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WRD/TC.46/9
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ENGLISH ONLY

STRATEGIC PLAN 2012-2016 MIDTERM REVIEW
(Item 9 of Provisional Agenda)

(Submitted by AWG and TCS)

ACTION REQUIRED:

The Committee is invited to:

- (a) Discuss the draft Strategic Plan 2012-2016 Midterm Review
 - (b) Approve the revised Strategic Plan 2012-2016
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Appendixes:

- I- Strategic Plan 2012-2016 Midterm Review

APPENDIX I (to WRD/TC.46/9)

1- Background Information

The Committee at its 45th Session (held in Hong Kong, China, on 29 Jan-1 February 2013) requested TCS to solicit Members for inputs to the midterm review of the Strategic Plan 2012-2016. This request of the Committee was reiterated by the AWG in its meeting in Bangkok, Thailand, on May 10, 2013. Following this request, TCS sent circular letters and reminders to the Members asking their collaboration.

Based on the replies from some Members, TCS drafted a first version of the midterm review of the TC Strategic Plan 2012-2016, which was discussed at the TC 8th IWS (held in Macao, China, from 2 to 6 December 2013, together with the 2nd TRCG Forum). Further to this discussion, a second draft, dated 13 December 2013, was written and submitted to the Members for further inputs. TCS also requested the collaboration from ESCAP and WMO.

The Appendix I to this working document consists of the draft of the Midterm Review of the Strategic Plan 2012-2016, which contains as annex the recommendations from ESCAP (Annex I to Appendix I)

TC STRATEGIC PLAN 2012-2016

MIDTERM REVIEW
WITH INPUTS FROM THE MEMBERS FOR ITS MIDTERM REVIEW
(VERSION 14 January 2014)

(Based on the APPENDIX XXIII to the 44th Session Report)

**(This version is the result of the discussion at the 8th
IWS/2nd TRCG Forum, in Macao, China, 02-06 December
2013 and further proposals from the WGH)**

Executive Summary

Countries in Asia and the Pacific are more prone to natural disasters than those in other parts of the world, which involves the urgent need to develop effective, end-to-end early warning systems that lead to an effective response by emergency managers and people at risk. It is clear that the Millennium Development Goals cannot be attained in the region if the development gains already achieved are not protected from the risks and impacts of disasters. For less developed countries, in addition to the tragic personal loss of life and property, natural disasters, especially typhoons, severely threaten and impact their sustainability, capacity building, debt repayments, poverty reduction and even the basic necessities of life - clean drinking water, food, and shelter.

Founded in 1968 under the original auspices of the United Nations Economic Commission for Asia and Far East, the Typhoon Committee (TC) has evolved into a collaboration of 14 Members involving both the Economic and Social Commission of Asia and the Pacific (ESCAP) and the World Meteorological Organization (WMO). Since then, 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.

The development of the Strategic Plan has been based on various international and regional frameworks, protocols, and action and strategic plans pertaining to tropical cyclone activities within the region. The purpose of this Strategic Plan is for the Typhoon Committee to identify regional key results areas, strategic goals, and associated activities which the Committee wants to achieve in 2012-2016 to save lives, mitigating damage, and decreasing social and economic effects from typhoon-related events. The impact of climate change is thought to influence all of the key result areas and strategic goals and thus is viewed as a crosscutting theme for this strategic plan.

Typhoon Committee's Vision: The Typhoon Committee is the world's best intergovernmental, 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.

Typhoon Committee's 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, economical, and environmental impacts by typhoon-related disasters.

The Typhoon Committee has identified seven Key Results Areas (KRAs) for special emphasis in the **5-year plan** (2012-2016). These KRAs are defined as the critical, overarching, priority areas of special interest for the Typhoon Committee. In addition, the Typhoon Committee believes the impacts of climate change will influence all of the key result areas and strategic goals and thus is viewed as a crosscutting theme for this strategic plan. The Committee must complete the Strategic Goals associated with these KRAs to achieve its vision and mission through regional, integrated actions. The seven KRAs are:

KRA 1: Reduced Loss of Life from Typhoon-related Disasters.

KRA 2: Minimized Typhoon-related Social and Economic Impacts.

KRA 3: Enhanced beneficial typhoon-related effects for the betterment of quality of life.

KRA 4: Improved Typhoon-related Disaster Risk Management in Various Sectors.

KRA 5: Strengthened Resilience of Communities to Typhoon-related Disaster.

KRA 6: Improved capacity to generate and provide accurate, timely and understandable information on typhoon-related threats.

KRA 7: Enhanced Typhoon Committee's Effectiveness, Efficiency and International Collaboration.

