

**Regional capacity development workshop for multi-hazard risk assessment and early warning systems**

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# **TC Cooperation Mechanism on Typhoon-related Disaster Risk Reduction**

**DANG THANH MAI - VIETNAM**

# Today's presentation

- ❖ **What's Typhoon Committee (TC)**
- ❖ **TC Strategic Plan 2017- 2021**
- ❖ **Cooperation Mechanism in TC**
- ❖ **Cooperative Projects**
- ❖ **Concluding Remarks**

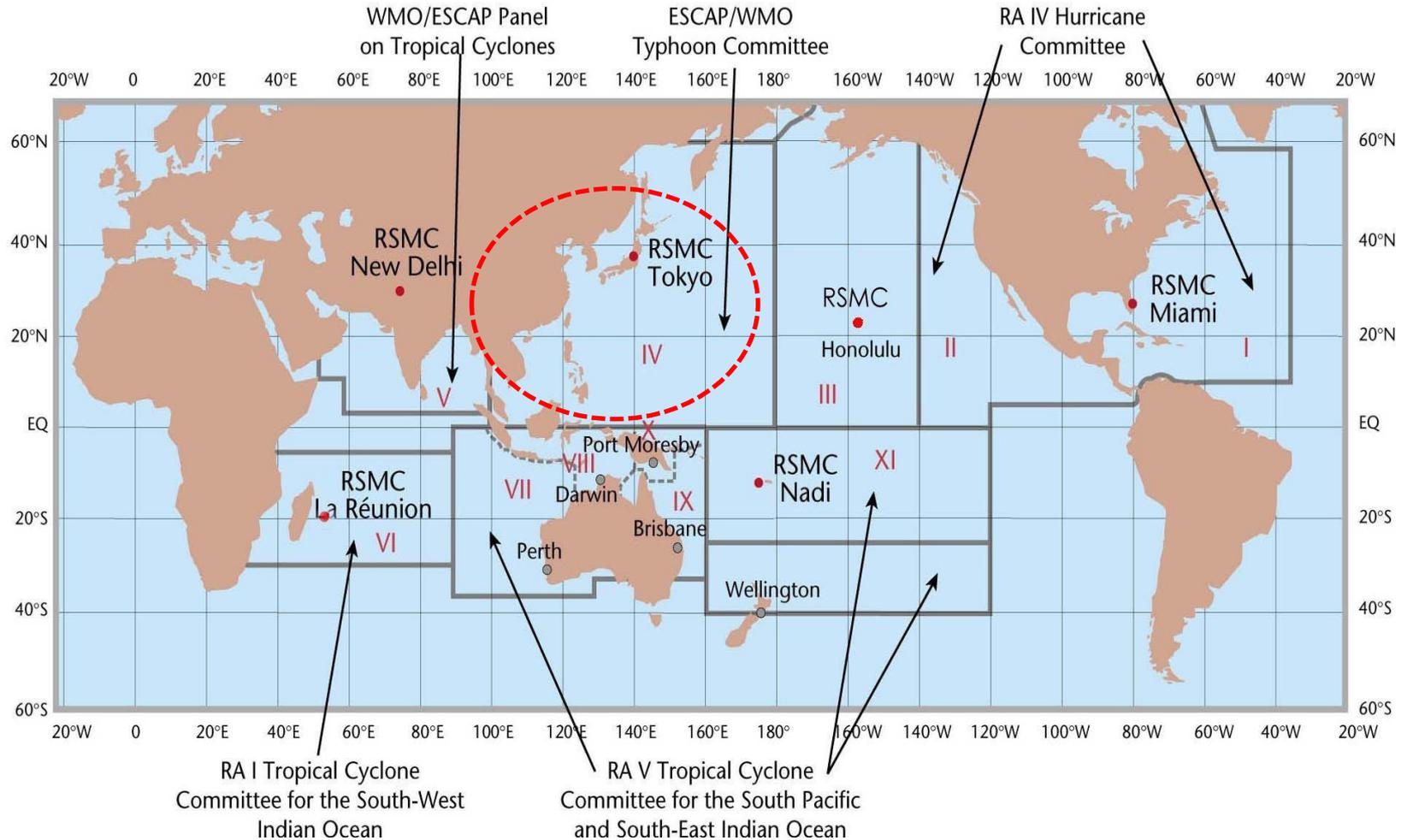


## ➡ ESCAP/WMO Typhoon Committee

- ▶ An inter-Government Regional Organization;
- ▶ Treat with typhoon-related disasters ;
- ▶ Founded in 1968;
- ▶ Affiliated to the Economic and Social Commission of Asia and the Pacific (**ESCAP**) and the World Meteorological Organization (**WMO**);
- ▶ Evolved into a collaboration of 14 Member.

