MEMBER REPORT
Japan

ESCAP/WMO Typhoon Committee
19th Integrated Workshop
Shanghai, China
19 - 22 November 2024

CONTENTS

I. Overview of tropical cyclones which have affected/impacted Member's area since the last Committee Session

1. Meteorological Assessment (highlighting forecasting issues/impacts)

In 2024, 11 tropical cyclones (TCs) of tropical storm (TS) intensity or higher had come within 300 km of the Japanese archipelago as of 2 November*. Two made landfall, and the country was affected even by those that did not make landfall.
The TCs are described below, with their tracks shown in Figure 1.
*The track/intensity commentary provided here is subject to change once best-track data are finalized.

(1) TY EWINIAR (2401)
EWINIAR formed as a tropical depression (TD) over the sea east of Mindanao at 18 UTC on 23 May 2024 and moved northwestward. It was upgraded to TS intensity over the Philippines at 12 UTC on 25 May. It was further upgraded to severe tropical storm (STS) intensity in Luzon Island at 00 UTC on 26 May. After turning northeastward, it was upgraded to typhoon (TY) intensity over the Philippines 12 hours later. It reached its peak intensity with maximum sustained winds of 75 kt and a central pressure of 970 hPa over the same waters at 00 UTC on 27 May. It downgraded to STS intensity over the sea south of Japan at 00 UTC on 29 May and weakened to TS intensity at 00 UTC the next day. Keeping its northeastward track, it transformed into an extratropical cyclone over the same waters 18 hours later. Further accelerating east-northeastward, it entered the sea south of the Aleutian Islands and crossed longitude 180 degrees east before 12 UTC on 2 June.

(2) TY GAEMI (2403)
GAEMI formed as a TD over the sea east of the Philippines at 00 UTC on 19 July 2024 and moved northwestward. It was upgraded to TS intensity over the same waters at 00 UTC the next day and moved westward. After turning northward, it was further upgraded to TY intensity over the same waters at 00 UTC on 22 July. It moved westward and reached its peak intensity with maximum sustained winds of 90 kt and a central pressure of 935 hPa over the sea south of Yonagunijima Island at 03 UTC on 24 July. Turning in a counterclockwise direction to circle over the sea east of Taiwan, it was downgraded to STS intensity at 15 UTC the same day. Moving westward, it hit Taiwan with STS intensity after 15 UTC the same day and weakened rapidly. After passing through Taiwan Strait, it hit again South China with STS intensity at 12 UTC on 25 July and was downgraded to TS intensity in same area at 18 UTC the same day. Moving northwest-westward, it weakened to TD intensity in Central China at 18 UTC on 26 July and then dissipated at 00 UTC on 29 July.

(3) STS MARIA (2405)
MARIA, after forming as a TD, was upgraded to TS intensity over the sea south of the Ogasawara Islands at 18 UTC on 7 August 2024 and moved northeastward. Turning northward gradually, it was upgraded to STS intensity and reached its peak intensity with maximum sustained winds of 55 kt with a central pressure of 980 hPa over the sea north-east of Chichijima Island at 18 UTC the next day. After moving northwestward, it made landfall near Ofunato city, Iwate Prefecture with STS intensity around 2330 UTC on 11 August. Crossing Honshu Island, it was downgraded to TS intensity at 03 UTC on 12 August and weakened to TD intensity over the Sea of Japan at 18 UTC the same day.

(4) TY AMPIL (2407)

AMPIL, after forming as a TD, was upgraded to TS intensity over the sea south of Japan at 18 UTC on 12 August 2024 and moved northeastward. It was upgraded to STS intensity over the same waters at 06 UTC the next day and turned northward over the sea west of Chichijima Island. Keeping its northward track, it was upgraded to TY intensity over the north-west of the island at 00 UTC on 15 August and it reached its peak intensity with maximum sustained winds of 85 kt and a central pressure of 950 hPa over the sea south-east of Hachijojima Island at 12 UTC the same day. After turning northeastward, it was downgraded to STS intensity over the sea far off east of Japan at 12 UTC on 18 August and transitioned into an extratropical cyclone over the same waters by 00 UTC the next day.

(5) TS JONGDARI (2409)

JONGDARI, after forming as a TD, was upgraded to TS intensity over the sea south of Miyakojima Island at 18 UTC on 18 August 2024 and moved northeastward. It moved northward and then reached its peak intensity with maximum sustained winds of 40 kt and a central pressure of 998 hPa over the sea north-east of the Island at 06 UTC the next day. After moving northward, it weakened to TD intensity over the Yellow Sea at 12 UTC on 20 August.

(6) TY SHANSHAN (2410)

SHANSHAN, after forming as a TD, was upgraded to TS intensity over the sea west of the Mariana Islands at 18 UTC on 21 August 2024 and remained almost stationary. It was upgraded to STS intensity over the same waters at 12 UTC on 22 August and then moved northward. It was further upgraded to TY intensity over the sea north-west of the Islands and turned northwestward. It reached its peak intensity with maximum sustained winds of 95 kt and a central pressure of 935 hPa around Amami-Oshima Island at 15 UTC on 27 August and moved northward. It made landfall near Satsumasendai city, Kagoshima Prefecture with TY intensity around 23 UTC on 28 August. It gradually turned northeast-eastward over Kyushu Island, was downgraded to STS intensity at 06 UTC on 29 August and to TS intensity 12 hours later. After moving northward, it weakened to TD intensity over the sea south of Honshu Island at 03 UTC on 1 September.

