

REPORT on Activities of Working Group on Disaster Risk Reduction (WGDRR) of TC in 2022

(Item 8 of Tentative Programme for TC 55th Session)
(Submitted by WGDRR)

ACTION REQUIRED:

The Working Group is invited to:

- A. Review the activities of TC WGDRR conducted in 2022
- B. Approve the recommendations and AOPs with the related budget of WGDRR in 2023

APPENDIX:

- I. Draft text for Inclusion at Session Report
- II. Progress Report on activities of Working Group on WGDRR in 2022

ANNEX

- I. Implementation Status Success Indicators of WGDRR Annual Operating Plans in 2022
- II. Implementation Status Success Indicators of WGDRR Annual Operating Plans in 2023.

APPENDIX

I. Draft text for inclusion at Session Report

1. Disaster Risk Reduction Component

During the 17th Integrated Working Group DRR parallel virtual meeting on November 29, 2022, the Working Group reviewed its activities and its Annual Operating Plans (AOPs) for 2022. Please refer to Appendix II for details.

Dr. Jongseol Lee Chair of WGDRR welcomed all the members online and delivered the opening remarks. He emphasized on the importance of WGDRR review of the AOP 2022 and the Plan of working for 2023. It was a great chance for cooperation of WGDRR as well as the contribution to the future of the world.

Dr Chihun Lee, NDMI, moderator of the meeting welcomed all the members and representatives. Participants was invited to introduce themselves during the meeting and a group photo was taken.

Around 22 members and representatives from ESCAP, WMO, Republic of Korea, ADRC, Japan, Lao PDR, Malaysia, Philippines, Thailand, USA, Vietnam, China (Shanghai, Hong Kong) and TCS.

The Working Group passed the following AOPs 2022

1) Review of the 2022 AOPs & Budget Status

2) AOP1. Capacity Building / Knowledge Sharing (NDMI)

- a. NDMI and NOAA held the Knowledge Sharing program in Guam, 26th July, 2022 with a total of around 20 experts attended the program which also included OCD and Red Cross.
- b. 7 experts from NDMI made a presentation on disaster management around topics of drought, satellite, landslide, disaster investigation etc.

3) AOP2. Setting up Early Warning and Alert System (NDMI)

- a. NDMI had launched the project for strengthening capabilities of disaster risk reduction with the Philippines from 2013 to 2015.
- b. Early Warning and Alert Systems was installed in Toledo and Dumanjug City, the province of Cebu in October 2022.
- c. NDMI conducted the field survey to choose sites for constructing systems in 2022 on June 12 -18 in Toledo & Dumanjug, the Philippines
- d. Feasibility studies such as site visit, land survey and meetings with local office was conducted

4) AOP3. WGDRR Annual Meeting (NDMI)

- a. Owing to the COVID situation, WGDRR annual meeting has been using online mode since 2020. If the situation in 2023 permits, it will get back to face to face meeting in Korea. If not, it will still be online meeting.

5) AOP4. Benefit Evaluation of Typhoon DRR (STI)

- a. Dr. Peiyun from Shanghai Typhoon Institute (STI), China Meteorological Administration presented the progress of the benefit Evaluation of Typhoon DRR.

- b. This Project was led by STI that functions to establish a set of evaluation index and provide an evaluation report that assists in decision-making basis for the optimization of typhoon disaster behavior. It included the research of the validity of STIDM, the development of a real time simulation system of typhoon rainstorm waterlogging over Shanghai, an update the operational pre-assessment system of risk caused by TCs and an update the database of damage caused by TCs over WNP
 - c. A real - time flood simulation system in Shanghai is developed and tested by historical cases.
 - d. Taking Shanghai as an example, a town-scale operational pre-assessment system of TC hazard for megacity was tested during Muifa 2022.
- 6) AOP5. Sharing Information related to DRR
- a. WGDRR will continue to exchange information and experience related to DRR through the forum on the TC website. Members are welcome to upload all kinds of DRR information such as data, video clips to the TC website.
- 7) AOP6. Making Education Videos related to DRR (HKO)
- a. A video about “Does a closer distance of a tropical cyclone from Hong Kong always mean a greater threat?” was translated into English with voiceover and subtitles as the coming education video related to DRR. The Hong Kong Observatory (HKO) shared the video during the meeting and no further comment was received from the members. The video was uploaded to the Typhoon Committee website and WMO’s YouTube Channel for members to use on public education on DRR.
- 8) AOP7. Seminar for TC Crowd-sourcing high density non-conventional weather data (HKO)
- a. An online seminar for TC Crowd-sourcing high density non-conventional weather data for TC members was held on July 5, 2022. During the seminar, two talks on the “Pilot Crowd Sourcing Scheme” and “Establishment of Microclimate Station Network in Hong Kong” were delivered by HKO. AOP 7 was regarded as accomplished after this online seminar.

