

= Cyclone Giri =

Very Severe Cyclonic Storm Giri (IMD designation : BOB 04 , JTWC designation 04B , also known as Cyclone Giri) was a powerful tropical cyclone which caused catastrophic damage in parts of Myanmar in late October 2010 . Originating from an area of low pressure over the Bay of Bengal on October 19 , the system began as a weak depression 250 km (155 mi) south of Myanmar . Over the following few days , the depression underwent explosive intensification , reaching its peak intensity with winds of 165 km / h (105 mph 3 @-@ minute sustained) on October 22 . Cyclone Giri made landfall roughly 50 km (31 mi) northwest of Kyaukpyu , shortly after peaking . Within hours of moving onshore , the system had substantially weakened . By the following day , Giri had degenerated into a tropical depression and the final advisory was issued on the storm .

Unlike during Cyclone Nargis in 2008 , the Government of Myanmar took steps to ensure the safety of residents in the path of Cyclone Giri . An estimated 53 @, @ 000 are believed to have evacuated Kyaukphyu before the arrival of the storm . Throughout central Myanmar , at least 157 people are known to have been killed by Giri . Thousands of structures near where the storm made landfall were destroyed , leaving more than 70 @, @ 000 people homeless . An international relief effort began shortly after the storm passed to assist survivors of the storm . Initially , local and foreign media initially criticized the Myanmar government for not giving residents enough warning of the storm and later for keeping quiet on the situation . However , the focus later shifted to the loss of life and relief efforts .

= = Meteorological history = =

Cyclone Giri was first identified by the India Meteorological Department (IMD) as an area of low pressure over the Bay of Bengal on October 19 . Early on October 20 , the system was classified as a depression and given the name BOB 04 ; and at that time , the system was situated roughly 250 km (155 mi) southwest of Sittwe , Myanmar . Continued development took place as convection consolidated around the system and banding features formed along the western side of the low . As the depression was situated in an area of weak wind shear , further development was anticipated over the following days . Early on October 21 , the IMD upgraded the system to a deep depression and expected it to further intensify into a cyclonic storm within 24 hours . Shortly thereafter , the Joint Typhoon Warning Center (JTWC) issued their first advisory on the depression , classifying it as Tropical Cyclone 04B . The system rapidly developed throughout the day on October 21 , developing an eye embedded within deep convection . In response to a near @-@ equatorial ridge to the south , the system slowly tracked towards the northeast , placing Myanmar within its path . Around 0600 UTC , the IMD upgraded the system to a cyclonic storm , assigning it the name " Giri " .

Tracking over an area of high sea surface temperatures , rapid intensification ensued during the latter half of October 21 . Following the development of very intense convection , with estimated cloud top temperatures between ? 70 and ? 80 ° C (? 94 and ? 112 ° F) , Giri strengthened into a severe cyclonic storm , having sustained winds of at least 95 km / h (60 mph 3 @-@ minute sustained) . Around 1800 UTC , the JTWC estimated that the system intensified into a Category 1 equivalent cyclone on the Saffir ? Simpson Hurricane Scale . Early on October 22 , Giri further strengthened into a very severe cyclonic storm as it slowly moved towards the central coast of Myanmar . Throughout the day , the storm underwent explosive deepening , attaining winds of 240 km / h (145 mph 1 @-@ minute sustained) by 0900 UTC . Satellite imagery depicted a well @-@ defined 46 km (29 mi) wide eye surrounded by deep convection . Accompanied by strong poleward outflow , additional strengthening took place despite Giri 's proximity to land .

In the hours before landfall on October 22 , Giri attained its peak intensity with winds of 165 km / h (105 mph 3 @-@ minute sustained) and a barometric pressure of 950 mbar (hPa ; 28 @. @ 05 inHg) . However , the JTWC estimated that Giri was a substantially stronger storm , nearly attaining Category 5 status ; peak winds were believed to have reached 250 km / h (155 mph 1 @-@ minute sustained) along with an estimated pressure of 922 mbar (hPa ; 27 @. @ 23 inHg) . Around 1400

UTC , Cyclone Giri made landfall near Hunter 's Bay , roughly 50 km (31 mi) northwest of Kyaukpyu at peak intensity . Upon doing so , Giri became the most intense storm to ever strike Myanmar , surpassing Cyclone Nargis which struck the Irrawaddy Delta region as a low @-@ end Category 4 equivalent in May 2008 . However , according to the International Federation of Red Cross And Red Crescent Societies , substantial weakening had taken place within the hours before landfall ; they estimated that Cyclone Giri struck the coastline with winds of 175 km / h (110 mph 1 @-@ minute sustained) . Once overland , the cyclone rapidly decayed as convection dissipated . Despite having estimated winds of 150 km / h (90 mph 1 @-@ minute sustained) , the JTWC issued their final advisory on Giri just six hours after landfall . By early October 23 , only scattered bursts of convection remained around the center of Giri as it degenerated into a tropical depression . The final advisory from the IMD was issued later that day as the system weakened further .