(7) TY BEBINCA (2413)

BEBINCA, after forming as a TD, was upgraded to TS intensity over the sea south of the Mariana Islands at 12 UTC on 10 September 2024 and moved northwestward. It was upgraded to STS intensity over the same waters at 00 UTC the next day and downgraded temporarily to TS intensity over the sea south of Japan at 00 UTC on 13 September. Keeping its northwestward track, it was upgraded to STS intensity again around Minamidaitojima Island at 21 UTC the same day. It was further upgraded to TY intensity over the East China Sea at 18 UTC on 14 September and reached its peak intensity with maximum sustained winds of 75 kt and a central pressure of 965 hPa over the same waters 6 hours later. After gradually turning westward, it hit Central China with TY intensity around 00 UTC on 16 September and then was downgraded to STS intensity 6 hours later. It weakened to TD intensity over the same area at 00 UTC the next day.

(8) TS PULASAN (2414)

PULASAN, after forming as a TD, was upgraded to TS intensity over the sea around of the Mariana Islands at 12 UTC on 15 September 2024 and moved northeastward. Turning west-northwestward, it reached its peak intensity with maximum sustained winds of 45 kt and a central pressure of 992 hPa over the sea south of Japan at 06 UTC on 17

September. It continued northwestward and crossed Okinawa Island around 15 UTC the next day. It crossed the coastline of the Central China with TS intensity around 15 UTC on 19 September, turned northeastward and entered the Yellow Sea. It transitioned into an extratropical cyclone over the same waters by 06 UTC on 21 September.

(9) TS CIMARON (2416)

CIMARON, after forming as a TD, was upgraded to TS intensity and reached its peak intensity with maximum sustained winds of 35 kt and a central pressure of 1002 hPa over the sea south of Japan at 03 UTC on 25 September 2024. It moved west-northwestward and weakened to TD intensity over the sea east of Amami-Oshima Island at 06 UTC the next day.

(10) STS JEBI (2417)

JEBI, after forming as a TD, was upgraded to TS intensity over the sea around of the Mariana Islands at 06 UTC on 27 September 2024 and moved northwest-northward. It was upgraded to STS intensity over the sea east of Hachijojima Island at 18 UTC on 30 September and reached its peak intensity with maximum sustained winds of 60 kt and a central pressure of 985 hPa at 00 UTC on 1 October. It gradually turned northeastward and then transitioned into an extratropical cyclone over the sea around the Kuril Islands by 12 UTC on 2 October.

(11) TY KONG-REY (2421)

KONG-REY, after forming as a TD, was upgraded to TS intensity over the sea around of the Mariana Islands at 21 UTC on 25 October 2024 and moved northward. After turning westward, it was upgraded to STS intensity over the sea east of the Philippines at 00 UTC on 28 October and to TY intensity at 00 UTC the next day. It gradually turned northwestward and then reached its peak intensity with maximum sustained winds of 100 kt and a central pressure of 925 hPa over the same waters at 00 UTC on 30 October. It hit Taiwan with TY intensity around 06 UTC on 31 October and weakened rapidly. Passing through the Taiwan Strait, it was downgraded to STS intensity at 15 UTC the same day and to TS intensity at 00 UTC on 1 November. It moved northeastward and then transitioned into an extratropical cyclone over the East China Sea by 12 UTC on 1 November.

