

Cyclone Mocha: Response and Recovery Progress Report

**6 May to 30 June 2023
Nay Pyi Taw**



**The National Disaster Management Committee
Republic of the Union of Myanmar**

This Progress Report covers the period 6 May to 30 June 2023. It uses currently available data from the Disaster Management Center, ministries, regional governments, and other sources. With the response to Cyclone Mocha and recovery activities still ongoing at the time of this report, the data used in this Report are not final and may be updated as more data becomes available.

Contents

Map showing the path of Cyclone Mocha	v
District Map of Rakhine State	vi
District Map of Chin State	vii
1. Introduction	8
2. Disaster Preparedness	11
2.1. Activation of disaster management structures	11
Box 1: Disaster Management systems in Myanmar	12
2.2. Awareness raising and preparedness drills	12
2.3. Planning and pre-positioning of supplies	14
2.4. Evacuation	15
3. Cyclone Mocha and early response	18
3.1. The Cyclone hits	18
3.2. Early response	19
4. Early recovery	24
4.1. Building back better than before	24
4.2. Milestones in infrastructure, assets and livelihoods restoration	24
4.3. Health care services	28
4.4. Education services	33
5. International cooperation and collaboration	36
5.1. Health sector collaboration	36
5.2. Collaboration with ASEAN	36
5.3. Myanmar Red Cross Society and International Federation of Red Cross and Red Crescent Societies	37
Box 2. The Myanmar Red Cross Society	38
5.4. Other international assistance	38
6. Funding and expenditure	39
7. Conclusion	40
Appendix. Donations from international sources	42
References and Notes	46

List of Tables

Table 1. Population of cyclone-affected areas (administrative data, 2022)	9
Table 2. Pre-positioned supplies in place by 14 May 2023 in preparation for Cyclone Mocha	14
Table 3. Population evacuated by 13 May before the onset of Cyclone Mocha	17
Table 4. Supplies for cyclone-affected areas delivered as of 12 June and 30 June 2023	22
Table 5. Progress in infrastructure and asset restoration after Cyclone Mocha	25
Table 6. Livelihood support up to 30 June 2023	26
Table 7. Environmental restoration up to 30 June 2023, Rakhine State	27
Table 8. Health supplies up to June 2023	29
Table 9. Health care services in Rakhine State from 14 May 2023 to 30 June 2023	30
Table 10. Health response to Cyclone Mocha: 16 May to 30 June 2023	30
Table 11. Support from the United Nations Children's Fund and World Health Organization	36
Table 12. Budget transfers, donations and expenditures as of 30 June	39
Table 13. Estimated number of beneficiaries up to 30 June 2023	41

List of Figures

Figure 1. State media broadcasts from five days before Cyclone Mocha's landfall repeatedly alerted the public.	8
Figure 2. Part of the damage in Sittwe	10
Figure 3. Number of townships by State/Region having held emergency drills and awareness raising meetings on Mocha, 8-14 May 2023	13
Figure 4. Firemen, Tatmadaw troops and other personnel help vulnerable and at-risk communities to evacuate.	16
Figure 5. Cyclone Mocha finally makes landfall.	18
Figure 6. The Head of State observes the devastation as the rain continues, Sittwe Township, 15 May 2023	19
Figure 7. Tatmadaw and police troops left their own devastated homes to save other families and help clean up.	20
Figure 8. Sittwe High School loses its roof, while many towns lose their trees	21
Figure 9. Civil and military transport of humanitarian supplies to cyclone-affected areas by land, sea and air from 14 May to 30 June 2023.	21
Figure 10. Telecommunications tower at Sittwe destroyed by Mocha	23
Figure 11. Provision of health care services in temporary shelters	28
Figure 12. Daily diarrhea cases reported in Rakhine, 17 May to 30 June 2023	31
Figure 13. Comparison: diarrhea cases at Sittwe General Hospital, 2022 and 2023	32
Figure 14. Demand is high for health services, which continued functioning throughout	32
Figure 15. Schools begin on time: Mrauk-U temporary school and Kyaukpyu primary school.	33
Figure 16. Weekly enrollment and attendance numbers for basic education, and percentage of attendance relative to 30 June enrollment levels, Rakhine State	34
Figure 17. Week by week progress by township: percentage of attendance relative to 30 June school enrollment, Rakhine State	35
Figure 18. Attending school restores normalcy in children's everyday lives (Buthitaung)	35



Map of Myanmar



Map No. 4168 Rev. 4 UNITED NATIONS
January 2016

Department of Field Support
Geospatial Information Section (formerly Cartographic Section)

Source: United Nations, 2016. Department of Field Support: Geospatial Information Section

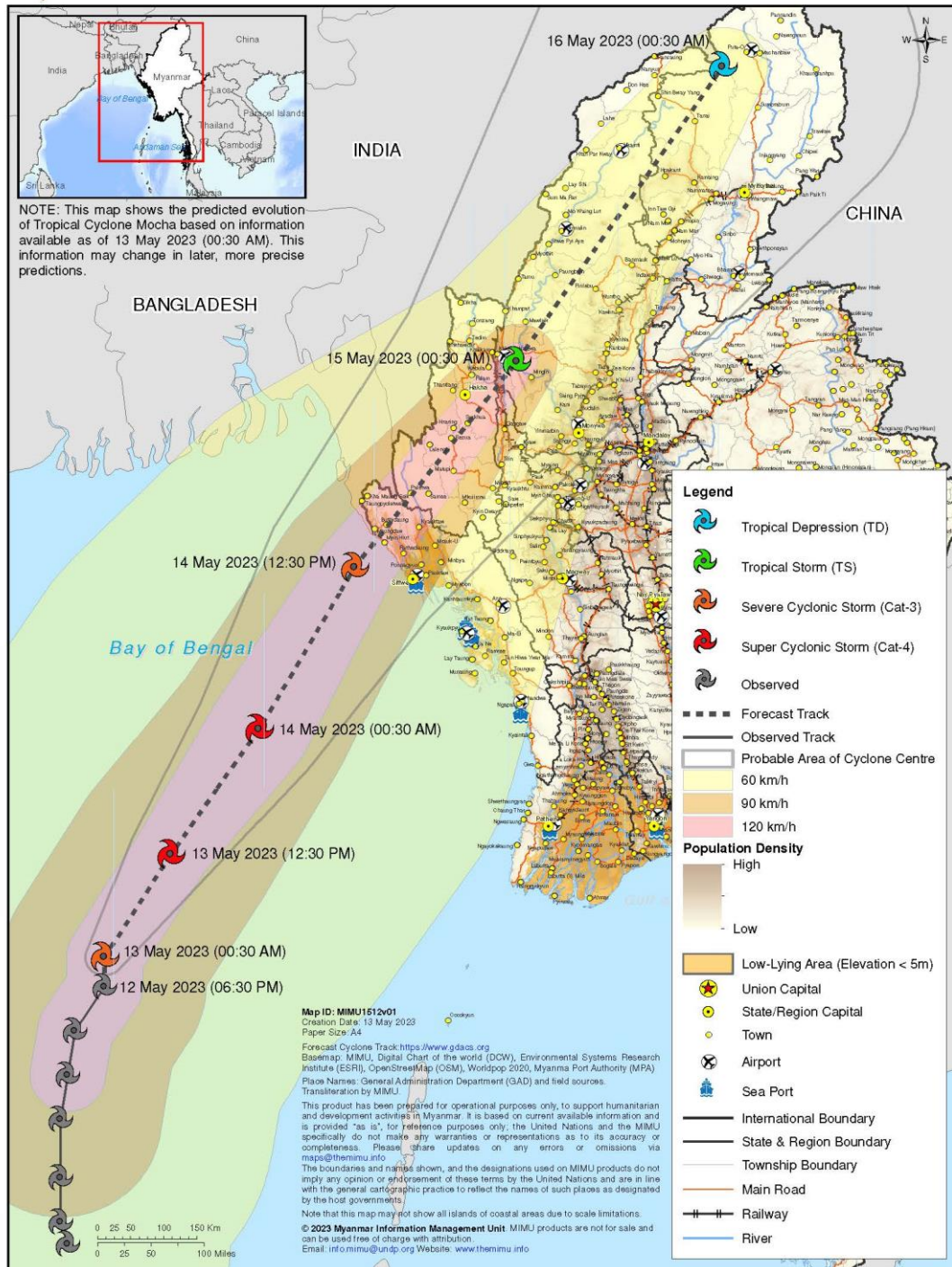
Map showing the path of Cyclone Mocha



Myanmar Information Management Unit

Tropical Cyclone Mocha Forecast with Low-lying Areas

(as of 13 May 2023, 00:30 AM)



Source: Myanmar Information Management Unit (MIMU), United Nations in Myanmar, 2023.

District Map of Rakhine State



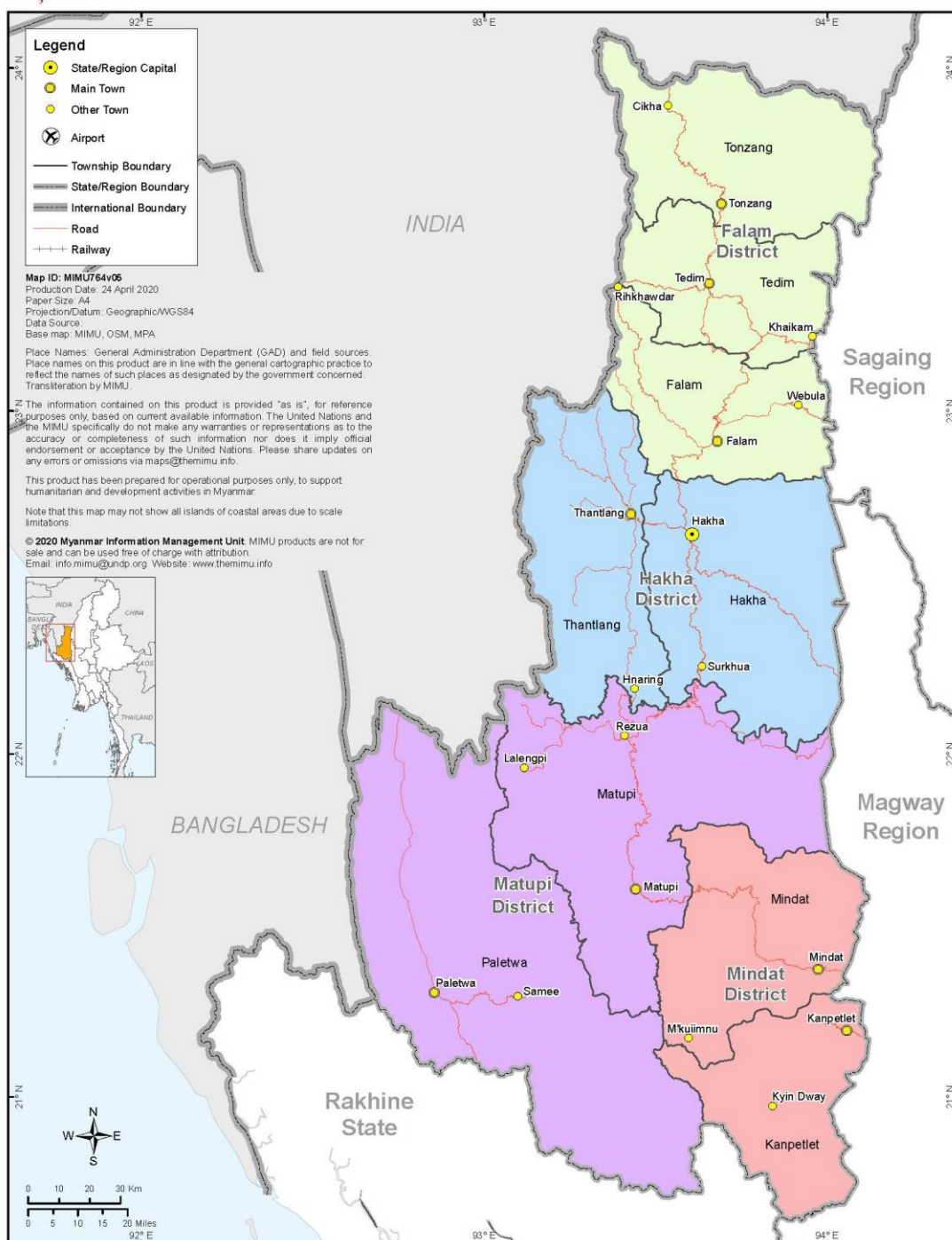
Source: Myanmar Information Management Unit (MIMU), United Nations in Myanmar, 2017.

