

Excellency Mr. Zahedi Kaveh, Deputy Executive Secretary of United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP)

Distinguished Mr. Toshihiko Hashida, Chair of Typhoon Committee.

Distinguished Mr. Yu Jixin, Secretary of Typhoon Committee

Distinguished Heads of delegations and our old Friends

Ladies and gentlemen

First of all, May I congratulate on the achievement of Typhoon Committee during 50 years. Typhoon Committee - from the technical organization - became the Inter-Governmental Organization. It can be said that this is the historic milestone of Typhoon Committee as well as member countries. With the role of the Governmental Organization, there were many more active and effective actions to the Asia and Pacific region in the natural disaster prevention and preparedness.

Participating in the Typhoon Committee from 1979, the Hydro-Meteorological Sector of Viet Nam has taken many opportunities to participate into international cooperation and to improve our capacity in providing hydro-meteorological related supports to the development of the socio-economic development.

Distinguished Guest,

Ladies and Gentlemen,

Facing the global climate change, the weather is increasingly complicated and unpredictable. In order

to take the initiative in the prevention of natural disasters, Congress has approved the Law on Disaster Prevention dated 19, June 2013. This Law prescribes the activities of natural disaster prevention, the rights and obligations of agencies, organizations, households and individuals participating in activities of natural disaster prevention and state management and resources to ensure work safety.

With the objective "By 2020, Hydro-Meteorological Sector will have the advanced science and technology in the Asia Region, having capacities of conducting basic surveys, hydro-meteorological forecast serving the requirement of prevention and risk mitigation caused by natural calamities for socio-economic development, national defense, exploitation and use of natural resources and environmental protection in the period of industrial development".

Up to now, we have successfully implemented cooperation programs and projects. Gradually, we have fulfilled our observation station network and improved the capacities in forecasting severe phenomena especially tropical cyclones.

And our most successful year was the Law of Hydrology and Meteorology was issued in 2015 and was on act in July 2016. It creates important changes for the state management of meteorology, ensures conditions for hydro-meteorological activities to develop, supply and use hydro-meteorological information in socio-economic sectors, creates a legal corridor for hydro-meteorological activities in the prevention and mitigation of natural disasters, response to climate change, protection of life and property and the sustainable development of the socio-economy, national defense and security. The level of risk was regulated in the Law creating the clear collaboration mechanism with other sectors and understanding for the community. It must be a very effective approach to the impact-based forecasting

and risk-based warnings of the World Meteorological Organization.

The Decision No. 03/2018/QĐ-TTg of the Prime Minister dated January 23th 2018 has brought to us a function and responsibility of the Viet Nam Meteorological and Hydrological Administration. It does not only give us a great opportunity to work in the sectors of meteorology, hydrology, climate change and natural disaster prevention and risk management, but also a big challenge in providing services to support to the socio-economic development.

Distinguished Guest,

Ladies and Gentlemen,

Viet Nam is willing with Typhoon Committee and other country members to write historic pages in the natural disaster preparedness and prevention mission.

Wish the 50th Typhoon Committee Session successful.

Thank you for your attention.



The Old Friends Sharing

At this significant moment, the Committee invited 18 Old Friends to share their history/experience on the past key events and development of the Typhoon Committee, which were divided in 2 panels. In particular, the many changes in TC down through the years were recognized and it was important that a progressive mindset be maintained by the leadership such as AWG for improvement and development to continue in the future. ESCAP and WMO Secretariats were also encouraged to help raise TC profile and link up TC's regional effort with relevant international initiatives. The List of Old Friend composed by:

1. Mr. WANG Bangzhong
2. Mr. HIDETOMI Oi
3. Dr. HONG, Il Pyo
4. Dr. Tiger LEE (Lee, Won Ho)
5. Dr. KIM, Ji Tae
6. Dr. Yuichi ONO
7. Mr. LAM Chiu-ying
8. Mr. Edwin LAI
9. Mr. Olavo RASQUINHO
10. Dr. LEE-Huu TI
11. Mrs. Nanette Lomarda
12. Mr. Katsuhiko ABE
13. Mrs. Elaine KOO
14. Mr. Antonio VISEU
15. Dr. Leoncio A. AMADORE
16. Dr. Patipat PATVIVATSIRI
17. Mr. Edward FUKADA
18. Mr. NGUYEN Dai Khanh