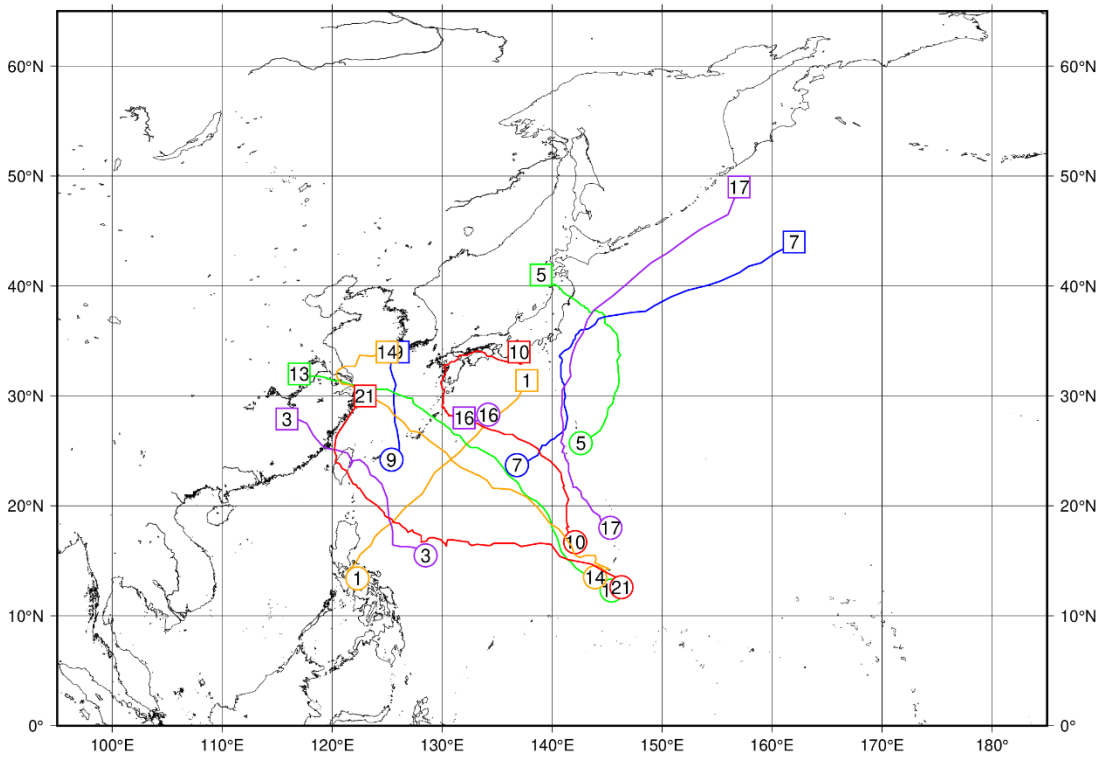


Figure 1: Tracks of the nine named TCs affecting Japan in 2024
The number circles represent the genesis point of each named TC, while the squares show the dissipation point. The last two digits of the identification number for each named TC are shown.

2. Hydrological Assessment (highlighting water-related issues/impact)

In 2024, eleven typhoons approached Japan, and two of them landed so far. In addition to that, there were heavy rainfalls accompanied by typhoons and an active rainy front. Those typhoons and related weather have caused significant impacts in Japan.

(1) STS MARIA (2405) (August)

The typhoon brought heavy rainfall mainly to the northern area in Japan, causing inundation damage of 3 rivers. In Iwate Prefecture, the total rainfall exceeded 400 mm, which is more than twice the normal August monthly rainfall.

(2) TY SHANSHAN (2410) (August-September)

The typhoon brought heavy rainfall mainly to the western and central area in Japan, causing inundation damage of 42 rivers and 133 landslides. Several rainfall stations recorded the highest 72-hour precipitation in recorded history, and the total rainfall from August 27 to September 1 exceeded 900 mm in some places, more than twice the normal August monthly rainfall.

Figure 2 damages caused by typhoon Maria

3. Socio-Economic Assessment (highlighting socio-economic and DRR issues/impacts)

Damages Caused by Tropical Cyclones in 2024

25 tropical cyclones developed as of November 13, 2024, of which 11 approached Japan and 2 of them reached above the national islands.

STS MARIA (2405) made landfall near Ofunato City, Iwate Prefecture, on August 12, crossed the Tohoku region at a slow speed, moved into the Sea of Japan by the night of August 12, and transitioned into a tropical cyclone on the west side of the Tsugaru Straits on August 13. In northern Japan, warm and moist air flowing toward the tropical cyclone brought heavy rainfall from 14th to 15th of August. MARIA caused no human casualties. It brought housing damages: 1 house was partially destroyed, 4 houses were flooded above floor level, and 10 houses were flooded below floor level. As for lifelines, it caused power blackouts for approx. 4,030 households in the service areas of Hokkaido Electric Power Co., Inc. and Tohoku Electric Power Co., Inc. Water supplies were disrupted for 291 households in Iwate Prefecture.

TY AMPIL (2407) developed to tropical storm intensity on the sea near Minami Torishima Island on August 13, moved northeastward while developing and approached the Ogasawara Islands from August 14 to 15, then moved northward while developing and approached the Izu Islands on the night of August 15 with extremely strong intensity. It continued to move northward while developing and approached the coast of the Kanto region from 16 to 17 of August. AMPIL caused casualties of 4 slightly injured. It also brought housing damages of 2 partially destroyed houses. As for the lifeline, it caused power blackouts for approx. 13,800 households mainly in the service areas of Tohoku Electric Power Co., Inc. and Tokyo Electric Power Company Holdings, Inc.

TY SHANSHAN (2410) developed to tropical storm intensity near the Mariana Islands on August 22, and approached the Amami Islands on August 27 with extremely strong intensity. It then changed its course to the north and made landfall near Satsumasendai City, Kagoshima Prefecture on August 29, moved slowly through Shikoku to the Tokaido coast, and transitioned into a tropical cyclone on September 1. It caused maximum instantaneous wind speeds exceeding 30 meters in Kagoshima Prefecture, and several observation sites in Kyushu recorded the highest maximum wind velocity for August. Furthermore, the effects of slow-moving typhoons and warm, moist air continued, resulting in record-breaking rainfall mainly on the Pacific side of western and eastern Japan, with the highest 72-hour precipitation ever recorded at several observation sites. The total rainfall from August 27 to September 1 exceeded 900 mm in some places in the Tokai region and southern Kyushu, which is more

than double the normal August monthly precipitation. SHANSHAN caused casualties of 8 fatalities, 11 severely injured, and 122 slightly insured as of September 10. It also brought housing damages: 8 houses were destroyed, 42 houses were half destroyed, 1,261 houses were partially destroyed, 210 houses were flooded above floor level, and 1,168 houses were flooded below floor level. As for lifelines, it caused power blackouts for approx. 283,679 households and water outage for 2,167 households nationwide.

TS PULASAN (2414) transitioned into cyclone and moved from the Sea of Japan to Sanriku offshore on September 22, bringing warm and moist air into the area, resulting in heavy rainfall with thunderstorms over a wide area from the Tohoku region to western Japan.
It resulted in record-breaking rainfall in the Hokuriku and Tohoku regions on the Sea of Japan side. Particularly in Ishikawa Prefecture, the total rainfall from September 20 to 22 exceeded 500 mm in some places, which is more than twice the normal September monthly precipitation. PULSAN caused casualties of 16 fatalities, 2 severely injured, and 45 slightly insured as of November 6. It also brought housing damages: 58 houses were destroyed, 447 houses were half destroyed, 28 houses were partially destroyed, 256 houses were flooded above floor level, and 1,101 houses were flooded below floor level. As for lifelines, it caused power blackouts for approx. 6,910 households nationwide. Water supplies were disrupted for 5,216 households in Ishikawa Prefecture.