It should be noted that the Typhoon Committee along with its working groups are making major contributions in accomplishing these KRAs, but there are many other factors and influences which are not under the direct control of the Typhoon Committee. Therefore the Committee will need the assistance and support of other international organizations and funding sources.

The most important functions and responsibilities of Members' governments are to protect the lives of their citizens and to improve their quality of life. Through this Strategic Plan, the Typhoon Committee's 14 Members are meeting these important government functions and responsibilities through regional cooperation and collaboration. Since 1968 the Typhoon Committee has shown how successful the Committee has been in the area of in typhoon-related matters in improving the protection of people's lives and in improving their quality of life. Building on this legacy of the past, the Strategic Plan provides the roadmap into the future. The Committee has currently fourteen Members: Cambodia; China; Democratic People's Republic of Korea; Hong Kong, China; Japan; Lao People's Democratic Republic; Macao, China; Malaysia; Philippines, Republic of Korea, Singapore; Thailand; United States of America and Viet Nam.

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Appendix - Activities associated with Strategic Goals and Key Results Areas

1. Introduction

Countries in Asia and the Pacific are more prone to natural disasters than those in other parts of the world, with people in the region four times more likely to be affected by natural catastrophe than those in Africa and 25 times more vulnerable than Europeans or North Americans.¹ During the period of 1980 to 2009, while the region generated only one quarter of the world's GDP, it accounted for a staggering 85 per cent of deaths and 38 per cent of global economic losses¹. In addition during 1980 to 2009, 45 percent of all worldwide disaster events occurred in Asia and the Pacific.¹ In 2008, disasters across the region accounted for almost 99 per cent of the world's reported victims, and from 2000-2007 more than 78 per cent of the world's reported victims of natural disasters were found in Asia.²

The two most common types of disaster in the Asia/Pacific area are floods and storms - many associated with typhoon-related impacts. From 1980 to 2009, 2444 flooding and storm events occurred and produced 513,150 deaths; affected 3340 million people; and caused USD467 billion of damage.¹

With climate change and global warming, it is generally accepted that more frequent or intense occurrences of high-impact anomalous weather are likely as atmosphere attempts to counteract or adjust to the resulting effects. As such, sustainable disaster mitigation efforts against typhoon related impacts, including too much or lack of typhoon-induced rainfall will need to address issues across the whole spectrum of climate and weather systems.

The United Nations is warning that tens of millions of people around the world are at risk of becoming new types of refugees seeking refuge from hunger, droughts, floods, and exhausted soils because of environmental breakdowns in their parts of the world.⁴

For more developed countries, typhoon related impacts cause major social and economic disruptions through loss of lives and property. For less developed countries, in addition to the tragic personal loss of life and property, natural disasters, especially typhoons, severely threaten and impact their sustainability, capacity building, debt repayments, and even the basic necessities of life – clean drinking water, food, and shelter. The Typhoon Committee, through its regional cooperation and collaboration has since 1968, been working to help the people of the region through accomplishments and actions to reduce the loss of life and property due to typhoon-related effects.

2. Vision and Mission

Typhoon Committee's Vision

The Typhoon Committee is the World's best intergovernmental, 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.

¹ Protecting Development Gains : Reducing Disaster Vulnerability and Building Resilience in Asia and the Pacific – The Asia-Pacific Disaster Report 2010 – ESCAP and UNISDR

² United Nations International Strategy for Disaster Reduction (ISDR), 2008 Disasters in Numbers

Typhoon Committee's Mission

To integrate and enhance regional activities in the areas of meteorological, hydrological, and disaster Risk Reduction of Members within international frameworks to reduce the loss of lives and minimize social, economical, and environmental impacts by typhoon-related disasters and to enhance beneficial typhoon-related effects.

3. Climate Change Impact Crosscutting Theme

To achieve its mission, the ESCAP/WMO Typhoon Committee believes climate change must be viewed as one of the major challenges of our time. In 2007, the United Nations Intergovernmental Panel on Climate Change (IPCC) clearly indicated in its Fourth Assessment Report that the warming in the climate system is unequivocal. In addition, it stated the increases in the atmospheric greenhouse gas concentration due to human activities are very likely responsible for most of the observed global warming since the middle of the 20th century. Climate change impacts the mean state of climate, but more importantly, it also has implications to the frequency and intensity of extreme events. Over the years, various studies have reported changes in the frequency of occurrence and intensity of extreme weather events around the world in the 20th century, including an increase of drought conditions, extreme high temperatures, heavy precipitation events, and coastal inundation.

The Western North Pacific is the most active tropical cyclone basin in the world with an annual average of about 30 tropical cyclones. Against the background of climate change and a continuous increase in economic damage and disruption by tropical cyclones, the Typhoon Committee has a growing concern on the possible impacts of climate change on tropical cyclone activities and related effects in the region. 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.