The Display Area

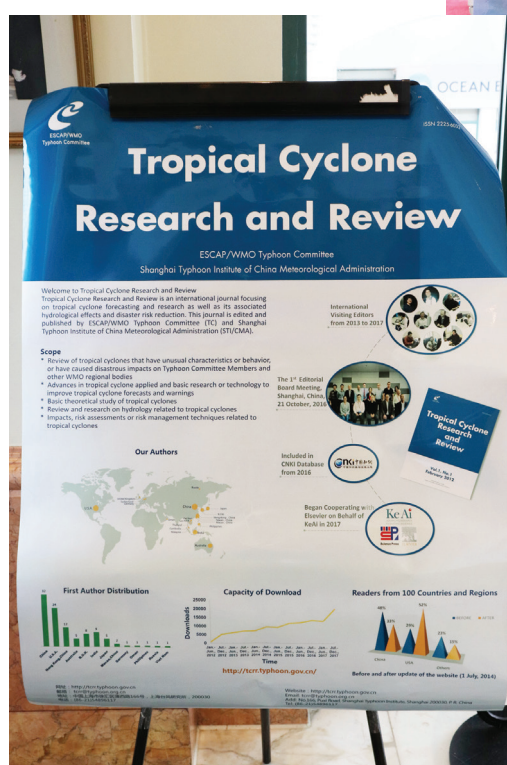
TC50
Newsletter
Special Edition

A display area for Members display their achievements and historic documents over the 50th years was setup.

You can consult the Members videos at: <http://www.typhooncommittee.org/tc50-members-video/>



PR's and Guests visiting the Members Display Area



Display Area from China

香港天文台 HONG KONG OBSERVATORY

Hong Kong, China and Typhoon Committee join hands to weather the storms

135 YEARS OF TYPHOON WARNING IN HONG KONG

Reduction of typhoon casualties in Hong Kong over the decades

1973 to present

NAME	NUMBER	SYMBOL
STAND BY	1	⚡
STRONG WIND	3	⬇
NWLY GALE or STORM	BNW	⬆
SWLY GALE or STORM	BSW	⬇
NELY GALE or STORM	ENE	⬆
SELY GALE or STORM	ESE	⬇
INCREASING GALE or STORM	9	⬇
HURRICANE	10	⬇

Adopted the current 1-3-8-9-10 scheme of tropical cyclone warning system

1931

NAME	NUMBER	SYMBOL
Stand by	1	⚡
Strong wind with squalls from SW	2	⬇
Strong wind with squalls from SE	3	⬇
Typhoon depression, but danger of heavy rain	4	⬇
Very gale	5	⬇
Very gale	6	⬇
Very gale	7	⬇
Very gale	8	⬇
Gale expected to increase	9	⬇
Hurricane	10	⬇

Adopted the No.1 to No.10 typhoon signal system as recommended by the 1st Conference of Directors of Far Eastern Weather Service

1917

NAME	NUMBER	SYMBOL
Stand by	1	⚡
Very gale	2	⬇
Very gale	3	⬇
Very gale	4	⬇
Very gale	5	⬇
Gale expected to increase	6	⬇
Hurricane	7	⬇

Introduced numbered typhoon signal system for local public (No.1 to No.7)

1907

Typhoon Gun was replaced by Explosive Bombs

1883

Establishment of Hong Kong Observatory, implementing local storm signal – Typhoon Gun, and non-local storm signals for marine community

