

MEMBER REPORT

ESCAP/WMO Typhoon Committee
10th Integrated Workshop/3rd TRCG Forum

DPR of Korea

26 – 29 October 2015

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- I. Overview of tropical cyclone which have affected / impacted DPRK's area since the last typhoon committee session

1. Meteorological Assessment

DPRK, which is located in Seasonal Wind Zone of East Asia, is often affected by the typhoon related disasters.

DPRK was affected by 2 tropical cyclones(TCs) in 2015. These 2 TCs are described below, and their tracks are shown in Figure 1.

(1) TS CHAN-HOM (1509)

CHAN-HOM was upgraded to TS in the west of the Marshall Islands at 12 UTC on 30 June.

Moving Northwestward, it reached its intensity with sustained maximum winds of 90 KT and central pressure of 935hPa 10-days later.

Turning Northeastward nearby Shanghai China on 11 July, it moved to the Korean West Sea.

CHAN-HOM was landed in and around Ongjin peninsula with TS intensity around 18 UTC on 12 July and transformed into an extratropical cyclone over the Kusong county, north Pyongan Province six hours later.

Average precipitation was reached about 102mm due to the influence of TS CHAN-HOM nationwide. Especially, precipitation more than 300mm was recorded in Doksong county north Hamgyong province during TS CHAN-HOM was passing.

When TS CHAN-HOM hits our country, wind gust of 10~15 m/s were accompanied mainly in south and north Hwanghae province and Kangwon province.

(2) TS GONI (1515)

GONI was upgraded to TS in southern sea of the Mariana Islands at 18 UTC on 14 August.

Moving westward, it reached its intensity with sustained maximum winds of 90 KT and central pressure of 940hPa in northern sea of Philippines at 06 UTC on 21 August.

After turning northeastward, it entered to the Korean East Sea with TY intensity around 06 UTC on 25 August.

GONI transformed into an extratropical cyclone around Ullung Island in Korean East Sea at 21 UTC on 25 August.

Under the influence of GONI, average precipitation was reached less than 15mm nationwide, but however, precipitation more than

300mm was recorded at MaSik Hills in KangWon province.

Gust was recorded mainly in south and north HwangHae province and KangWon province due to the influence of TS GONI.

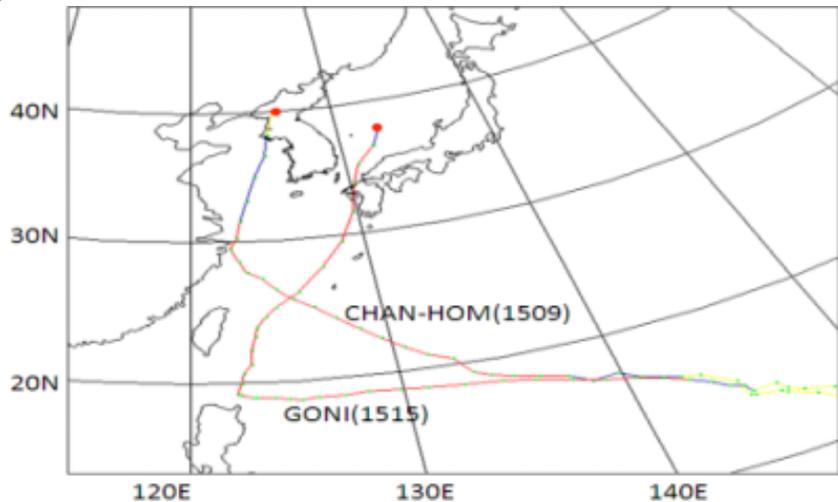


Fig.1 Tracks of the 2 TCs affected to DPRK in 2015

2. Hydrological Assessment

In 2015, TS CHAN-HOM(1509) and TS GONI(1515) affected to the DPRK. But precipitation of these typhoons were smaller than past events, so that it could not occurred flood events.

3. Socio-Economic Assessment

In recent years, DPRK was continuously affected by typhoons, and suffered from typhoon related disasters. This year, rainfall by typhoon was more beneficial than harmful for the DPRK because DPRK has suffered from long term drought.

4. Regional Cooperation Assessment

During the past period, Typhoon information was issued from RSMC Tokyo Typhoon Center, and numerical weather prediction products of ECMWF, CMA, JMA, NCEP have been received via GTS, internet and CMACast from Beijing, China, and then they are used for typhoon monitoring and forecasting in DPRK.

Also, observation data of neighboring countries were received every 3 hours and these were used for the effective typhoon monitoring and

early warning.

In 2014, 2 experts from DPRK participated to the fellowship of Shanghai Typhoon Institute(STI) China, and contributed to improve the capacities for typhoon genesis forecasting.

At present, raising the correctness and ensuring promptness of typhoon information issued in typhoon warning center is still essential.

