



Sphere India

National Coalition of Humanitarian Agencies in India



SECONDARY DATA ANALYSIS REPORT

Cyclone Michaung:

Tamil Nadu & Andhra Pradesh

DECEMBER 2023

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1. SITUATION OVERVIEW

The development of Cyclone Michaung, the fifth cyclone to manifest in the Indian Ocean this year and the fourth to originate in the Bay of Bengal, has precipitated a series of impactful events in the southern regions of India. The India Meteorological Department initially forecasted the development of Cyclone Michaung in the Southwest Bay of Bengal on Sunday, December 3, with a projected landfall along the coast of Andhra Pradesh by December 5.



FIGURE 1: AREAL VIEW OF WATERLOGGING IN CHENNAI

The cyclone's impact became evident on the night of December 3 and December 4 when heavy rains hit the coast of Tamil Nadu, leading to extensive flooding in various areas of Chennai. The cyclonic storm made landfall in the afternoon on December 5 in Bapatla between Nellore and Machilipatnam in Andhra Pradesh. It had earlier impacted Chennai and the adjacent areas of Tamil Nadu with maximum force on December 4. Heavy rainfall in northern districts of Tamil Nadu, including Chennai, caused road inundation and disruptions in daily life. Chennai reported 17 casualties due to rain-related incidents, prompting the closure of the airport on December 4 after a submerged runway. Operations resumed at 9 am on December 5. Regrettably, seventeen lives were lost in diverse rain-related incidents in and around Chennai, necessitating active rescue efforts by personnel utilizing fishing boats and farm tractors.



FIGURE 2: WATER LOGGING IN ANDHRA PRADESH

Furthermore, the south coast of Andhra Pradesh, encompassing areas near Prakasham, Bapatla, Machilipatnam, Patnam, and East-West Godavari, is poised to face heightened risks of flooding due to anticipated heavy downpours. This complex and dire situation underscores the pressing need for coordinated and expeditious response measures to mitigate the impact and ensure the safety and well-being of the affected populace.

According to data shared by the Andhra Pradesh CMO, nearly 40 lakh people from 194 villages and two towns were affected by Michaung's impact, including the inundation of 25 villages. The storm damaged 770-kilometre roads, uprooted 35 trees and killed three livestock, among others.

2. METHODOLOGY

The secondary data analysis in the aftermath of the cyclone Michaung in Tamil Nadu and Andhra Pradesh, was conducted in December 2023. The secondary review was a desk study based on information available in the Media, Sphere India Network and Government situation reports, government sources, inputs from local organisations working in the state, etc. For more detailed study, a preliminary Joint Rapid Needs Assessment (JRNA) will be conducted by Sphere India and its partners in the affected areas. Data collection for the same has been initiated in affected districts.

3. PRE-INCIDENT INFORMATION

3.1 STATE OVERVIEW: TAMIL NADU

3.1.1 LOCATION AND GEOGRAPHY

The State of Tamil Nadu is situated in the southernmost part of the Indian Peninsula between the northern latitudes of 8°05' and 13°35' and the eastern longitudes of 76°15' and 80°20'. It is bordered by the Union Territory of Puducherry and the States of Kerala, Karnataka, and Andhra Pradesh.



FIGURE 3: TAMIL NADU LOCATION MAP

Additionally, it shares a maritime border with the country of Sri Lanka. Tamil Nadu boasts the second-longest coastline in India, measuring 1,076 km, and the state covers a total area of 130,058 sq.km. The major administrative units of the State comprise 38 districts, 94 revenue divisions, 313 taluks, 1,209 Firkas, and 16,743 Revenue villages. There are 21 municipal corporations (including Greater Chennai Corporation), 138 municipalities, 385 panchayat unions (Blocks), 487 town Panchayats, and 12,525 village Panchayats.

The geographical setting of Tamil Nadu makes the state vulnerable to natural disasters such as cyclones, floods, and earthquake-induced tsunamis. About 8% of the state is affected by five to six cyclones every year, of which two to three are severe. Cyclonic activities on the east coast are more severe than on the west coast and occur mainly between April-May and October-November. Tamil Nadu is also subjected to annual flooding, including flash floods, cloudburst floods, monsoon floods of single and multiple events, cyclonic floods, and those due to dam bursts or failure. Every year, on average, thousands of people are affected, a few hundred lives are lost, thousands are rendered homeless, and several hectares of crops are damaged. Tamil Nadu is also prone to very severe damaging earthquakes..

TABLE 1: BASIC FEATURES OF STATE

Parameter	Value
State	Tamil Nadu
Capital	Chennai
Geographical area	130,058 sq.km
Co-ordinates	8°05' N - 13°35'N, 76°15'E - 80°20'E
Population	7,21,47,030
Administrative districts	38
Borders	Union Territory of Puducherry and the States of Kerala, Karnataka, and Andhra Pradesh.
Average Rainfall	937.5 mm (47% from the Northeast Monsoon)
Rivers	Cauvery, Palar, Thenpennai, Tamirabaruni, Bhavani Sagar, Ponnaiyar, Kosasthalaiyar and Araniyar rivers.