In view of the impact of climate changes and its resultant effects on the patterns and occurrences of typhoons, the Committee will keep abreast of the latest climate change assessment and establish linkage with major international initiatives to maximum information sharing as well as to facilitate optimal resource leverage in support of studies and efforts to cope with any future trends in typhoon behaviour, particularly with respect to disaster risk reduction and water resource implications. **(INPUT BY CHAIR OF AWG/TRCG)**

4. Development of the Strategic Plan

The Typhoon Committee at its 37th Session held in Shanghai, China and at its 38th Session held in Hanoi, Vietnam decided to restructure the Committee's Regional Cooperation Programme Implementation Plan (RCPIP) to better reflect Key Results Areas and the required Strategic Goals and Activities needed to achieve these Key Results Areas.

In September 2006, a historical “International Workshop on Integrating Activities of Meteorology, Hydrology, and Disaster Risk Reduction Components of the Typhoon Committee into the related International Framework for Disaster Risk Management for Better Impacts and Visibility” was held in Macao, China. For the first time, 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. An initial Strategic Plan was drafted based on the inputs from the working groups. After incorporating comments from Members, the Typhoon Committee at its 39th Session held in Manila, Philippines in December 2006 approved the “Typhoon Committee Strategic Plan, 2007 – 2011, an Integrated, Regional approach to Improve the Quality of Life for Members’ Population through Mitigating Typhoon-Related Impacts”.

The Typhoon Committee at its 42nd Session, held in Singapore, requested the AWG and the working groups to review the Strategic Plan and present a draft with a climate impact crosscutting theme for its consideration at the 43rd Session. The finalized version of the Strategic Plan 2012-2016 was approved on Feb. 11, 2012.

The purpose of this Strategic Plan is for the Typhoon Committee to identify key results areas, strategic goals, and activities which the Committee wants to achieve in 2012-2016 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 key result areas and strategic goals and thus is viewed as a crosscutting theme for this strategic plan.

5. Scope of the Typhoon Committee’s Strategic Plan

- The results will be achieved through the Members’ regional and integrated activities with support and monitoring of the TCS, World Meteorological Organization (WMO), and the UN Economic and Social Commission for Asia and the Pacific (ESCAP).
- The critical part of this plan is the required regional cooperation and collaboration among Members and the integration of the meteorological, hydrological, and DRR components.
- This strategic plan directly supports 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 concerned plans and measures for the improvement of meteorological and hydrological facilities needed for typhoon damage prevention;
 3. Recommend to the participating Governments concerned plans and measures 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.

6. Key Results Areas (KRAs), Strategic Goals (SGs)

KRAs are defined as the critical, overarching, priority areas of special interest for the Typhoon Committee. The Committee must complete the strategic goals associated with these KRAs for it to achieve its vision and mission through regional, integrated actions. The Committee has identified seven KRAs and one crosscutting theme for special emphasis in the next five years in the 5-year plan. **(CHANGE PROPOSED BY CHAIR OF AWG/TRCG)**

~~It should be noted that the Typhoon Committee along with its working groups can make major contributions in these KRAs, but there are many other factors and influences which are not under the direct control of the Typhoon Committee. Therefore the Committee will need the assistance and support of other international organizations and funding sources. The followings are the KRAs, Strategic Goals (SGs) to be pursued among the working groups (detailed integrated associated activities and associated activities specific to the respective working groups are given in the Appendix):~~

KRA 1: Reduced Loss of Life from Typhoon-related Disasters

Strategic Goal 1: To enhance cooperation among TC Members to reduce the number of deaths by typhoon-related disasters by half in the ten years of 2006 – 2015 (using the ten years of 1990 - 1999 as the base line).

KRA 2: Minimized Typhoon-related Social and Economic Impacts

Strategic Goal 2: To reduce the socio-economic impacts of typhoon-related disasters per GDP per capita by 20 per cent in the ten years of 2006- 2015 (using the ten years of 1990 - 1999 as the base line).

KRA 3: Enhanced beneficial typhoon-related effects for the betterment of quality of life

Strategic Goal 3a: To identify and explore the beneficial use of resources such as rainfall brought by typhoon.

Strategic Goal 3b: To study and promote the increasing use of typhoon-related beneficial effects among the Members.

KRA 4: Improved Typhoon-related Disaster Risk Management in Various Sectors

Strategic Goal 4a: To provide reliable typhoon-related disaster information for effective decision making in risk management in various sectors.

Strategic Goal 4b: To strengthen capacity of the Members in typhoon-related disaster risk management in various sectors.