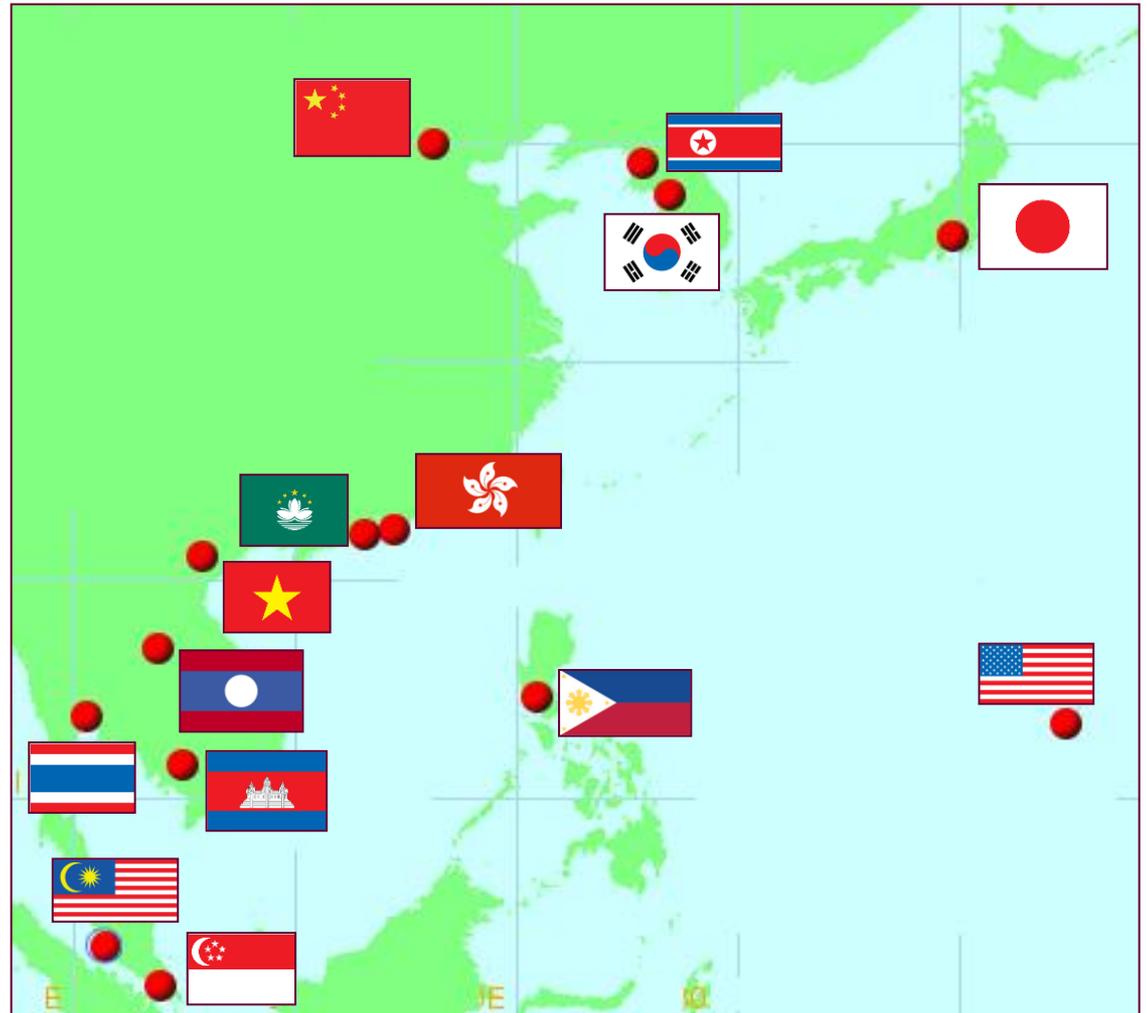


# World Map of the Five Regional Bodies

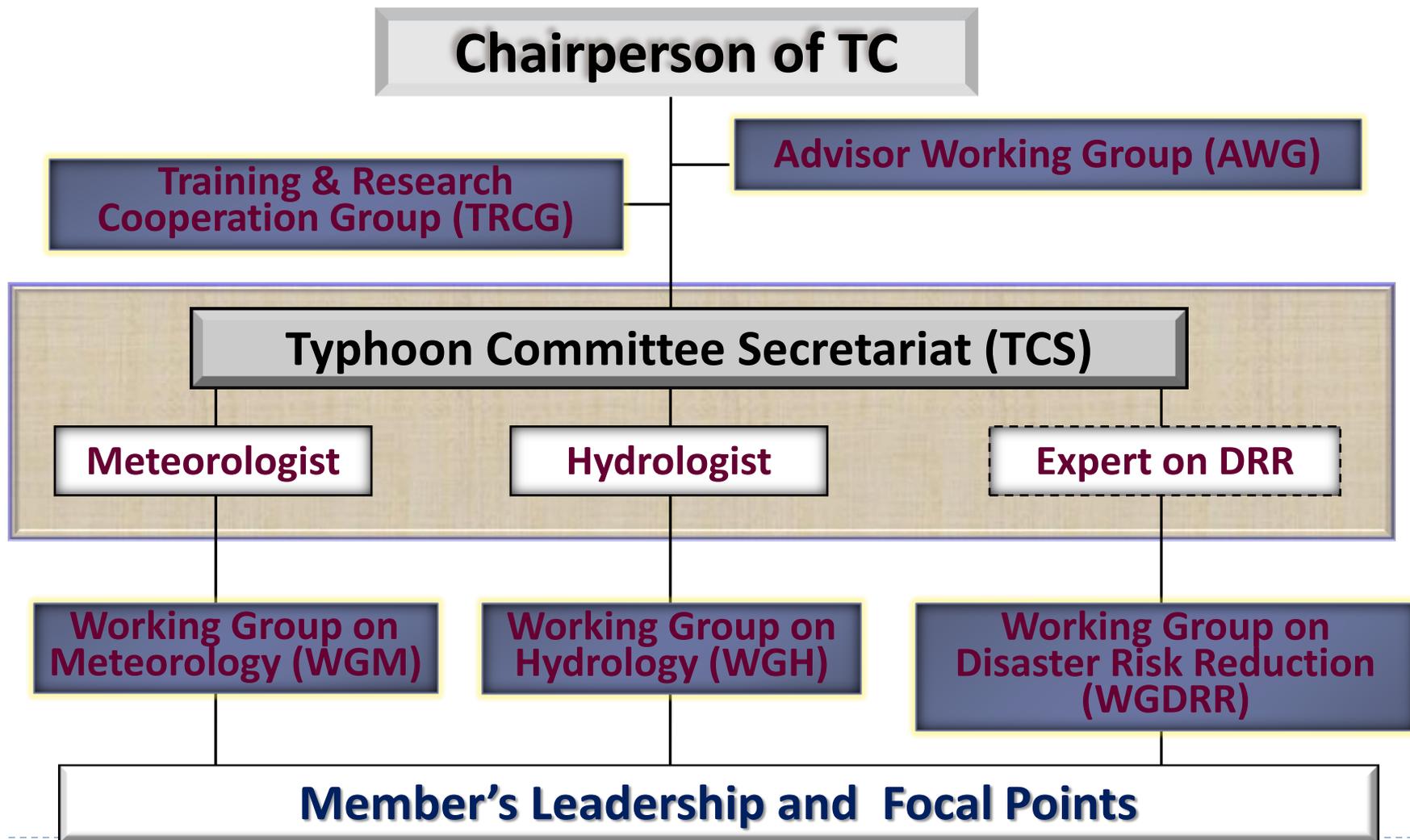


## Membership of Typhoon Committee

1. Cambodia, 1968
2. China, 1968
3. DPR of Korea 1992
4. Hong Kong, China, 1968 - Member Territory
5. Japan, 1968 - (RSMC Tokyo Typhoon Center)
6. Lao PDR, 1968
7. Macao, China, 1992 - Member Territory
8. Malaysia, 1968
9. Philippines, 1968
10. Republic of Korea, 1968
11. Singapore, 1997
12. Thailand, 1968
13. USA, 1998 - (RSMC Honolulu - Hurricane Center)
14. Viet Nam, 1968



## ➡ Structure of Typhoon Committee



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## ➡ Vision and Mission

The Typhoon Committee has been repeatedly recognized as an outstanding regional body who has integrated the actions and plans of the meteorological, hydrological, and disaster risk reduction (DRR) components to produce meaningful results.

- ▶ **Vision:** The Typhoon Committee is 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.
- ▶ **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.



## ➡ **Scope of the Strategic Plan**

- To be achieved through the Members' regional and integrated activities with support and monitoring of the TCS, WMO, and the UN ESCAP.
- The critical part is the required regional cooperation and collaboration among Members and the integration of the Meteo, Hydrol, and DRR.
- To directly support the functions of the Committee as described in the Statute of the Typhoon Committee:
  1. Review regularly the progress made in the various fields of typhoon damage prevention;
  2. Recommend to the participating Governments for the improvement of meteorological and hydrological facilities needed for typhoon damage prevention;
  3. Recommend to the participating Governments for the improvement of community preparedness and disaster prevention;
  4. Promote the establishment of programmes and facilities for training personnel from countries of the region in typhoon forecasting and warning, hydrology and flood control within the region and arrange for training outside the region, as necessary; and
  5. Promote, prepare and submit to participating Governments and other interested organizations plans for coordination of research programmes and activities concerning typhoons.