= = Preparations = =

Shortly after Giri was classified a very severe cyclonic storm , warnings were issued for the coastline of Myanmar . Relative to the storm 's intensity , preparations were minimal ; however , this was because forecasters did not anticipate Giri to strengthen as quickly as it did . The greatest fear of the residents was the aftermath of the storm . There were concerns that the cyclone could cause devastation similar to that of Cyclone Nargis in May 2008 which killed an estimated 140 @,@ 000 people in the Irrawaddy Delta . The chief of the Myanmar Climate Change Watch , a branch within the Myanmar Meteorology and Hydrology Department , urged people to move to higher grounds and into sturdy buildings as a storm surge up to 3 @.@ 6 m (12 ft) was anticipated . Warnings of the storm were constantly broadcast through television , radio and newspapers . In Sittwe , the capital of Rakhine State , authorities used loudspeakers to warn residents about Cyclone Giri . According to the military junta , an estimated 53 @,@ 000 are believed to have evacuated Kyaukphyu before the arrival of the storm .

Even though the storm wasn 't expected to hit Bangladesh , the Bangladesh Meteorological Department issued storm signal five , " danger level " , at ports of Cox 's Bazar and Chittagong . Ships and vessels were also asked to return to shore quickly . On October 23 , the warning signals were lowered as the threat from Giri diminished .

= = Impact = =

According to local media , Cyclone Giri brought a storm surge up to 3 @.@ 7 m (12 ft) , along with waves up to 8 m (26 ft) and winds in excess of 260 km / h (160 mph) . In Kyaukphyu , much of the city was left more than 1 @.@ 2 m (3 @.@ 9 ft) under water by the storm . Residents stated that most of Kyaukphyu was destroyed by Giri , with nearly every tree and lamppost felled and all structures damaged or destroyed . Later reports confirmed that roughly 70 % of the city had been destroyed by Giri . In the Asheya Paing ward , an entire village was flattened by the storm as roughly 1 @,@ 000 homes were destroyed . Near the Gangawtaw Pagoda in Kyaukphyu , nearly 100 homes were completely destroyed . The local Red Cross office in the city was also destroyed after a large tree fell on it due to high winds . Myebon Township was the hardest @-@ hit area in the country : several villages were completely destroyed by the storm and many others were severely damaged . According to the United Nations , roughly 15 @,@ 000 homes were destroyed by the storm throughout Rakhine State .

In the Seikphyu Township , flood waters up to 4 @.@ 6 m (15 ft) deep inundated 20 villages after overflow from a dam was released without warning . Of the few reports coming from the region , there were indications of fatalities in outlying villages . Most of the livestock in the area perished as there was no time to bring them to higher ground safely . The overall timing of the cyclone 's landfall was also devastating for the region . It came at the only harvest of the year for Rakhine State . According to the United Nations Food and Agriculture Organization , 16 @,@ 187 hectares (40 @,@ 000 acres) of rice paddies were destroyed and another 40 @,@ 468 hectares (100 @,@ 000 acres) were damaged .

Within a day of Giri striking Myanmar , three people were reported to have been killed by the storm and tens of thousands of residents were believed to have been left homeless . By October 25 , officials in Myanmar stated that the death toll had risen to 50 and at least 30 people in the Pyin Wan Village were missing . Press reports stated that " The situation here is alarming , " as more bodies were discovered . Offshore , more than 100 fishermen from Myanmar and Bangladesh were reported missing after 21 ships were caught in rough seas produced by the cyclone . By October 29 , at least 94 people were confirmed to have been killed by Giri . Of these fatalities , 84 were in Myebon Township (Mray Bon) and 10 in Pauktaw Township . However , according to local relief groups , the death toll had risen over 100 .

By November 2 , 157 fatalities had been confirmed as a result of Cyclone Giri . Of these fatalities , 138 were in Myebon Township , 11 in Pauktaw Township , 5 in Minbya Township and 3 in Kyaukpyu Township . According to officials in Kyaukpyu Township , damage from the storm amounted to 2 @. @ 34 billion kyat (US \$ 359 million) .

