

= Cyclone Komen =

Cyclonic Storm Komen was an unusual tropical cyclone that originated near the southern coast of Bangladesh and later struck the same country while drifting over the northern Bay of Bengal . The second named storm of the 2015 season , Komen brought several days of heavy rainfall to Myanmar , Bangladesh , and India . It formed as a depression on July 26 over the Ganges delta and moved in a circular motion around the northern Bay of Bengal . Komen intensified into a 75 km / h (45 mph) cyclonic storm and moved ashore southeastern Bangladesh on July 30 . The system turned westward over land and was last noted over eastern India on August 2 .

Across its path , Komen dropped torrential rainfall , primarily in northwestern Myanmar where the precipitation totaled at 840 mm (33 in) in Paletwa . The rains compounded upon ongoing flooding and contributed to the worst flooding in the country in a century . About 1 @. @ 7 million people were forced to evacuate as flood waters inundated houses to their rooftops . About 510 @, @ 000 houses in the country were damaged or destroyed , and many residents lost their source of income as 667 @, @ 221 acres (270 @, @ 000 ha) of crop fields were damaged . The floods killed 132 people , of which at least 39 were directly related to Komen . The government requested assistance from the international community to cope with the disaster , considered the worst in the country since Cyclone Nargis in 2008 . Elsewhere , the storm 's flooding damaged 88 @, @ 900 houses in Bangladesh and covered crop fields for a week ; Komen killed 45 people in the country , some of whom due to illnesses spread by the storm . Later , floodwaters affected southeastern India , killing 103 people and damaging or destroying 476 @, @ 046 houses .

= = Meteorological history = =

The monsoon spawned a low pressure area on July 25 over the extreme northern Bay of Bengal and along the southern coast of Bangladesh . With low wind shear and abundant convection south of a developing circulation , the system quickly organized . At 03 : 00 UTC on July 26 , the India Meteorological Department (IMD) classified the system as a depression , while the circulation was nearly stationary near the southern coast of Bangladesh . Land interaction and an unfavorable phase of the Madden Julian Oscillation prevented further strengthening , despite warm water temperatures of 31 ° C (88 ° F) . Early on July 27 , the American @- @ based Joint Typhoon Warning Center (JTWC) began monitoring the depression after the convection organized further , amplified by good outflow . Still embedded within the monsoon , the depression remained nearly stationary for two days over southern Bangladesh . The JTWC issued a tropical cyclone formation alert late on July 28 , due to the increasingly defined circulation .

On July 28 , the system began moving more to the south and southeast , although its movement was very slow , possibly affected by another monsoon depression over western India . The IMD described the track as " unique " , taking a " semi @- @ circular path over the northeast [Bay of Bengal] . " At 00 : 00 UTC on the next day , the IMD upgraded the depression to a deep depression , and three hours later the JTWC classified the system as Tropical Cyclone 02B , located 135 km (85 mi) southwest of Chittagong , Bangladesh . A tropical upper tropospheric trough to the northeast imparted dry air , but otherwise , conditions were generally favorable . A ridge over Myanmar turned the system to the north on July 29 . During that day , the circulation was somewhat elongated and exposed from the convection , while the thunderstorms in the southern periphery organized into spiral rainbands . At 18 : 00 UTC on July 29 , the IMD upgraded the system to Cyclonic Storm Komen , one of only four storms of such intensity in July since 1965 ; typically , low pressure areas that form in the month are in the extreme northern periphery of the Bay of Bengal , allowing little time to develop over waters , and usually impeded by wind shear .

Late on July 29 , the JTWC estimated that Komen attained peak 1 minute sustained winds of 75 km / h (45 mph) , based on estimates from satellite imagery . As the storm approached Bangladesh , the circulation remained very broad with most of the convection in the southern periphery , although radar imagery from the coast indicated there was a formative eye feature in the storm 's center . At 06 : 00 UTC on July 30 , the IMD estimated peak 3 minute winds of 75 km / h (45 mph) . Between

14 : 00 ? 15 : 00 UTC that day , Komen made landfall on Bangladesh just west of Chittagong , and the JTWC discontinued advisories once the storm was ashore . Komen quickly weakened as it turned to the northwest through Bangladesh , steered by a ridge over Tibet to the north . On July 31 , the system crossed into the Indian state of West Bengal as a weakened depression . The track shifted to the west @-@ southwest until Komen weakened into a remnant low on August 2 over Jharkhand .