Strategic Goal 4c: To enhance international and regional cooperation and assistance in the field of disaster risk reduction.

KRA 5: Strengthened Resilience of Communities to Typhoon-related Disaster

Strategic Goal 5a: To promote and enhance culture of community-based disaster risk management among the Members.

Strategic Goal 5b: To promote education, training and public awareness of typhoon-related disasters among the Members.

KRA 6: Improved capacity to generate and provide accurate, timely and understandable information on typhoon-related threats

Strategic Goal 6a: To facilitate RSMC capability to respond to the needs of the Members in forecasting and capacity building.

Strategic Goal 6b: To improve capacity of Members to provide timely and accurate user-oriented and friendly tropical cyclone products and information.

Strategic Goal 6c: To enhance capacity of Members' typhoon-related observation, monitoring, forecasting and warning.

KRA 7: Enhanced Typhoon Committee's Effectiveness, Efficiency and International Collaboration

Strategic Goal 7a: To strengthen the capacity of Typhoon Committee to effectively discharge its responsibilities and functions described in this Strategic Plan and completed its stated mission in accordance with the Typhoon Committee's Statute.

Strategic Goal 7b: ~~To mobilize available resources and engage collaborators for the implementation of the strategic goals.~~ **To mobilize available resources, engage collaborators and link up with other major international initiatives to further the strategic goals and their implementation. (CHANGE PROPOSED BY CHAIR OF AWG/TRCG)**

7. Annual Operating Plan and Budget

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 Plan (AOP) to be approved at the next Typhoon Committee Session. The AOP will contain detailed actions and success indicators to be conducted in that year as steps towards meeting the KRAs Strategic Goals and Crosscutting Theme. Thus, through the completion of the five AOPs, the Committee and its Members should accomplish all of the KRA Strategic Goals and Activities contained in this plan.

It should be noted that the Typhoon Committee along with its working groups can make major contributions in these KRAs, but there are many other factors and influences which are not under the direct control of the Typhoon Committee. Therefore the Committee will need the assistance and support of other international organizations and funding sources. (THIS PARAGRAPH WAS TRANSFERRED FROM SECTION 6 UNDER PROPOSAL OF CHAIR OF AWG/TRCG)

The AWG will prepare a proposed draft budget (TC Trust Funds) for each year based upon the priority actions contained in the AOP and the successes achieved in the previous year's AOP. Activities and objectives which are successfully accomplishing Strategic Plan objectives and AOP actions and are producing positive results in accomplishing the vision and mission of the Typhoon Committee will be given due consideration when preparing the budget.

8. Conclusion

The most important functions and responsibilities of Members' Governments are to protect their people's lives and to improve their people's quality of life. World-wide, the

Asia/Pacific region is the most heavily impacted by natural disasters such as typhoons. Regional coordination and collaboration is essential to reduce these tragic losses and resulting socio-economic impacts. Therefore through this Strategic Plan, the Typhoon Committee's 14 Members are building on the great legacies of the past and laying a path to meet the challenges of the future. With a focus on accomplishments in the seven identified KRAs and Crosscutting Theme, the Members have a plan to improve their abilities during typhoon situations to protect their people's lives and to improve their quality of life through regional coordination and cooperation.

Key Results Areas (KRAs)	Strategic Goals	Associated activities			
		Integrated	Meteorology	Hydrology	DRR
KRA 1 Reduced Loss of Life from Typhoon-related Disasters	Strategic Goal 1: To enhance cooperation among TC Members to reduce the number of deaths by typhoon-related disasters by half in the ten years of 2006 – 2015 (using the ten years of – 1990-1999 as the base line).	<ul style="list-style-type: none"> Identify the primary causes of typhoon-related loss of life and identify location (which Members and where in the Members’ area), gender, social status, and any other additional information available. 	<ul style="list-style-type: none"> Update typhoon monitoring, forecasting, and warning system. (Also applicable to SG 2) Improve tropical cyclone forecast accuracy, including forecast of intensity and track of typhoon as well as typhoon induced wind, rainfall and storm surge. (Also applicable to SG 2, SG 3a, SG3b, SG4, SG 6b) Use typhoon related indices to improve the accuracy of typhoon forecast products and services 	<ul style="list-style-type: none"> Establishment on flash flood warning system including debris flow and landslides. (Also applicable to SG 2) Evaluation and improvement of operational flood forecasting system models. (Also applicable to SG 2) Establishment and improvement of flood forecasting systems to selected river basins. (Also applicable to SG 2) (change BY WGH) Development of Hazard Mapping for flood and sediment-related disasters (change BY WGH) Establishment and improvement of urban flood risk management systems to selected cities. (change BY WGH) Establishment of Global Flood Alert System (GFAS) Establishment of flood alert system (Change by WGH) 	<ul style="list-style-type: none"> Identify Members’ key agencies and sectors working on disaster preparedness and protection of vulnerable communities against typhoon-related disasters and encourage establishment of linkages, networking, and exchange of information among them. Assist in policy development and strategic planning on disaster risk management with special emphasis on densely populated areas and vulnerable communities. Provide an effective framework for integrating early warning systems for vulnerable communities into development process

