

Cyclone Idai in Mozambiqueⁱ

Two consecutive tropical cyclones hit Mozambique in 2019 leaving death, damage and devastation in their wake. The main one, Cyclone Idaiⁱⁱ, made landfall near the city of Beira on the evening of March 14. The storm brought strong winds and heavy rains as it made its way across central Mozambique, Malawi and into eastern Zimbabwe. This caused extensive and prolonged flooding to occur throughout the region. In Mozambique, Sofala province was particularly affected. Over 70% of the settlements in Buzi district, just south of Beira and home to 160,000 people, were flooded (see Figure 1).¹ More than 770 square miles of land were still under water 10 days after the cyclone made landfall and the water only started to subside significantly in the third week of the response.²

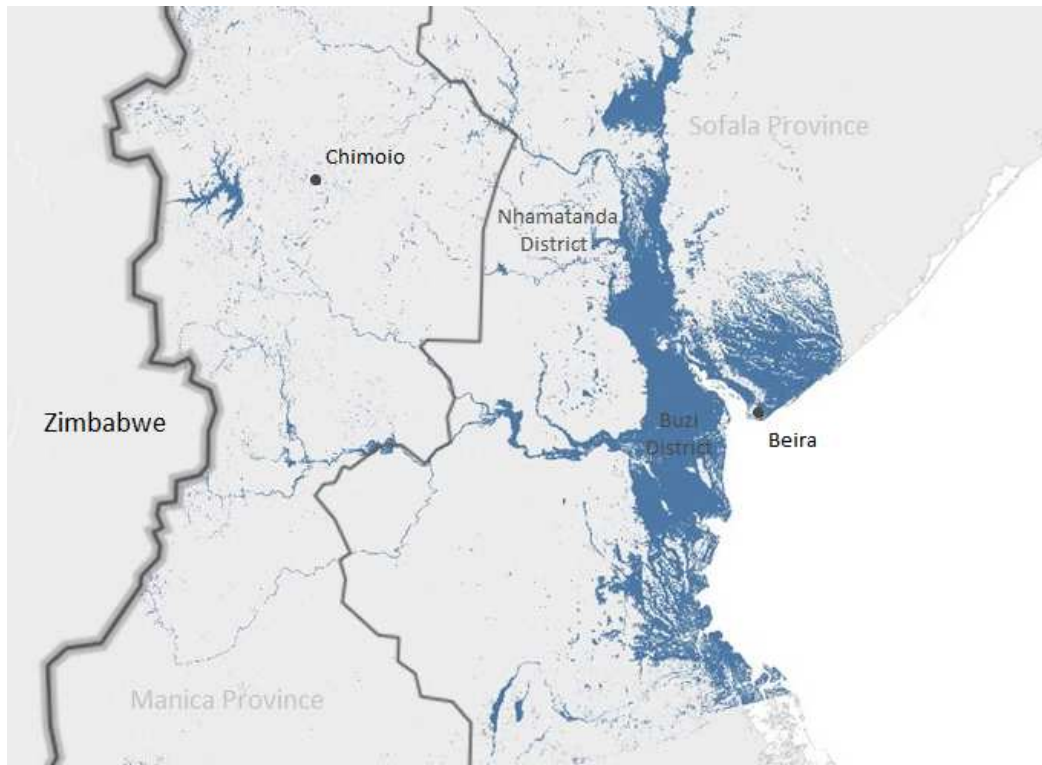


FIGURE 1. CUMULATIVE FLOODING SOFALA PROVINCE, CENTRAL MOZAMBIQUE.³

According to the International Federation of Red Cross the scale of the damage in Mozambique was “massive and horrifying”. Villages were completely washed away and in Beira, the largest city in central Mozambique and home to 560,000 people, 90% was reported to be damaged or destroyed.⁴ Logistics infrastructure as the airport and seaport were

ⁱ This case is part of a series of humanitarian operations vignettes by the INSEAD Humanitarian Research Group called *Behind the Scenes of Humanitarian Operations*. It was written in August 2019 by Boas Meijer, Esther Val and Luk Van Wassenhove. For more information go to <https://www.insead.edu/centres/humanitarian-research-group>.

ⁱⁱ On 25th April, tropical Cyclone Kenneth made landfall in the Cabo Delgado province, compounding the devastation of the earlier and stronger cyclone Idai.

damaged while main roads in the affected region were blocked and access bridges were washed away. On top of this, most of the city's telecom infrastructure was down making it difficult to disseminate warnings and information in the affected areas.