3.1.2 DEMOGRAPHY

As per the 2011 India census, Tamil Nadu had a population of 72,147,030, with 555 persons per sq. km, out of which the proportion of the rural population is 51.6%, while that of the urban population is 48.41%. The sex ratio of the state is 995, with 36,137,975 males and 36,009,055 females, and the recorded decadal growth rate of the State was 15.6%.

The state has 51,837,507 literates, making the literacy rate 80.33 percent. Tamil Nadu is the seventh most populous state in India. 48.4 percent of the state's population lives in urban areas, the third-highest percentage among large states in India.

There are a total of 2,78,78,282 workers, comprising 47,38,819 cultivators, 60,62,786 agricultural laborers, 12,61,059 working in household industries, and 1,16,95,119 other workers. India has a human development index calculated as 0.619, while the corresponding figure for Tamil Nadu is 0.736, placing it among the top states in the country. The life expectancy at birth for males is 65.2 years, and for females, it is 67.6 years. There is a total of 2,31,66,721 households. A total of 1,44,38,445 people, constituting 20.01 percent of the total population, belonged to Scheduled Castes (SC), and 7,94,697 people, constituting 1.10 percent of the population, belonged to Scheduled tribes.

3.1.3 CLIMATE

The climate of the state of Tamil Nadu is influenced by both the Southwest and Northeast Monsoons. Unlike most regions in the country that primarily rely on the Southwest Monsoon for their significant rainfall, Tamil Nadu receives approximately 36% of its precipitation from the Southwest Monsoon. The Northeast Monsoon, however, plays a crucial role in providing the major share of rainfall to the state.

Key agricultural seasons in Tamil Nadu, including Samba, Thaladi, Navarai, and others, heavily depend on the Northeast Monsoon. Consequently, the rainfall during the period from October to December holds significant importance, as it profoundly influences the fate of the state's agricultural economy. Despite the predominantly agrarian nature of Tamil Nadu's economy, agriculture in the state becomes a gamble, contingent on the performance of the monsoons. The success or failure of these monsoons becomes a determining factor for agricultural outcomes and, by extension, the economic well-being of the state..

3.1.4 HOUSEHOLDS AND SLUMS

In Tamil Nadu, approximately 48.40% of the total population resides in urban areas, experiencing a notable increase of 27.05% during the 2001-2011 period, with expectations of further urbanization. In urban regions, the sex ratio stands at 1000 females per 1000 males, reflecting gender balance. The average literacy rate for urban areas in Tamil Nadu is 87.04%.

Contrastingly, around 51.60% of the state's population resides in rural areas, with a recorded population growth rate of 6.61% during the 2001-2011 decade. In rural regions, the female sex ratio is 993 females per 1000 males, and the average literacy rate is 73.54%.

Regarding housing, recent census data reveals that 74.55% of houses in Tamil Nadu are owned, while 23.37% are rented. The majority, accounting for 74.38%, consists of couples living in single-family households.

Examining access to financial services, 52.52% of the Tamil Nadu population had access to Banking and Non-Banking Finance Corporation in 2011. A mere 4.18% had internet facilities, with expectations of improvement in 2021, particularly with the influence of Reliance Jio and Airtel, potentially leading to increased e-commerce penetration by platforms like Flipkart and Amazon.

In terms of transportation, 4.30% of families in Tamil Nadu own a car, and 32.32% own a two-wheeler. The increasing literacy rate in the state has resulted in growing interest in purchasing health and life insurance policies among the population.

3.1.5 EDUCATION

Tamil Nadu stands as one of India's most literate states with an impressive literacy rate of 80.33% in 2011, surpassing the national average. According to an Assocham survey, the state ranks at the forefront with a 100% Gross Enrollment Ratio (GER) in primary and upper primary education. While positioned 12th in literacy for men and 13th for women, there is a concern about the 21% dropout rate, though it is lower than the national average. Notably, dropout rates for girls (35.3%) aged 5-18 exceed those for boys (26.7%). In 2010, Tamil Nadu enrolled a total of 12,855,485 children in schools, indicating substantial progress in providing educational opportunities across primary, secondary, and higher secondary levels.