And also regional cooperation is important in order that we can wholly use NWP's of neighbor countries for typhoon forecasting in time.

II. Summary of progress in Key Result Area

➤ Development of Typhoon Operational Prediction System(TOPS)

The government of the DPRK has paid a great attention to the improvement of typhoon forecasting

We have already developed the Typhoon Monitoring and Forecast System (TFS) and used in monitoring and forecasting of Typhoon.

But there are some technical problems due to the shortage of user interface and forecast supporting tools.

We have developed a new Typhoon Operational Prediction System this year in order to place the typhoon forecast on a new scientific basis.

This system has all available items including observation, forecast, message and dissemination, and end-users can easily use the system.

Forecasters can see the ensemble forecasting with several typhoon forecasting data and modify their forecasting results using the system.

Also, they can read the data including typhoon long term forecasting data, climatic data, recent characteristic data and typhoon related booklets.

This program was made in PHP language, and all users can efficiently receive typhoon information via network.

KRA =	1	2	3	4	5	6	7
Meteorology					✓		
Hydrology							

DRR							
Training and research					✓		
Resource mobilization or regional collaboration							

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➤ **Strengthening analytical capacity on precipitation distribution by typhoon**

Precipitation by numerical prediction is much different with actual conditions due to the model characteristics and geographical conditions in our country.

We have analyzed precipitation distribution of typhoons to move northward over the Korean west sea in detail and established conceptual model for heavy rain.

This model has been beneficially used to predict typhoon precipitation more accurately.

KRA =	1	2	3	4	5	6	7
Meteorology					✓		
Hydrology							
DRR							
Training and research					✓		

Resource mobilization or regional collaboration							
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➤ **Strengthening forecaster's capacity**

In many case, meteorological forecasting depends on numerical prediction products.

But, results of numerical prediction are different with actual condition, and strengthening forecaster's capacity is very essential.

Process analysis is the most important procedure for strengthening forecaster's capacity, and forecasters can improve their forecasting skills.

KRA =	1	2	3	4	5	6	7
Meteorology					✓		
Hydrology					✓		
DRR							
Training and research					✓		
Resource mobilization or regional collaboration							

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➤ **Improvement of typhoon information service**

State Hydro-Meteorological Administration (SHMA) pays attention to the improvement of several meteorological information including typhoon information and meteorological disasters according to the increase of social needs on meteorological forecasting.

During the past period, meteorological service was only broadcasting via TV and radio, but at present, this service was expanded into computer network and Mobile service, and meteorological service was much improved than past period.

Through these service, Many people have a good knowledge on meteorology and are interested in meteorological forecasting and apply the service to own life.

SHMA will promote the improvement of typhoon information service in the future.

KRA =	1	2	3	4	5	6	7
Meteorology					✓		
Hydrology					✓		
DRR					✓		
Training and research							
Resource mobilization or regional collaboration					✓		

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➤ **Increase of State measure for improving typhoon forecasting.**

The Government of DPRK has paid a great attention to the reinforcing of forecasting capacity and improvement of forecasting conditions.

In recent years, many experts graduated from KIM IL SUNG University and other universities were reinforced and a modern building of central meteorological institute was newly built at MIRAE Scientist avenue.

Also, AWSs more than 50 were installed nationwide, and meteorological factors for typhoon forecasting were observed in real time manner.

Such State measures became a big contribution for meteorological forecasting including typhoon, heavy rain, gust and flood.

KRA =	1	2	3	4	5	6	7
Meteorology					✓		
Hydrology					✓		
DRR					✓		
Training and research					✓		
Resource mobilization or regional collaboration					✓		

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➤ **Effort to prevent typhoon-related disasters**

Activities to prevent typhoon-related disasters were coordinated and controlled by the Government in DPRK.

The Government of DPRK organized State Committee for Emergency Disaster Management and formulated forest rehabilitation as main policy.

As a result, last spring tree planting campaigns were held nationwide, and all mountains will be covered with trees within 10 years.

This will become contribution to prevent typhoon-related disasters in our country.

KRA =	1	2	3	4	5	6	7
Meteorology							
Hydrology							
DRR				✓			
Training and research							
Resource mobilization or regional collaboration				✓			

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➤ **Enhanced regional collaboration**

Typhoon Committee makes an important contribution to prevent typhoon-related disasters in DPRK.

Under the active efforts of Typhoon Committee, typhoon information issued in the several forecasting center are timely used to forecast and prevent typhoon-related disasters in DPRK.

Also, fellowship of Shanghai Typhoon Institute, China is a good chance to enhance regional collaboration in Asian-Pacific region.

KRA =	1	2	3	4	5	6	7
Meteorology							
Hydrology							
DRR				✓			

Training and research				✓			
Resource mobilization or regional collaboration				✓			

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