<p>KRA 2: Minimized Typhoon- related Social and Economic Impacts</p>	<p>Strategic Goal 2: To reduce the socio-economic impacts of typhoon-related disasters per GDP per capita by 20 per cent in the ten years of 2006 – 2015 (using the ten years of – 1990-1999 as the base line).</p>	<ul style="list-style-type: none"> • Collect, study, and catalog typhoon-related social and economic impacts. • Standardize Members' methodology to assess social and economic impacts/issues of typhoon-related disasters. • Study and understand the impact of climate change on tropical cyclone activity and related effects in the region 	<ul style="list-style-type: none"> • Produce user-friendly products. (Also applicable to SG 1) • Assess the change of track and impact areas of tropical cyclones. (Also applicable to SG 1) 	<ul style="list-style-type: none"> • Improve management of Improvement of the management of urban flood risk. (Also applicable to SG 1, SG 4a, SG 4b, and SG 5b) • Development of assessment system of socio-economic impact of flood management (Also applicable to SG 4 and SG 5) • Analysis of social and economic impacts of flood (Also applicable to SG 4 and SG 5) 	<ul style="list-style-type: none"> • Evaluate relationship between socio-economic impacts and intensity of the tropical cyclones. • Assessment of socio-economic impacts of typhoon-related disasters. (Also applicable to SG 4a) • Provide reliable statistics of impacts of typhoon-related disasters for monitoring the progress achieved by the Typhoon Committee. • Develop, establish, promote, coordinate and facilitate exchange of good practices on disaster risk management for a regional-wide disaster information system which would be accessible to all Members' decision makers, disaster services, communities, and others designated by the Members. • Develop an effective framework for integrating early warning systems to support socio-economic development.
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KRA 3: Enhanced beneficial typhoon-related effects for the betterment of quality of life.	Strategic Goal 3a: To identify and explore the beneficial use of resources such as rainfall brought by typhoon.	<ul style="list-style-type: none"> Collect and distribute Members' studies on typhoon-related beneficial effects. Promote such sharing of experience via the Typhoon Committee's web site and the media. 		<ul style="list-style-type: none"> Improvement of dam operation for flood control and water resource management considering rainfall induced by typhoon. (Change by WGH) 	
	Strategic Goal 3b: To study and promote the increasing use of typhoon-related beneficial effects among the Members		<ul style="list-style-type: none"> Identify the typhoon-related wind and precipitation. (Applicable to SG 4) Improve typhoon-related wind and precipitation forecast accuracy. (Also applicable to SG 4) 	<ul style="list-style-type: none"> Utilization of rainfall induced by typhoons as water resource. 	<ul style="list-style-type: none"> Identify Members' key agencies and sectors working on beneficial effects of typhoons and encourage
KRA 4: Improved Typhoon-related Disaster Risk Management in Various Sectors	Strategic Goal 4a: To provide reliable typhoon-related disaster information for effective policy making in risk management in various sectors.	<ul style="list-style-type: none"> Improve the methods to calculate the QPE, QPF and to estimate the PMP and PMF. <u>(CHANGE SUGGESTED BY CHAIR OF AWG/TRCG: transfer this bullet to the column under Meteorology)</u> 	<ul style="list-style-type: none"> Improve the methods to calculate the QPE, QPF and to estimate the PMP and PMF. Preparation of typhoon hit or landfalling probability maps. Preparation of tropical cyclone precipitation maps Assess the possible effects of climate 	<ul style="list-style-type: none"> Preparation of inundation and water-related Hazard Maps. Preparation of urban inundation maps and water-related Hazard maps. PMP/PMF review and study considering climate change. Establishment of scenario building for typhoon-related hydrological disaster reduction Improvement of satellite data utilization in typhoon-related disaster management and hydrological modeling. 	<ul style="list-style-type: none"> Develop, establish, promote, coordinate and facilitate development of database on various sectors for a regional-wide disaster information system which would be accessible to all Members' decision makers, disaster services, communities, and others designated by the Members. (Applicable to SG 1, SG 2, SG 3b, SG 4b, SG 4c, SG 5a and SG 5b) Establish and distribute an inventory of Members' existing disaster reduction techniques and management strategies.