KEY CONTRIBUTIONS TO THE TYPHOON COMMITTEE

- 2016**
 - Aircraft dropsonde system commenced operation with the first mission in September
 - Active participation in EXOTICCA project
- 2015**
 - Deploying drifter buoys over the South China Sea
 - Production of videos on typhoon hazards on behalf of Typhoon Committee
- 2013**
 - Hong Kong, China hosted the 45th Session and Mr C M Shun of the Hong Kong Observatory (HKO) served as Chairman
 - Leading the Typhoon Committee Weather Information Network Project (Co-WIN)
- 2012**
 - Dr Kintanar Award: Meteorological Data Collection Programme for tropical cyclones
- 2011**
 - Collaborated with Government Flying Service to initiate typhoon reconnaissance flights over the South China Sea
- 2009**
 - Dr Kintanar Award: WMO Severe Weather Information Centre developed and operated by HKO
- 2001**
 - Offering Typhoon Committee research fellowship
 - Supporting capacity building on rainfall nowcasting system (SWIRLS)
- 1997**
 - Hong Kong, China hosted the 30th Session and Dr H K Lam of HKO served as Chairman
 - Mr Patrick Sham of HKO – Chairman of the 12th (1979), 15th (1982), 19th (1986) and 22nd (1989) Sessions
 - Mr Gordon Bell of HKO – Chairman of the 6th (1973) and 11th (1978) Sessions
 - Hong Kong, China served as Chief Editor of Typhoon Committee Annual Review (1985-1994)
 - Active participation in SPECTRUM project
- 1968**
 - Taking an active role in the establishment of the Typhoon Committee
 - One of the Typhoon Committee founding Members
- 1930**
 - Hosted the 1st Conference of Directors of Far Eastern Weather Services