2. Conclusion of WGDRR

On the basis of the information provided by the Members, the reports presented by project coordinator/leader and findings of the parallel session on WGDRR, the following conclusions were reached:

- 1) With the continuous travel restrictions and risk of infection of COVID-19, most of the face to face meetings which included the 17th WGDRR annual meeting and the seminar for TC Crowd-sourcing high density non-conventional weather data hosted by HKO were conducted online. Projects such as Capacity Building/knowledge Sharing Program, setting up of Early Warning and Alert System in Philippines, benefit evaluation of Typhoon DRR (STI), making an educational video related to DRR, and DRR information sharing were also successfully implemented.
- 2) The 17th WGDRR annual meeting was hosted by NDMI Korea on October 21, 2022 to discuss the issues related to WGDRR activities. WG reviewed the AOPs implementation with the budget expenditure in 2022 and proposed the plans for 2023. Besides the TC DRR members, ADRC, WMO and ESCAP were also invited to the meeting to give informative and valuable comments for WG.
- 3) WGDRR decided to continue conducting the projects which can improve capacities of disaster management among TC Members through the project of information exchange and sharing such as participation in the important DRR world conferences, organizing the expert team to selected member state and using effective platform to exchange DRR information, as well as holding the WGDRR annual meeting.

- 4) The project of Capacity Building/Knowledge Sharing in DRR was resumed in 2022. NDMI and NOAA held the Knowledge Sharing program in Guam, on July 26, 2022 with a total of around 20 experts attended the program which also included OCD and Red Cross. 7 experts from NDMI made a presentation on disaster management around topics of drought, satellite, landslide, disaster investigation etc.
- 5) WGDRR decided to continue the projects related to public education on DRR for promotion in the coming future which can raise public awareness on typhoon related disasters.
- 6) At the 17th WGDRR annual meeting, HKO expressed that they could continue contributing educational videos related to DRR for TC DRR public education use. The project will continue to be led by HKO.
- 7) An online seminar for TC Crowd-sourcing high density non-conventional weather data for TC members was held on July 5, 2022. During the seminar, two talks on the “Pilot Crowd Sourcing Scheme” and “Establishment of Microclimate Station Network in Hong Kong” were delivered by HKO. AOP 7 was regarded as accomplished after this online seminar.
- 8) For implementation of the proposed projects in 2023, WGDRR proposed the request of **USD 15,500** to be allocated TCTF for the following items:
 - (a) To allocate USD **12,500** budget of TCTF in 2023 for capacity building/knowledge sharing in DRR
 - (b) To allocate USD **3,000** budget of TCTF in 2023 for making education video related to DRR

3. Recommendations for Implementation in 2023

On the basis of the conclusion, the WGDRR made the following recommendations:

- 1) To request NDMI to organize the team to the selected member for the project of capacity building and knowledge sharing in DRR
- 2) To request NDMI to continue supporting the development and improvement of the early warning and alert systems related to typhoon disaster in the participating members
- 3) To request NDMI, to continue supporting and hosting the WGDRR Annual Meeting in 2023 in ROK.
- 4) To request STI, China to continue conducting the research of the project of benefit evaluation of typhoon disaster prevention and preparedness.
- 5) To encourage the Members to share information related to DRR on the established forum of TC Website.
- 6) To request the Hong Kong Observatory to continue providing WGDRR with a video related to typhoon disaster or severe weather and translate it into English version (voiceover and subtitle) for members to use on DRR public education.
- 7) To request the cooperation of the Synergized Standard Operating Procedures for Coastal Multi-Hazard Early Warning System Phase 3 concept SSOP III with WGDRR.
- 8) To request the Typhoon Committee to approve the proposed projects and related budget in 2023.

II. Progress Report on activities of Working Group on WGDRR in 2022

1. Introduction

The Working Group of Disaster Risk and Reduction (WGDRR) continued to implement a series of projects according to the plan outline from the 54th TC Session. However, most of the face to face programs or projects are hindered by the COVID travel restrictions and was replaced by virtual meetings.