			change on tropical cyclone	<ul style="list-style-type: none"> • Improvement the capacity of damage assessment related to typhoon (Change by WGH) • Preparation of safety zones 	
	<p>Strategic Goal 4b: To strengthen capacity of the Members in typhoon-related disaster risk management in various sectors.</p>		<ul style="list-style-type: none"> • Promote and facilitate the exchange and use of relevant data. • Establishment and improvement of operational typhoon short-term climate prediction system. 	<ul style="list-style-type: none"> • Establishment and improvement of QPE/QPF and storm surge warning services • Establishment and improvement of the products application of QPE/QPF and storm surge warning services in hydrological modeling. (Change by WGH) • Development of comprehensive countermeasure for extraordinary extreme flood disaster (Also applicable to SG 2, SG 5, SG6) (Change by WGH) 	<ul style="list-style-type: none"> • Identify priority areas for capacity building on disaster risk management of interested Members as may be required
	<p>Strategic Goal 4c: To enhance international and regional cooperation and assistance in the field of disaster risk reduction.</p>	<ul style="list-style-type: none"> • Strengthen cooperation and collaboration of disaster early warning systems among Members using the latest technology. (Also applicable to SG 1, SG 2 and SG 3b) • Development of contacts and actions among Members of TC and PTC in view of implementing and 		<ul style="list-style-type: none"> • Survey and analysis of flood disaster in TC Members (Also applicable to SG 2, SG 5 and SG 6) • Encouragement of hydrological data sharing (Change by WGH) 	<ul style="list-style-type: none"> • Establish and distribute an inventory of Members' existing disaster reduction techniques and management strategies. • Identify Members whose risk management is efficiently structured and then promote visits of DRR experts from other Members. • Provide expert missions to enhance Member's disaster reduction techniques and management

		<p>synergizing Standard Operating Procedures for coastal multi-hazard early warning system</p> <p><u>(PROPOSED BY TCS UNDER SUGGESTION OF CHAIR OF AWG/TRCG)</u></p>			strategies
<p>KRA 5: Strengthened Resilience of Communities to Typhoon-related Disaster</p>	<p>Strategic Goal 5a: To promote and enhance culture of community-based disaster risk management among the Members.</p>	<ul style="list-style-type: none"> • Develop and support urban flood risk management pilot projects in the Typhoon Committee’s area. • Increase the number of women regionally in meteorology, hydrology, disaster risk reduction, and related sciences in support of the Millennium Development Goals. (Also applicable to SG 5b) 	<ul style="list-style-type: none"> • Provision of understandable and useful tropical cyclone impact information and materials to the public for disaster preparedness as a typhoon approaches the impact areas. . 	<ul style="list-style-type: none"> • Establishment and sustaining community-based flood forecasting and warning systems. (Also applicable to SG 1, SG 2, and SB 4b). • Develop Development of landslide and sedimentation flows forecasting and warnings. • Improvement of flood early warning dissemination to the community. (Change by WGH) 	<ul style="list-style-type: none"> • Facilitate exchange of experiences on community based risk management to support a regional-wide disaster information system. • Assist as requested, Members’ development policy and strategic planning process to include integration of community based risk management.

	<p>Strategic Goal 5b: To promote education, training and public awareness of typhoon-related disasters among the Members.</p>	<ul style="list-style-type: none"> • Promote lectures in primary, secondary and high schools in order to sensitize students to typhoon-related social and economical impacts and to encourage them to choose earth sciences as a future field of study and work. • Identify and distribute material (including photographs) on typhoons and related hazards and make available to Members' teachers and professors. • Promote media and public campaigns to enhance awareness of tropical cyclone impacts and on preparedness activities the public should take to protect their lives and mitigate losses to property. • Develop and implement a multi-hazard information web site to raise the level of public awareness of natural hazards and their impacts. Encourage users' participation in the development. • Develop a library of outreach/education material based upon 	<ul style="list-style-type: none"> • Provision of on-the-job training on typhoon forecasting systems. (Also applicable to SG 1 and SG 2). 	<ul style="list-style-type: none"> • Provision of on-the-job training on flood forecasting systems. (Also applicable to SG 1 and SG 2) • Implementation of techniques on urban flood inundation mapping, hazard mapping and flood disaster assessment • Implementation of techniques on sediment-related disaster forecasting and warning. 	<ul style="list-style-type: none"> • Provide training and outreach activities to and face-to-face meetings with the people at the last kilometre/mile and the local first responders. • Promote information to communities about flood-proof techniques to prevent damage to their homes. • Provide information to communities on land use planning to ensure that the areas prone to flooding should not be used for housing. <p>(Change by MALAYSIA)</p>
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		<p>users' needs for Members to use during their outreach/educational activities.</p>			
<p>KRA 6: Improved capacity to generate and provide accurate, timely and understandable information on typhoon-related threats</p>	<p>Strategic Goal 6a: To facilitate RSMC capability to respond to the needs of the Members in forecasting and capacity building.</p>		<ul style="list-style-type: none"> • Identify regional tropical cyclone forecasting guidance requirements to develop and improve typhoon-related operational products. • Provide more typhoon-related operational forecasting products. • Identify methods to verify typhoon products other than track and intensity forecasts for future use. 	<ul style="list-style-type: none"> • Improvement of real-time operational implementation ability to forecast hydrological phenomena related to typhoon (Change by WGH) 	