II. Summary of Progress in Priorities supporting Key Result Areas

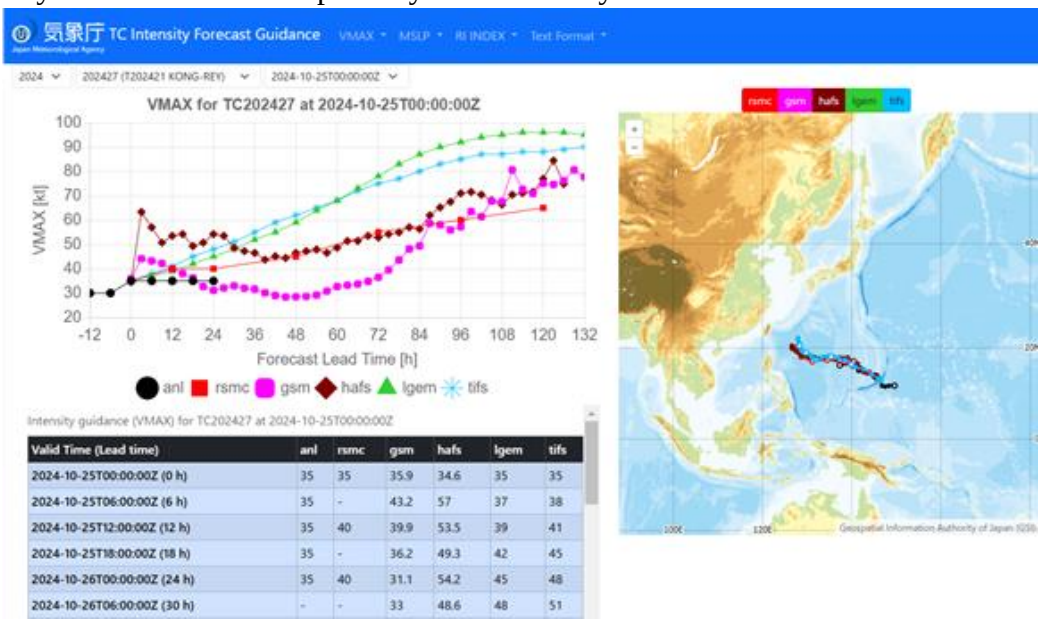
1. Update of the RSMC Tokyo's Numerical Typhoon Prediction Website

Main text:

The RSMC Tokyo – Typhoon Center update the Numerical Typhoon Prediction (NTP) Website (https://tynwp-web.kishou.go.jp/).

The update contents are as follows:

- The Tropical Cyclone Intensity Forecast Guidance (TIFS) monitor and Tropical Cyclone Forecast Verification Tool have been updated.
- JMA GSM extended deterministic track prediction up to 264 hours ahead at 00 and 12 initial time (UTC).
- Prediction based on the NOAA's Hurricane Analysis and Forecast System (HAFS) is newly available on the Tropical Cyclone Intensity Forecast Guidance Monitor.



Valid Time (Lead time)	anl	rsmc	gsm	hafs	lgem	tifs
2024-10-25T00:00:00Z (0 h)	35	35	35.9	34.6	35	35
2024-10-25T06:00:00Z (6 h)	35	-	43.2	57	37	38
2024-10-25T12:00:00Z (12 h)	35	40	39.9	53.5	39	41
2024-10-25T18:00:00Z (18 h)	35	-	36.2	49.3	42	45
2024-10-26T00:00:00Z (24 h)	35	40	31.1	54.2	45	48
2024-10-26T06:00:00Z (30 h)	-	-	33	48.6	48	51

Figure 3: An example of the Tropical Cyclone Intensity Forecast Guidance Monitor
Prediction based on HAFS is shown in brown.

Identified opportunities/challenges, if any, for further development or collaboration:
Ongoing focus will be placed on improving forecast accuracy.

Priority Areas Addressed:

Integrated

- Enhance activities to develop impact-based forecasts and risk-based warning.

Meteorology

- Enhance the capacity to monitor and forecast typhoon activities particularly in genesis, intensity and structure change.

Key Pillars of UN's Early Warnings for All (EW4All) Initiative Addressed:

Key Pillars of EW4All	Please ✓ the related pillar(s)
Disaster risk knowledge and management	
Detection, observation, monitoring, analysis, and forecasting	✓
Warning dissemination and communication	
Preparedness and response capabilities	

Contact Information:
Member: Japan
Name of contact for this item: ISHIHARA Koji
Telephone: +81-3-6758-3900
Email: rsmc-tokyo@met.kishou.go.jp

2. Attachment training in 2024

Main text:

The 23nd ESCAP/WMO Typhoon Committee Attachment Training course was held at JMA Headquarters from 15 to 26 January 2024. RSMC Tokyo – Typhoon Center has run annual ESCAP/WMO Typhoon Committee Attachment Training courses since 2001 with the support of the WMO Tropical Cyclone Programme and the Typhoon Committee to enhance the tropical cyclone (TC) analysis and forecasting capacity of Committee Members. The center welcomed participants from Hong Kong, China; Lao PDR; Macau, China; Malaysia; the Philippines; Republic of Korea; Saudi Arabia; Sri Lanka; Vietnam. Researchers and Japanese experts from the Typhoon Committee's Working Groups on Hydrology and on Disaster Risk Reduction along with a weathercaster were invited as presenters, with the expectation that the training would give forecasters broader perspectives in the field and contribute to the UN's EW4ALL initiative.

