MEMBER REPORT

ESCAP/WMO Typhoon Committee

43rd Session

17 – 22 January 2011

Jeju Island, Republic of Korea

I. Overview of tropical cyclones which have affected/impacted Member's area in 2010

1. Meteorological Assessment (highlighting forecasting issues/impacts)

There were 11 tropical cyclones (TC) that entered or developed within the Philippine Area of Responsibility (PAR) from March to October 2010. These were classified as 1 tropical depression (TD), 5 tropical storms (TS), and 5 typhoons (TY). The tracks of these tropical disturbances are shown in Figure 1.

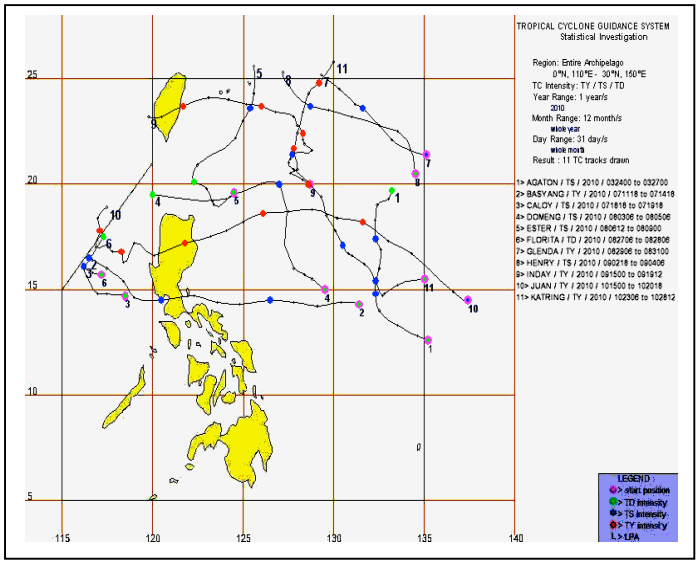

Figure 1: Tracks of Tropical Cyclones that crossed the PAR in 2010

The number of tropical cyclone occurrence for the year was below the annual average of 19 to 20 tropical cyclone occurrence per year recorded during the past 59 years (1948-2006). Tropical Depression (TD) and Typhoon (TY) occurrence is below the annual average with the exception of Tropical Storm (TS) occurrence which is within the annual average. The annual average intensity distribution of tropical cyclone is 4 Tropical Depressions, 5 to 6 Tropical Storm and 10 Typhoons.

It is worthy to note that this is the second time that the agency recorded the least number of tropical cyclone occurrence in a year which is eleven (11), the other was recorded in 1998.

This is also the year that the agency recorded the lowest number of landfalling tropical cyclones which is 2 (Ty "Basyang" and Ty "JUAN") breaking the old record of 4 TCs recorded in 1955, 1958, 1992 and 1997.

Out of the 11 TCs, 2 developed in the South China Sea (TS "Caloy" and TD "Florita").

In terms of tropical cyclone development, 6 tropical cyclones developed within the PAR while the rest developed outside. The descriptions of the eleven (11) tropical cyclones that occurred within the PAR are summarized below.

1. TROPICAL STORM "AGATON" (OMAIS)

Agaton was the first tropical cyclone for the year 2010. It was already a Tropical Depression with maximum winds of 55 kph near the center, when it was spotted at 8 AM on March 24, as it entered the Philippine Area of Responsibility (PAR). It then moved in a West Northwest direction at 22 kph. At 8:00 PM of the same day, "AGATON" has slowed down as it intensified into a Tropical Storm (international name "OMAIS") with maximum sustained winds of 65 kph near the center and gustiness of 80 kph and changed direction to the northwest at 17 kph. "AGATON" then maintained its strength as it moved almost northward and at 10:00 AM of March 25, it was estimated at 760 kms East Northeast of Virac, Catanduanes. At 10:00 PM of March 25, Tropical Storm "Agaton" has slowed down at 15 kph as it veered to the North Northeast. Agaton then continued to move in the same direction as it weakened into a tropical depression with maximum winds of 55 kph in the afternoon of August 26. In the morning of August 27, Tropical Depression AGATON has weakened further at 45 kph as it moved away from the country and at 2:00 PM on the same day, "AGATON" was downgraded to a low pressure area.

NO PUBLIC STORM WARNING SIGNAL WAS RAISED DURING THE OCCURRENCE OF T.S."AGATON".