District Map of Chin State



Myanmar Information Management Unit

District Map - Chin State

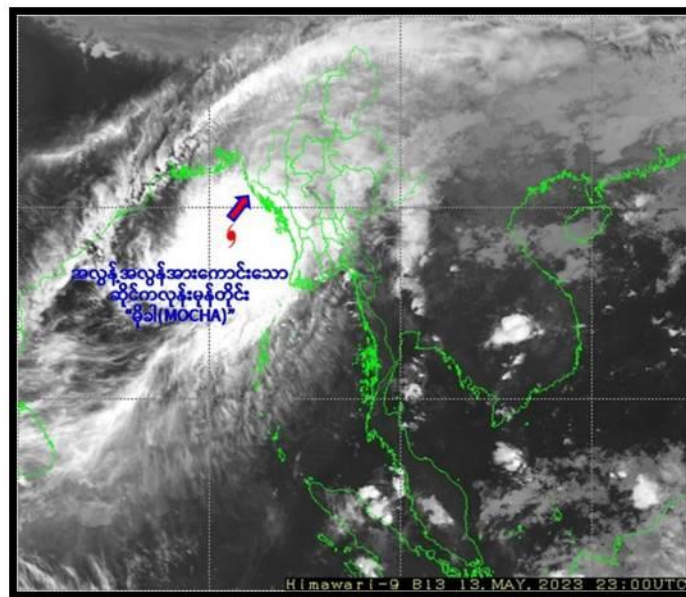


Source: Myanmar Information Management Unit (MIMU), United Nations in Myanmar, 2020.

1. Introduction

1. At 1430 hours on 14 May 2023, Cyclone Mocha, made landfall in Sittwe township, the state capital of Rakhine State, at a wind speed of 177–193 kmph (110–120 miles per hour) as it hit the coast.¹ Originating from a tropical depression in the Indian Ocean, the cyclone had developed into an extremely severe cyclonic storm² by the morning of 14 May at a distance with 100 southwest of Sittwe with wind speeds of 257 km per hour (160 miles per hour), which decreased slightly as it approached the coast in the afternoon. After moving northeast through Chin State close to the town of Matupi, and then Magwe and Sagaing Regions, the cyclone dissipated into a storm. By the afternoon of 15 May 2023, it moved into China at 14:00 as a depression.³

Figure 1. State media broadcasts from five days before Cyclone Mocha's landfall repeatedly alerted the public.



Credit: Himawari 9 weather satellite operated by the Japan Meteorological Agency. Access provided to the Myanmar Department of Meteorology and Hydrology, Ministry of Transport and Communication.

2. Cyclone Mocha cut a broad swath of destruction across Rakhine State, decreasing in severity as it swept across Chin State, Magwe and Sagaing regions. It killed 148 people, injured 132, and destroyed or damaged an estimated 271,335 homes.⁴ The entire population of Rakhine State in all 17 townships (2.876 million) and four townships in Chin State were affected. A total of 3.2 million population are living in these 21 townships in two States, 33.3% of whom were children and

adolescents under the age of 18 years (Table 1).⁵ Two other townships in Chin State (Falam and Mindat) suffered less impact, as did Magwe and Sagaing Regions.

Table 1. Population of cyclone-affected areas (administrative data, 2022)

State/ Township	Population			Percentage under 18 years of age
	Male	Female	Total	
Rakhine State, total	1,403,050	1,472,854	2,875,904	32.4%
1 Gwa	33,246	34,708	67,954	22.5%
2 Manaung	33,785	35,290	69,075	21.3%
3 Yanbye	51,095	56,529	107,624	23.1%
4 Maungdaw	58,790	61,113	119,903	46.7%
5 An	59,922	64,202	124,124	32.8%
6 Thandwe	61,312	66,871	128,183	23.6%
7 Myebon	69,971	72,526	142,497	38.1%
8 Rathetaung	72,681	76,622	149,303	31.7%
9 Ponnakyun	76,499	80,049	156,548	26.4%
10 Taunggok	77,634	81,682	159,316	27.8%
11 Kyaukpyu	80,298	86,799	167,097	22.7%
12 Pauktaw	99,634	102,684	202,318	36.7%
13 Buthitaung	103,378	105,350	208,728	48.5%
14 Mrauk-U	111,620	119,302	230,922	30.7%
15 Minbya	119,484	120,043	239,527	23.0%
16 Kyauktaw	131,648	137,468	269,116	32.7%
17 Sittwe	162,053	171,616	333,669	40.7%
Chin State, total	161,113	166,451	327,564	41.0%
1 Hakha	26,380	28,562	54,942	39.3%
2 Matupi	31,235	31,978	63,213	44.6%
3 Tedim	49,839	51,185	101,024	39.6%
4 Paletwa	53,659	54,726	108,385	40.9%

Source: Rakhine and Chin States General Administrative Offices, Ministry of Home Affairs.

Note: Administrative data is different from estimates made by the 2019 Intercensal Survey (conducted by the Department of Population, Ministry of Immigration and Population with support from the United Nations Population Fund, UNFPA) due to (i) different methodology, (ii) out-migration from both Rakhine and Chin States between 2019 and 2023 (iii) non-registration by households into the administrative system for various reasons. The administrative data down to village and ward levels are continually updated and used by all regional and local governments across Myanmar for day-to-day planning.

Figure 2. Part of the damage in Sittwe



Source: Disaster Management Center

2. Disaster Preparedness

2.1. Activation of disaster management structures

3. The Government of the Republic of the Union of Myanmar had prepared for Cyclone Mocha as best as circumstances allowed, despite the sanctions placed on the country by the west and terrorism wreaking havoc in some townships. During the 2015 extensive floods in Myanmar,⁶ cross-ministerial national disaster management mechanisms first established by President U Thein Sein's government⁷ had been effectively applied, but not used subsequently in the 2017 and 2018 floods that devastated the southern part of Myanmar. This time, from before Cyclone Mocha made landfall, the State Administration Council government activated these mechanisms under the 2013 Disaster Management Law, with operational procedures established down to decentralized levels. Box 1 describes the National Disaster Management Committee (NDMC) and the Disaster Management Center (DMC).

Box 1: Disaster Management systems in Myanmar

Myanmar's National Disaster Management Committee (NDMC) is chaired by the Vice Chairman of the State Administration Council. The Committee is supported by two Vice-Chairpersons: the Union Minister for Home Affairs and the Union Minister for Social Welfare, Relief and Resettlement, and by twelve working committees, each headed by a Union Minister. At subnational level, the NDMC is supported by disaster management teams at all levels, from State/Region, district and township, to village and ward level. The National Disaster Management Committee is tasked with coordinating and guiding all phases in the disaster management cycle. The Law explicitly instructs disaster management entities to obtain assistance from the Tatmadaw, the Myanmar Police Force, the Myanmar Fire Department, the Red Cross, voluntary organizations, civil society and other non-governmental organizations, among others.

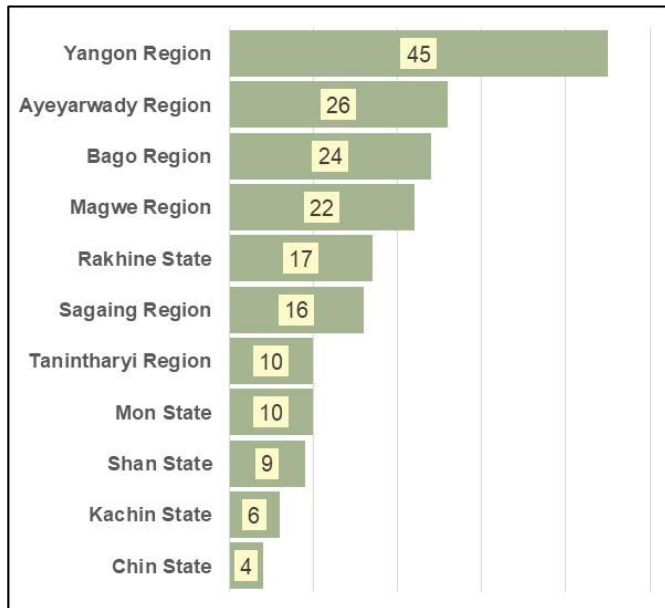
The Disaster Management Center (DMC), as defined by the NDMC, may be summed up as being the day-to-day operational entity that translates policy guidance from the NDMC into timely and effective disaster management work. The DMC coordinates and supports as necessary the working committees, ministries, regional and local disaster management teams, as well as non-governmental organizations and Tatmadaw personnel involved in the disaster. The DMC is also tasked with timely data collection, news dissemination and the functioning of an emergency communications system. The DMC has the responsibility to ensure delivery of humanitarian aid for the affected population through coordination as needed among government entities, non-governmental organizations, and international entities. The DMC's mandate includes ensuring equity, inclusion, and prevention of gender violence, and human and drug trafficking in disaster response, recovery and rehabilitation.

Sources: NDMC meeting records and the 2013 Disaster Management Law.

4. Preparedness measures were initiated by the authorities as early as 6 May 2023, when Vice Chairman of the State Administration Council Vice Senior General Soe Win convened an emergency meeting of the NDMC. The NDMC discussed the possible paths Cyclone Mocha could take, including through Yangon region and Pyapon township in Ayeyarwady Region, and between Sittwe and Kyaukpyu in Rakhine State. From 8 May 2023, the NDMC activated the Disaster Management Center (DMC) to ensure preparedness and enable a coordinated and effective response to Cyclone Mocha at all levels, down to communities and wards. Disaster preparedness measures taken between 6 May and the landfall of Cyclone Mocha are described in the following sections.

2.2. Awareness raising and preparedness drills

Figure 3. Number of townships by State/Region having held emergency drills and awareness raising meetings on Mocha, 8-14 May 2023



Source: Disaster Management Center, Union of Myanmar

5. From at least five days before the cyclone struck, national news channels and reports from the Myanmar Department of Meteorology and Hydrology (widely shared on social media) had warned the Myanmar public of the impending cyclone and likely paths. Awareness raising measures from 8 May onwards included (i) emergency drills and public education sessions spearheaded by the Myanmar Fire Services Department, and (ii) awareness raising meetings led by the Department of Disaster Management (DDM, under the Ministry of Social Welfare, Relief and Resettlement) and local

authorities across 189 townships in 11 States and Regions. These activities were reported by national newspapers — although not in any comprehensive manner — and are on record at the NDMC (Figure 3). The authorities also issued announcements on the locations of ports that could provide safe havens to fishing vessels during bad weather and the onset of Cyclone Mocha.