Figure 3 Group photo of participants

Identified opportunities/challenges, if any, for further development or collaboration:

Ongoing focus will be placed on enhancing the quality of the training course.

Priority Areas Addressed:

Integrated

- Enhance activities to develop impact-based forecasts and risk-based warning.

Meteorology

- Enhance the capacity to monitor and forecast typhoon activities particularly in genesis, intensity and structure change.
- Develop and enhance typhoon analysis and forecast techniques from nowcast to medium-range, and seasonal to long-range prediction.
- Enhance and provide typhoon forecast guidance based on NWP including ensembles, weather radar and satellite related products, such as QPE/QPF.
- Promote communication among typhoon operational forecast and research communities in Typhoon Committee region.
- Enhance training activities with TRCG, WGH, and WGDRR in accordance with Typhoon Committee forecast competency, knowledge sharing, and exchange of latest development and new techniques.

Key Pillars of UN's Early Warnings for All (EW4All) Initiative Addressed:

Key Pillars of EW4All	Please ✓ the related pillar(s)
Disaster risk knowledge and management	✓
Detection, observation, monitoring, analysis, and forecasting	✓
Warning dissemination and communication	✓
Preparedness and response capabilities	

Contact Information:

Member: Japan
Name of contact for this item: ISHIHARA Koji
Telephone: +81-3-6758-3900
Email: rsmc-tokyo@met.kishou.go.jp

3. Updates on JMA's numerical weather prediction system

Main text:

The Japan Meteorological Agency (JMA) upgraded its supercomputer system in March 2024. At the same time, new observational data, Advanced Technology Microwave Sounder (ATMS) and Cross-track Infrared Sounder (CrIS) of NOAA-21 were introduced to its assimilation system for JMA's global model (GSM).

This update increases the amount of observation data used to generate initial values, reduces observation gaps when other satellites are unavailable, and is expected to improve the prediction of typhoon tracks and intensities.

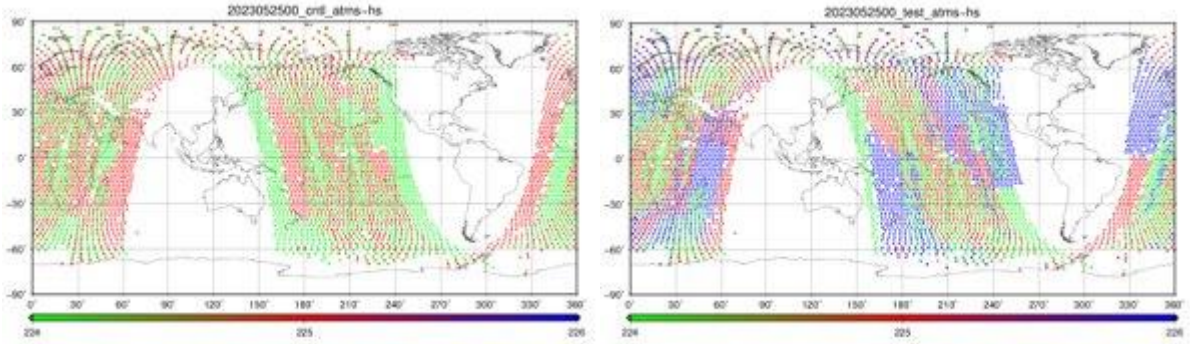


Figure 4: Improvement of the coverage of ATMS of S-NPP (Green), NOAA-20 (Red) and NOAA-21 (Blue). Before improvement (left) and after improvement (right).

Identified opportunities/challenges, if any, for further development or collaboration:
Ongoing focus will be placed on improving NWP accuracy.

Priority Areas Addressed:
Meteorology

- Enhance the capacity to monitor and forecast typhoon activities particularly in genesis, intensity and structure change.
- Develop and enhance typhoon analysis and forecast techniques from nowcast to medium-range, and seasonal to long-range prediction.

Key Pillars of UN's Early Warnings for All (EW4All) Initiative Addressed:

Key Pillars of EW4All	Please ✓the related pillar(s)
Disaster risk knowledge and management	
Detection, observation, monitoring, analysis, and forecasting	✓
Warning dissemination and communication	
Preparedness and response capabilities	

Contact Information:
Member: Japan
Name of contact for this item: SASAGAWA Yutaka
Telephone: +81-3-3434-9102
Email: globalnwp@met.kishou.go.jp

4. Flood Risk Assessment for Companies

Main text:

Private firms are facing the disclosure of climate-related risks, including flood risks, based on the TCFD（Task Force on Climate-related Financial Disclosures） recommendations. In Japan, more than 90% of companies listed on the Tokyo Stock Exchange that have assessed physical risks have also assessed water-related disaster risks, which suggests that floods are considered a major risk by the companies. Then a guide was released by Ministry of Land, Infrastructure, Transport and Tourism (MLIT) to propose a method of evaluating flood risk, in line with the

TCFD recommendations to support the disclosure activities. Therefore, practitioners can assess quantitative future risk easily based on currently available scientific knowledge and such disclosure processes are essential to make firms' management more resilient.