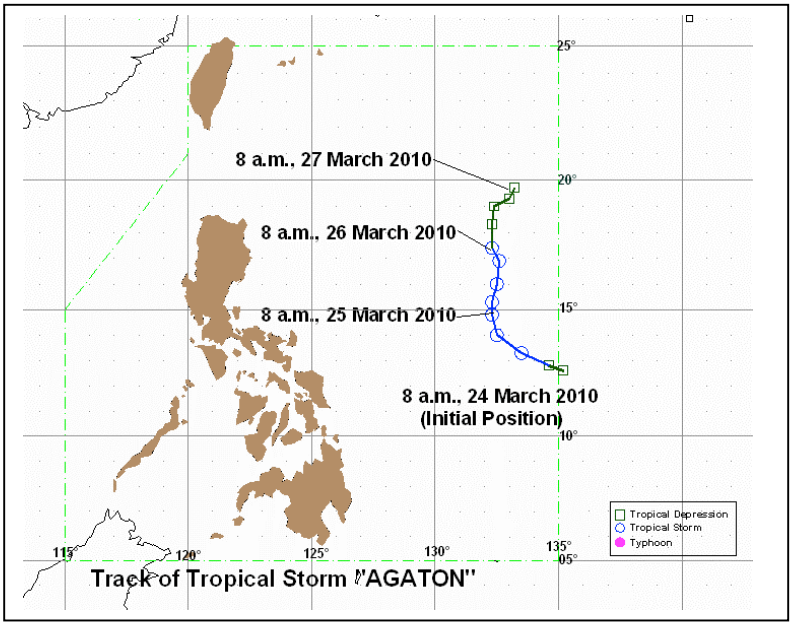

Figure 2: Track of Tropical Storm "Agaton" (OMAIS)

2. TYPHOON "BASYANG" (CONSON)

It was an active low pressure area (LPA) embedded along the Intertropical Convergence Zone (ITCZ) when it was first spotted in the Philippine Sea, 960 kilometers east of Bicol Region in the morning of July 11, 2010. This developed into a Tropical Depression and was named "BASYANG" and at 5:00 AM of July 12, the initial severe weather bulletin was issued. It was estimated at 660 kms east Northeast of Virac, Catanduanes and was moving Westerly at 22 kph. BASYANG intensified into a tropical storm (International Name "CONSON") and at 10:00 AM of the same day, it was estimated at 570 kms east northeast of Virac, Catanduanes and continued moving West at 22 kph. BASYANG gained more strength and intensified into a typhoon and at 10:00 AM of July 13, the center was estimated to be at 90 kms north of Virac, Catanduanes with maximum sustained winds of 120 kph and gustiness of up to 150 kph and still moving West at 22 kph. The Westward movement of Basyang is due to the strengthening of the ridge that extends from East to West located over Northern Luzon. Typhoon "BASYANG" maintained its strength as it moved towards Aurora and Quezon Area. By 11:00 PM of July 13, the center of "BASYANG" was estimated in the vicinity of Infanta, Quezon and weakened into a tropical storm due to the frictional effect of the land mass of the Sierra Madre Mountains when it made landfall over Northern Quezon while moving West at 22 kph. The Westward movement of Tropical Storm "BASYANG" continued as it passed over Metro Manila in the early morning of July 14. Tropical Storm "BASYANG" exited west of Bataan-Zambales area and at 10:00 AM of the same day, the center was estimated to be at 150 kms southwest of Iba, Zambales and moved northwestward at 22 kph as the ridge weakened and receded to the East of the system. Tropical Storm "BASYANG" has weakened slightly as it exited the northwestern boundary of the Philippine Area of Responsibility (PAR) on July 15 and moved northwestward towards the general direction of Southern China.

PSWS NO.3 - Catanduanes, Camarines Norte, Northern Quezon including Polillo Is., Aurora

PSWS NO. 2 – Isabela, Nueva Viscaya, Nueva Ecija, Quirino, Bulacan, Rizal, Laguna, Southern Quezon, Marinduque, Camarines Sur, Catanduanes, Cavite including Lubang is., Batangas, Bataan, Pampanga, Zambales, Tarlac, Pangasinan, and Metro Manila

PSWS NO.1 – Cagayan, Isabela, Mt. Province, Ilocos Sur, La Union, Benguet, Ifugao, and Albay