3.1.6 HEALTH

Tamil Nadu emerges as a frontrunner among Indian states in health indicators, particularly excelling in maternal and child care, making it a model for public health. An impressive 99.8% of deliveries in the state occur in institutions under the supervision of qualified personnel, showcasing a commitment to maternal health. Additionally, Tamil Nadu has made substantial strides in combating communicable diseases such as polio, leprosy, tuberculosis, and HIV/AIDS eradication. The Directorate of Medical and Rural Health Services, with a legacy spanning 98 years, has been a cornerstone in providing diverse medical care through a network of institutions. This includes 18 Headquarters Hospitals, 205 Taluk Hospitals, 67 Non-Taluk Hospitals, 7 Women & Children Hospitals (W&CH), 11 Dispensaries (DPY), 2 Tuberculosis Hospitals (TB HL), 7 Leprosy Hospitals (Lep), and 1 Rehabilitation Institute & Mental Health (RIMH). Notably, maternity and child welfare services have been fortified with the establishment of Comprehensive Emergency Obstetrics and Newborn Care (CEmONC) units in 93 hospitals, Newborn Stabilization Units (NBSUs) in 110 hospitals, and Sick Neo-Natal Care Units (SNCUs) in 42 hospitals under the Directorate of Medical and Rural Health Services.

3.1.7 WATER, SANITATION AND HYGIENE

The average rainfall in Tamil Nadu is 925 mm, compared to the country's average of 1170 mm. Rainfall variation ranges from 1200 mm near coastal areas to 550 mm in inland regions. While Tamil Nadu receives rainfall from both the northeast and southwest monsoons, the precipitation is limited to approximately two months. Consequently, the state faces a deficit in water resources for irrigation and drinking water, heavily relying on monsoons. Fluctuations in the monsoon patterns significantly impact the economic well-being and livelihoods of the population, particularly in rural areas.

Addressing the challenge of providing safe drinking water and sanitation in rural areas falls under the purview of the Department of Rural Development & Panchayat Raj and the Tamil Nadu Water Supply & Drainage Board (TWAD). The Chennai Metropolitan Water Supply and Sewerage Board (CMWSSB) play a pivotal role in delivering protected water supply and sewerage services to the Chennai Metropolitan Area. For urban local bodies, excluding the Chennai Metropolitan Area, the Tamil Nadu Water Supply and Drainage Board (TWAD Board) is responsible for water supply and sanitation. Municipal Corporations and Special Grade Municipalities are also empowered to undertake water supply schemes independently.

3.1.8 TAMIL NADU STATE DISASTER PROFILE

Tamil Nadu experiences two cyclonic seasons, occurring in April-May and October-November, with a coastline spanning 1,076 km. Cyclonic activity is more severe on the east coast compared to the west. Thirteen districts in the state are vulnerable to high or very high cyclonic impact and flooding, exacerbated by the densely populated coastline, climate change, and variations that increase the risk of occurrences. Cyclonic floods pose a significant threat to life and property.

The state is also susceptible to earthquakes that can trigger tsunamis, supported by ongoing tectonic activity and release fractures. Creeks along the coastline serve as conduits for tsunami waves to reach the mainland. Studies conducted after the 2004 Tsunami highlight increased vulnerability to HIV in affected populations due to high-risk behavior, powerlessness, constraints in blood screening, and exposure to infected blood.

Tamil Nadu experiences annual flooding, including flash floods, cloudburst floods, monsoon floods, cyclonic floods, and those resulting from dam bursts or failures. These events lead to loss of life, displacement of families, damage to homes, and loss of crops, exposing the affected population to various socio-economic vulnerabilities.

COVID-19, 2020

The first case of the COVID-19 pandemic in the Indian state of Tamil Nadu was reported on 7 March 2020. The total case count crossed 2.5 lakh mark in the state, with 2,51,738 cases on 1 August.

CYCLONE OCKHI – DEC, 2017

Cyclone Ockhi hit the Indian coast on 30 November. The cyclone killed 74 people in Kerala and 18 in Tamil Nadu. Many of them were the sole breadwinners in their families. More than a hundred men, who had gone to the sea for fishing unaware of the cyclone's arrival, are still missing. Total of 1,687 houses had been fully damaged while 2,814 houses suffered partial damage.

FLOODS – NOV-DEC, 2015

470 dead, 18 lakh displaced and more than 30 lakh families affected due to partial or complete damage to houses; 3,82,768 lakh hectares of crops had been lost; 432 relief camps have opened in 3 highly affected districts outside of Chennai city, with approximately 72,000 people evacuated to the camps.

3.2 STATE OVERVIEW: ANDHRA PRADESH

The State of Andhra Pradesh shares borders with Telangana in the Northwest, Chhattisgarh in the North, Tamil Nadu in the South, Odisha in the Northeast, Karnataka in the West, and the Bay of Bengal in the East. A small enclave, Yanam, a district of the Union Territory of Puducherry, lies in the Godavari delta to the Northeast of the state. Andhra Pradesh is one of the 29 states with a coastline of 974 km situated on the country's Southeast Coast.