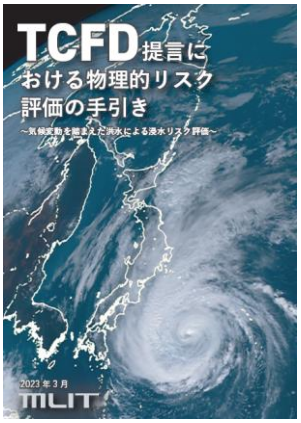


Figure 5: The main body of the guide

Figure 6: The summary of the guide

Identified opportunities/challenges, if any, for further development or collaboration:
None

Priority Areas Addressed:
Enhance collaborative activities with other regional/international frameworks/organizations, including technical cooperation between TC/AP-TCRC and TC/PTC cooperation mechanism.
Promote international cooperation of DRR implementation project.

Key Pillars of UN's Early Warnings for All (EW4All) Initiative Addressed:

Key Pillars of EW4All	Please ✓ the related pillar(s)
Disaster risk knowledge and management	✓
Detection, observation, monitoring, analysis, and forecasting	✓
Warning dissemination and communication	✓
Preparedness and response capabilities	✓

Contact Information:
Member: Japan
Name of contact for this item: MIZUSHIMA Yusuke
Telephone: +81-3-5253-8444
Email: mizushima-y87wb@mlit.go.jp

5. 13th TC WGH Meeting (in Nanjing, China), 22-24 October 2024

Main text:
The 13th Meeting of the Typhoon Committee Working Group on Hydrology (WGH) on 22-24 October 2024 was jointly hosted by the Information Center (IC) of the Ministry of Water

Resource (WMR), China in cooperation with Nanjing Research Institute of Hydrology and Water Conservation Automation (NIHWA) in Nanjing, China. It was chaired by Dr. Miyamoto from ICHARM (the International Centre for Water Hazard and Risk Management). 72 attendees from 9 countries/regions had constructive discussions on the theme of "Strengthen Standardization for Better National Hydrological Services". Many presentations were delivered on each country's/region's situations and Annual Operating Plans (AOPs).

Figure 7: 13th WGH Meeting group photo

Identified opportunities/challenges, if any, for further development or collaboration:
None

Priority Areas Addressed:
Enhance collaborative activities with other regional/international frameworks/organizations, including technical cooperation between TC/AP-TCRC and TC/PTC cooperation mechanism.

Key Pillars of UN's Early Warnings for All (EW4All) Initiative Addressed:

Key Pillars of EW4All	Please ✓ the related pillar(s)
Disaster risk knowledge and management	✓
Detection, observation, monitoring, analysis, and forecasting	✓
Warning dissemination and communication	✓
Preparedness and response capabilities	✓

Contact Information:
Member: Japan

Name of contact for this item: MIZUSHIMA Yusuke
Telephone: +81-3-5253-8444
Email: mizushima-y87wb@mlit.go.jp

6. Asian Conference on Disaster Reduction 2023

Main text:
On 20 October 2023, the Government of the Republic of Tajikistan hosted the Asian Conference on Disaster Reduction (ACDR2023) at the Hyatt Regency Dushanbe. It adopted the theme, "Effective Implementation of DRR Measures: Enabling Digital Transformation in DRR". ACDR2023 gathered 120 onsite participants comprising representatives from 18 member-countries, international and regional organizations, private sector, and academic/research institutes. Online participation reached 111 participants, including from 7 member-countries.
ACDR2023 covered a roundtable and two thematic sessions, wherein disaster risk reduction strategies and directions were discussed. Statements at the roundtable highlighted scaling-up actions that promote access to disaster databases, early warning systems, and disaster response. It also highlighted science-based approaches and utilization of digital technologies for multi-hazards disaster risk reduction. Thematic Session 1: Innovative Solutions for Resilient Societies, tackled the latest solutions for DRR issues, such as visualization of disaster risk using digital transformation and development of design technologies for disaster-resistant buildings/structures. Thematic Session 2: Adaptation to the Climate Crisis, was focused on innovative approaches to monitoring and responding to GLOFs and floods. A summary of ACDR 2023 can be accessed online at https://acdr.adrc.asia/meeting/home/acdr2023

Figure 8: Group Photo of ACDR2023 at Hyatt Regency Dushanbe, Tajikistan

Identified opportunities/challenges, if any, for further development or collaboration:
The discussions at ACDR2023 provided opportunities for greater collaboration among members of the Typhoon Committee's Working Group on Disaster Risk Reduction (WGDRR). During the ACDR2023, the National Disaster Management Research Institute (NDMI) of the Republic of Korea actively introduced innovative technologies for DRR. Additionally, ACDR2023 provided avenues for greater cooperation among key institutional partners in advancing disaster risk reduction activities.

Priority Areas Addressed:

Integrated
- Strengthen cross-cutting activities among working groups in the Committee.
- Enhance collaborative activities with other regional/international frameworks/organizations, including technical cooperation between TC/AP-TCRC and TC/PTC cooperation mechanism.

DRR
- Promote international cooperation of DRR implementation project.