2. Components of the WGDRR

WGDRR Member (Focal points)

<i>Chair</i>	Dr. Jongseol Lee (Republic of Korea)
<i>Vice Chairs</i>	Mr. Marcus Aydlett (USA) Dr. Woojung Choi (Republic of Korea)
<i>Focal Points</i>	National Committee for Disaster Management (Cambodia) Mr. Wang Yawei (China) Mr. CHOE Kyong Sik (DPR Korea) Mr. W Kong (Hong Kong, China) Ms. KABUTO Shoko (Japan) Mr. ISHIGAMI Shogo (Japan) Ms. Akhom Thammalangsy (Lao PDR) Mr. Fan Ka Wa (Macao, China) Ms. Che Siti Noor bint koh Poh Lee (Malaysia) Mr. Bernardo Rafael R Alejandro IV, CESO IV (Philippines) Dr. Chihun Lee (Republic of Korea) Mr. Cheong Wee Kiong (Singapore) Mr. Saharat Wongsakulwiwat (Thailand) Mrs. Nguyen Thi Xuan Hong (Vietnam)

3. Organization of the 17th Working Group Disaster Risk and Reduction Virtual Meeting in October 21 2022

A video conference for the 17th Working Group meeting of ESCAP/WMO Typhoon Committee (TC) Working Group on Disaster Risk and Reduction (WGDRR) was organized by the National Disaster Management Institute (NDMI) on October 21, 2022 to discuss the implementation status of the Annual Operation Plan in DRR aspects.

The meeting was convened by Dr Jongseol Lee, Chair of WGDRR, with around 30 members and representatives from ESCAP, WMO, Republic of Korea, ADRC, Thailand, Malaysia, Lao PDR, Vietnam, USA, China (Shanghai, Hong Kong and Macau) and TCS participating. Dr Chihun Lee from NDMI was the moderator of the meeting.

During the meeting, the 2022 AOP implementation status was reviewed as follow

- (1) AOP1. Capacity Building / Knowledge Sharing (NDMI)
 - (a) NDMI and NOAA held the Knowledge Sharing program in Guam, 26th July, 2022 with a total of around 20 experts attended the program which also included OCD and Red Cross.
 - (b) 7 experts from NDMI made a presentation on disaster management around topics of drought, satellite, landslide, disaster investigation etc.
- (2) AOP2. Setting up Early Warning and Alert System (NDMI)
 - (a) NDMI had launched the project for strengthening capabilities of disaster risk reduction with the Philippines from 2013 to 2015.
 - (b) Early Warning and Alert Systems was installed in Toledo and Dumanjug City, the province of Cebu in October 2022.
 - (c) NDMI conducted the field survey to choose sites for constructing systems in 2022 on June 12 -18 in Toledo & Dumanjug, the Philippines
 - (d) Feasibility studies such as site visit, land survey and meetings with local office was conducted
- (3) AOP3. WGDRR Annual Meeting (NDMI)
 - (a) Owing to the COVID situation, WGDRR annual meeting has been using online mode since 2020. If the situation in 2023 permits, it will get back to face to face meeting in Korea. If not, it will still be online meeting.
- (4) AOP4. Benefit Evaluation of Typhoon DRR (STI)
 - (a) Dr. Peiyun from Shanghai Typhoon Institute (STI), China Meteorological Administration presented the progress of the benefit Evaluation of Typhoon DRR.
 - (b) This Project was led by STI that functions to establish a set of evaluation index and provide an evaluation report that assists in decision-making basis for the optimization of typhoon disaster behavior. It included the research of the validity of STIDM, the development of a real time simulation system of typhoon rainstorm waterlogging over Shanghai, an update the operational pre-assessment system of risk caused by TCs and an update the database of damage caused by TCs over WNP
 - (c) A real - time flood simulation system in Shanghai is developed and tested by historical cases.
 - (d) Taking Shanghai as an example, a town-scale operational pre-assessment system of TC hazard for megacity was tested during Muifa 2022.
- (5) AOP5. Sharing Information related to DRR
 - (a) WGDRR will continue to exchange information and experience related to DRR through the forum on the TC website. Members are welcome to upload all kinds of DRR information such as data, video clips to the TC website.
- (6) AOP6. Making Education Videos related to DRR (HKO)
 - (a) A video about “Does a closer distance of a tropical cyclone from Hong Kong always mean a greater threat?” was translated into English with voiceover and subtitles as the coming education video related to DRR. HKO shared the video during the meeting and no further comment was received from the members. The video was uploaded to the Typhoon Committee website and WMO’s YouTube Channel for members to use on public education on DRR.
- (7) AOP7. Seminar for TC Crowd-sourcing high density non-conventional weather data (HKO)
 - (a) An online seminar for TC Crowd-sourcing high density non-conventional weather data for TC members was held on July 5, 2022. During the seminar, two talks on the “Pilot Crowd Sourcing Scheme” and “Establishment of Microclimate Station Network in Hong Kong” were delivered by HKO. AOP 7 was regarded as accomplished after this online seminar.