According to the 2011 Census, it is the eighth-largest state with an area of 1,62,970 sq. km and the tenth most populous state with a population of 495.77 lakhs. The state features diverse physiographic elements, including the Eastern Ghats, Nallamala Forest, Coastal plains, and the deltas of the two major rivers, the Krishna and the Godavari. In the interest of better administration and development, the Government of Andhra Pradesh reorganized the erstwhile 13 districts into 26 districts, effective from April 4, 2022, as published in AP Gazette No. 472, dated April 3, 2022. These districts are divided into three regions: North Coastal, South Coastal, and Rayalaseema. The state comprises 13,385 Gram Panchayats in 686 Mandals, 16 Municipal Corporations, 77 Municipalities, and 27 Nagar Panchayats. Visakhapatnam, Vijayawada, and Guntur are the three largest cities in Andhra Pradesh.



FIGURE 4: ANDHRA PRADESH DISTRICT MAP

North Coastal (11 Districts)	Srikakulam, Parvathipuram Manyam, Vizianagaram, Visakhapatnam, Alluri Sitaramaraju, Anakapalli, Kakinada, East Godawari, Dr. B. R. Ambedkar Konaseema, Eluru and West Godawari,
South Coastal (07 Districts)	NTR, Krishna, Palnadu, Guntur, Bapatla, Prakasam, SPSR Nellore
Rayalaseema (08 Districts)	Kurnool, Nandyal, Anantapuram, Sri Satya Sai, YSR, Annamaya, Tirupathi and Chittoor

TABLE 2: BASIC FEATURES OF ANDHRA PRADESH

Parameter	Value
State	Andhra Pradesh
Capital	Amaravati
Geographical area	275,045 (Sq. KMs.)
Population	84,580,777
Administrative districts	26
Borders	Telangana in the North –West, Chhattisgarh in the North, Tamil Nadu in the South, Odisha in the North-east, Karnataka in the West, and the water body of Bay of Bengal in the East.
Average Rainfall	966mm
Rivers	Krishna & Godavari

3.2.1 DEMOGRAPHY

The population of Andhra Pradesh has steadily grown over the years, reaching 84,580,777, spread across 275,045 sq. km, according to the Census of India (2011). The state has a population density of 308, compared to 277 in 2001, below the national average. The recorded growth rate is 11.10%, a decrease from 14.59% in the 2001 census, marking a 3.49% decline during the 2001-2011 period. The literacy rate in 2011 was 67.02%, showing a significant increase from 60.47% in the 2001 census, reflecting a growth of 7.19%. The official language of the state is Telugu.

Andhra Pradesh features diverse physiographic elements, including the Eastern Ghats, Nallamala Forest, coastal plains, and the deltas of the Krishna and the Godavari rivers. The state is one of the largest producers of rice. Telugu, one of the classical languages of India, serves as the official language of Andhra Pradesh, known for several pilgrimage destinations like Tirumala Tirupati Devasthanams (TTD), Mantralayam, and Srisailem, along with historical Buddhist centers for tourists.

Out of the total population, 33.36% reside in urban regions, with the urban population experiencing a growth of 35.61% during the 2001-2011 period. The sex ratio in urban regions is 987 females per 1000 males, and the average literacy rate in urban areas is 80.09%.

In rural areas, where 66.64% of the total population resides, the growth rate recorded during the 2001-2011 decade was 1.73%. The female sex ratio in rural regions is 996 females per 1000 males, with an average literacy rate of 60.45%.

3.2.2 CLIMATE

The climate of Andhra Pradesh exhibits significant variation depending on the geographical region, with monsoons playing a crucial role in shaping the state's climate. The state receives an average rainfall of 966 mm. The period from June to September marks the season for tropical rains, with approximately 556 mm (58%) of rainfall received from the South West Monsoon (1st June to 30th September). Additionally, 296 mm (31%) is received from the North East Monsoon (1st October to 31st December), and 114 mm (11%) from the winter-summer season (January to May).

3.2.3 HOUSEHOLDS AND SLUMS

Recently as per Andhra Pradesh census data, 78.47% houses are owned while 19.72% were rented. In all, 75.82% couples in Andhra Pradesh lived in single family. In 2011, 53.10% of Andhra Pradesh population had access to Banking and Non-Banking Finance Corporation. Only 2.61% of Andhra Pradesh population had internet facility which is likely to improve in 2021 due to Reliance Jio and Airtel. This is likely to see increased ecommerce penetration of Flipkart/Amazon in Andhra Pradesh. 2.68% of family in Andhra Pradesh owned car while 18.62% owned two wheller. Due to increase in literacy rate of Andhra Pradesh, we are also seeing increase in interest in purchasing Health and Life Insurance policies by Andhra Pradesh population. In few months we will also get details of election data for Andhra Pradesh.