Display Area from Hong Kong, China



Display Area from Japan

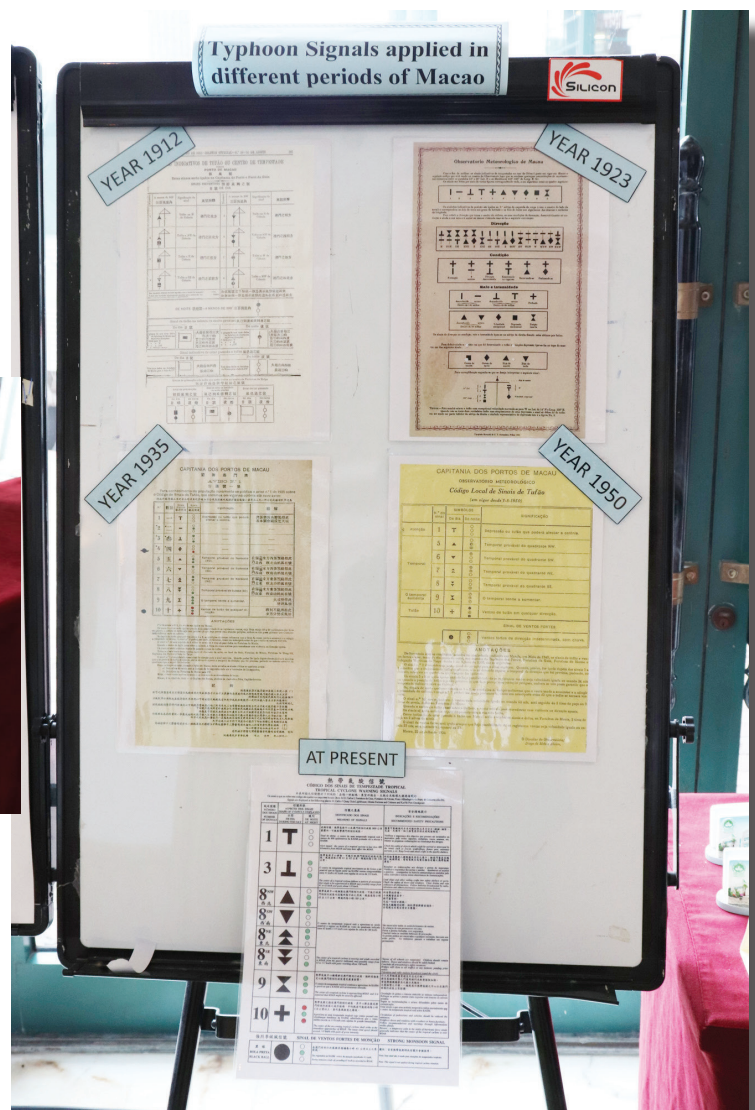




Display Area from Lao PDR



Display Area from Macao, China



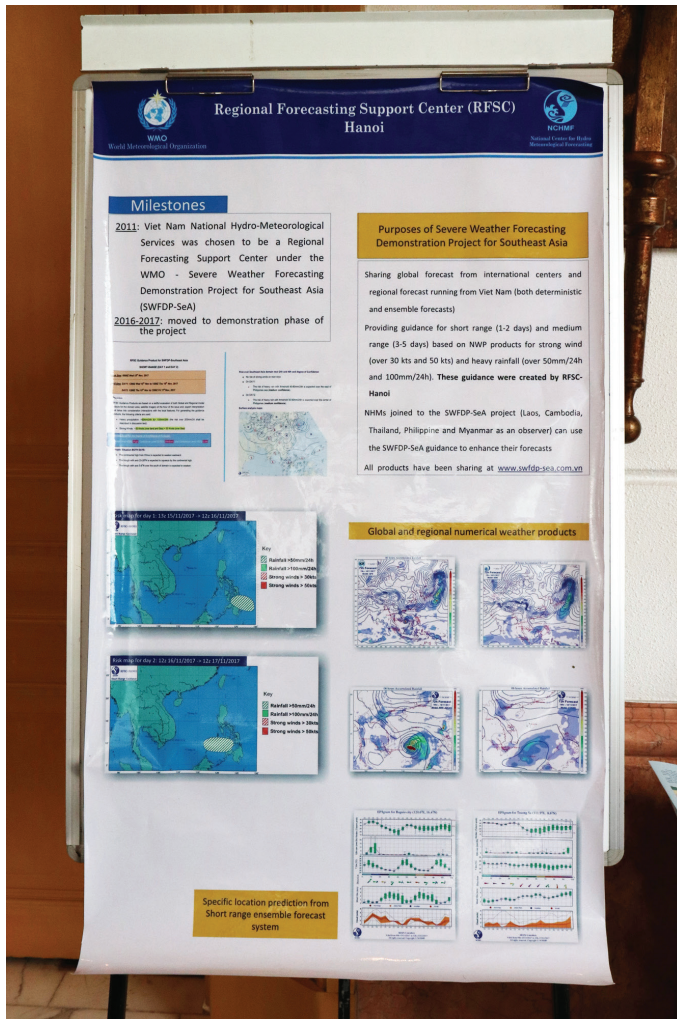


Display Area from Thailand



Display Area from USA





Display Area from Viet Nam





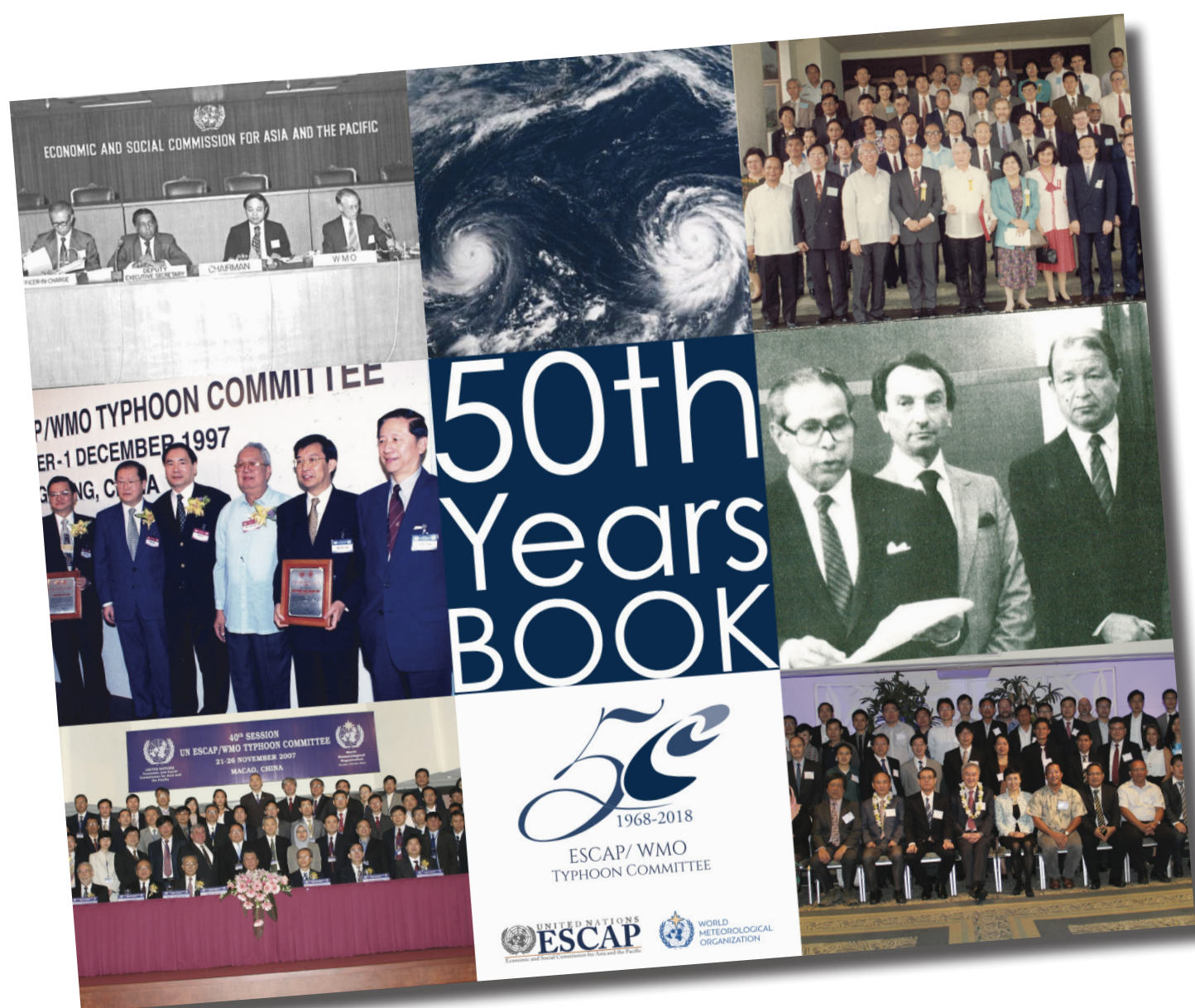
Display Area from UNESCAP



The 50th years Photo Book

TC50
Newsletter
Special Edition

As one of the activities for celebrating the 50th anniversary of the Committee, TCS published the photo book which is following historical clues demonstrated the main events of Committee in past 50 years. It may arise the memories of the achievements of the Committee in the past, and encourage us work together closely to face challenges for the better life of our people in the future.



UNITED NATIONS
ECONOMIC COMMISSION FOR ASIA AND THE FAR EAST
AND
WORLD METEOROLOGICAL ORGANIZATION
Inaugural Session of the Typhoon Committee
17-20 December 1968
Bangkok, Thailand

DRAFT REPORT OF THE TYPHOON COMMITTEE
(FIRST SESSION)

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IV. Recommendations to participating Governments for specific.....	17

1968

TC CHAIR
TC VICE-CHAIR

Vice-Adm
Sanit Vesa Rajananda,
Thailand

Dr. Roman L. Kintanar
Philippines