= = Preparations = =

During the duration of Komen 's existence , the IMD issued warnings on the storm that were relayed to the governments of the countries affected . In southeastern India , government officials issued various warnings for fishermen and for the potential of disruptive rainfall . The widespread flooding forced 1 @. @ 2 million people to evacuate their homes , with 1 @, @ 537 shelters opened to house 214 @, @ 306 of the evacuees . West Bengal Chief Minister Mamata Banerjee canceled an overseas trip to London to coordinate relief activities related to the storm .

The Bangladeshi government evacuated 331 @, @ 120 people to 766 storm shelters , mostly in low @-@ lying areas of Cox 's Bazar District .

= = Impact = =

For several days , Komen dropped heavy rainfall across the northern Bay of Bengal and onto the adjacent coastlines of northwestern Myanmar , Bangladesh , and eastern India . The southeast quadrant produced the heavy rainfall , resulting in a peak rainfall of 840 mm (33 in) in Paletwa , Myanmar ; the country experienced record rainfall totals during July and August 2015 in some locations . In extreme northwestern Myanmar , Maungdaw recorded winds of 124 km / h (77 mph) , possibly during a passing squall . Nearby Sittwe recorded winds of 107 km / h (67 mph) . In southeastern Bangladesh , a station at Teknaf Upazila briefly recorded winds of 100 km / h (65 mph) on July 30 . Chittagong in southeastern Bangladesh recorded over 800 mm (31 in) of rainfall over three days , and over 1 @, @ 000 mm (39 in) in Cox 's Bazar over ten days . In India , rainfall peaked at 520 mm (20 in) in Harinkhola , West Bengal , after the storm moved inland and tracked westward .

Moving ashore Bangladesh , Komen was accompanied by a storm surge of 1 to 2 m (3 @. @ 3 to 6 @. @ 6 ft) that affected Chittagong , while flooding rains caused landslides . Rough seas killed two people off Cox 's Bazar when a boat capsized . Rain @-@ induced landslides killed five people in Cox 's Bazar , and two others died in the town due to flooding . The storm damaged 88 @, @ 900 houses across Bangladesh , including hundreds of fishermen huts . Trees knocked onto houses killed at least three people in separate instances . Flooding submerged at least 145 @, @ 000 ha (360 @, @ 000 acres) of crops for at least a week after Komen struck the country . Komen killed 45 people in Bangladesh ? 21 in Cox 's Bazar and 7 in Bandarban District ? some of whom due to illnesses spread by the storm . About 220 @, @ 000 residencies required some form of assistance after the storm , primarily to cover lack of food .

Komen 's rainfall in India compounded upon previous floods ; heavy rainfall from the storm occurred while rivers and dams were overflowing . Rainfall produced a landslide in Manipur state in extreme eastern India , killing 20 people . As the storm moved into West Bengal , it killed 10 @, @ 088 livestock while affecting millions of residents . Komen damaged 368 @, @ 238 houses and destroyed another 107 @, @ 808 . Across the state , the storm killed 83 people , some related to lightning and snakebites . Flooding covered a portion of National Highway 60 in neighboring Odisha state . The Indian government utilized 121 rescue boats to assist stranded residents .