Key Pillars of UN's Early Warnings for All (EW4All) Initiative Addressed:

Key Pillars of EW4All	Please ✓ the related pillar(s)
Disaster risk knowledge and management	
Detection, observation, monitoring, analysis, and forecasting	✓
Warning dissemination and communication	✓
Preparedness and response capabilities	✓

Contact Information:
Member: Asian Disaster Reduction Center, Japan
Name of contact for this item: Mr. SASAHARA Akio
Telephone: +81 78 262 5540
Email: as-sasahara@adrc.asia

7. Visiting Researchers Program

Main text:
ADRC works to enhance the disaster risk management (DRM) capacities of its 33-member countries, many of which are also members of the Typhoon Committee, through the Visiting Researchers (VR) Program.

As of March 2024, a total of 132 officials from 27 countries had participated in the program since it started in 1999. Under this initiative, VRs are invited to Japan to conduct their own research on disaster risk reduction (DRR) with opportunities to attend relevant events and visit related organizations. It enables VRs to compare and learn from different DRM systems in the Asian region.

In FY 2023, six visiting researchers came to Japan to participate in the program. During their stay, the VRs learned about innovative and practical DRR activities and technologies as well as established greater cooperation and collaboration with other national governments, international organizations, and DRR agencies.

Azerbaijan	3
Armenia	9
Yemen	3
Iran	1
India	9
Indonesia	3
Uzbekistan	2
Cambodia	4
Kyrgyz	2
Sri Lanka	11
ROK	3
Thailand	12
Tajikistan	2
China	3
Türkiye	1
Nepal	9
Bangladesh	6
Pakistan	6
PNG	1
Philippines	9
Bhutan	4
Viet Nam	6
Malaysia	4
Myanmar	5
Maldives	5
Mongolia	6
Lao PDR	3
Total	**132**

Table: Numbers of VRs as of March 2024. Photos: VRs in Japan

Identified opportunities/challenges, if any, for further development or collaboration:
ADRC facilitates networking among VR alumni for cooperation in various ongoing projects toward effective and efficient implementation. VRs are also invited to design new projects suited to local conditions, and are contacted whenever ADRC intends to suggest policy updates or extends support to their home countries based on requests or information they have provided. New VRs are encouraged to contact alumni to establish communication and share experiences/insights. Some alumni also attend the ACDR every year and give presentations, thereby supporting opportunities for wider collaboration in typhoon disaster risk reduction and other areas.

Priority Areas Addressed:

Integrated
- Strengthen cross-cutting activities among working groups in the Committee.
- Enhance collaborative activities with other regional/international frameworks/organizations, including technical cooperation between TC/AP-TCRC and TC/PTC cooperation mechanism.

DRR
- Promote international cooperation of DRR implementation project.
- Share experience/knowhow of DRR activities including legal and policy framework, community-based DRR activities, methodology to collect disaster-related information.

Key Pillars of UN's Early Warnings for All (EW4All) Initiative Addressed:

Key Pillars of EW4All	**Please ✓ the related pillar(s)**
Disaster risk knowledge and management	
Detection, observation, monitoring, analysis, and forecasting	

Warning dissemination and communication	
Preparedness and response capabilities	✓

Contact Information:
Member: Asian Disaster Reduction Center, Japan
Name of contact for this item: Mr. SASAHARA Akio
Telephone: +81 78 262 5540
Email: as-sasahara@adrc.asia

8. GLobal unique disaster IDEntifier (GLIDE)

Main text:
ADRC introduced the concept of a GLIDE (Global unique disaster IDEntifier) system in 2001, in which common but unique numbers are assigned to disasters all over the world based on cooperation among relevant organizations. This is intended to promote disaster information sharing among databases developed by various different DRR organizations, research institutions and governments to support disaster resilience worldwide.

A GLIDE Number comprises the following components: disaster type, year of occurrence, serial number within the year and country code. Once a disaster occurs, an operator issues a GLIDE number by inputting disaster information such as location, time, disaster type and initial damage, and uploads it to the GLIDE website for automatic dispatch to over 2,000 subscribers.

As of October 2024, over 8,200 GLIDE numbers had been cumulatively issued since the system was introduced. Most recently, GLIDE Numbers for Typhoon Yagi that hit in LAO PDR, Myanmar, Philippines, Thailand and Vietnam in September 2024 were issued as TC-2024-000161-LAO, TC-2024-000161-MMR, TC-2024-000161-PHL, TC-2024-000161-THA and TC-2024-000161-VNM.

The GLIDE system is linked to other disaster data management tools (e.g., applications at UNOCHA ReliefWeb, IFRC, EC/ JRC (GDACS), Sentinel Asia, UNOSAT and AHA Centre (ADINet)), and its governance and functions are periodically updated. The Steering Committee (SC) was established in 2021 for governance of GLIDE followed by Sub-Committees (API, Product Development and SOP). The GLIDE SC is composed of representatives from ADRC, CRED/EM-DAT, EC/JRC, ICRC, IDMC, IFRC, Tohoku University, UNDP, UNDRR, UNOCHA, UNOSAT and WMO.

