= Cyclone Nadia =

Cyclone Nadia was a powerful tropical cyclone that struck both Madagascar and Mozambique in March 1994 . It formed on March 16 and moved westward for the first ten days of its duration . Warm waters and low wind shear allowed for the storm to gradually strengthen . After developing a well @-@ defined eye , Nadia intensified to reach winds of 175 km / h (110 mph 10 minute sustained) early on March 22 , according to Météo @-@ France (MF) . In contrast , the Joint Typhoon Warning Center (JTWC) estimated winds of about 220 km / h (140 mph 1 minute sustained) . On March 23 , the cyclone struck northern Madagascar , causing flooding and localized damage where it moved ashore . There were 12 deaths in the country . Nadia emerged into the Mozambique Channel as a weakened storm , although it reintensified slightly before making landfall in northeastern Mozambique on March 24 . The storm turned southward through the country , emerging over water on March 26 . It turned to the northeast and meandered over waters before dissipating on April 1 .

Damage was heaviest in Mozambique , estimated at about $ 20 million (1994 USD) . Cyclone Nadia severely affected four provinces in the country , primarily Nampula Province where it moved ashore . There , 85 % of the houses were destroyed , and across its path , the cyclone left 1 @.@ 5 million people homeless . High winds caused widespread power outages , left areas without water , and significantly damaged crops , notably the cashew crop . The storm struck before the harvest , and lack of food resulted in 300 deaths in the months after the storm . Across Mozambique , Nadia directly caused 240 deaths and injured thousands . Effects spread as far inland as Malawi .

= = Meteorological history = =

A disturbance in the Indian Ocean intertropical convergence zone became evident southeast of the Chagos Archipelago on March 16 after two cyclones moved away from the region . Based on analysis from MF , the system slowly organized while moving westward , its movement influenced by a subtropical ridge to the south . On March 17 , the JTWC also began tracking the system . Due to cool , dry air , the system initially did not intensify , although its passage over warmer sea surface temperatures on March 19 allowed for strengthening . On March 19 , MF classified the disturbance as Tropical Storm Nadia after rainbands developed . A day later , the JTWC designated Nadia as Tropical Cyclone 23S .

After becoming a tropical storm , Nadia quickly intensified , developing a central dense overcast and later an eye . With minimal wind shear , the storm strengthened into a tropical cyclone early on March 21 . That day , the JTWC estimated winds of 120 km / h (75 mph 1 @-@ minute sustained) , or the equivalent of a minimal hurricane , and late on March 21 , MF upgraded Nadia into an intense tropical cyclone . While the cyclone was approaching northern Madagascar on March 22 , MF estimated Nadia attained maximum sustained winds of 175 km / h (110 mph 10 minute sustained) early on March 22 . At around the same time , the JTWC estimated winds of about 220 km / h (140 mph (1 @-@ minute sustained)) . While at peak intensity , Nadia had well @-@ defined outflow and an eye no larger than 30 km (19 mi) . At about 0100 UTC on March 23 , Nadia made landfall on northern Madagascar near Vohemar , having weakened slightly from its peak .

While located over Madagascar , Nadia weakened into a tropical storm due to the mountainous terrain . With warm temperatures , the storm re @-@ intensified slightly after entering the Mozambique Channel , and it passed about 100 km (62 mi) south of Mayotte at 1900 UTC on March 23 . At 1700 UTC the next day , Nadia made its second landfall on Mozambique , about halfway between Nacala and Moçambique . Shortly thereafter , the JTWC discontinued advisories . Despite moving further inland , Nadia retained a well @-@ organized circulation and convection . The storm turned to the south and re @-@ emerged into the Mozambique Channel late on March 26 near the mouth of the Zambezi River . Nadia gradually re @-@ intensified while curving to the southeast , and it re @-@ intensified into a tropical storm on March 28 , the same day the JTWC resumed issuing advisories . The storm strengthened to reach a secondary peak intensity of 85 km / h (50 mph (10 minute sustained)) , according to MF . After reaching a position about halfway

between Mozambique and Madagascar , Nadia turned to the southwest on April 1 and lost its remaining convection . The JTWC and MF discontinued advisories that day , and the circulation dissipated a day later .

= = Impact and aftermath = =

While crossing northern Madagascar , Nadia produced widespread flooding . In Vohemar where it moved ashore , the storm destroyed most public buildings , although local churches provided assistance in the aftermath . Across the region , the storm downed power lines and destroyed more than 540 tonnes (600 tons) of rice . The cyclone killed 12 people and caused about $ 200 @,@ 000 damage (1994 USD) .

Upon striking Mozambique , Nadia produced heavy rains and strong wind gusts , causing widespread tree damage and flooding . The city of Nampula recorded 126 mm (4 @.@ 96 in) of rainfall in a 24 ? hour period . Damage was heaviest in Nampula , Zambezia , Manica , and Sofala provinces . In Nampula Province , Nadia destroyed 85 % of the houses and 75 % of the crops , mostly cashew trees . The city of Nacala was heavily damaged , with about 170 @,@ 000 people losing their houses . Many residents evacuated Nacala , and temporary shelters were provided for those who stayed . At the port in Nacala , the local harbor was wrecked and two ships sank ; one of the damaged ships spilled oil into the Bay of Nacala . The city lost power and water , and its primary hospital was destroyed . About 130 km (81 mi) of power lines were cut between Nampula and Nacala , and widespread road and bridge damage disrupted transportation . In the area along Nadia 's path , over 120 schools were damaged destroyed , affecting over 46 @,@ 864 students . Across the country , roughly 1 @.@ 5 million people were left homeless . A World Food Programme building in the city was destroyed , wrecking 642 tonnes (708 tons) of stored food . Overall , Nadia killed 240 people in Mozambique and injured thousands . Damage was estimated at $ 20 million (1994 USD) .

Damage from Nadia extended as far inland as Malawi .

After the storm , about 300 @,@ 000 people in Nampula Province in Mozambique required food and other goods . Officials sent relief to the affected areas , including iron sheeting and medical teams . Due to damage to sanitation facilities , there were outbreaks of diarrhea and cholera in the weeks after the storm . By April 20 , most primary roads were cleared , bridge reconstruction had commenced , and power was being restored . Heavy crop damage depleted food supplies , The cyclone struck shortly before the annual harvest , causing heavy crop damage that depleted food supplies . Some residents who evacuated during the country 's civil war returned late to assist in harvesting the remaining crops . In the six months after the storm , about 300 people died due to starvation . Many secondary roads remained blocked in the weeks after the storm , forcing relief supplies to be transported by boat . The country appealed to the international community for assistance , and by Mary 6 , various international agencies and governments donated about $ 1 @.@ 4 million in cash (1994 USD) . The French government sent $ 48 @,@ 000 worth of medicine , blankets , and food , the United Kingdom sent $ 373 @,@ 134 for generators , water tanks , and roofing materials , and the Spanish government sent about $ 117 @,@ 000 worth of food and tents . The charity organization Concern Worldwide sent 54 @,@ 000 sets of clothing to the country . The government of Japan sent 6 @,@ 000 blankets and 1 @,@ 800 bars of soap , while the Italian government sent five generators , eight water tanks , and 1 @,@ 150 agricultural tools . Donated generators assisted in restoring water in Nacala . In June 1994 , the World Bank provided $ 20 million in assistance to the country due to the storm . Cyclone Nadia contributed to fishing exports decreasing by $ 11 million during the year .