DAMAGE TO PROPERTIES: 377 MILLION PESOS

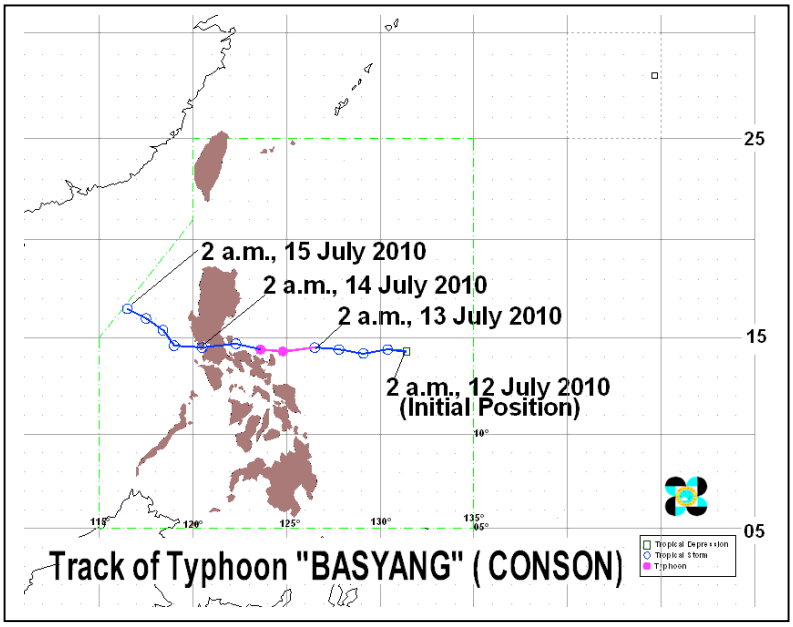

Figure 3: Track of Tropical Storm “Basyang” (CONSON)

3. TROPICAL STORM “CALOY” (CHANTHU)

Caloy was a Low Pressure (LPA) area that crossed Central Luzon into the South China Sea where it developed into a Tropical Depression in the morning of July 19. It was then estimated at 200 kms West of Iba, Zambales, with maximum sustained winds of 55 kph near the center and was moving West Northwest at 19 kph. It then intensified into a storm (International Name (CHANTHU) in the evening of the same day with maximum sustained winds of 65 kph near the center and gustines of 80 kph. Tropical Storm”Caloy” has maintained its strength as it veered to the Northwest at 15 kph away from the country. It slowed down while maintaining its Northwesward direction at 11 kph and moved out of the Philippine area of Responsibility in the morning of July 20.

NO PUBLIC STORM WARNING SIGNAL WAS RAISED DURING THE OCCURRENCE OF T.S. CALOY.

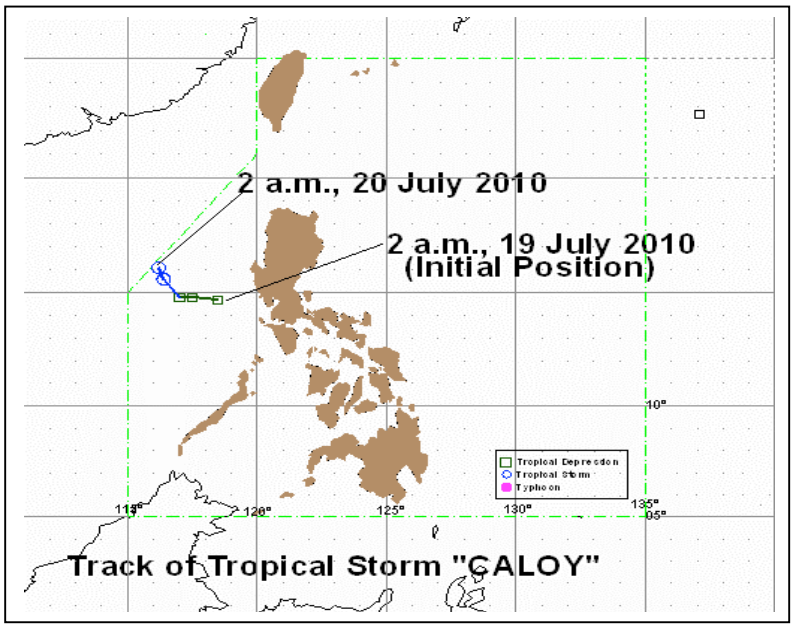

Figure 4: Track of Tropical Storm "Caloy" (CHANTHU)

4. TROPICAL STORM "DOMENG"

Tropical Storm Domeng was the first tropical cyclone that formed in the month of August. It was spotted as a low pressure area 570 km East of Bicol Region in the morning of August 3 and developed into a Tropical Depression in the afternoon of the same day. It then moved West Northwest at a slower pace towards Northern Luzon at 7 kph. Domeng has accelerated in the morning of August 4 as it continues to move towards Northern Luzon. In the afternoon of August 4, it intensified into a storm after it merged with the low pressure area located North Northeast of the system. It weakened into a Tropical Depression in the morning of August 5 as it moved in a west southwest direction at 15 kph. It then weakened further at 45 kph as it moved westward and traversed the Balintang Channel. Domeng weakened into a Low Pressure Area in the evening of August 5 on its way out to the South China Sea.