- UN ESCAP at its 24th Session at Canberra in April 1968, WMO Executive Committee at its 20th Session in 1968 endorsed the establishment of the Typhoon Committee in accordance with the Statute.

- The Typhoon Committee was organized by the Governments of China; Hong Kong, China; Japan; Republic of Korea; Laos; the Philippines and Thailand as 7 founder Members, with ESCAP and WMO as ex-officio Members.



- The 1st TC Session was convened by ESCAP in Bangkok from 17 to 20 December 1968 according to the Article 12 of the Statute of the Committee. This inaugural session was attended by representatives from 7 founder Members. The representatives of Australia, France, the Netherlands, the United States of America and the USSR also attended as observers. The UNDP Regional Representatives and observers from ICAO and LRCS also attended the first meeting. Mr. U Nyun, Executive Secretary of ECAFE (predecessor of ESCAP) and Mr. D.A. Davice, Secretary-General of WMO delivered speeches at opening session and outlined the broad approach which they believed the Committee might adopt in its work.

1969

TC CHAIR
TC VICE-CHAIR

Dr. Roman L. Kintanar
Philippines

Mr. Tatsuo Kawagoe,
Japan

- ESCAP and WMO established a joint Unit on Typhoon located in ESCAP Secretariat to Assist the Committee following the decision of 1st Session.