2.3. Planning and pre-positioning of supplies

6. The central and regional governments, assisted by the Myanmar Defense Services (“Tatmadaw”), undertook strenuous efforts in logistics and supplies. By the evening of 13 May, a total of 63,898 essential household kits had been pre-positioned in 82 warehouses across 8 States and Regions (Table 2). The pre-positioned items included 10,000 tons of rice (mostly stored in Yangon, Nyaungdon, Mandalay and Nay Pyi Taw in readiness for onward shipment), over 3000 tents, over 11,000 tarpaulins and rainproof sheets, over 189,000 zinc roofing sheets, 137,397 gallons of fuel oil, some 2,112 land and sea transportation vehicles (including fiber boats and ambulances), 1,306 telecommunications system items (satellite terminals, mobile base transceiver stations, and mobile towers), 144 heavy equipment and vehicles for road and bridge repair and construction, 7,970 tons of wood construction supplies, and 4 mobile water purification and storage sets (Table 2).⁸ Before the cyclone hit, 3,214 and 945 search and rescue teams had been respectively identified for Rakhine and Chin States.⁹

Table 2. Pre-positioned supplies in place by 14 May 2023 in preparation for Cyclone Mocha

Items	Yangon	Mandalay	Nay Pyi Taw	Rakhine	Chin	Sagaing	Magwe	Ayeyarwady	Total
Warehouses prepared (number)	5	16	2	9	4	16	17	13	82
17-item essential household kits	16,782	22,174	1,436	8,657	1,086	4,519	3,670	5,574	63,898
Rice (tons)	5,000	2,000	1,000					2,000	10,000
Tents (units)	1,335	422	20	393		526	103	212	3,011
Tarpaulins & equivalent (sheets)	5,468	1,443	180	817	150	5	239	2,834	11,136
Zinc roofing sheets (sheets)	67,983	105,091		7,741		48	990	7,273	189,126
Fuel/diesel/ gasoline (gallons)				62,163	5,660	69,574			137,397
Land & sea transportation vehicles (numbers)	33	27	2	707	301	1,052			2,122
Telecommunications equipment/systems (Satellite Terminal/ Mobile BTS/ Mobile Tower) (units)				750	283	273			1,306
Heavy equipment and vehicles for construction (units)				63	32	49			144
Wood for construction (tons)				989		6,981			7,970
Mobile water purification and storage sets (units)				2			1	1	4

Source: Disaster Management Center, Union of Myanmar.

7. In health, during the preparatory phase for Cyclone Mocha, the Ministry of Health had conducted daily virtual meetings with the State Health Departments in Rakhine, Magway, Chin, and Kachin States, involving all township medical officers and medical superintendents. Health preparedness planning focused on: (i) ensuring the safety of patients, health staff and their families, (ii) preventing or minimizing damage to health-related commodities, equipment, and health infrastructure, (iii) preventing interruption of health services, (iv) preventing communicable disease outbreak after the cyclone, especially diarrhea-related diseases, (v) ensuring availability of safe drinking water after the cyclone, and (vi) providing health services for evacuated persons and temporary shelters/camps.

8. As a result, necessary preparations were made to reduce the damage to drugs, vaccines, and equipment in hospitals and other healthcare facilities. Essential medical supplies that would be required in an emergency situation were stockpiled and sent to Sittwe in advance using military aircraft. The stockpiling of Food and Drug Administration (FDA)-approved clean bottled water was promoted. Health supplies stockpiled and distributed included 4,752,000 water purification tablets, 155 bleaching powder drums, 335 hygiene kits, 212 Interagency Health Emergency Kits, 30 community water filters, 203,500 oral rehydration salt sachets, and 3,000 sanitation pans and pipes.

9. In addition, the Department of Public Health allocated emergency funds to Rakhine State Public Health Department, while the Department of Medical Services allocated emergency funds to the medical services departments in each township for necessary purchases. The Ministry of Health collaborated with UN Agencies, international NGOs and local NGOs, most notably the Myanmar Red Cross Society (MRCS), in the planning of rapid response teams and emergency medical teams, and in stockpiling health supplies (Section 5).

2.4. Evacuation

10. Before Cyclone Mocha made landfall, evacuation operations were conducted in Rakhine State, Chin State and Ayeyarwady Region. Nearly half a million population deemed to be at risk were moved into premises that had been identified as suitable shelter locations. In Rakhine State, 449,331 were evacuated, including some 62,202 people living in camps for internally displaced persons (IPDs). The government provided the evacuees with spaces deemed to be safe, including selected schools, monasteries, mosques, other buildings of public use, and the houses of family and friends, in addition to cyclone shelters specifically built for the purpose (Table 3).

11. The main issue in evacuation were the significant numbers of people deemed to be at risk who refused to evacuate, either because they did not fully believe the authorities, or because they thought their dwellings would be safe. Townships where less than one-third of the population deemed at risk did not evacuate were Sittwe, Pauktaw, Taunggok, Thandwe, Mrauk U, Maungdaw, and Buthitaung townships. While the last two townships comprise mainly Bengali communities, other townships had considerable numbers of Rakhine people. The refusal to evacuate caused greater death and injury than would have been the case if the population at risk had agreed to evacuate to safer locations, as arranged by the authorities.

Figure 4. Firemen, Tatmadaw troops and other personnel help vulnerable and at-risk communities to evacuate.



Source: Disaster Management Center

12. In Chin State, another factor had to be considered. This was the exposure to landslide hazards, due to the combination of steep slopes, geological structures and nature of rocks. In 2015, a massive landslide had occurred in Hakha township triggered by unusually heavy rains.¹⁰ Since that time, hundreds of houses had been relocated and newly built in Hakha on relatively safer ground (less prone to landslide), but not so for other townships. Accordingly, the landslide risk was a factor in the decision to evacuate people in the three townships of Tedim, Falam and

Twanzan. Altogether, 1,390 people were evacuated from six townships in Chin State. In Ayeyarwady Region, 14,432 people were evacuated from four townships. Fortunately for that region, it escaped the worst of the cyclone.

Table 3. Population evacuated by 13 May before the onset of Cyclone Mocha

Region/State/ and township	Evacuated population			Evacuated to:
	Male	Female	Total	
Rakhine State, total	215,820	233,511	449,331	
Pauktaw ^[a]	108,463	111,553	220,016	Monasteries, Myebon, Sittwe, Kyainnipyin IDP camp, Anaukye IDP camp, Peinnechaung, Sin-Aing, Thayetchaung Hill
Sittwe ^[b]	28,209	31,593	59,802	Cyclone Shelters, mosques, government technical high school, 25 double-storey buildings, schools and Sittwe University buildings.
Rathetaung	25,360	27,396	52,756	Monasteries
Kyaukpyu	14,477	15,373	29,850	Schools, monasteries and Cyclone Shelters
Myebon	9,345	11,811	21,156	Schools, monasteries and Buddhist temple
Ponnakyun	4,865	5,865	10,730	Monasteries
Yanbye	4,686	5,183	9,869	Schools, monasteries and Cyclone Shelters
Kyauktaw	4,274	4,376	8,650	Schools and monasteries
Minbya	3,498	4,432	7,930	Monasteries and "Maungmyay Yadanar" Cyclone Shelter
Manaung	3,093	3,617	6,710	Schools, monasteries and Cyclone Shelters
Thandwe	2,409	3,174	5,583	Schools and monasteries
Maungdaw	1,752	2,327	4,079	Schools, monasteries and mosques
Gwa	1,614	2,253	3,867	-
Buthitaung	1,649	1,882	3,531	Schools, monasteries and mosques
Taunggok	1,078	1,390	2,468	Schools, monasteries and Cyclone Shelters
An	914	1,040	1,954	Schools, monasteries and Cyclone Shelters
Mrauk-U	134	246	380	Natchaung, Ywahaung double-storey buildings
Chin State, total	617	773	1,390	
Paletwa	301	382	683	Schools and relatives' houses
Hakha	160	188	348	Kharsin Events Hall and relatives' houses
Tedim	58	98	156	Khwado Events Hall and relatives' houses
Falam	66	74	140	Relatives' houses
Twanzan	32	31	63	Monastery and relatives' houses
Matupi	-	-	-	
Mindat	-	-	-	
Ayeyarwady Region, total	6,235	8,197	14,432	
Latputta	4,052	5,468	9,520	Schools, monasteries and Cyclone Shelters
Pathein	1,237	1,429	2,666	Schools, monasteries and Cyclone Shelters
Pyapon	848	1,213	2,061	Schools, monasteries and Cyclone Shelters
Kyonpyaw	98	87	185	Schools and monasteries
Grand total	222,672	242,481	465,153	

Source: Disaster Management Center, Union of Myanmar.

Notes:

[a] For Pauktaw, the evacuees included 18,311 people living in IDP camps (9,130 females, 9,181 males).

[b] For Sittwe, the evacuees included 43,891 people living in IDP camps (22,519 females, 21,372 males).

3. Cyclone Mocha and early response

3.1. The Cyclone hits

13. On 13 May, the whole nation held its collective breath as Cyclone Mocha approached Rakhine State. The public had been informed well in advance by national and state authorities through news channels, social media, and administrative orders. Regional and local leaders had been sensitized through drills and awareness raising meetings. Nonetheless, social media posts indicated fear of the impending disaster among the public, so much so that the government had to send out messages to allay fears and reassure the regions in the path of the incoming cyclone.

Figure 5. Cyclone Mocha finally makes landfall.



Source: Disaster Management Center

14. On 14 May 2023, communities in Rakhine, living in an already poor and devastated region, bore the brunt of Cyclone Mocha, hunkering down as the cyclone whipped through their towns and villages. From 15 May 2023, initial reports came in of death, injury, destruction of houses, schools, roads and other essential infrastructure. These initial numbers were quickly updated. The human toll from Cyclone Mocha as of 30 June 2023 is significant, at 148 deaths and 132 injured among the population. In both Rakhine and Chin states, the cyclone brought destruction and damage to over 271,335 houses, 1,627 schools, 3,540 religious buildings (temples, pagodas, monasteries and mosques), and 509 health facilities. The cyclone also took down 4 telecommunication towers¹¹ and 7,247 electricity poles, and killed well over a hundred thousand livestock and poultry (estimated at 177,923).¹²

At least 101.3 kilometers (332,490 feet) of dikes and levees that kept out the salt water were breached or destroyed during the cyclone, letting in salt water that contaminated freshwater bodies and farmland. Over 10,000 acres of agricultural

land, including those with planted crops, suffered damage and/or contamination with salt water.

15. Just one day after the cyclone, the Chairman of the State Administration Council and Head of State Senior General Min Aung Hlaing himself went out to the worst-hit township of Sittwe on 15 May 2023.¹³ He saw the destruction at first hand and promised speedy help. He also emphasized the steps to be prioritized for recovery and reconstruction (section 4.1). On 16 May 2023, the Government declared all 17 townships of Rakhine State and four townships of Chin State (Tedim, Paletwa, Matupi and Hakha) to be disaster-affected areas, according to Article 11 of the 2013 Disaster Management Law.

Figure 6. The Head of State observes the devastation as the rain continues, Sittwe Township, 15 May 2023.