## ➡ Key Results Areas and Strategic Goals

KRAs are defined as the critical, overarching, priority areas of special interest for the Typhoon Committee. The Committee must complete these KRAs for it to achieve its vision and mission through Priorities. The Committee has identified **two Targets and five Key Result Areas (KRAs)** in addition to **the one crosscutting theme and Priorities for special emphasis** in the next five years.

### ❖ Targets

- **Target 1:** Substantially reduce total mortality caused by typhoon-related disasters of the Members in the decade 2020 -2030 compared to the period 2005 – 2015.
- **Target 2:** Reduce direct economic loss caused by typhoon- related disasters in relation to the total gross domestic product (GDP) of the Members by 2030.



## ❖ KRAs

- **KRA 1:** Enhance capacity to monitor mortality and direct economic loss caused by typhoon-related disasters.
- **KRA 2:** Enhance capacity to generate and provide accurate, timely and understandable information using multi-hazard impact-based forecasts and risk-based warnings.
- **KRA 3:** Improve typhoon-related flood control and integrated water resource management.
- **KRA 4:** Strengthen typhoon-related disaster risk reduction activities in various sectors, including increased community-based resiliency with better response, communication, and information sharing capability.
- **KRA 5:** Enhance Typhoon Committee's Regional and International collaboration mechanism.



## ❖ Climate Change Impact Crosscutting Theme

- ▶ To achieve its mission, the Committee believes **climate change must be viewed as one of the major challenges of our time.**
- ▶ The Committee considers it **a high priority to understand the possible effects brought about by climate change**, such as changes in tropical cyclone frequency and intensity and the associated extreme rainfall and coastal inundation impacts from both scientific and socio-economical viewpoints and to share relevant information among Members.
- ▶ Sustainable disaster mitigation efforts against tropical cyclone related impacts, including too much or too little typhoon-induced rainfall, will be needed **to address issues across the whole spectrum of climate and weather systems.**



## ❖ High Priority Areas

The Typhoon Committee's Working Groups on Meteorology, Hydrology, and Disaster Risk Reduction along with the Advisory Working Group (AWG) met jointly to define high priority regional actions required to reduce the loss of life and social and economic impacts from tropical cyclones.

WG	Priorities	KRA				
		1	2	3	4	5
Integrated	Enhance activities to develop impact-based forecasts and risk-based warning.		X			
	Strengthen cross-cutting activities among working groups in the Committee.	X	X	X	X	X
	Enhance collaborative activities with other regional/international frameworks/organizations, including TC and PTC cooperation mechanism.					X
Meteorology	Enhance the capacity to monitor and forecast typhoon activities particularly in genesis, intensity and structure change.		X	X		X
	Develop and enhance typhoon analysis and forecast technique from short- to long-term.		X	X		X
	Enhance and provide typhoon forecast guidance based on NWP including ensembles and weather radar related products, such as QPE/QPF.		X	X		
	Promote communication among typhoon operational forecast and research communities in Typhoon Committee region.		X	X		
	Strengthen the cooperation with WGH and WGD RR to develop impact-based forecast and risk-based warning.		X	X		
	Enhance, in cooperation with TRCG, training activities in accordance with Typhoon Committee forecast competency, knowledge sharing, and exchange of latest development and new techniques.		X	X		
	Enhance RSMC capacity to provide regional guidance including storm surge, responding to Member's needs.		X	X		

## ❖ High Priority Areas (Cont'd)

WG	Priorities	KRA				
		1	2	3	4	5
Hydrology	Improve typhoon-related flood (including river flood, urban flood, mountainous flood; flash flood and storm surge, etc. the same below) monitoring data collection, quality control, transmission and processing.			X	X	
	Enhance capacity in typhoon-related flood risk management (including dam operation), integrated water resources management and flood-water utilization.		X	X	X	
	Enhance capacity in impact-based and community-based operational flood forecasting and early warning, including methodology research, hydrological modelling, and operation system development.		X	X	X	
	Enhance capacity in flood risk (hazard, inundation) information, mapping and its application.		X	X	X	
	Enhance capacity in assessment and dealing with the impacts of climate change, urbanization and other human activities on typhoon-related flood disaster vulnerability and water resources availability.		X	X	X	
	Enhance capacity in advanced technology (including satellite data, GIS, RS, QPE/PQF, ensemble, parallel computing) utilization in typhoon-related flood forecasting and early warning, and hydrological modeling.		X	X	X	
DRR	Provide reliable statistics of mortality and direct disaster economic loss caused by typhoon-related disasters for monitoring the targets of the Typhoon Committee.	X				
	Enhance Members' disaster reduction techniques and management strategies.			X	X	X
	Evaluate socio-economic benefits of disaster risk reduction for typhoon-related disasters.		X	X	X	X
	Promote international cooperation of DRR implementation project.		X	X	X	X
	Share experience/knowhow of DRR activities including legal and policy framework, community-based DRR activities, methodology to collect disaster-related information.	X			X	X