3.2.4 EDUCATION

As per the 2011 census of India, Andhra Pradesh has an overall literacy rate of 67.35% (males 74.77%, females 59.96%), significantly lower than the overall national average of 74.04%. Among the Indian states and union territories, it stands at 32nd position. There were a total of 29,859,982 literates: 16,549,514 males and 13,310,468 females. In terms of district-wise literates, united East Godavari has the most with 3,348,077 and united Vizianagaram has the least with 1,238,388.

As per Socio Economic Survey, 2022-23, the enrolment in all types of schools during 2022-23 in the state is 71.79 Lakhs, of which 21.72 Lakhs (30.25%) are in primary schools, 9.79 Lakhs (13.63%) in upper primary schools and 40.29 (56.12%) in High Schools. During 2021-22, the Annual Average Dropout Rates are: 0.80% (No drop outs) at I-V classes (Primary Level), 1.62% in VI- VIII classes (Upper Primary Level) and 4.89% at IX-X (Secondary Level).

There are 476 Government and Vocational Junior Colleges and 45 Aided Junior Colleges, 2535 Private unaided and 729 other Junior colleges functioning in the state. Under Ammavodi, 6.49 Lakh beneficiaries covered in Intermediate Education. All Govt. Jr Colleges are set for modernization and transformation under the Mana Badi Nadu Nedu programme in phase II.

There are 169 Government Degree Colleges (166 degree + 3 cluster University Constituent colleges) and 55 Private aided Colleges existing in the state catering to the educational needs of 1.45 Lakh students offering UG & PG courses. Out of these, 27 are Autonomous colleges (14 GDCs+11 Aided + 2 Cluster University constituent), 2 Social Welfare Govt. Residential Degree Colleges and 3 College with Potential for Excellence (CPE) Colleges and one Govt. Degree College with DBT Star College status.

3.2.5 HEALTH

The State Government provides key health services such as Maternal Health Care, Child Health Care and Family Welfare Services through 11071 Sub-centers, 1142 Rural Primary Health Centers, 542 Urban Primary Health Centers 175 Community Health Centers, 53 Area Hospitals, 12 District Hospitals 2 MCH Centers and 28 Teaching hospitals in the state.

Under the UPHCs, 43.10 Lakhs OPD, 12.89 Lakhs Tele consultation, 7.23 Lakhs Lab investigations, 2.60 Lakhs Immunization and 2.30 Lakhs ANC/PNC were performed during the year 2022-23 up to December, 2022.

Under National Urban Health Mission, 560 Urban Primary Health Centres (UPHCs) in 120 ULBs have been established. Each urban health centre covers 25,000 to 30,000 population in slum area.

The male and female expected life at birth for the combined state of A.P state are 68.4 and 72.1 respectively as against the All-India figures of 68.8 and 71.1 in (2016- 20). Maternal Mortality Ratio (MMR) stands at 45 for A.P much lower than All-India's 97, as per the latest SRS (2018-20).

During 2022-23 (up to December 2022), Full Immunization (Children below 1 yr) coverage is 103.34% and Complete Immunization (Children 1 to 5 Yrs) is 103.99%. Under the Emergency Health Transportation Scheme (108), 26.66 lakh patients and 2.94 lakh pregnant women were transported.

The State has launched the Family Physician Concept to extend the health services at the doorsteps of the community through the Medical officers for creating confidence among public and to deliver curative care in addition to prevention and promotion. 2.51 lakh cases visited for follow-up for Hypertension and 1.01 lakh cases visited for follow-up for Diabetes.

3.2.6 ANDHRA PRADESH STATE DISASTER PROFILE

The state of Andhra Pradesh, on account of its geographical location and conditions, is vulnerable to various disasters such as Cyclones, Floods, and Droughts besides minor disasters like lightning, heat wave, landslides, and storm surges. About 44% of the state is prone to tropical storms and about 29 million people in 178 mandals are vulnerable to Cyclones. Five rivers viz., Godavari, Krishna, Penna, Vamsadhara and Nagavelli are flowing across the state and thus, the state is prone to recurring floods. About 12% of the total area (44 million hectares) covering 766 villages in 112 mandals are prone to floods and river erosions. Drought is a common phenomenon in the state and about 68% of the area is prone to drought. Though drought is very common in Rayalaseem districts and Prakasam district, with the change in weather pattern many more interior areas of the coastal belt are experiencing drought in the recent past. On account of its geographical condition and location, State is vulnerable to one or another disaster every year and sometimes, prone to more than one disaster.

TSUNAMI – 2004

107 dead and 2,11,670 people affected. Many fishermen went missing. Tidal waves 500-2 Kms. into the main land and height of upto 5 meters affected about 300 villages. Many people on beaches and close to the coast were washed away, 1557 houses were fully destructed, and 40,000 houses were severely damaged. State Government evacuated about 9,000 persons to the safer places and provided food packets. Medical Teams have been deputed to take sanitation measures in the affected villages.