Source: Global New Light of Myanmar

3.2. Early response

16. In the first week, 1,366 police and 1,144 firemen joined Tatmadaw troops in search and rescue efforts.¹⁴ Data collection teams backed by various experts from central ministries went to the field to collect data on losses and damages, and estimate the costs incurred. It has been estimated that the damage and losses to infrastructure in Rakhine alone could run into billions of kyats.¹⁵ For just the four townships of Rakhine (Sittwe, Rathetaung, Kyauktaw and Ponnakyun (where the ASEAN team conducted assessments), the estimates made on 6 June 2023 were US\$38 million. For the whole of Rakhine State, the Central Statistical Organization of Myanmar has estimated damages and losses to exceed MMK 522 billion (over US\$248.5 million at world currency exchange rates).¹⁶

17. Immediately after the cyclone, the Ministry of Health sent additional medical teams to 10 severely affected townships in Rakhine state. Emergency health services

were resumed as soon as 14 May 2023 in local hospitals with the support of prepositioned specialist medical teams, emergency medical teams and rapid response teams. At 10:00 pm on 14 May, a normal child delivery took place, and at 1:00 am on 15 May, an emergency operation for child delivery was successfully completed in the township hospital at Pauktaw, a severely affected area. An emergency operation for ectopic pregnancy was successfully completed in the evening of 17 May in Sittwe General hospital. Renal dialysis services were resumed on 25 May.

Figure 7. Tatmadaw and police troops left their own devastated homes to save other families and help clean up.



Source: Disaster Management Center

18. Of particular note is the role played by the Tatmadaw troops and police forces already stationed in each region. In Rakhine State, which bore the brunt of the cyclone's destructive fury, Tatmadaw and police troops left their own devastated homes and families to save other families and tend to community needs. The relatively rapid cleanup and restoration of freshwater wells, ponds, dikes, farmland, roads, bridges and other basic infrastructure would not have been possible without contributions of sheer manpower from these troops. To date, the Tatmadaw, police, and the Myanmar Fire Services Department continue to play important roles in recovery. As of the last week of June, some 545 Tatmadaw troops, 2,188 police and 435 firemen were still involved in the massive recovery efforts.

Figure 8. Sittwe High School loses its roof, while many towns lose their trees



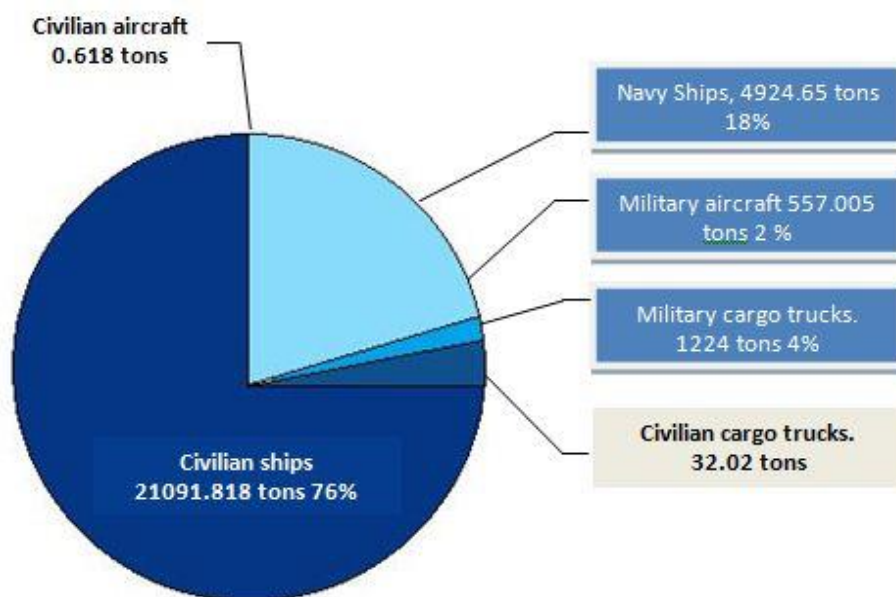
Source: Global New Light of Myanmar



Source: Disaster Management Center

19. In the second week, efforts to clear debris and assess damage were stepped up, involving the Tatmadaw, 2187 police, 1144 firemen and other civil servants. By that time, some 160 Life Straw water purification systems and 17 fiber water storage tanks had been delivered to various townships of Rakhine State, while five water purification sets were serving Sittwe, Rathetaung and Minbya townships. Efforts to rebuild and restore basic services infrastructure were well in progress. By 28 May 2023, 35% of health facilities and 47% of educational facilities in Rakhine State had been repaired. Repair of telecommunications towers and other facilities were on track: mobile phone coverage had reached 90% of its former service areas in Rakhine State.¹⁷

Figure 9. Civil and military transport of humanitarian supplies of cyclone-affected areas by land, sea and air from 14 May to 30 June 2023.



Source: Disaster Management Center, Union of Myanmar

20. Preparedness measures to ensure adequate transport facilities had paid off, as shown by the first month of the response. From 14 May to 30 June 2023, some 4,392 personnel were sent to the affected areas by ships, civil and military aircraft, and 27,830 tons of supplies were shipped out or flown out to the affected areas.¹⁸ The bulk of supplies was moved by Ministry of Transport and Communications ships (76%) and navy vessels (18%). Military aircraft played a key role by flying in the most urgent supplies and personnel during the most critical period of the response (Figure 9).

21. Table 4 shows the supplies delivered to the cyclone-affected areas by the fourth week (12th June) and sixth week (30 June 2023). This shows that at the one-month mark, a significant volume of supplies had already been delivered to Rakhine State, while only a small proportion of supplies were being delivered to disaster-affected areas in the Chin State due to the challenges mentioned in the following paragraph. The supplies include, among others, 17-item essential household kits, rice, dried noodles, lentils, canned food items, cooking oil, emergency shelter materials (tents, tarpaulin and waterproof sheets), construction materials such as zinc roofing sheets and wood, and diesel and gasoline fuel.¹⁹ Rice seeds and seedlings/saplings were also provided to aid farmers and accelerate recovery in the agriculture sector.

Table 4. Supplies for cyclone-affected areas delivered as of 12 June and 30 June 2023

Item	Rakhine State		Chin State	
	12 June	30 June (Cumulative)	12 June	30 June (Cumulative)
17-item essential household kits	10,938	10,938	1,461	1,461
Rice (tons)	3,216.797	4,225.367	40	56
Lentils (viss/box)[a]	3,064	3,064		
Dried Noodles (boxes)	37,079	38,702		
Canned food items (cans)	15,122	27,100		
Cooking Oil (viss) [b]	25,925	27,494		
Tents (units)	1,302	1,488		
Tarpaulin (rolls/sheets)	4,700	4,700		
Zinc roofing sheets	324,441	334,744		
Fuel/diesel/ gasoline (million liters) [c]	2.92	2.92		
Mobile Water Purification Sets	6	6		
Wood planks/posts for construction (tons)	1,756.50	2,583.91		
Rice seeds (baskets “Tin”) [d]		10,004		
Additional seedlings/saplings transported to Rakhine for environmental restoration (Table 7)		56,917		

Source: Disaster Management Center, Union of Myanmar

Notes:

[a] 3,064 viss is equivalent to 5,003.3 kilograms of lentils.

[b] 27,494 viss of cooking oil is equivalent to 49,385.4 liters of cooking oil.

[c] 2.92 million liters is equivalent to 649,649 (imperial) gallons.

[d] 1 basket (“tin”) is equivalent to 46 imperial pounds or 20.87 kilograms. 10,004 Tin is therefore equivalent to 208,736 kg of rice seeds. (Table 6)

Figure 10. Telecommunications tower at Sittwe destroyed by Mocha



Source: Global New Light of Myanmar

22. Since damage and destruction were limited in Sagaing and Magway Regions, the respective regional governments addressed cyclone-related needs from their own regional budgets, using their own personnel and local volunteers. However, delivery of humanitarian assistance to Chin State continues to be slowed down by significant challenges: (i) the mountainous geography, (ii) the scarcity of transport/aviation fuel (one of the consequences of the sanctions against Myanmar), and (iii) the threats and attacks by the terrorist group Chinland Defence Forces (CDF).²⁰ These constraints continue to limit the ability to serve the affected areas of Chin State as effectively as Rakhine State. Out of the 3,000 tons of rice already earmarked for Chin State, only 56 tons had been delivered by 30 June 2023.²¹

4. Early recovery

4.1. Building back better than before

23. Despite numerous challenges faced by the country, Myanmar has committed to ensuring that recovery and rehabilitation in the cyclone-affected regions lead to better infrastructure, improved livelihoods and enhanced well-being. This was emphasized by the Chairman of the State Administration Council during his visit to Sittwe on the day after the cyclone. On that day, the Chairman also highlighted the urgent need to restore roads and communications, repair and rehabilitate health and basic education facilities, clean up old peoples' homes, plant windbreak trees to protect against violent storms and winds, restore drinking wells and freshwater bodies, and accelerate recovery in the agriculture, fisheries and livestock sectors.

4.2. Milestones in infrastructure, assets and livelihoods restoration

24. By 14 June, one month after Cyclone Mocha's landfall, hard work by the response teams had restored the majority of infrastructure and other assets damaged or destroyed in the cyclone (Table 5).²² By 30 June 2023, six weeks after the disaster, ponds and freshwater bodies contaminated with salt water had been cleaned up, repaired and restored. Two-thirds and four-fifths respectively of damaged health facilities and damaged schools had been repaired and restored. A total of 13,774 meters (45,191 feet) of damaged dikes and levees had been rehabilitated or reconstructed to protect against saltwater intrusion. Over 60% of damaged roads and bridges had been restored. A total of 236 water purification systems or sets were in use. Electricity networks serving the main towns of all townships had been restored, and authorities are now working on restoring and repairing electricity networks to serve the villages in the townships of Sittwe, Ponnakyun, Rathetaung, Pauktaw, Mrauk-U, Kyauktaw, Minbya, and Myebon. Nearly all (99.68%) of the previous telecommunications networks had been restored across Rakhine State. Restoration and rehabilitation are continuing, including the construction of new infrastructure as needed.