= = Aftermath = =

Immediately following the storm , urgent requests for food and clean water were made by residents in the hardest hit areas . By the afternoon of October 23 , the Red Cross began deploying relief supplies to the affected region ; 300 tents and 150 bags of rice were planned to be distributed to Kyaukphyu where at least 5 @, @ 000 people were left homeless . According to the United Nations Office for the Coordination of Humanitarian Affairs (OCHA) , a total of 176 @, @ 823 people were affected by the storm and 70 @, @ 795 were left homeless . By October 30 , the number affected and homeless had risen to 1 @. @ 1 million and roughly 100 @, @ 000 respectively . Red Cross officials also reported that an estimated 60 @, @ 000 people were in need of assistance throughout Myanmar . Later that day , a relief charity was opened in Rangoon to aid victims of the storm ; in short order , the charity had received donations of 10 million kyat (\$ 10 @, @ 000 USD) . By October 25 , temporary shelter camps set up by relief agencies housed an estimated 5 @, @ 000 people .

By October 26 , the Government of the Union of Myanmar had begun distributing 60 @, @ 000 zinc roof sheets and the Ministry of Forestry provided 200 tonnes (220 tons) of timber . Through the end of October , six non @-@ governmental organizations in Myanmar planned to distribute emergency food supplies , such rice , oil , salt and pulses , to 5 @, @ 000 residents in Kyaukpyu and Myebon . Health supplies were also being distributed at relief camps by UNICEF in the hardest @-@ hit areas . About 500 family kits containing non @-@ food items , such as tarpaulins and mosquito nets , had been distributed by the Myanmar Red Cross Society and another 1 @, @ 200 were being sent to the area . By the start of November , the government of Myanmar requested medial aid from the United Nations as a cholera outbreak began to unfold . Additional post @-@ storm diseases such as diarrhoea , dysentery , eye infections and skin diseases became prevalent as well . According to locals , at least six people died as a result of cholera . At least 200 people were infected with dysentery and four were killed by the disease in the towns of Kyaukphyu , Minbya and Myebon . The cause of the outbreak was linked to a lack of clean water .

= = = International assistance = = =

On October 26 , United States Secretary of State Hillary Clinton stated that the country would provide emergency assistance and aid to Myanmar . Roughly a week after the passage of Cyclone Giri , the Government of Australia pledged about US \$ 200 @, @ 000 to victims of the storm . The governments of Britain and Japan also pledged to donate US \$ 700 @, @ 000 and US \$ 500 @, @ 000 respectively to Myanmar . The World Food Programme sent 900 tonnes (992 tons) of rice with another 300 tonnes (330 tons) on the way ; stocks of rice in Kyaukpyu itself had reportedly been exhausted . By late @-@ November , the World Food Programme had allocated US \$ 2 @. @ 8 million in relief funds . Roughly 1 @, @ 500 households in Kyaukpyu township were being cared for by Save the Children . Through the United Nations , organizations pledged to provide a total of US \$

54 million in aid . In late @-@ November , the United States provided an additional US \$ 3 million in relief funds .

= = = Criticism of the Junta = = =

International and local media criticized the military government for inadequate warnings prior to Giri 's landfall in the country . However , the junta claims to have informed the public appropriately . Little assistance had reached thousands of survivors days after the storm 's passage , fueling anger from local media sources . Government relief slowly reached the area ; however , workers only cleared debris left by the storm and only encouraged residents to rebuild by giving them the supplies needed to do so . Further criticism was made about the government withholding information on the loss of life and scale of damage . Requests were also made to postpone a national election for residents in Arakan State ; however , no response was given and the elections were still planned to be held on November 7 .

Additional criticism continued even a week after the storm , especially over the scale of the disaster . The government claimed that only 27 people had been killed by Giri while numerous local and international agencies stated significantly higher totals . They were also blamed for downplaying the amount of damage , resulting in slower distribution of aid to areas in desperate need . Two weeks after Giri struck Myanmar , little attention was given to the ongoing disaster by the Junta . The Myanmar government continued to keep other countries out of the area and prevent them from knowing what was going on in the hardest hit areas . Thousands of survivors continued to suffer due to the insufficient relief making it into the region . On November 8 , local media discovered that the Junta was threatening to sever aid to the region if residents did not vote for them in the national election . According to Mizzima , the opposing party won landslide victories in numerous townships ; however , in the cyclone affected areas , the Junta had complete victories .