Earth

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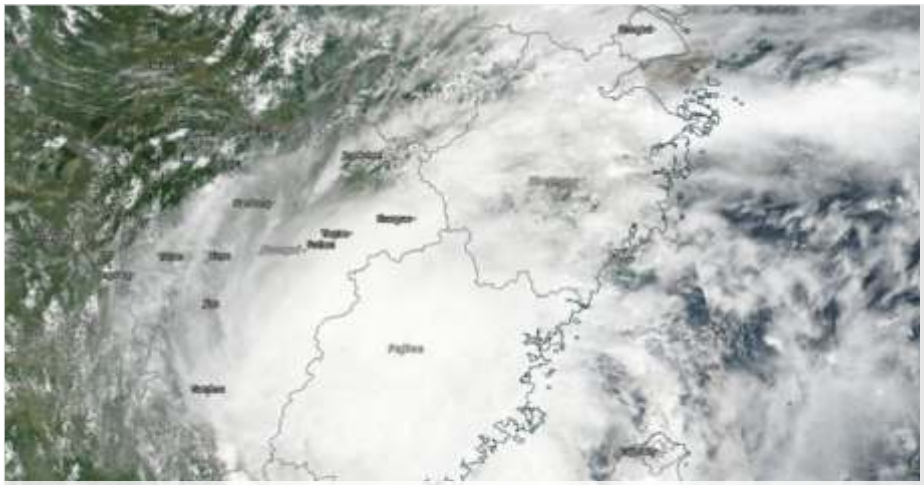
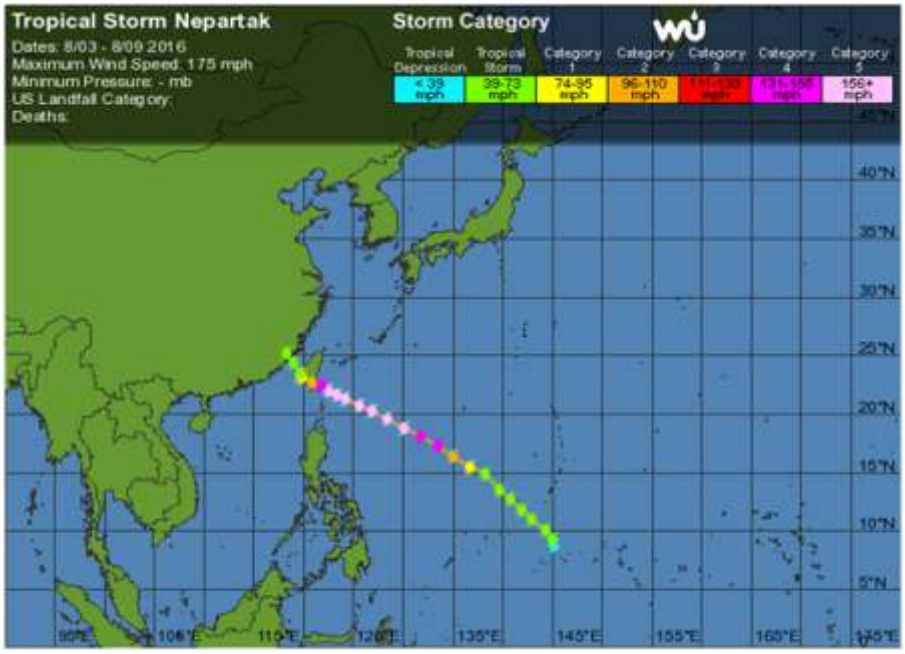


Typhoon Nepartak as on July 9, 2016 Source: *NASA*

TYPHOON NEPARTAK HIT TAIWAN AND CHINA

Typhoon Nepartak -3rd event of the 2016 Pacific typhoon season and the first named storm of the 2016 season- affected Taiwan and East China. It was active from July 3 to July 9.



Source: *Wunderground*

It attained maximum wind speed 175 mph - around 282 kilometers per hour and made first landfall in the southeastern Taiwan county of Taitung on Friday July 8, 2016. It made second landfall on July 2016 in Shishi city of Fujian province of China.

Nepartak caused 3 deaths and loss of more than NT$ 1 billion (US$33.4 million) of crop loss in Taiwan and 83 deaths and ¥9.98 billion (US$1.51 billion) in damage in China.

A road is washed away in Minqing County, south-east China's Fujian province, on Sunday in the wake of super typhoon Nepartak.
Source: *Xinhua / Barcroft Images*

HISTORIC TYPHOONS IN EAST ASIA

East Asia falls in the Northwestern Pacific Basin (from the dateline to Asia including the South China Sea) that is the most active tropical cyclone basin on earth. It experiences almost one third of tropical cyclones occurring in the world annually. Data between 1981 & 2010, presented in Table 1 below, shows number of events occurred in each basin.