			<ul style="list-style-type: none"> • Provide ensemble forecast products to promote their operational use by TC Members <p>(INPUT BY JAPAN/IMA)</p> <ul style="list-style-type: none"> • Enhance capacity of Members in TC operational analysis, for the purpose of effective warnings issued by Members (INPUT BY CHINA and JAPAN in 6 Dec 2013) 		
	<p>Strategic Goal 6b: To improve capacity of Members to provide timely and accurate user-oriented and user-friendly tropical cyclone products and information</p>		<ul style="list-style-type: none"> • Post Member's typhoon model verification data where available on a web site • Improve less developed Members' typhoon information processing system. (CHINA proposed modify 2ND bullet): • Improve less developed Members' information communication system and typhoon information 	<ul style="list-style-type: none"> • Improve hydrological products which meet users' requirements. (Also applicable to SG 1 and SG 2) 	

	<p>Strategic Goal 6c: To enhance capacity of Members' typhoon-related observation, monitoring, forecasting and warning</p>	<ul style="list-style-type: none"> • Recruit volunteers to help observe, report, and distribute information on typhoon-related hazards. • Enhance the understanding of the processes related to tropical cyclone formation, intensity change and landfalling through collection of real time targeted observations in the vicinity of typhoons and analysis, including buoys and aircraft reconnaissance data. <u>(PROPOSED BY CHAIR OF AWG/TRCG)</u> • Enhance and facilitate warning dissemination by Members using available communication technologies 	<p>processing system.</p> <ul style="list-style-type: none"> • Participate in THORPEX-ASIA and organize other observational programmes and experimental studies. • Improve regional in situ observations for monitoring typhoons. • Assist relevant Members in receiving required satellite data and in applying these data. • Identify requirements and improve less developed Members' typhoon forecast system, especially the utility of ensemble products. (INPUT BY CHINA) 		
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<p>KRA 7: Enhanced Typhoon Committee's Effectiveness, Efficiency and International Collaboration</p>	<p>Strategic Goal 7a: To strengthen the capacity of Typhoon Committee to effectively discharge its responsibilities and functions described in this Strategic Plan and completed its stated mission in accordance with the Typhoon Committee's Statute.</p>	<ul style="list-style-type: none"> • Promote the participation in typhoon-related internal meetings and conferences and prepare written reports on proceedings to share with other members. • Enhance the effectiveness and efficiency of the TCS. • Enhance the communication and cooperation among TC Members. • Enhance the effectiveness and efficiency of the Working Groups. • Enhance the cooperation among the Working Groups focal points • Enhance the cooperation and linkage with ESCAP, WMO and other regional and international organizations 		<ul style="list-style-type: none"> • Enhancement of linkage with the activities of WMO water and hydrology issues. (Change by WGH) 	<ul style="list-style-type: none"> • Provide reliable disaster statistics for monitoring the progress achieved by the Typhoon Committee. • Provide policy guidance to the <u>global agenda</u> related to disaster risk reduction and sustainable development, including the post Hyogo Framework for Action and Post UN Millennium Development Goals to emphasize the importance of implementation of tropical cyclone disaster risk reduction
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	<p>Strategic Goal 7b: To mobilize available resources and engage collaborators for the implementation of the strategic goals. To mobilize available resources, engage collaborators and link up with other major international initiatives to further the strategic goals and their implementation <u>(PROPOSED BY CHAIR OF AWG/TRCG)</u></p>	<ul style="list-style-type: none"> • Facilitate resource mobilization for projects among Members with assistance from national, regional and international organizations and TCS. • Collect, collate, and make available to Members successful cases of project funding for their reference. • Enhance the cooperation and linkage with ESCAP, WMO and other regional as well as international organizations and initiatives <u>(SUGGESTED BY CHAIR OF AWG/TRCG - transfer this bullet from 7a)</u> 			