CYCLONE 'HUDHUD' – OCTOBER 2014

63 dead and nearly 16,98,000 people affected. 20,554 houses were damaged: 483,000 Ha. of crop area was damaged. The overall health infrastructure and system was moderately affected. However, Out of total 23 health camps organized, 19 (83%) of them got affected due to water logging.

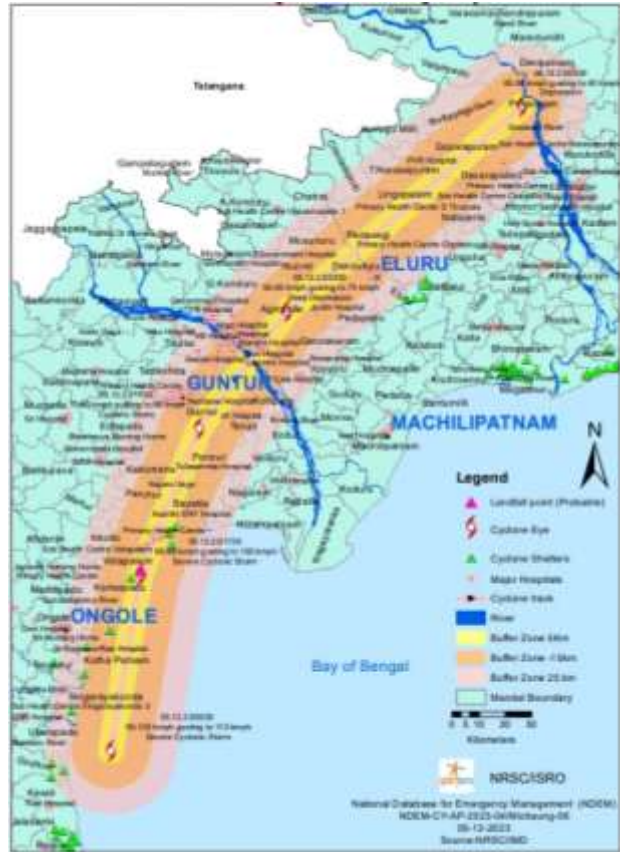
COVID-19, 2020

The first case of the COVID-19 pandemic in the Indian state of Andhra Pradesh was reported in Nellore on 12 March 2020. The Andhra Pradesh Health department has confirmed a total of 4,14,164 cases, including 3,796 deaths and 3,12,687 recoveries, as of 29 August 2020. The virus has spread in 13 districts of the state, of which East Godavari has the highest number of cases

4. CURRENT SITUATION SCENARIO

The severe cyclonic storm Michaung, which crossed the Andhra Pradesh coast close to Bapatla on Tuesday and subsequently weakened into a cyclonic storm, left a trail of destruction in its wake. Heavy rain has been reported in various areas across Andhra Pradesh, Puducherry, and Tamil Nadu in the past few hours. The IMD has issued a red alert for isolated places in Mulugu, Bhadradi Kothagudem, and Khammam districts of Telangana also, indicating heavy to very heavy rainfall on Tuesday.

Tamil Nadu, Andhra Pradesh, and Odisha are gradually returning to normalcy following the impact of cyclone Michaung. However, residents in the severely affected areas of Chennai are still contending with stagnant water, minimal receding, and ongoing power outages. Despite the concerted efforts of multiple state and central agencies engaged in relief and rescue operations in inundated suburbs such as Tambaram and Velachery, three additional casualties were discovered under the debris of a private building in Chennai that collapsed on Tuesday.



	ANDHRA PRADESH	TAMIL NADU
Population affected:	40 Lakhs	3.9 Lakhs
Human lives lost:	05	20
Injured people:	-	11
No. of Relief Camp:	204	411
No. of inmates in camp:	15,173	41,459
Damaged Houses:	232	89
Most affected Districts:	Bapatla, Krishna, Prakash, Nellore	Chennai, Thiruvallur, Chengalpattu,

4.1. TAMIL NADU

- Over the past two days, tall waves battered southern coastal towns as the cyclone approached, submerging entire villages and disrupting transportation. Authorities reported that more than 390,000 people felt the impact.
- Sadly, 17 individuals lost their lives, and eleven others sustained injuries in rain-related incidents, currently undergoing treatment in various hospitals.
- A total of 89 residential structures were impacted by the recent event, with 88 houses sustaining partial damage, and one house being rendered completely uninhabitable.
- Trees were uprooted in at least 69 locations in the GCP area, contributing to power outages in many regions. Telecommunication networks suffered disruptions, hindering rescue and communication efforts
- The Tamil Nadu Chief Secretary announced that 80% of power supply and 70% of mobile networks have been restored. In Chennai, where there are 42,747 cell phone towers, 70% are operational, while the remaining 30% face challenges due to power outages.
- Schools and colleges in and around Chennai will remain closed on Wednesday.
- The fishing community is severely affected, with 1,200 fishing boats completely damaged, and many others partially damaged or missing.
- The Greater Chennai Corporation mobilized 21,000 staff, supported by 5,000 personnel from other districts, for rescue operations. The Army and the National Disaster Response Force (NDRF) collaborated with state agencies in relief efforts.
- Tamil Nadu authorities relocated 32,158 people to relief camps over two days, and 411 relief centers are operational. Three lakh food packets have been distributed in three districts of Tamil Nadu.
- Prolonged power cuts were reported in many parts of Chennai after the cyclone made landfall in Andhra's Bapatla coastal area. Several residential areas experienced more than 30 hours without power due to the cyclone.