PWSS No.2: Isabela, Mt. Province, Kalinga, Apayao, Ilocos Norte, Cagayan inc. Babuyan and Calayan and the Batanes group.

PWSS No. 1: Ilocos Sur, La Union, Pangasinan, Benguet, Nueva Viscaya, Nueva Ecija, Quirino, Ifugao and Aurora.

NO DAMAGE REPORTED

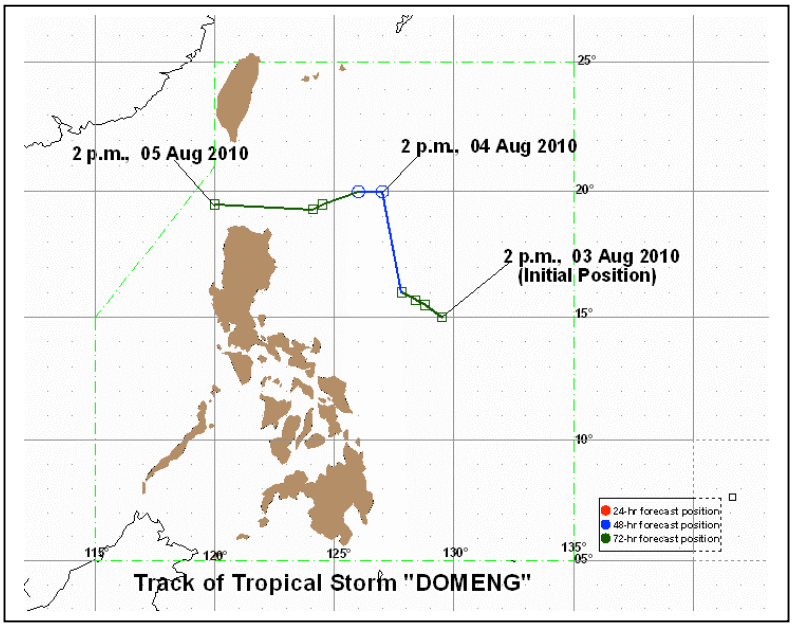

Figure 5: Track of Tropical Storm "Domeng"

5. TROPICAL STORM "ESTER" (DIANMU)

"Ester" was first detected as a low pressure area 600 km East of Northern Luzon in the afternoon of August 6. It organized and later developed into a tropical depression and was estimated at 220 km East Southeast of Basco, Batanes in the early morning of August 7 prompting the issuance of a severe weather bulletin. It then moved Southwesterly at 22 kph threatening Northern Luzon and Public Storm Warning Signal Number 1 was raised over the area. T.D. Ester has slowed down at 11 kph as it veered to the West Northwest in the morning of August 7. It then continued to veer towards the North Northeast in the early morning of August 8 while maintaining its strength at 55 kph. "Ester" then accelerated as it continued to move North Northeast towards the Southern islands of Japan at 11 AM of August 8. It intensified into a storm at 65 kph in the afternoon of the same day. T. S. "Ester" intensified further at 85 kph in the early morning of August 9 as it moved away from the country. It then intensified again at 95 kph in the late morning of the same day and the final bulletin was issued.

PSWS NO.1: Batanes Group of Islands, Cagayan including Babuyan and Calayan islands, Apayao, Kalinga, Abra, Ilocos Norte, Ilocos Sur, and Northern Isabela