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- ❖ TC Strategic Plan 2017- 2021
- ❖ Cooperation Mechanism in TC
- ❖ Cooperative Projects
- ❖ Concluding Remarks



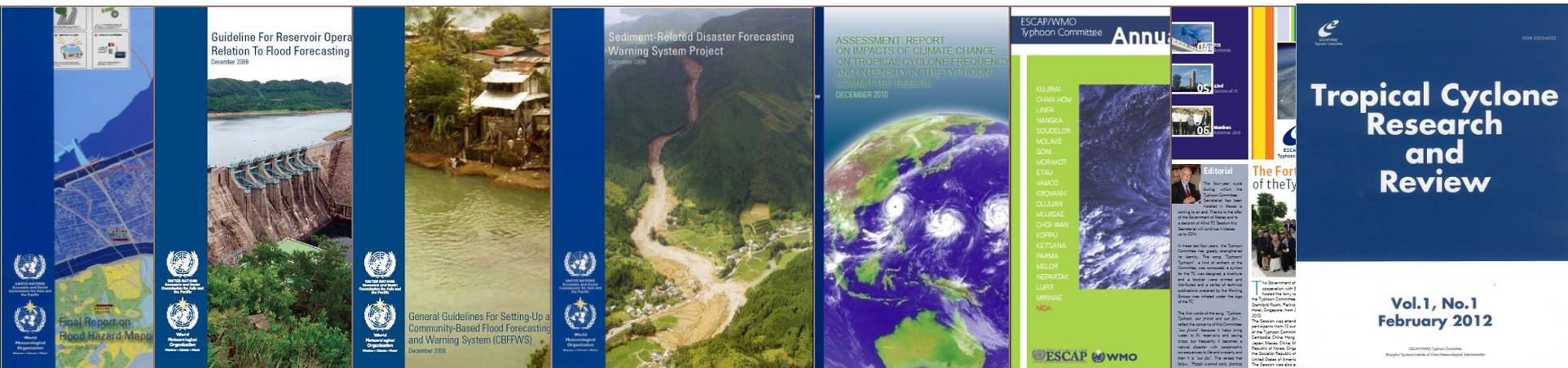
## ➡ Workshop/Meeting as Platform

1. TC Annual Session
2. TC Integrated Workshop
3. TC Working Group Meetings
4. TC Training/Seminar:
  - On-job Training
  - Roving Seminar
  - Project workshop/seminar
5. International Workshop/Conference