4.2. ANDHRA PRADESH

- The impact of Cyclone Michaung affected nearly 40 lakh people in 194 villages and two towns, with 25 villages experiencing inundation.
- Under the influence of the severe cyclonic storm, 10 places – seven in Tirupati and three in Nellore – received more than 200 mm of rainfall on Tuesday. Manubolu in Nellore district recorded 366.5 mm of rainfall.
- Due to heavy inundation of villages, cities, localities, and apartments, the health risks in flood-like situations have increased significantly.
- Across the state, 204 relief camps are providing shelter to 15,173 evacuees.
- In relief efforts, 18,073 food packets and over 1 lakh water packets were distributed, and 80 health camps were organized.
- Damaged structures include 78 huts and cattle sheds, with 232 houses marooned. Two kuccha houses were completely destroyed.
- In the roads and buildings department, 770 kilometers of surface roads suffered damage in Konaseema (234 kilometers), Prakasam (55 kilometers), Nellore (433 kilometers), and Tirupati (48 kilometers).
- Nellore witnessed the highest number of uprooted trees, with 29 out of the total 35. Under the municipal administration department, 376 streetlights and 7.5 kilometers of roads were damaged.

- Fourteen minor irrigation sources were damaged in Tirupati.
- The Andhra Pradesh Southern Power Distribution Company Ltd reported damage to 13 33-KV feeders, 312 11-KV feeders, 29 33/11-KV sub-feeders, nine 33-KV poles, 140 11-KV poles, and 244-LT poles.



FIGURE 5: SITUATION IN CYCLONE AFFECTED AREAS

4.2. GOVERNMENT RESPONSE

4.2.1 CENTRAL GOVERNMENT

- Seven teams of the National Disaster Response Force (NDRF) have been deployed in Tamil Nadu, and an additional 10 teams have been deployed in Andhra Pradesh.
- The Railway Ministry has established an emergency control cell in Chennai and a war room in New Delhi to coordinate and respond to the situation.
- Adverse weather conditions have led to the snapping of power lines, uprooting of trees, and the cancellation of over 140 trains and 40 flights in Andhra Pradesh

4.2.2 STATE GOVERNMENT – ANDHRA PRADESH

- For the affected districts, the state government has allocated Rs 23 crore for relief efforts.
- On Tuesday, six State Disaster Response Force teams and an equal number of National Disaster Response Force teams were deployed. With the receding rainwater, the state government has decided to assess agriculture and horticulture damage.
- Special officers have been appointed in Andhra Pradesh for all cyclone-affected districts, and the government has released Rs 2 crore each for rescue and relief works. Officials have been instructed to prioritize safeguarding crops, particularly by procuring paddy and preserving the kharif harvest.

- To support people returning home from relief camps, the Chief Minister of Andhra Pradesh has announced financial aid—Rs 1,000 for individuals and Rs 2,500 for families, along with other essential items. Houses damaged in the cyclone will be compensated with Rs 10,000 each.

4.2.3 STATE GOVERNMENT – TAMIL NADU

- Tamil Nadu Chief Minister seeking interim financial assistance of Rs 5,060 crore due to the heavy damages caused by cyclone Michaung in Chennai and its neighboring districts.
- The TN government declared a public holiday on Monday and Tuesday in Chennai, Kanchipuram, Tiruvallur, and Chengalpattu districts.
- To address electricity disruptions, nearly 8,590 electricity board personnel, supervised by the Electricity Minister, are engaged in restoration works in the rain-affected districts of Tamil Nadu.
- To assist residents in low-lying areas, the TN Chief Minister stated that 350 boats are prepared for rescue operations, and 4,320 doctors are deployed to provide treatment and curb the spread of rain-related diseases.
- The TN government has set up a total of 236 relief camps across eight locations, providing food, water, and other basic amenities to 9,634 people to date.
- More than 1,200 sanitary workers, panchayat secretaries, and block-level staff have been enlisted for massive relief work in inundated areas of Greater Chennai Corporation limits, especially its extended areas like Ambattur and Villivakkam zones, for at least the next three days.