The cyclone and the extreme flooding exacerbated an already dire food insecurity situation in the region triggered by El Niño-related drought. Over 711,000 hectares of crops were washed away just before the harvest.⁵ To make things worse, most of the health centers and hospitals had been affected leading to concerns about the growing health needs, especially the risk of waterborne diseases like cholera and malaria. Overall, the cyclone caused at least 603 deaths and it is estimated that close to 1.85 million people needed urgent humanitarian assistance.

The Response

As reports made headlines worldwide, the government of Mozambique declared a state of national emergency (March 19) reaching out to the international community for support. The response was led by the Mozambique Emergency Management Agency (INGC), which worked closely with the United Nations Organization for the Coordination of Humanitarian Affairs (OCHA), and the UN clusters. In the immediate aftermath of the storm, there was an instant outpour of international support and solidarity. Nations, NGOs, the private sector and ordinary citizens donated to the relief efforts. Overall, at least fourteen countries - five from Africa - deployed over 100 assets to support the aid effort and supplies were flown in from around the world.⁶ Humanitarian action scaled up rapidly, with over 200 organizations joining the response and 1,000 aid workers deployed to the affected areas.

The UN Logistics Clusterⁱⁱⁱ was activated promptly (March 20) in order to coordinate the influx of relief supplies into the region. Coordination cells were established in Maputo, Beira and Chimoio. The designated entry points to central Mozambique were Maputo (not affected by the cyclone) and Beira while storage facilities were set up in Beira and Chimoio. When the flood levels decreased, storage facilities were also made available in Buzi and Nhamatanda districts. Supplies shipped to Maputo were generally forwarded to Beira, which quickly became the central point for the response operations. Shipments to Beira were by air only until March 23.⁷ The main road between Maputo and Beira opened the following day and the first shipments to the port of Beira also arrived around this time. Sea and road transport to Beira would become more frequent from this point on.

The sudden influx of supplies to Beira and Chimoio led to some issues. The extensive damage and the lack of appropriate handling equipment created congestion at Beira airport. This was somewhat mitigated from March 27 as handling equipment and staff arrived at the site. Further, several INGOs reported a lack of storage capacity in the large cities. The

ⁱⁱⁱ The Logistics Cluster provides coordination and information management to support operational decision-making and improve the predictability, timeliness and efficiency of the humanitarian emergency response. Where necessary, the Logistics Cluster also facilitates access to common logistics services.

situation in Beira had improved by the second week but in Chimoio, the problem persisted until at least April 22. Fuel shortages were an additional element hindering the response as especially Chimoio suffered an extensive period with very limited fuel supply.⁸

Distribution of relief supplies focused initially on Beira where forty-eight hours after the cyclone, some organizations were already distributing food. During the first weeks after the cyclone, ground transportation in the affected region was virtually impossible. Roads out of Beira were inaccessible for the first 10 days and even when the main roads dried up, secondary roads were often impassable. This made distribution of supplies outside of Beira very challenging and alternative forms of transport were required to reach the affected population. During this phase, remote villages had to be reached with helicopters and airdrops of relief items. By the third week, receding water levels and emergency repairs allowed humanitarian organizations to move their ground operations land inwards via the major roadways. However, access to and assessments of beneficiaries remained the main logistical gap. One month into the response, at least 59 villages in Manica and Sofala provinces were still inaccessible by land as interior roads within districts remained flooded. Air and water transport assets capable of dealing with flooding and damaged infrastructure were urgently required. In this context, appropriate transport (helicopters, off-road trucks and river boats) emerged as a main bottleneck.

Outcomes

Thousands of people living in remote villages did not receive any form of humanitarian aid during the first month of the response.⁹ A timely response suffered from some fundamental underlying limitations.

A key challenge was the lack of critical assessment of the situation. These shortcomings undermined the ability of humanitarians to appropriately locate the affected people and to establish their specific needs. More precise pre-assessments in areas such as Beira and remote locations would have improved the quality and timeliness of the response. Enhanced information sharing around technical requirements is also key to private sector engagement and to ensure that the help goes where it is most urgently needed.¹⁰

The other critical constraint was the lack of effective transport assets capable of operating through flooded land. Floodwaters can create a landscape that makes it impossible for boats and trucks to pass through. Humanitarian airdrops were the only way to reach desperate populations in isolated areas. However, ground assistance is critical in disaster response as airdrops are hugely expensive, do not provide the ability to conduct thorough assessments of people's needs, have difficulties delivering targeted assistance to specific groups of people, and cannot provide psychological support.¹¹ New developments and priority towards the availability of appropriate transport assets at an early stage in the response is therefore necessary to provide timely ground humanitarian assistance in highly inaccessible regions.