Table 5. Progress in infrastructure and asset restoration after Cyclone Mocha

Indicators (as of 30 June 2023)	14 June 2023	17 June 2023	20 June 2023	30 June 2023
Freshwater bodies contaminated with salt water repaired and restored:				
Number of contaminated lakes/ponds having been cleaned up and restored:	205	210	224	233
Number of contaminated lakes/ponds undergoing restoration at the given date:	26	23	9	0
Number of contaminated ponds where restoration has not yet started:	2	0	0	0
Damaged health and education facilities repaired and restored:				
Percentage of damaged health facilities having been repaired and restored	60%	63%	64%	68%
Percentage of damaged basic education facilities having been repaired and restored	76%	80%	81%	83%
Percentage of damaged post-secondary/ higher education facilities having been repaired and restored	43%	56%	63%	76%
Basic infrastructure repaired, rehabilitated and/or restored:				
Damaged dikes rehabilitated and reconstructed to protect against saltwater intrusion: total length reconstructed				
				13,774 meters (45,191 feet)
Percentage of works completed:				100%
a) Mrauk-U Kalapone Kyun: 1,828.8 meters (6,000 feet)				100%
b) Myebon Ngamanye Kyun: 6,867.1 meters (22,530 feet)				100%
c) Maungdaw Chanbyin: 3,048 meters (10,000 feet)				100%
d) Ponnakyun Tago: 187.8 meters (616 feet)				100%
e) Rathetaung Kyikyun: 1,522.5 meters (4995 feet)				70%
f) Sittwe Wabo: 320 meters (1050 feet)				90%
Roads: Percentage of damaged roads restored:	63.28%	63.28%	63.28%	63.28%
Bridges: Percentage of damaged/destroyed bridges restored:	62.5%	62.5%	62.5%	62.5%
Buildings: Percentage of damaged public buildings restored:	31.12%	31.12%	31.12%	32.45%
Systems for clean water provided and in use:				
Number of Life Straw water purification systems in use	210	210	210	210
Number of mobile water purification sets in use	6	6	6	6
Number of mobile solar water purification systems in use	20	20	20	20
Electricity restored in all main towns:				
Urban: Electricity networks serving all main towns in all townships have been restored.				
Rural: Work is ongoing in rural areas in 8 townships to restore and repair networks: Sittwe (74% completed), Ponnakyun (37%), Rathetaung (40%), Pauktaw (43%), Mrauk-U (87%), Kyauktaw (37%), Minbya (77%), Myebon (65%) as of 27 June 2023. Restoration and repair are completed in the other 9 townships.				
Telecommunications towers repaired and networks restored:				
Percentage of mobile communication services restored across Rakhine State.	99%	99.18%	99.27%	99.68 %
Source: Disaster Management Center, Union of Myanmar				

25. In the recovery process, the government is supporting and expanding livelihood opportunities for local communities, including in agriculture and in construction. Over 200,000 kilograms of different varieties of rice seeds were supplied to Rakhine communities from other rice-growing regions of Myanmar, such as Ayeyarwady and Bago regions and Nay Pyi Taw Union Territory. Tractors and other agricultural machinery were also provided. Rebuilding and renovation of public infrastructure have been able to provide 4,157 jobs so far, while the restoration of electricity is providing 355 jobs to local people (Table 6).

Table 6. Livelihood support up to 30 June 2023

Indicators	By 30 June 2023		
Rice seeds from other regions in Myanmar sent to Rakhine State (in baskets/ <i>Tin</i>):	Total planned	Delivered by 30 June	Scheduled
Total planned and delivered by 30 June 2023	73,397	10,004	63,393
a) Sittwe	2,500	1,100	1,400
b) Rathetaung	54,013	0	54,013
c) Ponnakyun	8,742	3,707	5,035
d) Pauktaw	4,500	3,400	1,100
e) Mrauk-U	2,402	1,362	1,040
f) Kyauktaw	400	200	200
g) Maungdaw	240	100	140
h) Buthitaung	600	135	465
Agricultural equipment provided to affected communities			
a) Number of New Holland (50 HP) tractors and related equipment provided		33	
b) Number of mini-tractors and related equipment provided		10	
c) Number of hand ploughing machines and related equipment provided		74	
d) Number of drum seeders provided		10	
Employment opportunities in construction in Rakhine State:			
Total number of jobs created in restoring/reconstructing schools, health facilities, public buildings, and roads:		4,157 jobs	
Of which:			
Number employed in Sittwe district		2,025 males	
Number employed in Maungdaw district		831 males	
Number employed in Mrauk-U district		1,301 males	
Employment opportunities in electricity in Rakhine State:			
Total number of jobs created in electricity restoration:		355 jobs	
Note: 1 basket (" <i>Tin</i> ") is equivalent to 46 imperial pounds or 20.87 kilograms. 10,004 <i>Tin</i> is therefore equivalent to 208,736 kg of rice seeds.			
Source: Ministry of Agriculture and Livestock and the Disaster Management Center, Union of Myanmar			

26. Damage to forests from storms and wind brings economic, social, and environmental losses, such as disrupting human activities and changing forests from carbon sinks to carbon sources.²³ To help restore the environment after Cyclone Mocha had devastated the forests of Rakhine State, the authorities launched a project aimed at greening ten most affected townships in Rakhine State with 420,000 trees, including 240,000 trees for Sittwe Township alone. The Ministry of Natural

Resources and Environmental Conservation has already planted 98,860 young trees and is in the process of preparing and transporting more seedlings and saplings for Rakhine State (Table 7).

27. The tree species are selected for the different zones of Rakhine State, from the tidal coastal belt into the inland regions. The choice of species was carefully made after the Ministry of Natural Resources and Environmental Conservation sent out a team of forest experts to assess the impact of the cyclone on the different species of existing trees. Along the coastal strip, resilient mangrove trees that will form tidal forests, such as Byu-Chay-htauk (*Rhizophora mucronata*), tha-me-gyi (*Avicennia officinalis*), and lamu (*Rhizophora mangle*) are being planted. Trees that will serve as windbreaks while giving shade, such as coconut tress (*Cocos nucifera*), pinle-kabwe (*Casuarina equisetifolia*), yay-thin-win (*Millettia macrostachya*), mahogany (*Swietenia macrophylla*), and thin-baw-ti (*Polyalthia longifolia*) are being planted next to the tidal forests. In the towns, flowering trees such as Myanmar padauk (*Pterocarpus macrocarpus*), poinciana or sein-pan (*Delonix regia*), gangaw (*Mesua ferrea*), khayay (*Mimusops elengi*) and pyinma (*Lagerstroemia speciosa*) are being planted to beautify the settlements and provide shade (Table 7).

Table 7. Environmental restoration up to 30 June 2023, Rakhine State

#	Township	Planned number of trees (seedlings and saplings under development)	Trees planted	Trees remaining to be planted
1	Maungdaw	40,000	38,500	1,500
2	Buthitaung	30,000	3,025	26,975
3	Sittwe	240,000	3,100	236,900
4	Ponnakyun	10,000	400	9,600
5	Rathetaung	5,000	-	5,000
6	Kyauktaw	25,000	12,000	13,000
7	Minbya	20,000	8,585	11,415
8	Pauktaw	5,000	-	5,000
9	Mrak-U	25,000	13,350	11,650
10	Myebon	20,000	19,900	100
	Total	420,000	98,860	321,140

Source: Ministry of Natural Resources and Environmental Conservation, Union of Myanmar

28. For religious and social sectors, the majority of religious buildings affected by the cyclone (3,540 in number) were locally repaired by local authorities and communities. Major repair work for cultural heritage buildings, such as the Buddhist Museum in Sittwe, Saint Mark's Cathedral (Anglican), and U Ye Gyaw Thu Monastery in Sittwe is being undertaken with support from the Ministry of Religious Affairs and Culture.

4.3. Health care services

29. Because of the Ministry of Health's meticulous preparation, basic health care services were restored rapidly after the cyclone hit (section 3.2). The Sittwe Civil Hospital as well as other township hospitals have been providing medical services to in-patients and outpatients, as well as specialized medical services. Tables 8 to 10 show the provision of health supplies and services, while Table 5 shows the work of infrastructure teams in the restoration of health facility buildings. One month after Cyclone Mocha struck Rakhine State, Rakhine state had 127 rural health centers and 584 sub-centers functioning, as well as 61 hospitals with 2,354 total bed capacity. The average number of daily in-patients in public hospitals of Rakhine State was 1,252 in May and June 2023. The medical specialist teams, emergency medical teams and rapid response teams are continuously providing health services, including surgical and orthopedic operations. The nurses and midwifery training school at Sittwe resumed courses on 5 June. As of 30 June 2023, 375 students were attending these courses.

Figure 11. Provision of health care services in temporary shelters



Source: Disaster Management Center

Table 8. Health supplies up to June 2023

Stockpiled and distributed emergency health items	
Water Purification Tablets	2,496,706
Bleaching Powder, 40 Kg Drums	1,738
Inter-Agency Emergency Health Kits	244
Disaster Kits	1,847
Hygiene Kits	335
Source: Ministry of Health, 30 June 2023	
Note: Supplies were supported in part by the United Nations Children's Fund (UNICEF) and the World Health Organization (WHO) (section 5.1)	

30. Since 1st June 2023, the Department of Public Health resumed the following routine health care activities in Rakhine State:

- (i) Routine immunization services for pregnant women and to children under one year of age,
- (ii) Catch-up immunization services for children under five years of age,
- (iii) COVID-19 vaccination booster doses,
- (iv) Antenatal care and postnatal care,
- (v) Care and treatment of childhood respiratory diseases and diarrheal diseases,
- (vi) Nutritional assessments and treatment as necessary,
- (vii) Preventive measures against dengue hemorrhagic fever and malaria,
- (viii) Chlorination of drinking water,
- (ix) Environmental sanitation,
- (x) Continuing treatment of chronic diseases such as diabetes, hypertension, tuberculosis and HIV/AIDS,
- (xi) Health education, and
- (xii) School health.

Table 9. Health care services in Rakhine State from 14 May 2023 to 30 June 2023

Community based health care/out-patients:	By 10 June	By 30 June (cumulative)
Specialist Teams	6 Teams on 47 tours of duty treated 6,180 patients	20 Teams on 92 tours of duty treated 15,472 patients
Rapid Response Medical Teams	7 Teams treated 79,489 patients	30 Teams treated 98,680 patients
Hospital outpatient department	15,614 patients	28,687 patients
10 Defense Services Medical Teams	13,154 patients	22,972 patients
Hospital-based health care:		
Daily average in-patients in hospitals	1,145 in-patients daily	1,252 in-patients daily
Surgical procedures in hospital performed during and immediately after Cyclone Mocha		
14 May 2023: Emergency lower segment Caesarean section at Pauktaw		
15 May 2023: Emergency lower segment Caesarean section at Ponnakyun		
17 May 2023: Emergency Laparotomy (ectopic pregnancy surgery) at Sittwe		
Renal dialysis services were resumed at Sittwe General Hospital on 25 May 2023.		
Preventive Health Care	By 14 June	By 30 June (cumulative)
Chlorination of water supply sources	4,864 times	6,572 times
Health Education sessions	10,187 sessions	15,078 sessions
Pregnant women provided with antenatal care	8,864	13,711