= = = Myanmar = = =

Across northwestern Myanmar , Komen brought additional rainfall after weeks of monsoonal flooding . Torrential rainfall , reaching 150 mm (5 @. @ 9 in) per hour , caused flooding and

landslides . In Chin State northeast of Tonzang , Komen resulted in three landslides , including one along a mountain slope that moved 395 million tons of ground at a speed of up to 180 km / h (112 mph) ; the landslide was 5 @. @ 9 km (3 @. @ 6 mi) in length , one of the largest worldwide in a decade that was unrelated to an earthquake , and a much faster moving landslide than normal . The flooding after Komen 's passage were considered the worst disaster in Myanmar since Cyclone Nargis in 2008 , and according to the government , possibly the worst flooding in a century . About 1 @. @ 7 million people had to temporarily evacuate .

Water levels reached the top of buildings , which displaced residents and restricted travel to just by boat and helicopter . Floods from Komen caused further damage to houses and roads . The floods covered crop fields with mud and silt , particularly in valleys . By the end of July 2015 , over 1 @, @ 400 @, @ 000 acres (570 @, @ 000 ha) of farmlands were inundated , of which 667 @, @ 221 acres (270 @, @ 000 ha) of planted crops were damaged , mainly to the rice paddy . About 236 @, @ 000 chickens were killed , and there were lower losses to other livestock . In Sittwe , flooding and winds damaged six shelters and camps , where about 100 @, @ 000 people were residing during the storm . The shelters sustained damage to latrines and learning centers , necessitating the use of tarps to ride out the floods . The town of Kalay was isolated by floods and only reachable by air travel .

Flooding from Komen was worst in Rakhine State , where water distribution was contaminated , and entire towns were largely destroyed . Waters started to recede by August 4 , allowing residents to return home ; by September 2015 , most of the displaced residents nationwide had returned home . High winds in Lailenpi within Chin State damaged a school and a training center for community health workers . Four schools were damaged nationwide by Komen alone . The storm and the preceding floods damaged 490 @, @ 000 houses and destroyed another 21 @, @ 000 , causing 132 deaths , at least 55 of whom in Rakhine State . Komen was directly responsible for at least 39 deaths in the country .

= = Aftermath = =

On July 31 , President of Myanmar Thein Sein declared disaster areas for Chin and Rakhine states and for Sagaing and Magway regions . On August 4 , the government issued an appeal to the international community for assistance . In response , the government of Australia provided A \$ 3 million , and the United States Agency for International Development sent US \$ 600 @, @ 000 . Neighboring Bangladesh donated \$ 800 @, @ 000 worth of medicine , water kits , and other supplies . Assistance from other countries included \$ 775 @, @ 000 from the United Kingdom , \$ 142 @, @ 202 from nearby Thailand , \$ 100 @, @ 000 from the Singapore Red Cross , and \$ 300 @, @ 000 from China .

After Myanmar 's government failed to respond to the devastating effects of Cyclone Nargis in 2008 , officials responded more quickly to the floods and the effects from Komen . Relief supplies were airdropped to marooned villages , assisting the Rohingya people in Rakhine . The government allocated US \$ 1 @. @ 2 million toward supplying farmers with rice paddy seeds to regrow damaged crops . About half of the damaged crop was replanted by November 2015 , and in most areas , the grounds remained fertile for future growing . Local businesses donated K2.06 billion toward buying supplies , and businessman Aung Ko Win donated US \$ 3 @. @ 6 million . The Myanmar Red Cross , which was already responding to the ongoing flooding , provided additional supplies and assisted with evacuations . The International Federation of Red Cross and Red Crescent Societies assisted in these efforts by providing rice and blankets . Volunteers distributed sleeping mats , mosquito nets , medical supplies , and tarps . Various United Nations agencies assisted the residents in displaced camps that were affected further by Komen . Within a month of the storm , the World Food Programme had provided meals to over 450 @, @ 000 people . Food and oil prices rose in the weeks after the floods , and the price of rice reached record levels in the country in August and September 2015 . The cost gradually declined after the next rice harvest . To help unemployed farm workers , the Bill & Melinda Gates Foundation financed a program to pay storm victims to rebuild damaged embankments and restore clean water access . An assessment by the United Nations ,

the World Bank , and the Myanmar government found that women and children were the worst affected group during and after the disaster , due to the stresses of the damaged houses , and insufficient food and assistance in the subsequent months .