NO DAMAGE REPORTED

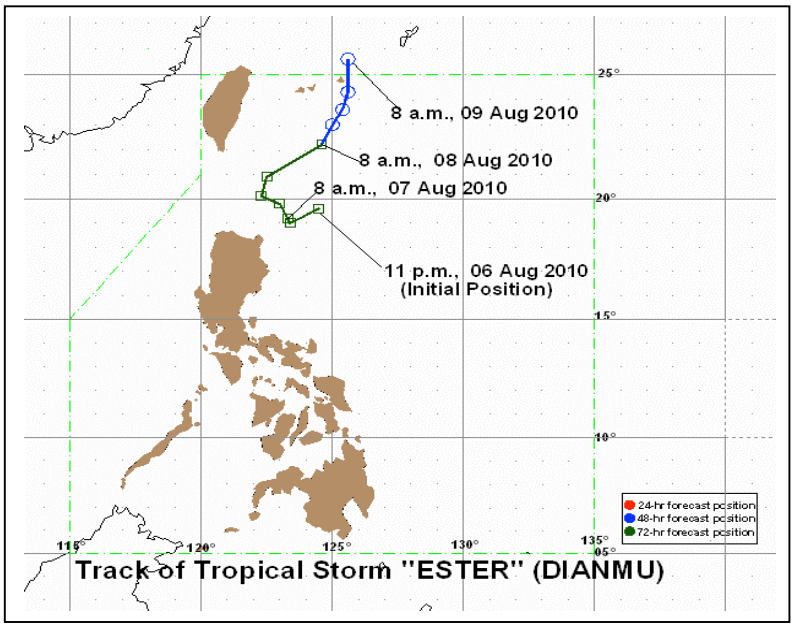

Figure 6: Track of Tropical Storm “Ester” (DIANMU)

6. TROPICAL DEPRESSION FLORITA

A low pressure area (LPA) was spotted West of Iba, Zambales in the South China Sea which then developed into a Tropical Depression in the afternoon of 27 August and was named “FLORITA”. The center was estimated at 330 kilometers (km) West of Dagupan City with maximum winds of 55 kilometers per hour moving northwest at 11 kph. FLORITA’s movement continued for the next 12 hours and then in the morning of Aug. 28, it accelerated and veered to the North Northwest while maintaining its strength. At 5:00 PM, of the same day “FLORITA” was estimated at 350 km West Northwest of Laoag City and was still moving North Northwest at 19 kph as it moved away from the country towards the general direction of Southern China.

NO PUBLIC STORM WARNING SIGNAL WAS RAISED DURING THE OCCURRENCE OF T.D. “FLORITA”.

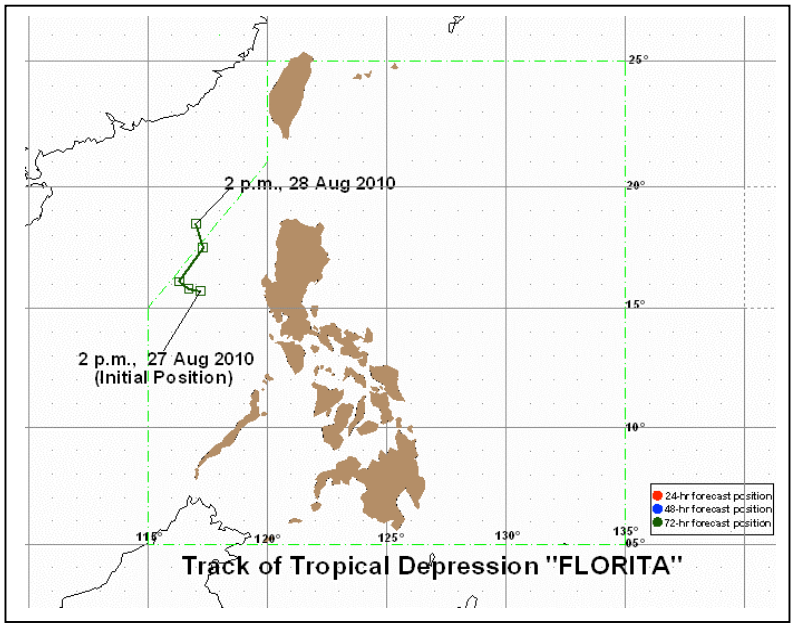

Figure 7: Track of Tropical Storm “Florita”

7. TYPHOON GLENDA (KOMPASU)

“Glenda” was already a tropical storm (international name “KOMPASU”) with maximum sustained winds of 65 kph and gustiness of 85 kph when it entered the Philippine Area of Responsibility (PAR) in the afternoon of August 29. It then moved in a west northwest direction at an average speed of 19 kph. “Glenda” gained strength at 95 kph and gustiness of 120 kph in the evening of August 30 as it changed course to the northwest at 15 kph. It intensified into a typhoon with maximum winds of 120 kph and gustiness of 150 kph in the early morning of August 31 as it moved towards the southern island of Japan. It continued to move northwesterly away from the country in the late morning of August 31 and the final tropical cyclone bulletin (alert) was issued.

NO PUBLIC STORM WARNING SIGNAL WAS RAISED DURING THE OCCURRENCE OF TYPHOON “GLENDA”.