Source: Ministry of Health, 30 June 2023

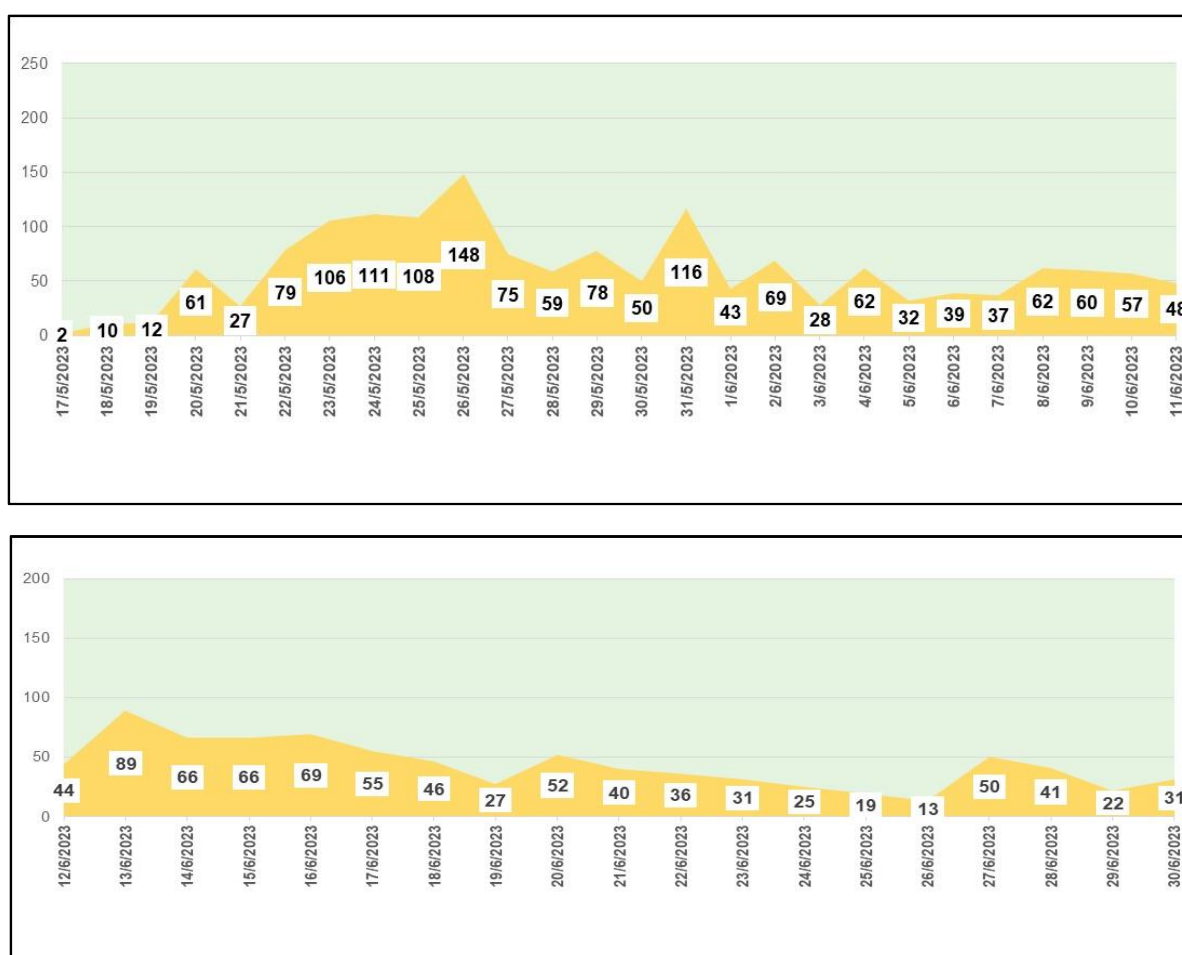
Table 10. Health response to Cyclone Mocha: 16 May to 30 June 2023

Number of patients served, by venue				Preventive and Protective Health	
Civil hospitals	Rural health centers	Mobile Specialist Teams		Chlorination of water sources (number of times)	Health education sessions
Out-patients	In-patients				
28,687	19,532	144,591	15,472	6,572	15,078

Source: Ministry of Health, 2023.

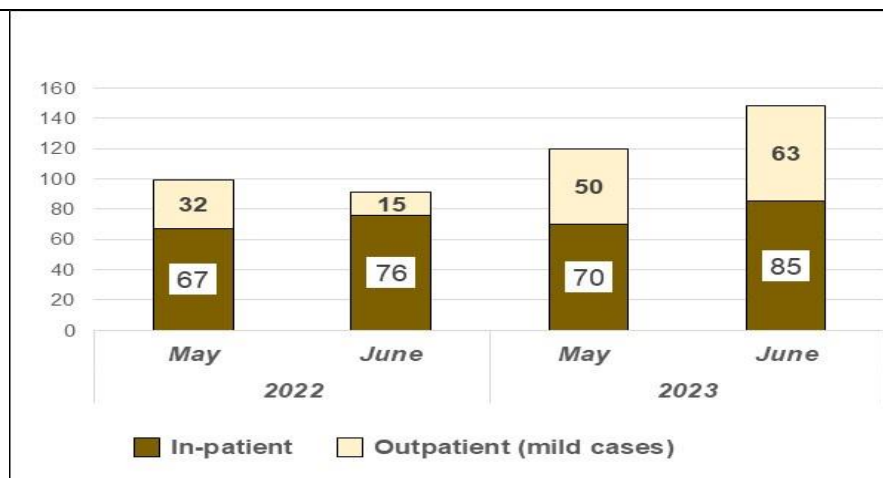
31. Following the cyclone, the Central Epidemiology Unit from the Ministry of Health, supported by other health teams, strengthened the disease surveillance system, especially for 15 communicable diseases including diarrhea, dysentery and acute respiratory infection. Daily surveillance was implemented to prevent and contain potential outbreaks. The increased level of surveillance is now identifying and reporting cases more accurately than in 2022. Even so, the results have revealed no cluster of cases nor any death from dehydration as a result of severe diarrhea, demonstrating that preventive activities continue to be successful at all levels of health care facilities (Figures 12 and 13). Given the increased level of surveillance and reporting in 2023 compared to that in 2022 (when under-reporting was more likely), the difference in the more serious diarrhea cases (in-patients) at Sittwe General Hospital between 2022 and 2023 for May and June is statistically insignificant. From 17 to 31 May, the daily average number of diarrhea cases was 69, while for June, the daily average reported was 45 cases.

Figure 12. Daily diarrhea cases reported in Rakhine, 17 May to 30 June 2023



Source: Ministry of Health, 2023.

Figure 13. Comparison: diarrhea cases at Sittwe General Hospital, 2022 and 2023



Source: Ministry of Health, 2023.

Figure 14. Demand is high for health services, which continued functioning throughout



Source: Ministry of Health

4.4. Education services

Figure 15. Schools begin on time: Mrauk-U temporary school and Kyaukpyu primary school.



Source: Disaster Management Center



Source: Global New Light of Myanmar

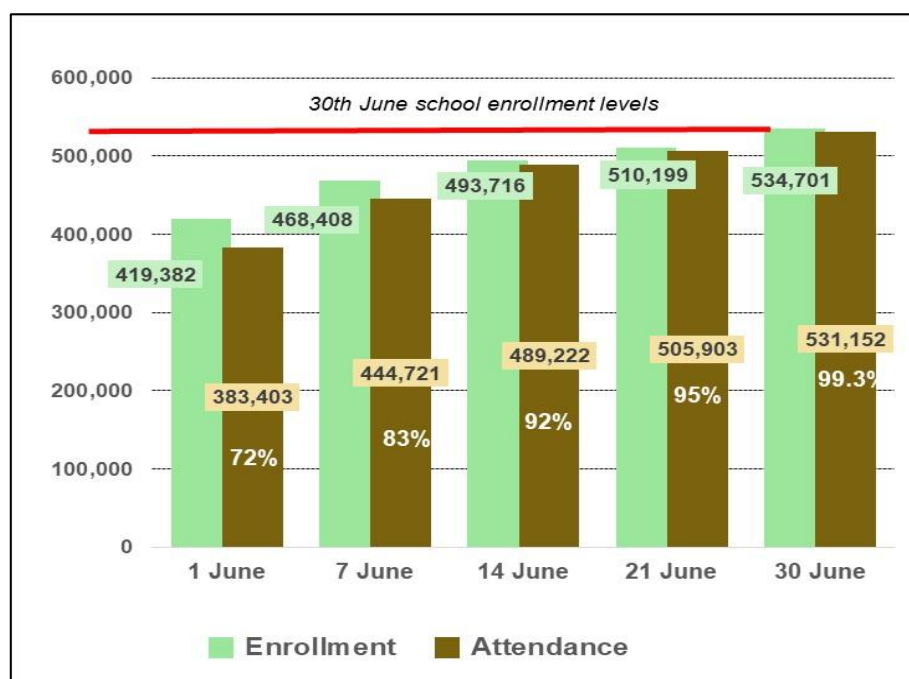
32. By 1 June 2023, not all school infrastructure had been fully repaired,²⁴ but nonetheless, the use of various learning spaces enabled schools in Rakhine State to be opened according to the national schedule, on 1 June. By 30 June, most of the education infrastructure repairs had been completed (Table 5). Because of the Cyclone, the education authorities had to extend the dates for school enrollment into July. This meant that school attendance as a percentage of enrollment became of little use, since the denominator was shifting throughout the month of June. The incompleteness of data on the total number of children of school-going age in each community posed challenges in calculating gross enrollment ratios, net enrollment rates, and other standard education indicators.²⁵ Hence, other ways had to be found to measure progress in the education sector.

33. Data was available on the absolute number of children enrolled in schools and those attending school. Using these numbers shows clear progress in increasing enrollment and increasing attendance (Figure 16). Assuming that the enrollment data on 30 June (534,701 children) is close to the final enrollment data for the 2023/24 school year, these data then show the following.

- (i) 419,382 children or 78.4% of children eligible for school enrollment (those enrolled on 30 June) were enrolled on 1 June. 21.6% of children eligible for school enrollment were not enrolled in that first week, due to the impact of the cyclone on their families or school.
- (ii) School attendance rates as a percentage of enrollment on the same date are high, varying from 91% (383,403 children on 1 June) to 99.3% (531,152 children on 30 June). However, this is not useful as an indicator, as it simply indicates that most of the children enrolled on a certain date

attended school on that date and it does not represent all children getting back to normalcy.

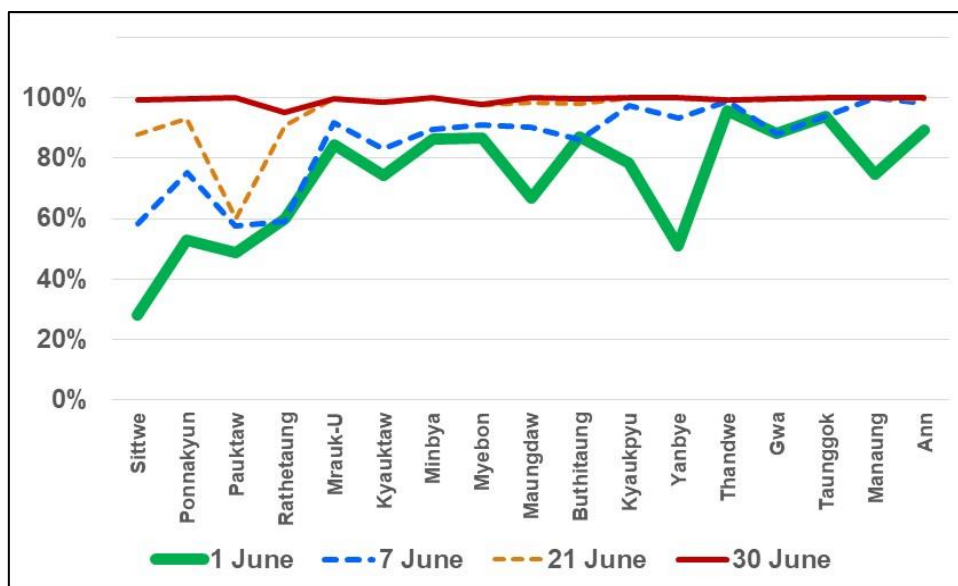
Figure 16. Weekly enrollment and attendance numbers for basic education, and percentage of attendance relative to 30 June enrollment levels, Rakhine State



Source: Recalculated from data provided by the Ministry of Education, 2023. The attendance percentages (brown columns) have been calculated using 30 June enrolment levels as a denominator (see text for explanation)

- (iii) School attendance rates as a percentage of all children eligible for school enrollment (those enrolled on 30 June) are lower in the first part of June due to the cyclone's impact (at 72% on 1 June) but rose to 99.3% by 30 June.
- (iv) Progress varies by township, due to the cyclone's impact on the township (Figure 17). Sittwe, Ponnakyun, Pauktaw, Rathetaung, Kyauktaw, Maungdaw, Yanbye and Manaung started off with low attendance rates relative to the numbers of children eventually enrolled on 30 June. However, the situation improved rapidly: on 30 June, all townships had between 98% and 100% of children who were enrolled in June attending school.
- (v) Overall, the increasing enrollment and attendance are indications of the successful efforts made by the authorities, teachers and communities in accelerating repairs to school infrastructure and mobilizing communities to get children back to school.