During the meeting, the WGDRR 2022 Budget Status was reviewed as follow

Project No	Name of Project	Proposed Budget (USD)	Actual Expenditure (USD)
AOP1	Capacity Building/Knowledge Sharing in DRR	\$10,000	\$2,550.04
AOP2	Installation of Early Warning System related to typhoon disasters	Funded by NDMI	--
AOP3	WGDRR Annual Meeting	Funded by NDMI	--
AOP4	Benefit Evaluation of Typhoon Project	Funded by STI	
AOP5	Sharing Information related to DRR	No need	--
AOP6	Making video related to DRR	\$2,000	\$1,746.47
AOP7	Seminar for TC Crowd-sourcing high density non-conventional weather data	No need	--
	Total	\$12,000	\$4,296.51
	Balance for 2022	\$7,703.49	

The expected expenditure for 2022 DRR will be AP01 – Capacity Building / Knowledge Sharing trip to Guam which cost USD2,550.04 and AOP6 – Making of Educational Video which cost USD1,746.47. Thus, the total expenditure of 2022 WGDRR budget was USD4,296.51 which left us a balance of USD 7,703.49.

The participants expressed their appreciation to National Disaster Management Institute (NDMI) for their kind contribution and continued support on WGDRR activities, China STI for supporting the benefit evaluation of Typhoon DRR research, and the Hong Kong Observatory for making educational videos for the past years.

The participants extended their further appreciation to the Working Group Chairs, Dr. Jongseol Lee, Chair, Mr. Marcus Aydlett and Dr. Woojung Choi Vice Chairs on their contribution and effort in the past years.

4. WGDRR AOP 2023 and Budget

Project No	Name of Project	Working Plan 2023	Proposed Budget (USD)
AOP1	Capacity Building/Knowledge Sharing	Knowledge sharing meeting will continue in Philippines and Lao PDR.	\$12,500
AOP2	Installation of Early Warning System related to typhoon disasters	Will implement a new project in Danao City and Municipality of Argao in the province of Cebu in Philippines	Funded by NDMI
AOP3	WGDRR Annual Meeting	Face to face meeting in Korea if situation permits.	Funded by NDMI
AOP4	Benefit Evaluation of Typhoon Project	Research continue and Fellowship program will start if COVID 19 situation permits.	No need
AOP5	Sharing information related to DRR	Sharing information in TC website forum.	No need
AOP6	Making video related to DRR	Making more educational videos by HKO.	\$3,000
	Total		USD15,500

ANNEX

I. Implementation for WGDRR AOPs in 2022 with the success indicators

SP's KRA and SG	NO	Objective	Action	Other WGs Involved	TCS Responsibility	Quarter Completed	Project leader/Other Organizations Involved	Success Indicators	Funding Required USD	Funding Sources	Completed YES/NO
KRA3 KRA4 KRA5 KRA7	1	Capacity Building /Knowledge Sharing	To organize an expert team to Palau for DRR information and capacity building exchange	Invite other WGs to join	Coordination and participation	Third	NDMI And participating members	Conducted the Mission in the selected member state	USD2,550.04	NDMI and TCTF	Yes
KRA2 KAR3 KRA4 KRA5 KRA6 KRA7	2	Installation of warning systems related to typhoon disaster	To develop and improve the installed EW and Alert Systems in the members' state in order to improve the capacities of resilience for typhoon related disaster		Coordination	Fourth	NDMI	NDMI assigned experts to Philippines to install and maintain the systems	Unspecifie d	NDMI	Yes

SP's KRA and SG	NO	Objective	Action	Other WGs Involved	TCS Responsibility	Quarter Completed	Project leader/Other Organizations Involved	Success Indicators	Funding Required USD	Funding Sources	Completed YES/NO
KRA1 KRA4 KRA5 KRA6 KRA7	3	Organizing the WGDRR Annual Meeting	To organize the annual meeting to follow up on the working group's activities and information exchange	AWG Members	Coordination and participation	Second	NDMI and TC DRR Members	The meeting was held in ROK	Unspecified	NDMI	No
KRA1 KRA4 KRA5 KRA6	4	Benefit Evaluation of Typhoon Project	To promote the research concerning benefit evaluation of typhoon disaster prevention and preparedness.		Coordination and participation	Second/ Third	STI, China	Conducted a research fellowship for TC Member in STI, China	No need		No
KRA2 KRA3 KRA4 KRA5 KRA7	5	Sharing information related to disaster risk management	To share information such as policies or mechanism related to DRR among TC Members via the forum established on TC Website		Establishment of the forum on TC website for facilitating the information sharing	Fourth	NDMI and TCS	Members shared the information on the forum	No need		Yes