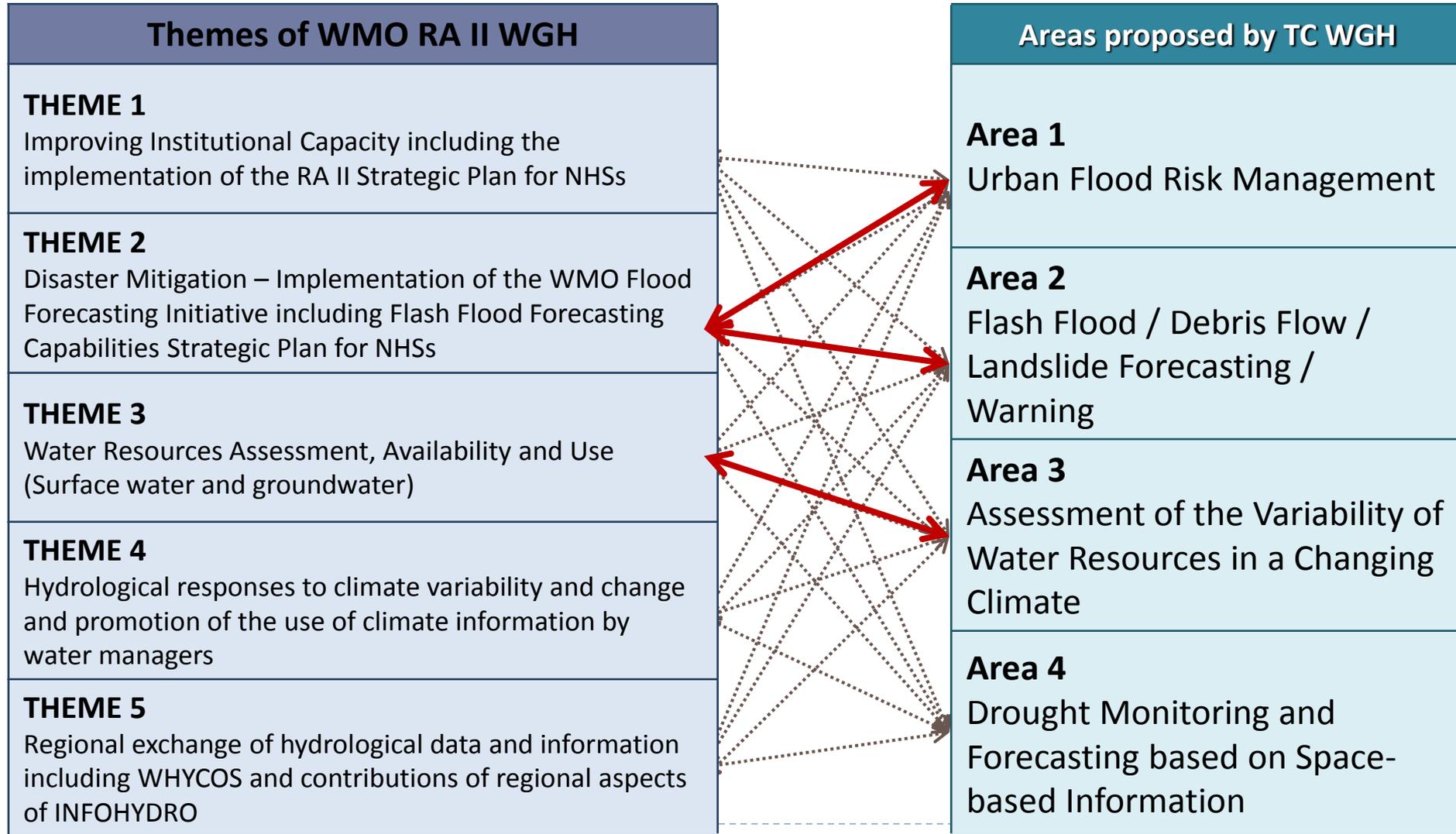


# Publication of TC as Experience Sharing

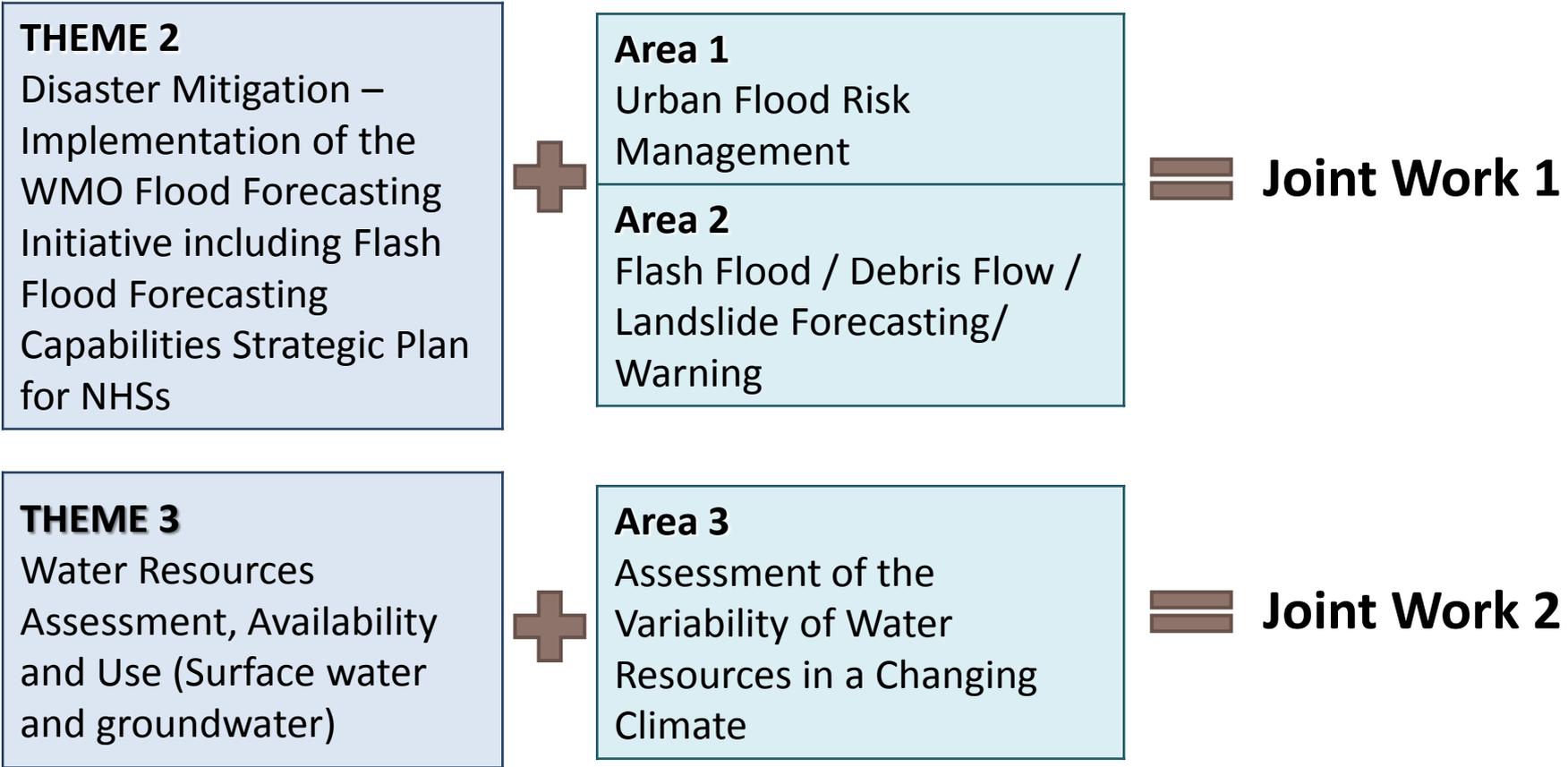
1. Technical Publications
2. Typhoon Committee Annual Report (TCAR)
3. TC Newsletter
4. TC Journal: *Tropical Cyclone Research and Review (TCRR)-ecsi*