Figure 17. Week by week progress by township: percentage of attendance relative to 30 June school enrollment, Rakhine State



Source: Recalculated from data provided by the Ministry of Education, 2023.

Figure 18. Attending school restores normalcy in children's everyday lives (Buthitaung)



Source: Global New Light of Myanmar

5. International cooperation and collaboration

5.1. Health sector collaboration

34. The Ministry of Health collaborated with UN Agencies in planning rapid response teams and emergency medical teams, and stockpiling health supplies. The World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) provided significant support to health commodities for the cyclone-affected communities in May and June (Table 11).

Table 11. Support from the United Nations Children's Fund and World Health Organization

Commodity	United Nations Children's Fund (UNICEF)	World Health Organization (WHO)
Inter-Agency Emergency Health Kits	20	500
Water-purification tablets	16,000,000	500,000
Misoprostol tablets	-	44,500
Oxytocin injections (ampule)	-	1,500
Clean delivery kits	-	29,000
Bleaching powder (40 kg drums)	200	-
Hygiene Kits A	600	-
Water filter (Lifestraw) systems	40	-
Buckets with lids	500	-
Tarpaulin sheets (20' x 11.5')	1,200	-
Rope coils	1,200	-

Source: Ministry of Health. Bulletin on Cyclone Mocha Preparation, Response and Rehabilitation, Bulletin No. 2 (June 2023)

5.2. Collaboration with ASEAN

35. In line with its “One ASEAN, One Response” principle, the ASEAN Coordinating Center for Humanitarian Assistance (AHA Center) on Disaster Management sent out a four-member in-country liaison team to Nay Pyi Taw on 14 May 2023, to support the DMC, help conduct needs and damage assessments, and support the coordination of humanitarian assistance related to Cyclone Mocha. For the Mocha response, the AHA Center has activated the Web Emergency Operations Center (WebEOC) as an online information-sharing platform between the AHA Center Emergency Operations Center in Jakarta and in-country liaison team in Myanmar.

36. On 1 June 2023, 84.7 tons of humanitarian assistance supplies were air-lifted from the ASEAN-DELSA²⁶ warehouse in Subang, Malaysia to Yangon. The government has already sent and distributed these in Rakhine State. The remaining humanitarian supplies are being shipped by sea from Malaysia (Appendix). The relief items mobilized to Myanmar from the DELSA warehouse include non-food items such as shelter tool kits, jerry can, tarpaulin and family tents with a total worth of USD 1.65 million.²⁷

37. From 21 May to 24 May 2023, a 14 member ASEAN Emergency Response and Assessment Team (ASEAN-ERAT) went to Rakhine State to conduct damage and needs assessments in the townships of Sittwe, Rathetaung, Kyauktaw and Ponnakyun. The ASEAN assessment team comprised (i) 10 people representing the ASEAN Secretary-General's Office, AHA Center, and four ASEAN countries (Brunei Darussalam, Philippines, Indonesia, Thailand) and (ii) four people from the Department of Disaster Management, Union of Myanmar. The ASEAN-ERAT worked on their report from 26 to 28 May and has already submitted their findings and recommendations to the NDMC and the State Administration Council. As encouraged by ASEAN and agreed to by the State Administration Council, Myanmar has activated the role of the ASEAN Secretary-General as the ASEAN Humanitarian Assistance Coordinator (SG-AHAC) for Cyclone Mocha. This will contribute to the overall objective of effective and timely response to the cyclone's impact.

5.3. Myanmar Red Cross Society and International Federation of Red Cross and Red Crescent Societies

38. Prior to landfall, volunteers of the Myanmar Red Cross Society (MRCS, Box 2) in the projected path and impact zone assisted with evacuations, conducted awareness campaigns, and gathered preliminary data. After the cyclone made landfall, on 14 May, MRCS branches mobilized their volunteers to engage in rescue operations, clear roads and debris, provide first aid and psychosocial support, and collect initial observations and data. Since then and as of 14 June 2023, the MRCS deployed 962 volunteers to aid the most affected communities since the cyclone made landfall.

39. With the support of the International Federation of Red Cross and Red Crescent Societies (IFRC) MRCS has reached 147,142 people (28,694 households) with relief assistance, including shelter, livelihood support, clean water, and essential household items, as of 14 June 2023. Some 4,650 individuals from 930 households received shelter assistance through distribution of tarpaulins, family kits and blankets. In the hardest-hit region of Rakhine State, MRCS distributed 549,210 liters of safe drinking water, along with 19,000 liters of domestic water to affected communities. To uphold the dignity of the affected communities, hygiene parcels for

families, specialized hygiene kits for men, and dignity kits for women were also distributed in various affected regions, reaching around 6,985 individuals with these items. Additionally, MRCS distributed 112 sets of children's clothing to affected children. Since 17 May 2023, MRCS's mobile health clinics in Rakhine have provided assistance to 1,616 individuals as of 14 June 2023.²⁸

Box 2. The Myanmar Red Cross Society

The Myanmar Red Cross Society (MRCS) is an independent humanitarian organization that operates impartially and neutrally. Its role as an auxiliary to the state in the humanitarian field, operating in line with the Red Cross Red Crescent Fundamental Principles, is enshrined in the Myanmar Red Cross Society Law of 2015. The MRCS has a strong presence with over a thousand trained Emergency Response Team volunteers and 44,000 members nationwide, including 7,994 core Red Cross Volunteers active at the community level. The organization has 23 warehouses strategically located throughout the country to support preparedness and response efforts. It also has regional and state branches across the country, and a substantial presence in various operational hubs in Rakhine State, under the management of the MRCS Rakhine Operations Management Unit established over the past decade.

Source: IFRC, 23 June 2023. Operation Update. Myanmar – Cyclone Mocha.

5.4. Other international assistance

40. Myanmar's neighbors and other international entities generously provided in-kind or cash contributions to humanitarian assistance for Cyclone Mocha's affected communities. These are summarized in the Appendix up to 30 June 2023. Notably, contributions were received from the governments of Bangladesh, Cambodia, China, India, Indonesia, and Pakistan, as well as from Their Majesties the King and Queen of Thailand. Civil society organizations in other countries, such as the Association for International Friendly Contact in China, the Thai Red Cross Association, Thai-Myanmar Friendship Association, Thai and Japanese private sector companies, private individuals in Japan, as well as Myanmar communities and individuals living abroad channeled their donations through the Ministry of Foreign Affairs and Ministry of International Cooperation.

6. Funding and expenditure

41. The response from the Myanmar public has been generous and is still ongoing. The authorities made public appeals through news channels and other channels. Table 12 shows the donations from the public in Myanmar Kyats and transfers made by the central government to affected states. Cash and in-kind donations from foreign entities up to 30 June are listed in the Appendix.

Table 12. Budget transfers, donations and expenditures as of 30 June

	MMK	Other currency
Budget transfers and donations		
Initial central government transfer to the Rakhine State Government	7.0 billion	
Donation from the Myanmar public (In cash, bank transfers, and mobile payments)	31.614 billion	
Donations in cash and in kind from international sources, including from the governments of Bangladesh, Cambodia, China, India, Indonesia, and Pakistan, and AHA Centre ^[a]		See Appendix
Expenditures		
Expenditure as of 30 June (including for the purchase of 10,000 tons of rice, zinc sheets and nails, etc.)	23.726 billion	
Approved additional expenditure (including for zinc sheets, nails, rice, rice seeds and fuel)	40.079 billion	
AHA: ASEAN Coordinating Center for Humanitarian Assistance, MMK: Myanmar Kyat.		
[a] For complete list of donations from international sources, see the Appendix.		
Source: Disaster Management Center, Union of Myanmar		

7. Conclusion

42. Six weeks after Cyclone Mocha made landfall, Table 13 summarizes the estimated number of beneficiaries from the joint efforts of the government, development partners (notably, the governments of Bangladesh, Cambodia, China, India, Indonesia, and Pakistan), Myanmar civil society, and various other donors to the government and to the ASEAN AHA Center. In these estimations, the following assumptions were used:

- (i) Infrastructure and services restoration (basic services, ponds, lakes, dikes, roads, bridges, religious buildings, electricity, telecommunications, and environmental restoration) benefit the population in all Rakhine townships in one way or another.
- (ii) Included in these counts, but worth highlighting as beneficiaries of targeted interventions, are schoolchildren, agricultural families, patients of health care services, workers in new jobs generated by the recovery and reconstruction, and the recipients of the initial emergency food supplies.
- (iii) Rice is used as a proxy to calculate the *minimum* number of beneficiaries for the government's food interventions. Since the government provided not only rice, but also lentils, noodles, canned food and cooking oil, it is safe to say that the actual number of food beneficiaries would be much more.

43. The long journey ahead to full recovery will be difficult for the communities living in Rakhine and Chin State. Yet, out of the difficult situation in Rakhine, one positive development has been that the ravaged communities have all been able to receive the humanitarian assistance peacefully, free from violence that wracked this region a few years ago, as a result of Rakhine people coming together in solidarity.

44. Another positive development has been the strengthened collaboration with ASEAN's AHA Center, and with the UN agencies that had channeled their assistance respectively through the DMC and the Ministry of Health, knowing that urgency was paramount. Some of these supplies that had been pre-positioned in Rakhine State before 14 May were the first to reach the devastated communities. Tripartite mechanisms of collaboration are being developed between the Myanmar government, the ASEAN and the UN, which hopefully will offer a solution for facilitating and accelerating humanitarian aid to the affected communities in the Chin State.

Table 13. Estimated number of beneficiaries up to 30 June 2023

Infrastructure and services restoration:		Estimated numbers
In Rakhine State, the entire population benefited from the restoration of basic facilities and services, the reclamation of ponds and lakes from salt water, the repair of dikes, roads, bridges and religious buildings, the restoration of electricity and telecommunications networks, and the environmental restoration and planting of trees.		Rakhine State: 2.88 million population (575,000 households) , of which: 1.47 million females, 1.40 million males, including the following:
Certain groups among these are worth highlighting, as follows:		
About one million adults engaged in agriculture and fishery benefited from the cleanup and reclamation of wells, ponds and farmland, the repair of dikes, the provision of rice seeds and farming equipment.		999,000 (567,000 males, 432,000 females) aged 15 years and above
Half a million school children: All over Rakhine State, damaged schools were restored, and temporary arrangements made as needed to get children back to school on time.		531,152 children attending school (99.3% of all enrolled children up to 30 June)
Over 100,000 needing health care received timely interventions:		
Patients treated by Rapid Response Medical Teams		98,680 patients
Patients treated by Specialist Teams		15,472 patients
Defense Services Medical Teams		22,972 patients
At health facilities, rapid restoration of services benefited tens of thousands more:		
Hospital outpatient department		28,687 patients
Hospital based in-patients served		19,532 patients
Patients served at rural health centers		144,591 patients
Thousands of new jobs were created:		
Electricity sector		355 employed
Construction/cleaning/restoration		4,157 employed
Thousands of vulnerable people received emergency food supplies:		
Rice to Rakhine State, at least		163,841–194,288 people
Rice to Chin State, at least		2,171–2,575 people.
Vulnerable families received cash assistance in the first two weeks (MMK 200,000–300,000 each)		152 families in Rakhine

Notes:

The number of agricultural and fishery workers (15 years and above) among the general population of Rakhine State was estimated using age and employment data from the 2019 intercensal survey, Department of Population, Ministry of Immigration and Population.