- The 2nd TC Session was held in Manila from 2 to 8 December 1969. At the Session, the Committee decided that: (1) The name of "Regional Typhoon Centre" to be changed to "Typhoon Committee Secretariat (TCS)"; (2) "Functions and Duties of the Typhoon Committee Secretariat" to be defined; and (3) Acceptance of the offer of the Government of the Philippines to provide facilities for the Secretariat of the committee in Philippines.



2017- The 12th Integrated Workshop of Typhoon Committee
Jeju, Republic of Korea

100

The 50th Anniversary Yearbook
ESCAP/WMO Typhoon Committee



2017- The 49th Session of Typhoon Committee
Yokohama, Japan

The 50th Anniversary Yearbook
ESCAP/WMO Typhoon Committee

99

The 50th years Video of TC

To celebrate this memorable event, TCS had prepared a journey of TC timeline with the major events on video. The video can be viewed and downloaded at <http://www.typhooncommittee.org/>.



The 7th TC Session was held in Manila from 8 to 14 October 1974.

1971 1972 1973 1974



2012 2013 2014 2015

The 49th TC Session was held in Yokohama, Japan from 21 to 24 February 2017.

2016 2017



The Welcome Reception TC50

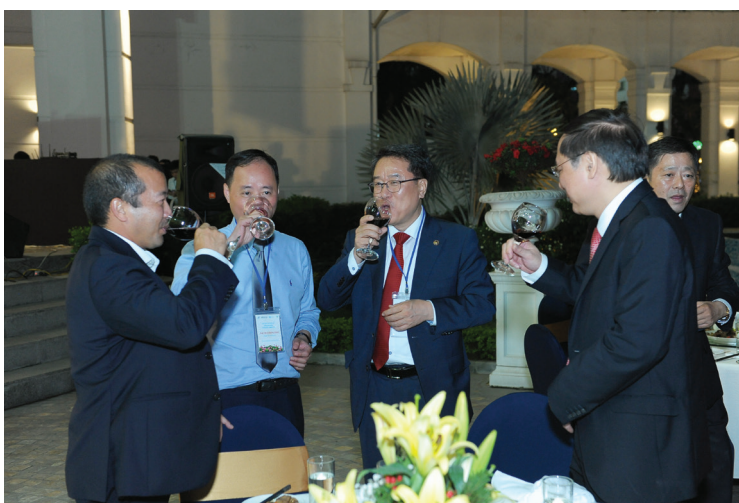
TC50 *Newsletter*
Special Edition

At the 50th Session, the Committee appreciated the dedication and hard work of the people involved and the spirit of international cooperation for the 50 years of achievements.







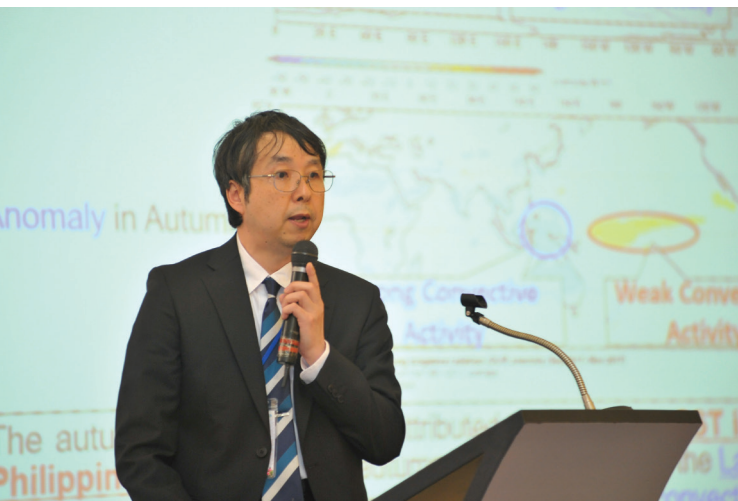




TC50 Memories











The ESCAP/WMO Typhoon Committee Newsletter
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Barrie LEI • DRR expert
Denise LAU • Senior Secretary
KOU Meng Kit, Lisa • Finance Assistant

18,250
days old
but who's counting?

Humour Corner