# ➡ Cooperation with Regional Bodies



❖ Possible joint work areas by TC and WMO RA II



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## ➡ Annual Operating Plan

Each year during the 5-year period of this Strategic Plan, the AWG with input from the working groups and TCS will prepare a proposed draft **Annual Operating Plans (AOPs)** to be approved at the next Typhoon Committee Session. The AOPs will be developed in line with Priorities and contain detailed actions and success indicators to be conducted in that year.



## ❖ Current AOPs in Three Components

No	WGM	WGH	WGDRR
1	Enhanced use of ensemble forecast	Flash Flood Risk Information for Local Resilience	Alert and early warning system in Members and <u>iCoWin</u> Project
2	Improve the performances & impacts of South China Sea typhoon model	Extreme flood forecasting system	Provide benefit evaluation of Typhoon disaster prevention and preparedness
3	Implementing roles of RFSC-Ha <u>Noi</u> in SWFDP for South East Asia	Guidelines for extreme flood risk management in TC region	Support the Synergized Standard Operating Procedures (SSOP II) project
4	Development of regional radar network	Operational System for Urban Flood Forecasting and Inundation Mapping (SUFFIM)	Sharing information (IT technologies utility in Disaster Management)
5	Assessment report on the impact of climate change on tropical cyclone in TC region	Application of Hydrological Data Quality Control System in TC Members	Making the Educational Videos related to Disaster Management
6	Storm surge watch scheme	Enhancement of Flood Forecasting Reliability with Radar Rainfall Data and Stochastic Technique	
7	Contribution for the <u>Experiment on Typhoon Intensity Change in Coastal Area (EXOTICCA)</u>	Impact Assessment of Climate Change on Water Resource Variability in TC Members	
8	Development of tropical cyclone forecasting competency		



## ❖ Cross-cutting Projects in TC

### ☑ Urban Flood Risk Management (UFRM) in TC region

- AOP of WGH, Led by China
- First cross-cutting project of TC
- Implementation duration: 2008-2012



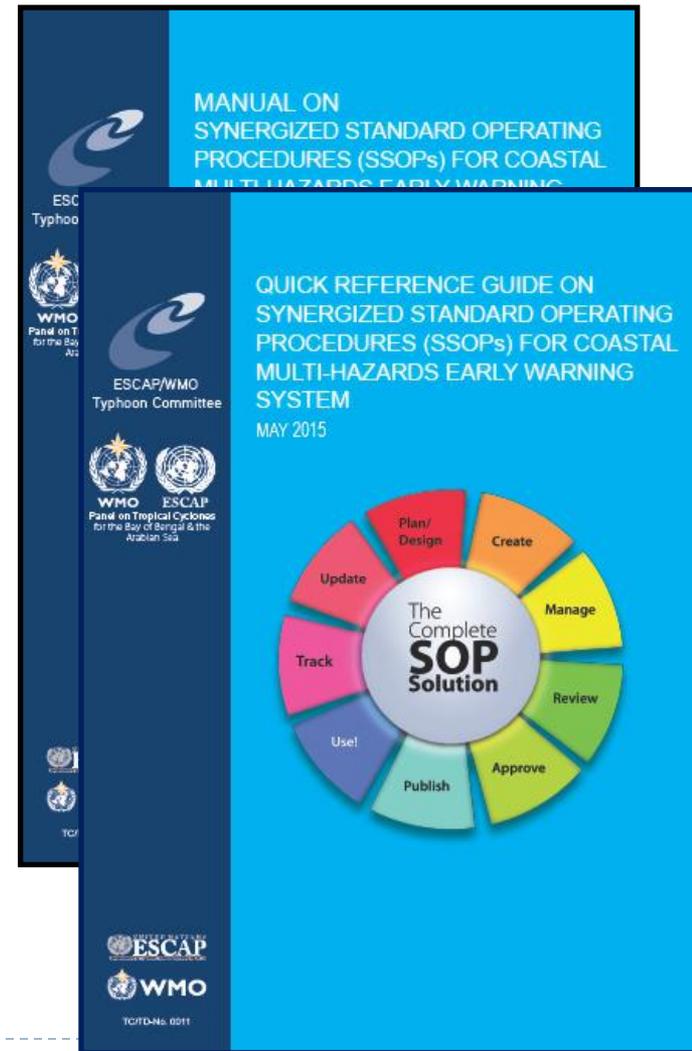
### ☑ Continual Project of UFRM: **Operational System for Urban Flood Forecasting and Inundation Mapping (OSUFFIM)**