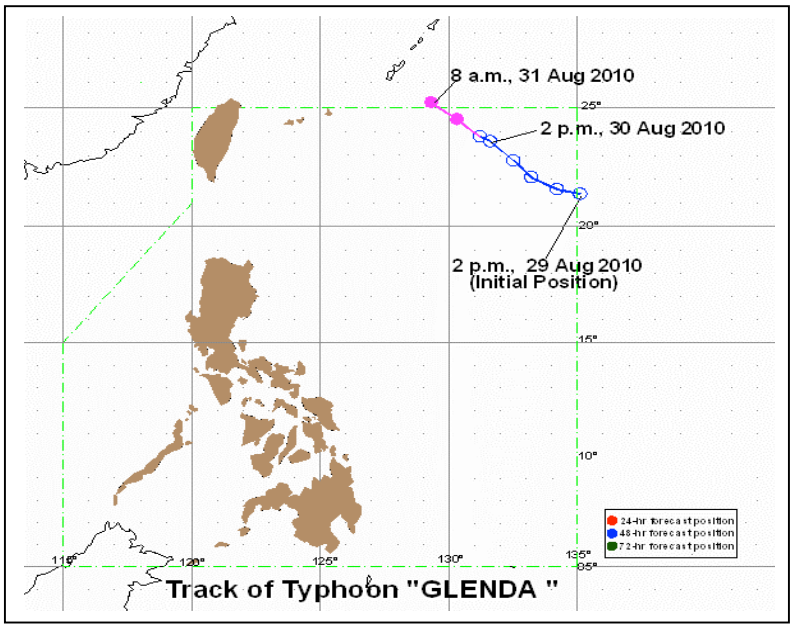

Figure 8: Track of Typhoon "Glenda"

8. TROPICAL STORM "HENRY" (MALOU)

"Henry" was already a Tropical Depression when it entered the Philippine Area of Responsibility in the early morning of September 3 and was estimated at 1,120 kms East of Basco, Batanes. It was then moving Northwest at 24 kph. It intensified into a Tropical storm (international name" MALOU") in the afternoon of September 3 as it slowed down and changed direction to the West Northwest at 15 kph.

Tropical Storm "Henry" continued to move West Northwest for the next 12 hours, then again changed direction to the West Northwest at 13 kph moving towards the southern islands of Japan in the morning of September 4. It accelerated as it continued to move in the same direction towards the southern islands of Japan, away from the country in the afternoon of September 4.

NO PUBLIC STORM WARNING SIGNAL WAS RAISED DURING THE OCCURRENCE OF TROPICAL STORM "HENRY".

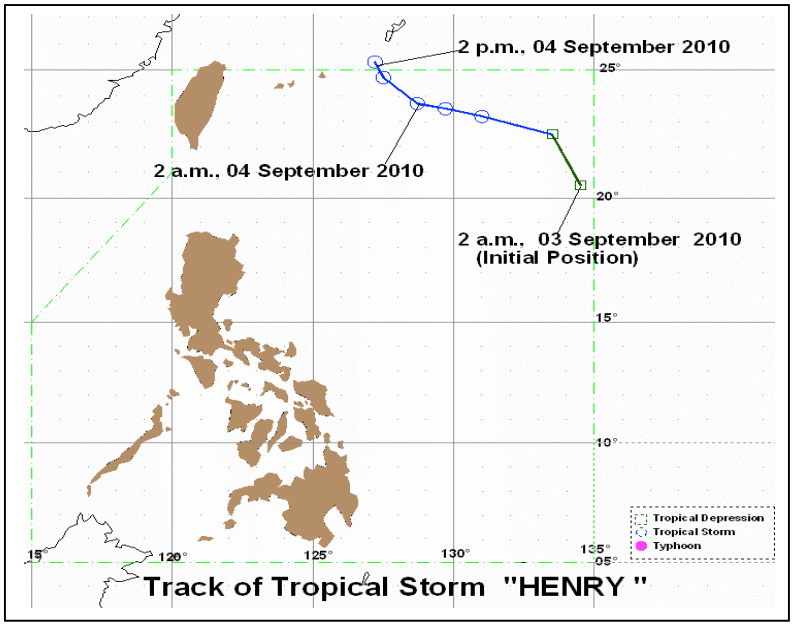

Figure 10: Track of Tropical Storm “Henry”

9. TYPHOON “INDAY” (FANAPI)

“Inday” was an active Low Pressure Area when it was spotted and developed into a Tropical Depression in the morning September 15 and was estimated at 640 kms East of Basco, Batanes. It intensified into a storm (international name “FANAPI”) in the evening of the same day as it moved northwestward slowly at 7 kph. Tropical Storm ”Inday” gained more strength and was packing maximum sustained winds of 85 kph and gustiness of up to 100 kph. when it changed in a Northerly direction as it interacted with a passing trough in the morning of September 16. It intensified into a typhoon in the evening of the same day with maximum sustained winds of 120 kph as it again shifted to the North Northeast at 7 kph. Typhoon “Inday” gained more strength at 140 kph as it moved slowly in a Northwest direction in the evening of Sept. 17. It gained more strength as it changed in a West Northwest direction at 12 kph in the morning of September 18. It intensified further at 160 kph near the center as it continues to move in a West Souththwest direction at 15 kph in the afternoon of the same day and it moved closer to Taiwan. Typhoon “Inday” made landfall in the morning of September 19 as it moved westward towards the eastern coast of southern China, outside the Philippine Area of Responsibility. It continued to move westward as it weakened at 110 kph after crossing the mountainous terrain of Taiwan and exited the Philippine Area of Responsibility in the evening of the same day.