Table 1 Number of Storms by Basin

	Tropical Storm or stronger (greater than 17 m/s sustained winds)			Hurricane/Typhoon/Severe Tropical Cyclone (greater than 33 m/s sustained winds)		
Basin	**Most**	**Least**	**Average**	**Most**	**Least**	**Average**
Atlantic*	28	4	12.1	15	2	6.4
NE/Central Pacific**	28	8	16.6	16	3	8.9
North Western Pacific	**39**	**14**	**26**	**26**	**5**	**16.5**
N Indian	10	2	4.8	5	0	1.5
SW Indian	14	4	9.3	8	1	5
Aus SE Indian	16	3	7.5	8	1	3.6
Aus SW Pacific	20	4	9.9	12	1	5.2
Globally	**102**	**69**	**86**	**59**	**34**	**46.9**

Source: *NOAA*

The 2015 Northwest Pacific Typhoon Season was an exceptional season with 39 events. The storms were more frequent as well as intense. Researchers believe that in the western Pacific, due to a strong El Nino, slight decreases in water temperatures and wind fields push storm formation farther to the east. This gave storms more time to intensify. These storms affected all the countries in basin causing huge economic losses. Due to low insurance penetration, the insured losses were not very high; thus reflecting huge Protection Gap.

Protection Gap, defined as difference between Economic and Insured Losses, is a measure of underinsurance. This is a known feature of emerging countries and occurs because insurance penetration does not increase in proportion with economic progress of country. For natural perils occurred between1974-2013, countries like China, India, Japan, and Indonesia show the maximum natural catastrophe protection gap in percentage of economic losses.

Table 2 and Table 3 show loss causing typhoons in North Western Pacific region countries between 2010-2015 and 10 costliest typhoons in Northwest Pacific countries since 1980. It is noteworthy that even for recent events insured losses are not available. It may be because of no or very low penetration in affected countries.

Increasing Protection Gap significantly affects a country's economic growth. A government that can spend money on development related works is forced to arrange funds for paying compensation and reconstruction activities. Instead, if there is higher insurance penetration, losses will be shared by insured, insurer, and reinsurers; thus, reducing burden on government.

Table 2 Loss Causing Typhoons between 2010-2015

Typhoon Name	Impacted	Event Duration	Original Economic Loss (million US$)	Original Insured Loss (million US$)	Protection Gap (million US$)
Melor	Philippines	12/14/2015-12/16/2015	225	NA	
Koppu	Philippines	10/18/2015-10/19/2015	298	NA	
Mujigae	China,Philippines	10/2/2015-10/4/2015	4,572	400	4,172
Dujuan	China,Philippines,Taiwan	9/25/2015-9/28/2015	516	78	438
Vamco	Vietnam,Combodia,Thailand	9/14/2015-9/19/2015	150	NA	
Goni	Philppines,Japan,North Korea	8/18/2015-8/26/2015	1,600	1,150	450
Soudelor	China,Philippines,Taiwan	8/2/2015-8/8/2015	31(Taiwan), 2,800 (Total)	120	2,680
Nangka	Japan,Marshall Islands	7/16/2015-7/17/2015	207	127	80
Chan-Hom	China,Japan,Taiwan	7/11/2015-7/13/2015	1,420	156	1,264

