

# **MEMBER REPORT**

**Democratic People's Republic of Korea**

**ESCAP/WMO Typhoon Committee  
18<sup>th</sup> Integrated Workshop  
ESCAP - UN Conference Center, Bangkok, Thailand  
28 November - 1 December 2023**

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## **I . Overview of tropical cyclones which affected/impacted member's area since the last Committee Session**

### **1. Meteorological Assessment (highlighting forecasting issues/impacts)**

DPRK which is located in monsoon area of East-Asia has been directly impacted by one typhoon in 2023.

- Typhoon 'KHANUN' (2306)

KHANUN was formed on the east sea 1 880km away from Manila, Philippines at 1800UTC on July 27.

At the time of occurrence, its Minimum Sea Level Pressure was 1 000hPa, Maximum Wind Speed was 18m/s and Radius of area with Wind Speed of 15m/s was 480km. It continued to move northwest, and developed into very strong "Big Typhoon" with 930hPa of central pressure on the sea 115km away from south of Okinawa Island.

Typhoon "KHANUN" has changed a course to the east sea of Zhejiang Province, China on August 4 and has changed again its course to the north over the sea of south Kyushu, Japan on August 7, and then has been landed in southern coastal area of South KyongSang Province on the morning of August 10 with weakened Minimum Sea Level Pressure of 980hPa.

And then it moved toward north along inland regions and it weakened into tropical depression at the northeastern part of North HwangHae Province with Minimum Sea Level Pressure of 994hPa at 1200UTC on August 11.

Owing to the impact of "KHANUN", it rained nationwide and there were many disastrous hydro-meteorological events such as torrential rain, heavy rain, strong wind and storm surge in some areas.

It was affected by strong wind more than 10m/s in areas such as several parts of KangWon Province, some of seaside of South HamGyong Province, local areas of South HwangHae Province, and PiHyon County of North PyongAn Province and MyonChon County of North HamGyong Province.

Especially, gales of 15~19m/s for a while were observed in some areas of KangWon Province including WonSan City and in RakWon County of South HamGyong

Province.

From 0300UTC to 1500UTC on August 10, it affected by torrential rain in coastal areas of KangWon Province and South HamGyong Province including very strong heavy rain of 96mm per an hour in KoSong County of KangWon Province.

From 0900UTC on August 10 to 1400UTC on August 11, accumulated rainfall was more than 100mm in some areas on the east sea coast including 337mm in KoSong meteorological station, 231mm in AnByon meteorological station and 218mm in MunChon meteorological station.

From 2100UTC on August 10 to 1500UTC on August 11, it was observed tidal waves of more than 50cm in areas of East Sea coast at south of the KimChaek City including 93cm in KoSong and 72cm in WonSan marine stations.

Typhoon “KHANUN” has been showed exceptional type of track from genesis to dissipation and it moved northward along the inland of Korean peninsula for 17 hours.



Figure. Track of typhoon “KHANUN” affected in 2023.

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

Typhoon “KHANUN” was directly affected DPRK, but there was no any hydrological damage in 2023.

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

DPRK has been affected by typhoon “KHANUN” (2306) which caused heavy rains and gales in 2023.

Typhoon “KHANUN” caused inundation of cultivated fields of about 200 ha by dyke collapse in some areas such as OGye-ri and WolRang-ri in AnByon County of KangWon Province.

### **4. Regional Cooperation (highlighting regional cooperation and related activities)**

As in the past, we used typhoon bulletin from RSMC-Tokyo typhoon centre and NWP products of ECMWF, CMA, JMA and NCEP via GTS, Internet and CMACAST from RSMC-Beijing for monitoring and forecasting typhoons.

These data played an important role in forecasting typhoons and reducing typhoon-related disasters in our country.

Also we received observed data every 3 hours from neighboring countries and used effectively to monitor typhoons and issue warnings.

For typhoon monitoring and forecasting in DPRK, it is still important to improve and ensure the accuracy and promptness of typhoon information issued from typhoon centers.

Along with this, it is also important that we able to timely and thoroughly use the NWPs, especially typhoon ensemble NWPs from neighboring countries through regional cooperation.

## **II. Summary of Progress in Priorities supporting Key Result Areas**

### **1. Improvement of Typhoon Forecasting**

In order to improve the accuracy of forecasting on typhoon occurrence and dissipation as key element for typhoon information, we have developed the treatment processes to predict occurrence and dissipation of typhoon using NWPs.

With this method, we can predict occurrence before 72 hours and dissipation before 120 hours. And we have developed the method to predict maximum wind speed of typhoon using the method of gathering and forming bias removed ensemble weighting. We will continue to improve the forecasting method on typhoon by using the method tailored to context in DPRK.

## **2. Improvement of Typhoon Information Service**

State Hydro-Meteorological Administration (SHMA) has continuously paid a great attention to the improvement of various meteorological information including information on typhoon and meteorological disasters.

SHMA has enabled many people to be fully prepared to cope with typhoon by disseminating detailed moving information and predicted situation from occurrence to dissipation of typhoon in real time manner via integrated service system of hydro meteorological data and common sense among the people.

SHMA will make greater efforts to improve type and quality of typhoon information services in the future.

## **3. Effort for Reducing Typhoon-related Disasters**

In DPRK, all activities for reducing damages from typhoon have been coordinated under the positive concern and support of the government.

The government of DPRK has regarded typhoons as principal enemy for the agriculture in this year and undertaken the work to minimize the typhoon-related damages on the nation-wide scale with attentively watching on typhoon activities since beginning of the year.

As the typhoon “KHANUN” (2306) has been occurred, the government of DPRK has been taken proper steps ahead 10 days to reduce damages from that.

When it is practically decided upon the possible influence on my country, the government has been taken action against small damages with issuing the emergency warning on typhoon.

The government has disseminated programs on tropical cyclones and news on typhoon related disasters in worldwide scale via TV and radiobroadcasting and thus

enabled people could be live having the crisis sense on typhoon.

The government has a great attention to the work of State of Hydro Meteorological Administration to monitor and predict typhoon, and forged ahead more vigorously with the struggle to raise the technical and practical skill and to strengthen the material and technical basis.

This could be contributed to reduce the damages from typhoon-related disasters.

#### **4. Strengthening Regional Cooperation**

Typhoon Committee's contributions to reduce damages from typhoon in DPRK are really great.

Under the active efforts of Typhoon Committee, advanced typhoon monitoring and forecasting skills are disseminating into DPRK and typhoon information issued from forecasting centers are effectively using to predict and prevent the typhoon-related disasters.