NO PUCLIC STORM WARNING SIGNAL WAS RAISED DURING THE OCCURRENCE OF TYPHOON “INDAY”.

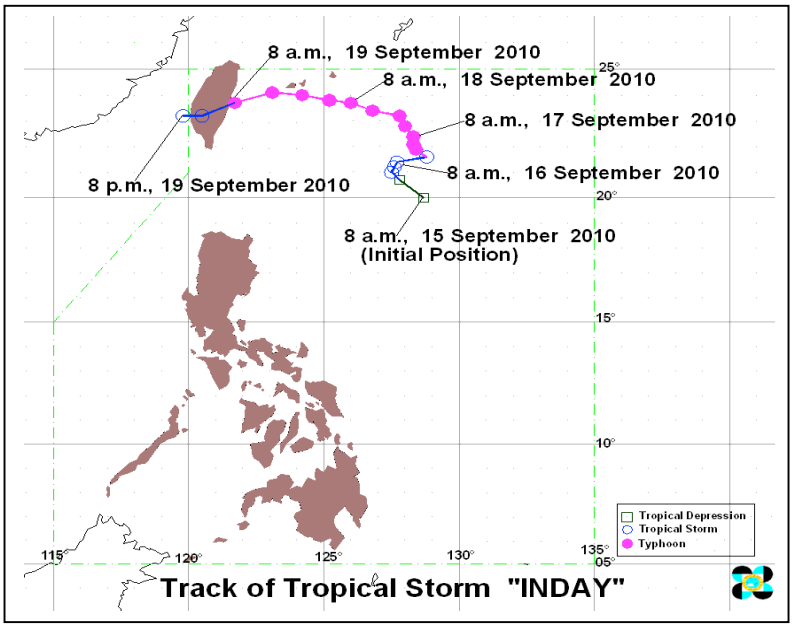

Figure 10: Track of Tropical Storm "Inday" (FANAPI)

10. TYPHOON "JUAN" (MEGI) {1013}

Spotted as a low pressure area East of Guam and then developed into a Tropical Depression on the 11th of October. The following day, it intensified into a storm as it continued to move west northwest and crossed Guam on the 13th of October. **JUAN** (**MEGI,** international name) gradually moved toward the Philippine eastern border at an average speed of 20 kph. It intensified further and reached typhoon intensity before it entered the Philippine Area of Responsibility **(PAR).** Upon entry, it was forecasted to hit land, particularly Northern Luzon, due to the high Pressure Area **(HPA)** north of the system barring **JUAN** to move in a northwest direction. Instead, it went on a west and west southwest direction on the 17th of October. **JUAN** then moved more to the south and made landfall over Isabela at 12 noon of October 18 causing severe damages to life and property due to strong winds and heavy downpour over Northern Luzon. Landslides occurred in the provinces of Apayao, Kalinga, Mt. Province, Benguet and La Union. Heavy rains brought by typhoon **JUAN** forced the Magat, Ambuklao, Binga and San Roque Dams to release water. **JUAN** crossed Northern Luzon in 12 hours and exited over the coast of La Union towards the South China Sea. It remained almost stationary while over the South China Sea for about 24 hours as the high pressure area north of the system barred it to move westward. As the westerly trough moved closer to Taiwan, **JUAN** gradually shifted its course to the northwest and north and exited the Philippine Area of Responsibility in the early morning of October 21 moving towards southeastern China.