Typhoon Name	Impacted	Event Duration	Original Economic Loss (million US$)	Original Insured Loss (million US$)	Protection Gap (million US$)
Vongfong	Japan, Philippines, Taiwan	10/10/2014	80	NA	
Phanfone	Japan	10/5/2014-10/10/2014	100	NA	
Fung-wong	China, Philippines, Taiwan	9/19/2014-9/24/2014	263	NA	
Kalamegi	China, HongKong, Philippines, Vietnam	9/10/2014-9/16/2014	Les than 3,000	NA	
Matmo	China, Taiwan	7/22/2014	9.43 (Taiwan), 530 (Total)	Minor market loss	
Rammasun	China, Philippines,Vietnam	7/15/2014-7/21/2014	5,150	250	4,900
Neoguri	Japan	7/8/2014-7/14/2014	156	NA	
Haiyan	China, Palau, Philippines, Taiwan,Vietnam	11/8/2013-11/10/2013	10,000	700	9,300
Krosa	Philippines	10/31/2013	6	NA	
Wipha	Japan	10/15/2013-10/16/2013	NA	NA	
Nari	Philippines,Vietnam	10/11/2013-10/17/2013	151	NA	
Wutip	Vietnam	9/30/2013-10/2/2013	237	NA	
Fitow	China,Japan	9/29/2013-10/5/2013	5,000 (China, Japan)	750 *, 1,130 **	3,870 - 4,250
Usagi	China,Philippines,Taiwan	9/21/2013-9/26/2013	3,860	NA	
Utor	China,Philippines	8/10/2013-8/21/2013	1,500	NA	
Soulik	China,Japan,Taiwan	7/13/2013-7/15/2013	460	NA	
Rumbia	China,Philippines	6/29/2013-7/2/2013	182	NA	
Quinta	Philippines	12/26/2012	5	NA	
Bopha	Philippines	12/4/2012-12/5/2012	902	NA	
Son-tinh	China,Philippines,Vietnam	10/24/2012-10/29/2012	225	NA	
Sanba	Japan,South Korea	9/17/2012	300	100	200
Bolaven	North Korea,South Korea	8/25/2012-8/30/2012	1,000	Over 350	~ 650
Tembin	Philippines,SouthKorea,Taiwan	8/23/2012-8/30/2012	8	Over 1.4	~ 6
Kai-Tak	China,Philippines,Vietnam	8/15/2012-8/18/2012	275	NA	
Haikui	China,Philippines	8/8/2012-8/9/2012	1, 500	183	1,317
Damrey	China	8/2/2012-8/8/2012	Less than 600	106	~ 450
Saola	China, Philippines, Taiwan	8/2/2012	161,27 (Taiwan)	1.8	159.2
Vicente	China, HongKong, Philippines,Vietnam	7/20/2012-7/24/2012	300	19	281
Nalgae	China,Philippines,Vietnam	9/30/2011-10/6/2011	3	NA	
Nesat	China,Philippines,Vietnam	9/26/2010-10/4/2010	Over 360	Less than 50	
Roke	Japan	9/20/2011-9/22/2011	1,700 *, 1,820 **	1,200	500 - 620
Talas	Japan	9/2/2011-9/3/2011	858	470	388
Nanmadol	China,Philippines,Taiwan	8/26/2011-8/31/2011	250 (Total), 2.6 (Taiwan)	NA	
Miuifa	China,Japan,NorthKorea,Philppines,South Korea	7/29/2011-8/9/2011	800 *, 850 **	100 *, Over 250 **	550 - 700
Nock-ten	China,Philippines,Vietnam	7/27/2011-7/31/2011	121	NA	
Maeri	China,Philippines,South Korea	6/27/2011-6/28/2011	50 *, 44 **	NA	
Haima	China,Philippines,Vietnam	6/19/2011-6/24/2011	50	NA	
Megi	China,Philippines,Taiwan	10/18/2010-10/24/2010	650	100	550
Fanapi	China,Taiwan	9/19/2010-9/21/2010	800 (Total), 158 (Taiwan)	69 (Taiwan)	731
Meranti	China	9/9/2010	121	NA	
Kompasu	Japan,NorthKorea,South Korea	8/31/2010-9/2/2010	515	143	372
Mindulle	Vietnam	8/24/2010	44	NA	
Chanthu	China,HongKong,Vietnam	7/22/2010	364	NA	
Conson	China,Philippines,Vietnam	7/12/2010-7/17/2010	145	NA	

Source: *Munich Re, Swiss Re | * Munich Re, ** Swiss Re*

Table 3 Top 10 Loss Causing Typhoons since 1980

Event	Event Duration	Affected Region(s)	Insured Loss(million US$) Original Values	Economic Loss (million US$) Original Values	Protection Gap (million US$)
Typhoon Mireille	9/26/1991-9/28/1991	Japan	6,000	10,000	4,000
Typhoon Songda	9/6/2004-9/8/2004	Japan, South Korea	4,700	9,250	4,550
Typhoon Bart	9/22/1999-9/26/1999	Japan, South Korea	3,500	5,000	1,500
Typhoon Vicki & Waldo	9/17/1998-9/22/1998	Japan, Philippines	1,600	3,000	1,400
Typhoon Goni	8/18/2015-8/25/2015	Japan, Philippines	1,400	2,000	600
Typhoon Tokage	10/19/2004-10/21/2004	Japan	1,300	2,300	1,000
Typhoon Shanshan	9/16/1996-9/19/1996	Japan, South Korea	1,200	2,500	1,300
Typhoon Chaba	8/22/2004-9/2/2004	Japan, Russian Federation	1,200	2,000	800
Typhoon Roke	9/20/2001-9/22/2001	Japan	1,200	1,700	500
Typhoon Saomai	9/11/2000-9/19/2000	Japan, Guam, Russian Federation South Korea	1,050	6,270	5,220

Source: *Munich Re*

References: *China News Service, COA, Taiwan, Munich Re, NOAA, Swiss Re, The Geneva Association, and The Guardian*

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