ABBREVIATIONS

ADRC – Asian Disaster Reduction Center
AOP – Annual Operating Plan
AWG – Advisory Working Group
ESCAP – Economic and Social Commission for Asia and the Pacific
GDP – Gross Domestic Product
IPCC – Intergovernmental Panel on Climate Change
KRA – Key Results Area
PMF – Probable Maximum Flood
PMP – Probable Maximum Precipitation
PTC – Panel on Tropical Cyclones
QPE – Quantitative Precipitation Estimation
QPF – Quantitative Precipitation Forecasting
RCPIP – Regional Cooperation Programme Implementation Plan
RSMC – Regional Specialised Meteorological Center
SG – Strategic Goal
TC – Typhoon Committee
TCS – Typhoon Committee Secretariat
THORPEX – The Observing System Research and Predictability Experiment
TRCG – Training and Research Coordination Group
UN – United Nations
WGDRR – Working Group on Disaster Risk Reduction
WGH – Working Group on Hydrology
WGM – Working Group on Meteorology
WMO – World Meteorological Organization

ANNEX I TO APPENDIX I STRATEGIC PLAN MID-TERM REVIEW INPUTS FROM ESCAP

References	Comments
1. Reference to WMO GFCS	Taking into account resolution 69/12, the strategic plan of the TC could explicitly reflect an intent to support the WMO Global Framework for Climate Services (e.g. under strategic goal 7B, following the suggested change by Hong Kong). WMO will likely be in a better position to suggest precise inputs, in this regard, but perhaps this is an issue that we could also flag.
2. Reference to 5 th Assessment Report of IPCC	In the introduction and the section on climate change, more direct reference could be made to the 5th Assessment Report from IPCC now that it's available.
3. Inclusion of activity related to climate change under Goals 1 and 2	This may include long-term assessment of climate change impacts for members, including the physical climatic changes such as typhoon intensity and frequency, and the socio-economic changes the affect how many lives are lost such as poverty, increasing urbanization and location of people and assets in exposed/hazardous areas
4. Inclusion of activity related to climate change under Goal 3	This may include future availability of water resources due to climate change and the impact of precipitation changes on catchments, particularly large transboundary ones.
5. Inclusion of institutional capacity assessment under Goal 4	Capacity assessment of institutions that are responsible to responding to typhoon related disasters and those to be engaged in disaster risk reduction.
6. Consider the trans-boundary nature of future climate change impact would necessitate sub-regional cooperation	Under 4c, review the circumstances considering the climate change where disaster impacts may be transboundary, and how members could collaborate to reduce the compounding risks
7. Incorporate climate change in Goal 5,	Climate change impacts scenario and adaptation strategies to be incorporate in promotional and educational material.
8. Under goal 6, consider modeling of possible future changing climatic conditions for members and the region. Also, goal 6c could also link to	

<p>the earlier suggested activity under goals 1 & 2.</p>	
<p>9. Goal 7: greater synergy with PTC</p>	<p>Building greater synergy with the Panel on Tropical Cyclones (PTC) towards joint programmes and projects could be included including those facilitated by the ESCAP and the Trust Fund for Tsunami and Disaster /Climate Preparedness</p>
<p>ASSOCIATED ACTIVITIES</p>	<p>Suggested considerations:</p>
<p>10. SG 1 and 2</p>	<p>a. Evaluate the interrelationship of three components: a) typhoon characteristics, b) vulnerability and capacity profiles of the affected communities, and c) the loss of lives and socio-economic damage and losses.</p>
<p></p>	<p>b. Improve the typhoon-induced disaster assessment, reporting, and statistics in terms of baseline and damage/losses particularly the nexus of Met Offices, NDMOs, and National Statistical Offices/Authorities</p>
<p></p>	<p>c. Identify, document and share good practices</p>
<p></p>	<p>d. Develop and implement projects at sub-regional level</p>
<p>11. SG 3b:</p>	<p>Conduct studies on the beneficial effects of typhoon in conjunction with the climate change medium and long term scenarios</p>
<p>12. SG 4a</p>	<p>a. Leverage the national institutions and mechanisms for development planning and disaster risk management to optimize the utilization of typhoon-related information for sectoral planning and programming</p>
<p></p>	<p>b. Leverage the sub-regional and regional forum and mechanisms to advocate typhoon-related policies of other sectors</p>
<p>13. SG 4b</p>	<p>Add: Develop cooperative framework including those under ESCAP</p>
<p>14: SG 4c.</p>	<p>Develop regional reference/primer on and advocate the use of technology in the “End-to-end” Early Warning System in conjunction with the GFCS</p>
<p></p>	<p>Strengthen regional mechanism for quality assurance of the use of technology in early warning system</p>