SP's KRA and SG	NO	Objective	Action	Other WGs Involved	TCS Responsibility	Quarter Completed	Project leader/Other Organizations Involved	Success Indicators	Funding Required USD	Funding Sources	Completed YES/NO
KRA2 KRA3 KRA4 KRA5 KRA7	6	Making educational video related to DRR	To produce a video related to DRR education for raising public awareness.		Coordination	Fourth	HKO	Prepare a video with English subtitle and voiceover and shared with TC Members	USD 1,746.47	TCTF	Yes
KRA2 KRA3 KRA4 KRA5 KRA7	7	Seminar for TC Crowd-sourcing high density non-conventional weather data	HKO organize a Seminar and WG to coordinate the Member to take part in		Coordination	Third	HKO and participating members	An online Seminar was successfully held by HKO	No need		Yes

- 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.
- KRA 6: Create a framework for cooperative scientific research on tropical cyclone and related disciplines, particularly in relation to climate change, and include support for translating research outcomes to services by developing relevant experiments, research projects, conducting field surveys, and publishing and promoting research findings.
- KRA 7: Enhance the resilience of vulnerable communities, especially coastal communities, to tropical cyclone impacts.

ANNEX

II. WGDRR AOPs in 2023 with the success indicators

SP's KRA and SG	NO	Objective	Action	Other WGs Involved	TCS Responsibility	Quarter Completed	Project leader/Other Organizations Involved	Success Indicators	Funding Required	Funding Sources	Completed YES/NO
KRA3 KRA4 KRA5 KRA7	1	Capacity Building /Knowledge Sharing	To organize an expert team to Philippines and Laos for DRR information and capacity building exchange	Invite other WGs to join	Coordination and participation	Third	NDMI And participating members	Conducted the Mission in the selected member state	USD12,500	NDMI and TCTF	
KRA2 KAR3 KRA4 KRA5 KRA7	2	Installation of warning systems related to typhoon disaster	To develop and improve the installed EW and Alert Systems in the members' state in order to improve the capacities of resilience for typhoon related disaster		Coordination	Fourth	NDMI	NDMI assigned experts to Philippines to install and maintain the systems	Unspecified	NDMI	
KRA1 KRA4 KRA5 KRA6 KRA7	3	Organizing the WGDRR Annual Meeting	To organize the annual meeting to follow up on the working group's activities and information exchange	AWG Members	Coordination and participation	Second	NDMI and TC DRR Members	The meeting was held in ROK	Unspecified	NDMI	

SP's KRA and SG	NO	Objective	Action	Other WGs Involved	TCS Responsibility	Quarter Completed	Project leader/Other Organizations Involved	Success Indicators	Funding Required	Funding Sources	Completed YES/NO
KRA1 KRA4 KRA5 KRA6	4	Benefit Evaluation of Typhoon Project	To promote the research concerning benefit evaluation of typhoon disaster prevention and preparedness.		Coordination	Third	STI, China	Shared the research result with members	Unspecified	STI	
KRA2 KRA3 KRA4 KRA5 KRA7	5	Sharing information related to disaster risk management	To share information such as policies or mechanism related to DRR among TC Members via the forum established on TC Website		Establishment of the forum on TC website for facilitating the information sharing	Fourth	NDMI and TCS	Members shared the information on the forum	No need		
KRA2 KRA3 KRA4 KRA5 KRA7	6	Making educational video related to DRR	To produce a video related to DRR education for raising public awareness.		Coordination	Third/ Fourth	HKO	Prepare a video with English subtitle and voiceover and shared with TC Members	USD3,000	TCTF	

- 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.

- KRA 6: Create a framework for cooperative scientific research on tropical cyclone and related disciplines, particularly in relation to climate change, and include support for translating research outcomes to services by developing relevant experiments, research projects, conducting field surveys, and publishing and promoting research findings.
- KRA 7: Enhance the resilience of vulnerable communities, especially coastal communities, to tropical cyclone impacts.