

MEMBER REPORT
Democratic People's Republic of Korea

ESCAP/WMO Typhoon Committee
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I . Overview of tropical cyclones which affected/impacted member's area since the last Committee Session

1. Meteorological Assessment

DPRK is located in monsoon area of East-Asia, and often impacted by typhoon-related disasters.

Our country was affected by five typhoons in 2020.

Three typhoons affected directly, and two typhoons indirectly.

(1) Typhoon 'HAGPIT'(2004)

Typhoon HAGPIT formed over southeastern part of China at 12 UTC on August 1.

It continued to move northwestward and landed on china at 18 UTC on August 3 with the Minimum Sea Level Pressure of 975hPa and Maximum Wind Speed of 35m/s, and weakened into a tropical depression at 15 UTC.

After whirling, it moved northeastward, and landed around peninsula of RyongYon at 18 UTC on August 5, and continued to pass through the middle part of our country.

Under the impact of HAGPIT, accumulated rainfall over several parts of the middle and southern areas of our country including PyongGang, SePo, SinGye, and PyongSan County reached 351-667mm from 4th to 6th August with strong heavy rain, and average precipitation was 171mm nationwide.

When it passed through our country, gales of 10-18m/s were observed in south and north HwangHae Province and KangWon province.

(2) Typhoon 'JANGMI'(2005)

Typhoon 'JANGMI' formed over southeastern part of South China Sea at 18 UTC on August 8.

It continued to move quickly northward and reached around BuSan city and then weakened into a tropical depression at 6 UTC on August 10.

At the moment, its Minimum Sea Level Pressure was 1000hPa and Maximum Wind

Speed 15m/s.

And then, it continued to move Korean East Seaward.

Under the impact of JANGMI, average precipitation was 51mm nationwide and accumulated rainfall over PanGyo County, KangWon Province was more than 300mm.

Under the impact of JANGMI, Gales of 10-16m/s were observed in mainly KangWon Province and South and North HwangHae province.

(3) Typhoon 'BAVI'(2008)

BAVI formed over eastern part of South China Sea at 0 UTC on August22.

It moved slowly northward and reached around the southwestern sea of RyongYon Peninsula with Minimum Sea Level Pressure of 970hPa and Maximum Wind Speed of 33m/s.

It continued to pass through the western sea of RyongYon Peninsula, and landed on western part of PyongAn province at 1 UTC and entered into north eastern area of China, and weakened into a tropical depression at 3 UTC on August 22.

Under the impact of BAVI, it rained and showered all over the country from 12 UTC on 26th to 9 UTC on 27th, and had heavy rains in the middle and south parts of western coastal areas including South HwangHae Province.

And then, accumulated rainfall was 102-225mm in AnJu, JungSan, RinSan, SinChon and SamChon County, and average precipitation was 38mm nationwide.

119 stations in several parts including South and North HwangHae Province, middle and south of eastern coastal area and RaSon city were observed gales more than 10m/s, and 59 stations in western and eastern coastal areas including OngJin, RinSan, NamPo, AnJu, KaePung, HamJu and CholWon were observed gales more than 20-35m/s from 15 UTC on 26th to 10 UTC on 27th.

(4) Typhoon 'MAYSAK'(2009)

MAYSAK formed over north eastern sea of Philippine at 6 UTC on August 28.

It continued to move northward, and landed on western area of BuSan city with Minimum Sea Level Pressure of 960hPa and Maximum Wind Speed of 35m/s.

It continued to pass through the South and North KyongSang Province, and moved into Korean East Sea at 22 UTC, and landed on North HamGyong Province, and weakened into a tropical depression at 3 UTC on August 23.

Under the impact of MAYSAK, it rained and showered all over the country from 0 UTC on 2nd to 8 UTC on 3rd and had heavy rain in some parts of eastern coastal areas including WonSan Gulf.

Accumulated rainfall was 126-165mm in KoSong, MunChon and ChonNae County for 3 hours and 132mm in AnByon County for 4 hours and 240mm in WonSan city for 5 hours.

Average precipitation was 94mm nationwide.

Gales more than 10m/s were observed in the most parts of eastern and western coastal areas from 10 UTC on 2nd to 8 UTC on 3rd.

Especially, gales of 15-28m/s were observed at 12 stations in eastern coastal areas (RaSon 20m/s, KoSong 28m/s) and NamYang, SungHo and KaePung County.

Also, gales of 20-27.4m/s were observed in HaeJu, SinWon, KokSan, RaSon, KimChaek, HamHung and AnByon County.

Gales of 10-16m/s continued for 12-14 hours in TongChon, RakWon and OnChon County.

In the morning of September 3, in WonSan, TongChon, KoSong County and in the afternoon SinPo, KimChaek and ChongJin city there were storm surges with height of 69-140 cm.

(5) Typhoon 'HAISHEN'(2010)

Typhoon HAISHEN formed over Northern Sea of Guam Island at 12 UTC on September 1.

It moved Northern Westward, and reached southern west sea of Kyushu at 12 UTC on September 6 with Minimum Sea Level Pressure of 945 hPa and Maximum Wind Speed of 43m/s.

And then, it landed on Korean peninsula at 0 UTC on September 7, and passed through South and North KyongSang Province, entered into Korean East Sea at 5 UTC, and landed on South HamKyong Province, and soon weakened into a tropical depression.

Under the impact of HAISHEN, it rained and showered all over the country from 9 UTC on 6th to 0 UTC on 8th, and had heavy rains in some parts of eastern coastal areas.

Especially, 10 stations in east coastal areas were observed heavy rain of 21 times that hourly precipitation was 30-43mm including hourly precipitation of 43mm in KoSong, and had heavy rain of 100-114mm in BuRyong, ChonNae and KoSong County for 3 hours.