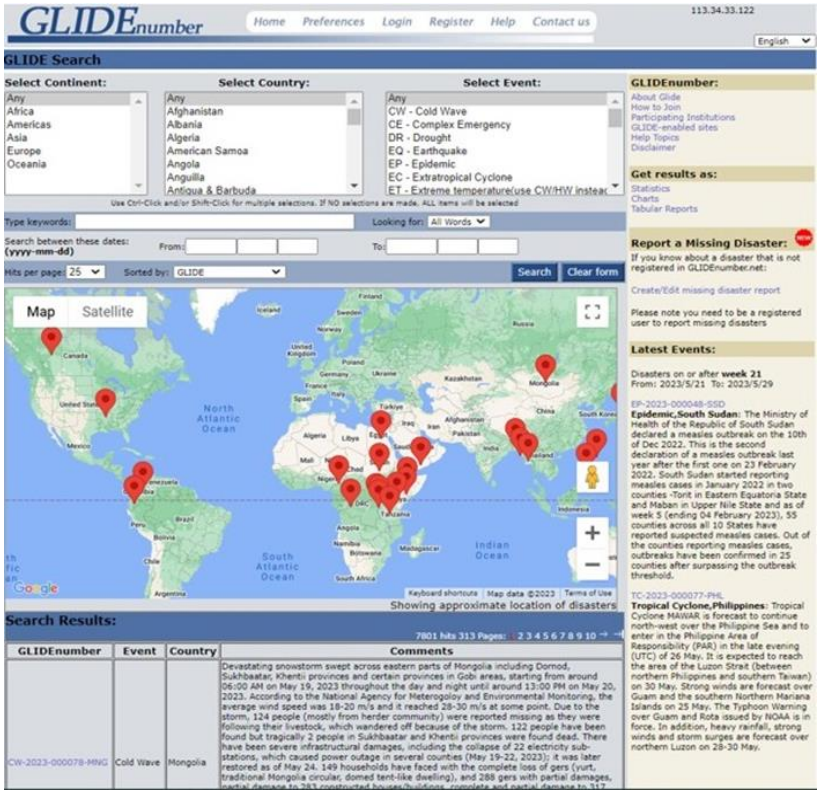


Figure 9: GLIDE Website: https://glidenumber.net

Any opportunities/challenges for further development or collaboration:
The GLIDE system allows Typhoon Committee members to link disaster database systems, including information on typhoon-related disasters, to provide a more holistic perspective. It also offers a platform for greater collaboration with other key institutional partners in advancing disaster risk reduction activities. In 2024, the Working Group on Disaster Risk Reduction (WGDRR) included in its Annual Operation Plan (AOP) the utilization of GLIDE Number system in reporting typhoon events.

Priority Areas Addressed:

Integrated
- Strengthen cross-cutting activities among working groups in the Committee.
- Enhance collaborative activities with other regional/international frameworks/organizations, including technical cooperation between TC/AP-TCRC and TC/PTC cooperation mechanism.

DRR
- Provide reliable statistics of mortality and direct disaster economic loss caused by typhoon-related disasters for monitoring the targets of the Typhoon Committee.
- Promote international cooperation of DRR implementation project.

Key Pillars of UN's Early Warnings for All (EW4All) Initiative Addressed:

Key Pillars of EW4All	Please ✓ the related pillar(s)
Disaster risk knowledge and management	✓
Detection, observation, monitoring, analysis, and forecasting	

Warning dissemination and communication	✓
Preparedness and response capabilities	✓

Contact Information:
Member: Asian Disaster Reduction Center, Japan
Name of contact for this item: Mr. SASAHARA Akio
Telephone: +81 78 262 5540
Email: as-sasahara@adrc.asia

Appendix I - Priority Areas of Working Groups for the Strategic Plan 2022-2026

WG	Priorities
Integrated	1. Strengthen the cooperation between TRCG, WGM, WGH, and WGDRR to develop impact-based forecasts, decision-support and risk-based warning.
	2. Strengthen cross-cutting activities among working groups in the Committee.
	3. Enhance collaborative activities with other regional/international frameworks/organizations, including technical cooperation between TC/AP-TCRC and TC/PTC cooperation mechanism.
Meteorology	4. Enhance the capacity to monitor and forecast typhoon activities particularly in genesis, intensity and structure change.
	5. Develop and enhance typhoon analysis and forecast techniques from nowcast to medium-range, and seasonal to long-range prediction.
	6. Enhance and provide typhoon forecast guidance based on NWP including ensembles, weather radar and satellite related products, such as QPE/QPF.
	7. Promote communication among typhoon operational forecast and research communities in Typhoon Committee region.
	8. Enhance training activities with TRCG, WGH, and WGDRR in accordance with Typhoon Committee forecast competency, knowledge sharing, and exchange of latest development and new techniques.
	9. Enhance RSMC capacity to provide regional guidance including storm surge, in response to Member's needs.
Hydrology	10. Improve typhoon-related flood (including riverine flood, flash flood, urban flood, and coastal flood) monitoring, data collection and archiving, quality control, transmission, processing, and sharing framework.
	11. Enhance capacity in typhoon-related flood risk management (including land-use management, dam operation, etc.) and integrated water resources management and flood-water utilization.
	12. Strengthen capacity in effective flood forecasting and impact-based early warning, including hazard mapping and anticipated risk based on methodological and hydrological modelling, and operation system development.
	13. Develop capacity in projecting the impacts of climate change, urbanization and other human activities on typhoon-related flood disaster vulnerability and water resource availability.
	14. Increase capacity in utilization of advanced science and technology for typhoon-related flood forecasting, early warning, and management.
DRR	15. Provide reliable statistics of mortality and direct disaster economic loss caused by typhoon-related disasters for monitoring the targets of the Typhoon Committee.
	16. Enhance Members' disaster risk reduction techniques and management strategies.
	17. Evaluate socio-economic benefits of disaster risk reduction for typhoon-related disasters.
	18. Promote international cooperation of DRR implementation project.
	19. Share experience/knowhow of DRR activities including legal and policy framework, community-based DRR activities, methodology to collect disaster-related information.