- **Pilot Members:** China, Thailand, Vietnam, Malaysia, Philippines, Laos
- **Phase-I:** 2013-2017
- **Phase-II:** 2018-2020



☑ **SSOP Phase I: Implementation of Synergized Standard Operating Procedures (SSOP) for Coastal Multi-hazard Early Warning System**

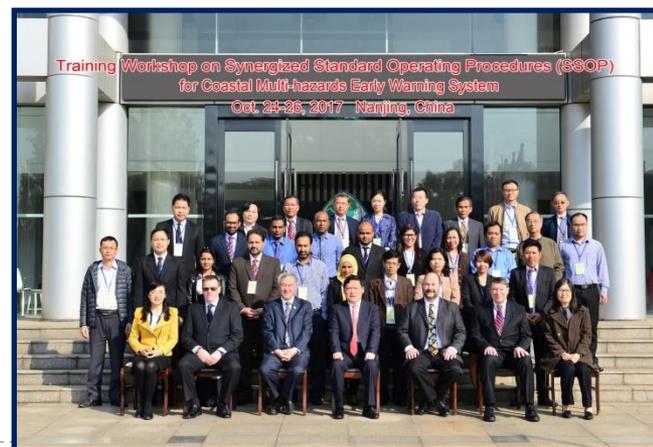
<p><b>Beneficiary Countries</b></p>	<p><u>13 Countries in TC and PTC region:</u>          Bangladesh; Cambodia; China; India; Lao PDR*; Malaysia; Maldives; Myanmar; Pakistan; Philippines; Sri Lanka; Thailand and Viet Nam.</p>
<p><b>Target Group(s)</b></p>	<ul style="list-style-type: none"> <li>• NMHSs</li> <li>• National Tsunami Warning Centres</li> <li>• National Disaster Management Offices</li> <li>• Government sectoral agencies</li> </ul>
<p><b>Implementation Period</b></p>	<p>Aug. 2012 ~ May 2015</p>
<p><b>Funding</b></p>	<p>ESCAP Trust Fund for Tsunami, Disaster and Climate Preparedness in Indian Ocean and Southeast Asian Countries</p>



## ☑ **SSOP Phase II: Implementation of Synergized Standard Operating Procedures (SSOP) for Coastal Multi-hazard Early Warning System**

<b>Beneficiary Countries</b>	<u>10 Countries in TC and PTC region:</u> Bangladesh; Cambodia; Lao PDR; Maldives; Myanmar; Pakistan; Philippines; Sri Lanka; Thailand and Viet Nam.
<b>Target Group(s)</b>	<ul style="list-style-type: none"> <li>• NMHSs</li> <li>• National Tsunami Warning Centres</li> <li>• National Disaster Management Offices</li> <li>• Government sectoral agencies</li> </ul>
<b>Implementation Period</b>	18 months (until 31 October 2018)
<b>Funding</b>	ESCAP Trust Fund for Tsunami, Disaster and Climate Preparedness in Indian Ocean and Southeast Asian Countries

### Activity 1: Training Workshop in WMO Nanjing RTC



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- **TC KARs, Strategic Targets and Priorities:** *the Committee wants to achieve in 2017-2021 and to continue to produce meaningful results for saving lives and mitigation of damage from typhoon-related events. The impact of climate change is thought to influence all of the KARs, Targets and Priorities and thus is viewed as a crosscutting theme.*
  - **TC Cooperative Mechanisms:** *the effective and efficient structure and network in TC support its cooperative mechanisms on typhoon-related disaster risk reduction.*
  - **TC Cooperative Project:** *through completion of AOPs and regional projects, the Committee and its Members should accomplish all of the KARs, Strategic Targets and Activities of the Committee.*
  - **Areas to Be Enhanced in the Region:** *(1) urban flood forecasting and warning; (2) flash flood (including landslide and mudflow) prediction and warning; and (3) Assessment of the Variability of Water Resources in a Changing Climate.*
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*“The Shapers of New Asia”*

*“They include YOU and ME...”*

Thanks

A black and white photograph of several hands stacked on top of each other, symbolizing teamwork and support. The word 'Thanks' is written in red over the hands.