Research has shown that in disaster prone countries, every euro spent on disaster preparedness can save 7 euros in disaster response.¹² This is specifically the case for



Mozambique as it ranks third among African countries most exposed to multiple weather-related hazards and suffers from periodic cyclones, droughts, floods, and related epidemics.¹³ Yet, Mozambique's INGC is under-resourced and still has a long way to go in meeting basic standards of disaster readiness.¹⁴ Current public budgets are insufficient to provide for full-scale vaccination, affordable housing, strong public health systems, universal access to clean water and effective sanitation. Furthermore, large scale deforestation contributed strongly to the country's vulnerability.¹⁵ The human consequences of disasters are often determined by the vulnerability of the community and lack of local capacity, rather than by the physical characteristics of the event. Building resilience is likely the most effective way to limit the impact of natural disasters in Mozambique while steps should be taken in disaster preparedness to facilitate timely and efficient response operations.

The extent of the humanitarian crisis in Mozambique was unprecedented. Arguably, the response could have been delivered more rapidly while the flooding - which cut off some areas from any humanitarian aid for over a month - could have been anticipated. Climate change will make natural disasters such as Cyclone Idai more frequent and occurrences of extensive flooding will increase. Both pre-disaster assessments and new ways to navigate through flooded lands will be essential for future, timely responses.

¹ Mozambique Rapid Assessment (MRA) - Buzi District Profile, <https://reliefweb.int/report/mozambique/mozambique-rapid-assessment-mra-buzi-district-profile-enpt>.

² *Clearing access points to deliver humanitarian aid*. Humanity & Inclusion. <https://reliefweb.int/report/mozambique/clearing-access-points-deliver-humanitarian-aid>.

³ Flooding information retrieved from the Humanitarian data exchange (Source: UNOSAT/UNITAR).

⁴ *Mozambique Cyclone: "90 Per Cent" Of Beira and Surrounds Damaged or Destroyed*. IFRC. <https://media.ifrc.org/ifrc/press-release/mozambique-cyclone-90-per-cent-beira-surrounds-damaged-destroyed/>.

⁵ Mozambique: Cyclone Idai & Floods Flash Update No. 15, 01 April 2019, OCHA.

⁶ *Cyclone Idai: One month on, flood waters in Mozambique have begun to recede, the needs have not*. OCHA. <https://reliefweb.int/report/mozambique/cyclone-idai-one-month-flood-waters-mozambique-have-begun-recede-needs-have-not>.

⁷ Beira Meeting Minutes, March 23, 2019, Logistics Cluster.

⁸ Mozambique Situation Updates and Meetings Minutes, March & April 2019, Logistics Cluster.

⁹ *After Cyclone Idai, thousands still cut off, many more in need - aid agencies*. Reuters. <http://news.trust.org/item/20190415093532-ubvd1>.

¹⁰ *Reflections on the humanitarian response to Cyclone Idai*. Humanitarian Logistics Association. <https://www.humanitarianlogistics.org/reflections-on-the-humanitarian-response-to-cyclone-idai/>.

¹¹ *What You Need to Know about Humanitarian Airdrops*, ICRC, <http://intercrossblog.icrc.org/blog/what-you-need-to-know-about-humanitarian-airdrops>.

¹² *Supply Chain Expenditure & Preparedness Investment Opportunities*. Help Logistics AG. Kuehne Logistics University and Action Contre la Faim (2017). <https://reliefweb.int/report/world/supply-chain-expenditure-preparedness-investment-opportunities-cooperative-study-help>.

¹³ Mozambique - Global Faculty of Disaster Reduction and Recovery. <https://www.gfdrr.org/en/mozambique>.

¹⁴ *Rethinking Disaster Preparedness in Southern Africa After Cyclone Idai*. Direct Relief. <https://reliefweb.int/report/world/rethinking-disaster-preparedness-southern-africa-after-cyclone-idai>.

¹⁵ *How rampant deforestation made Mozambique more vulnerable to Cyclone Idai*. The New Humanitarian. <https://www.thenewhumanitarian.org/news-feature/2019/04/24/how-rampant-deforestation-made-mozambique-more-vulnerable-cyclone-idai>.