PSWS No. 4 – Cagayan, Isabela, Mt. Province and Ifugao

PSWS No. 3 – Babuyan and Calayan Group of Islands, Northern Aurora, Quirino, Nueva Viscaya, Benguet, Ilocos Norte, Ilocos Sur, Abra and La union

PSWS No. 2 –Polillo Island, Nueva Ecija, Pangasinan, Tarlac, Batanes Group and Rest of Aurora

PSWS No.1 – Cavite, Bulacan, Pampanga, Bataan, Zambales, Northern Quezon, Metro Manila, Rizal, Laguna and Batangas

DAMAGE TO PROPERTIES: 11 BILLION PESOS

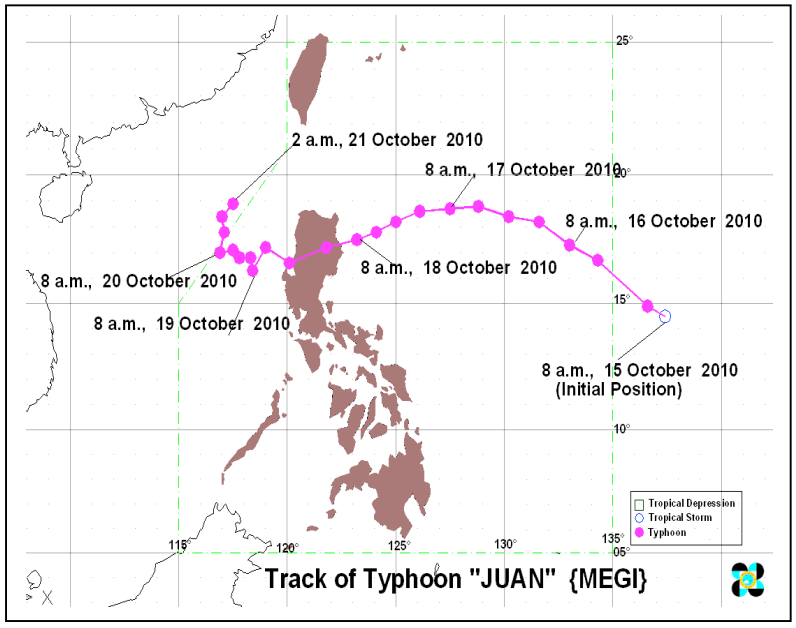

Figure 11: Track of Typhoon "Juan" (MEGI)

11. TYPHOON "KATRING" (CHABA) {1014}

It started in a wide area of low pressure system over the Marianas group. This low pressure area developed into a tropical depression 22nd of October. It entered in the eastern border of the Philippine Area of Responsibility at 2PM of October 23. Upon entry to PAR, KATRING has

moved west northwest at an average speed of 19 kph. However, it shifted its course to the west southwest while gradually slowed down prior from its re-curvature due to the interaction with the high pressure area to its north. KATRING has intensified into Storm in the afternoon of October 24 and has shifted its direction to the north northwest as the high pressure cell (north of KATRING) moved westward. It moved north northwest slowly as the deep trough approached Taiwan which opened its gate to move more to the north and exited PAR in the evening of October 28 towards southern islands of Japan. No storm warning signal was raised and no reported flooding to any part of the Philippine landmass.

NO PUBLIC STORM WARNING SIGNAL WAS RAISED DURING THE OCCURRENCE OF TYPHOON “KATRING”.

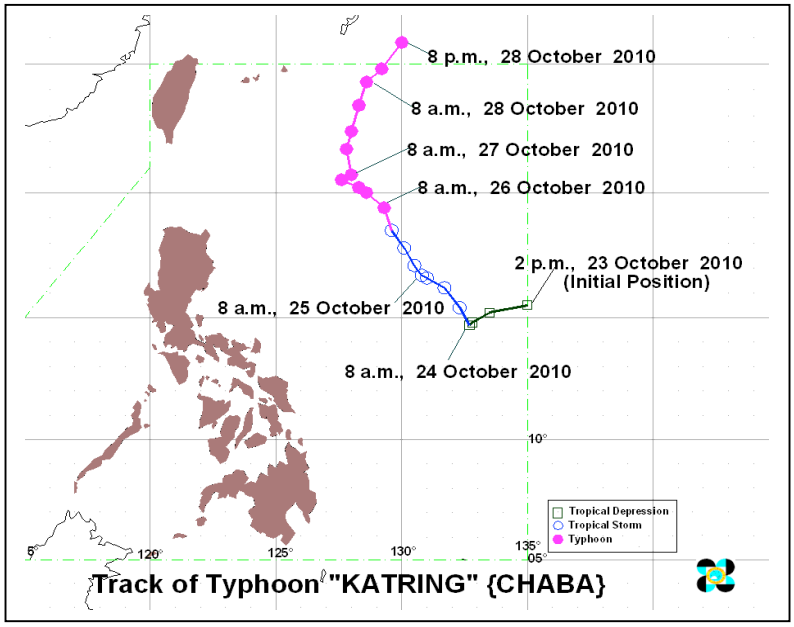

Figure 12: Track of Typhoon “Katring” (CHABA)