During the all day of 7th September, accumulated rainfall was 201-250mm in KoSong, BuRyong, KilJu, HoChon, ChongJin, MunChon and ChonNae County.

Average precipitation was 73mm nationwide.

Under the impact of HAISHEN, gales more than 10m/s were observed in several parts of eastern coastal areas and some parts of northern inland from 18 UTC on 6th to 0 UTC on 8th.

Especially, gales of 26-35m/s were observed in WonSan, TongChon, RaSon and RiWon County, and gales of 15m/s were observed in 40 stations including DanChon and SinWon County nationwide.

Also, gales of 18-30m/s continued for 7 hours in TongChon County, and gales of 18-30m/s continued for 15-22 hours in RyongYon, UnRyul, OnChon and RaSon city. In TongChon, WonSan, RiWon, HongWon, SinPo, DanChon and ChongJin, there were storm surges with height of 52-96 cm from 0 UTC on 7th to 0 UTC 8th.

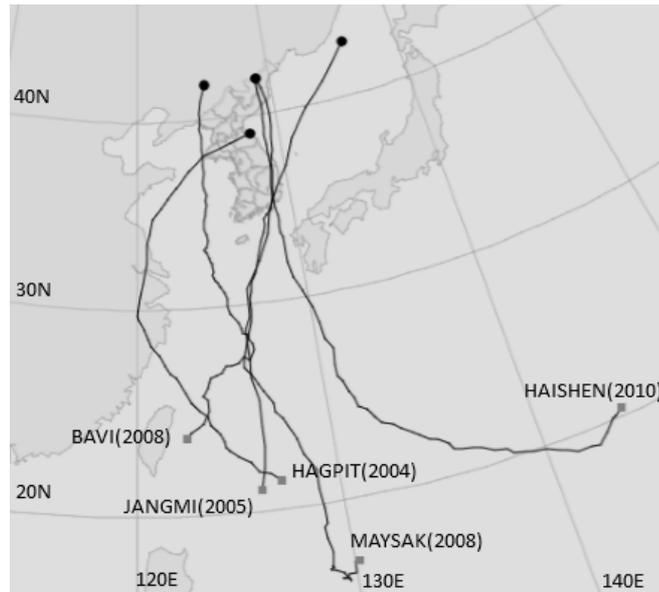


Figure 1. Tracks of typhoons affected in Korean Peninsula

2. Hydrological Assessment

Five typhoons including HAGPIT, JANGMI, BAVI, MAYSACK and HAISHEN affected in our country in 2020.

These typhoons caused Gales, heavy rain, torrential rain and storm surge, and brought great damage in several sectors in our country.

Especially, under the impact of Ty MAYSACK and Ty HAISHEN, there occurred devastating flood in several areas nationwide.

3. Socio-Economic Assessment

Recent years, our country has been affected by typhoon-related disasters.

Last year, our country had affected by TY 13, and this year, had been affected by 3 typhoons including TY 8, TY 9 and TY 10.

Due to the catastrophic typhoons, Tens of personal injury was reported, more than thousands of houses collapsed, more than hundreds of public buildings damaged, tens of hectares of crops affected, hundreds of kilometers of railroad and road destroyed, and its direct economic losses has accounted to hundreds of millions Won.

4. Regional Cooperation Assessment

During the last period, we used typhoon bulletin from Tokyo, NWP products of ECMWF, CMA, JMA and NCEP for monitoring and forecasting typhoons.

Also, observed data from surrounding nations were efficiently used for typhoon monitoring and early warning.

It is still important that typhoon information issued from typhoon centers should be improved and developed for the typhoon monitoring and forecasting.

Typhoon Committee plays an important role in reducing typhoon-related disasters in DPRK.

Under the active efforts of Typhoon Committee, typhoon information issued from several forecasting centers have been used for forecasting typhoon-related disasters and reducing damages in our country.

II. Summary of Progress in Priorities supporting Key Result Areas

1. Strengthening Typhoon Analyzing Capacity

We have established typhoon analysis system using Dvorak technology, and introduced it into operational activities this year.

This system enabled for us to analyze the location of typhoon center, minimum sea level pressure and maximum wind speed, and to watch and forecast typhoons in time.

2. Improvement of Typhoon Track Forecasting

We have newly developed typhoon track forecasting method using technology of Ensemble partial collection.

We have introduced the method into operational activities for typhoon forecasting, and confirmed its accuracy this year.

It is important to improve continuously typhoon track forecasting method in the future.

3. Continued improvement of TOPS

We have already developed Typhoon Operational Prediction System (TOPS) and used efficiently for typhoon monitoring and forecasting.

And then, considering past forecasting experience, typhoon precipitation displaying module and typhoon searching module have been improved, and result displaying module has been added.

Therefore, we could make a great advance in typhoon analyzing, forecasting and reporting.

4. Improvement of Typhoon Information Service

State Hydro-Meteorological Administration (SHMA) has paid a great attention to the improvement of typhoon information according to the increased social demand on typhoon forecasting.

SHMA has broadcasted information and common sense on typhoon every hour via TV and computer network, and it enabled many people to be fully prepared to cope with typhoon.

SHMA will make greater efforts to improve typhoon information service in the future.

5. Effort for reducing typhoon-related disasters

All activities for reducing typhoon damage have been coordinated by the government in our country.

The government of DPRK had previously organized the work to minimize typhoon-related disasters at national level based on the detailed information analysis on upcoming typhoon.

As the result, although our country had been continuously affected by super typhoons, its damage could be minimized.

At present, the government of DPRK has immediately rehabilitated destroyed houses,

public buildings and facilities with the combined efforts of the whole nation regarding damage rehabilitation as the prime task.

In the future, these actions will obviously contribute to protect typhoon-related disasters in our country.