4.3 HUMANITARIAN RESPONSE

- The Trained Task Force members of Coastal Area Disaster Mitigation Efforts (CADME), along with its members from coastal Andhra Pradesh, are actively monitoring the situation.
- Organizations including ADRA India, SEEDS India, Aum Education Seva Trust, Society For Integrated Rural Development (SFIRD), and Society for National Integration through Rural Development are actively monitoring the situation.
- HCLF, in collaboration with its partners, is actively responding to the current situation in Tamil Nadu.
- Goonj, Dream India Cyclone Relief Team, and Dreamz Foundation Trust have issued appeals for assistance, while Hero Insurance Broking assures swift help for vehicle damage during turbulent weather.
- Bangalore Birth Network is providing comprehensive support through its free helpline for breastfeeding, concerns on pregnancy, birth, or postpartum health, counseling, etc.
- KAIFA, a pioneer in disaster management, is present in Thanjavur, offering support to Chennai Corporation and the Government of Tamil Nadu for flood restoration.
- Chaitanya Jyoti Welfare Society (CJWS) is actively supporting the district administration in evacuating people from vulnerable areas.
- Navajeevan Organisation is providing water supply and operating a community kitchen in Nellore.
- Sphere India and IAG Andhra Pradesh are actively monitoring the situation and coordinating preparedness and response efforts.
- Sphere India called for an emergency meeting of the Inter-Agency Coordination Committee on December 5, 2023, to assess the situation and plan the course of action.

- Agencies already responding or planning to respond are updating their information in the Sphere India URS matrix for mapping of who is doing what and where. The link to the matrix is http://tiny.cc/URSMatrix_CycloneMichaung.
- Sphere India, with the support of responding agencies and state IAGs, has initiated a joint rapid need assessment as per the guidance of the IAC committee. The link to the assessment is http://tiny.cc/Cyclone-Michaung_JRNA.

5. SECTOR WISE NEEDS ANALYSIS

WATER, SANITATION, AND HYGIENE (WASH) SECTOR

- Ensure immediate access to clean and safe drinking water by deploying mobile water purification units and distributing water purification tablets in affected areas.
- Establish temporary sanitation facilities in relief camps and affected communities to prevent the spread of waterborne diseases. Promote hygiene practices through awareness campaigns.
- Implement efficient waste management systems to prevent the contamination of water sources and minimize health hazards. Coordinate with local authorities for timely waste disposal.

HEALTH SECTOR

- Deploy mobile health clinics to provide medical assistance to displaced populations. Ensure the availability of essential medicines, especially for waterborne diseases and injuries.
- Establish a robust disease surveillance system to monitor and respond to potential outbreaks. Conduct health education sessions to inform the community about common health risks and preventive measures.
- Provide psychosocial support services for those affected, including counseling and mental health support. Collaborate with local mental health professionals and organizations to address the psychological impact of the disaster.

EDUCATION SECTOR

- Set up temporary learning spaces in safe locations to ensure the continuation of education for children affected by the cyclone. Provide essential learning materials and engage qualified teachers or volunteers.
- Incorporate psychosocial support into the school curriculum to help students cope with trauma and stress. Train teachers and education personnel to identify and address mental health concerns in students.
- Establish effective communication channels with educational institutions to provide timely updates on the resumption of classes, distribution of educational materials, and any additional support required.

PROTECTION SECTOR

- Implement child protection measures, including the establishment of child-friendly spaces in relief camps. Conduct awareness programs on preventing child trafficking and exploitation in the aftermath of the disaster.

- Implement measures to prevent and respond to gender-based violence in affected areas. Ensure the presence of trained personnel to support survivors and establish confidential reporting mechanisms.
- Facilitate community meetings to identify protection concerns and tailor interventions based on the specific needs and vulnerabilities of different groups, including women, children, and the elderly.

LIVELIHOOD AND FOOD AND NUTRITION SECURITY (FNS) SECTOR

- Initiate livelihood restoration programs, including cash-for-work initiatives, to help affected communities recover economically. Provide training in alternative livelihood options and support the revival of local markets.
- Ensure the timely distribution of food aid to affected households, with a focus on nutritionally vulnerable groups such as children, pregnant women, and lactating mothers. Collaborate with local farmers to boost agricultural recovery.
- Conduct assessments of local markets to understand and address disruptions in the supply chain. Implement measures to stabilize food prices and ensure the availability of essential commodities.

SHELTER SECTOR

- Distribute emergency shelter kits containing essential items such as tarpaulins, blankets, and basic tools to families in need. Prioritize vulnerable groups, including the elderly, pregnant women, and individuals with disabilities.
- Establish temporary shelters in safe locations for displaced families. Ensure these shelters are equipped with basic amenities, including sanitation facilities and clean water sources.
- Engage affected communities in the planning and construction of shelters to ensure that their needs and preferences are considered. Provide technical support and training for safe and resilient shelter construction practices.

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