The number of beneficiaries of rice distribution is calculated with two methods: (i) the World Food Programme standard of 2100 kilocalories/person/day²⁹ and the kilocalories content per kilogram of dry rice; and (ii) the average rice consumption of Myanmar citizens, equivalent to 189 kg dry rice per person per year.³⁰

Source: Recalculated from Disaster Management Center data, Union of Myanmar

Appendix. Donations from international sources

**Appendix. Cyclone Mocha donations (cash and in-kind)
received by the National Disaster Management Committee
through the Ministry of Foreign Affairs, 30 June 2023**

Cash contributions			
	Donor	Amount	Date received
1	U Pote Lee and family; Professional Services International (MM) and Krispy Kreme Doughnuts (MM) family	THB 1,000,000	19 May 2023
2	U Yan Khite Shwin and wife Daw Law Chong May	MMK 10,000,000	23 May 2023
3	Consul U Moe Htet Kyaw from Consulate General Office of Myanmar in Dubai	MMK 100,000	24 May 2023
4	Japan Theravada Buddha Sasana Bhavana Group, Aggamahāpaṇḍita Agga Maha Saddhammajotikadhaja Bhaddanta U Nyānuttara and his donors from Japan	JPY 1,000,000	29 May 2023
5	Ambassador and staff from Embassy of Myanmar in Tokyo	JPY 385,500	29 May 2023
6	Honorary Consul of Myanmar in Nagora, Japan Mr. Toshio Nishimura	JPY 200,000	29 May 2023
7	Honorary Consul of Myanmar in Kobe, Japan Mr. Noriatsu Otomori	JPY 200,000	29 May 2023
8	MJ Technology Company, Japan	JPY 300,000	29 May 2023
9	Daw Myint Myint Aye and family, Japan	JPY 30,000	29 May 2023
10	Government scholarship students in Japan	JPY 23,000	29 May 2023
11	Government of Cambodia	USD 300,000	31 May 2023
12	The Indian community in Myanmar	MMK 11,100,000 USD 1,000	1 Jun 2023
13	Ambassador, Myanmar staff and local staff from Embassy of Myanmar in Rome	MMK 1,866,000	8 Jun 2023
14	The Cambridge International School Rome	MMK 1,560,600	8 Jun 2023
15	Yunnan Provincial Buddhist Association	CNY 600,000 (MMK 253,478,000)	13 Jun 2023
16	Chinese Buddhist Association in Beijing	CNY 1,000,000 (USD 139,795)	30 Jun 2023
17	Government of China	CNY 1,000,000 (USD 139,983.48)	12 Jun 2023
18	The First Good Man Group Co., Ltd. Thailand.	THB 200,000	8 Jun 2023

In-kind contributions					
	Donor	Item	Quantity	Value (where available)	Date received
1	Myanmar nationals in Thailand	dried noodles	158,640 packets	THB 1,077,263	8 May 2023
2	Myanmar nationals in Thailand	Chain Saw	30 pcs	THB 160,800	16 May 2023
3	Yunnan Provisional Friendship Association	Medical supplies, Emergency Rescue Kits, Water, Tents, Dried noodles	(10) items	CNY 100,000 (approx.)	18 May 2023
4	Government of India	Medical supplies, clothes, food items, electrical appliances, hygiene kits, etc.	72 items, 45 tons (transported by 4 naval vessels)	N.A	18 May 2023
5	Myanmar nationals in Thailand	Zinc roofing sheets	6,300 sheets	MMK 104,190,800	19 May 2022
6	Government of China	MAMA instant noodles, biscuits, purified water	27,900 packets, 2,502 boxes, 22,002 bottles	CNY 100,000	19 May 2023
7	AHA Center (ASEAN)	Kitchen sets, family kits, hygiene kits, tents, jerry cans, construction materials, mosquito nets, tarpaulin sheets	34.6 tons by 3 flights	USD 107,064.54	21 May 2023
8	Myanmar nationals in Thailand	Zinc roofing sheet	6,000 pcs	THB 1,128,000	21 May 2023
9	AHA Center (ASEAN)	Kitchen sets, family kits, hygiene kits, tents, jerry cans, construction materials, mosquito nets, tarpaulin sheets	4 flights	USD 199,146.54	22 May 2023
10	Their Majesties the King and Queen of Thailand, Thailand Red Cross Society, Thai-Myanmar Friendship Association, Thai private companies	Food items and household items	20 tons (estimated)		23 May 2023
11	AHA Center (ASEAN)	Kitchen sets, family kits, hygiene kits, tents, jam jars, construction materials, mosquito nets, tarpaulin sheets	2 flights	USD 53,451.18	26 May 2023
12	Embassy of Pakistan in Yangon	Rice sacks (48 kg), instant noodle boxes, vegetable oil	(62) sacks, (300) boxes, (84) boxes		29 May 2023
13	AHA Center (ASEAN)	Family tents, construction materials, water purifiers, tarpaulin sheets		USD 72,708.42	1 Jun 2023

In-kind contributions					
	Donor	Item	Quantity	Value (where available)	Date received
14	Government of Bangladesh	Tents, dry rations and other food items (rice, lentils, sugar, salt, cooking oil, chili powder, turmeric powder, coriander powder) and various medical supplies	150 sets, 7,500 pcs		6 Jun 2023
15	U Wang Jia Hua	Rice sacks	1,800 sacks	MMK 408 Lakhs	
16	Thai Red Cross Society	Rice, canned fish, candles, torches	7.57 tons		
	Board of Trade Thailand	Instant noodles, canned fish	2.64 tons		
	PTT Public Co. Ltd	Instant noodles, steamed rice, canned fish	0.55 tons		
	Jelly Ohmmy Co., Ltd	Energy snacks, jelly, instant noodles, purified water bottles	4 tons		
17	Sea Value Public Company Limited	Canned fish	100 cans	THB 160,000	
18	Government of China	Dried noodles, dried noodles(boxes), tents, blankets, mosquito nets, water purification tablets, generators, water pumps, solar torches, effervescent disinfection tablets		CNY 9,000,000	
19	AHA Center (ASEAN)	Non-food items, hygiene kits	200 tons carried by a container ship	USD 963,698.24	20 Jun 2023
20	AHA Center (ASEAN)	Shelter toolkits, manual water purifiers, water buckets	1,046 pcs, 2 pcs, 780 pcs	USD 37,874.74	26 Jun 2023
21	Government of Indonesia	Tarpaulin sheets, Refugee tents, Family tents, Tool Kits, Instant foods, Hygiene Kits, Blankets, Mattresses, Generators	1,000 pcs, 15 sets, 150 sets, 30 pcs, 1,500 packets, 1,500 pcs, 5,000 pcs, 200 pcs, 100 pcs		26 Jun 2023
22	AHA Center (ASEAN)	Kitchen Sets Family kit ASEAN Family kit ASEAN B Hygiene kits Kitchen sets, Type A, 5 Persons, w/bucket	2,532 pcs 492 pcs, 2,098 pcs, 13,500 pcs, 642 pcs	USD 393,421.36	27 Jun 2023

References and Notes

Unless otherwise stated, all national data were obtained from the cross-ministerial Disaster Management Center (DMC), established under the National Disaster Management Committee (NDMC) (Section 2.1).

- ¹ DMC Situation Report 3 (14 May 2023).
- ² Classification by the India Meteorological Department (IMD). The Times of India. <https://weather.com/en-IN/india/news/news/2023-05-13-extremely-severe-cyclone-mocha-to-maintain-intensity-until-landfall>.
- ³ The name Mocha/Mokha was adopted by the World Meteorological Organization, and member countries of the United Nations Economic and Social Commission (ESCAP). It was derived from the Yemeni city of Mocha.
- ⁴ DMC Situation Report 39 (20 June 2023).
- ⁵ 2022 population data from the General Administration Office.
- ⁶ Government of the Union of Myanmar. 2015. Myanmar Post-Disaster Needs Assessment of Floods and Landslides. July–September 2015. Supported by the European Union, United Nations, the World Bank, and other development partners. <https://documents1.worldbank.org/curated/en/646661467990966084/pdf/103631-WP-P157276-PUBLIC-PFLNA-Report-2016.pdf>
- ⁷ The Disaster Management Law, 2013, and Disaster Management Rules, 2015. Republic of the Union of Myanmar.
- ⁸ Source: DMC data.
- ⁹ DMC Situation Report 3 (14 May 2023).
- ¹⁰ Government of the Union of Myanmar. 2015. Myanmar Post-Disaster Needs Assessment of Floods and Landslides. July–September 2015. Supported by the European Union, United Nations, the World Bank, and other development partners. <https://documents1.worldbank.org/curated/en/646661467990966084/pdf/103631-WP-P157276-PUBLIC-PFLNA-Report-2016.pdf>
- ¹¹ The 624 telecommunications towers damaged or felled by the cyclone included 271 belonging to Myanmar Post and Telecommunications with the rest belonging to Mytel, Ooredoo, and Atom.
- ¹² DMC Situation Report 49 (30 June 2023).
- ¹³ Myanmar newspaper reports, 16 May 2023 (Myanmar Alin, Kyemon and Myawady newspapers and the Global New Light of Myanmar).
- ¹⁴ DMC Situation Report 9 (21 May 2023)
- ¹⁵ DMC Situation Report 9 (21 May 2023)
- ¹⁶ Rates as of July 7, 2023, 01:25 PM UTC. <https://www.exchange-rates.org/converter/mmk-usd>
- ¹⁷ DMC Situation Report 16 (28 May 2023)
- ¹⁸ Source: DMC coordination meeting reports.
- ¹⁹ Source: DMC data.
- ²⁰ The CDF is under the command of the Chin National Front (CNF) whose representatives have joined the so-called National Unity Government (NUG), both of which are declared as terrorist organizations under Myanmar law, committing terrorist acts against civilians and state administrative machinery.
- ²¹ Source: DMC data.
- ²² DMC Situation Report 36 (17 June 2023), DMC Situation Report 49 (30 June 2023), and other DMC sources.

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- ²³ Kamimura et al. (2022). ‘Tree dynamic response and survival in a category-5 tropical cyclone: The case of super typhoon Trami.’ *Science Advances* 8, eabm7891 (2022) 11 March 2022. <https://www.science.org/doi/10.1126/sciadv.abm7891>
- ²⁴ DMC Situation Report 20 (1 June 2023).
- ²⁵ School data can only capture the children in school, and not the children out of school. Unlike many other ASEAN countries, the school system still lacks school and community census mechanisms.
- ²⁶ DELSA is the Disaster Emergency Logistics System for ASEAN.
- ²⁷ DMC data used in reporting back to AHA Center.
- ²⁸ IFRC, 23 June 2023. Operation Update. Myanmar – Cyclone Mocha. <https://reliefweb.int/report/myanmar/myanmar-cyclone-mocha-operation-update-2-emergency-appeal-no-mdrnm018>
- ²⁹ World Food Programme. The WFP food Basket. <https://www.wfp.org/wfp-food-basket#>
- ³⁰ Rice consumption per capita. <https://www.helgilibary.com/indicators/rice-consumption-per-capita/>