Briefing Note – 15 November 2015

India: Floods in Tamil Nadu

Need for international assistance	Not required	Low	Moderate	Significant	Major
		X			
Expected impact	Very low	Low	Moderate	Significant	Major
		X			

Crisis Overview

Several days of heavy rainfall in Tamil Nadu in southern India has led to flash floods particularly affecting Cuddalore district. As of 14 November, 56 people have been reported killed and at least 29,000 people have been evacuated, the majority from rural areas. The total number of people affected is not known.

Roads and bridges have been damaged, and several villages are reported to be cut off. Power and communication infrastructure has also been affected. Tens of thousands of houses have been damaged or destroyed.

Key Findings

Anticipated scope and scale

- Cuddalore is the most affected district, where at least 32 people have been killed. More than 20,000 hectares of crops have been affected in the district, and more than 11,000 homes have been completely destroyed.
- The situation is expected to further deteriorate from 16 November, when another storm is forecast to hit Tamil Nadu and neighbouring states. A red alert has been raised by the India Meteorological Department for 16 and 17 November.

Priorities for humanitarian intervention

- Food
- Safe drinking water
- Shelter and NFIs
- Livelihood support

Humanitarian constraints

Damage to infrastructure, including roads, bridges, and communication networks, hampers humanitarian assistance.

Heavy rainfall is forecast for the coming days, which will cause further challenges to the delivery of humanitarian assistance.

Limitations

Lack of information on total number of affected and displaced.

Crisis Impact

At least 56 people have been killed in flash floods in Tamil Nadu state in southern India, as a result of heavy rainfall that began 9 November. More than half of the deaths (32) were reported in Cuddalore district (Sphere India 14/11/2015; Times of India 14/10/2015; India Today 13/11/2015). The rainfall was a result of a deep depression – a weak tropical cyclone – passing over the Bay of Bengal. While the initial storm has passed, more heavy rainfall and strong winds are expected in the coming days, as another depression has built up along the Tamil Nadu coast (India Meteorological Department 14/11/2015).

Tamil Nadu usually receives around 440mm of rain during the northeast monsoon season, which lasts from October to December, but the state received 300mm between 9 and 11 November alone. Cuddalore district receives an average of 700mm of rain during the monsoon season, but has seen more than 500mm in past days (Times of India 11/11/2015).

Landslides have been reported in the mountainous area of Tamil Nadu, known as the Ghats, and several villages have been cut off due to damaged roads and bridges (Times of India 11/11/2015).

Food security and livelihoods: More than 20,000 hectares of crops have been damaged in Cuddalore district. In Chidambaram and Kattumannarkovil, almost 12,000 hectares of crops have been affected. At least 300 livestock have been lost in Cuddalore. Farmers have been unable to pump water from their fields as a result of disruptions in the power supply (Sphere India 14/11/2015; The Hindu 13/11/2015; ACT Alliance 13/11/2015). Many day labourers, who depend on their wage to meet their basic needs, have been unable to work since 8 November (ACT Alliance 13/11/2015). Fishing boats and nets have been damaged, affecting the livelihoods of fisherman (New Indian Express 14/11/2015; Times of India 13/11/2015).

WASH: Damage to electricity infrastructure has affected the availability of clean drinking water in rural areas (New Indian Express 14/11/2015).

Shelter: More than 11,000 houses have been destroyed and 53,000 houses partially damaged in Cuddalore district, according to initial government assessments (Times of India 14/11/2015). About 25,000 people in rural areas and 4,000 people in urban areas have been evacuated to relief centres (ACT Alliance 13/11/2015). As of 14 November, evacuees have begun returning to their villages (New Indian Express 14/11/2015).

Health: Prevention of waterborne diseases is considered a priority (Times of India 13/11/2015).

Education: Schools and other educational facilities have been closed since 9 November in Chennai, Vellore, Thiruvallur, and Kanchipuram districts (India Today 13/11/2015; 09/11/2015).

Vulnerable Groups Affected

21% of Tamil Nadu's population belong to the Dalit caste, and Dalits make up 25% of the state's rural population. Dalits have been disproportionately affected by previous disasters as a result of their social marginalisation and economic vulnerability (The Hindu 05/07/2015; Dalit National Watch 11/02/2012).

Impact on Critical Infrastructure

Across Tamil Nadu, more than 2,000 electricity posts have been uprooted, disrupting the power supply to 683 villages (Times of India 13/11/2015). As of 13 November, electricity and communication networks had not been fully restored. Many villages are cut off as a result of overflowing rivers and damaged roads and bridges (Times of India 13/11/2015; ACT Alliance 13/11/2015). Power and telecommunication services have sustained damage in Chennai.

Rail, road, and air traffic in Tamil Nadu have all been affected. Main roads, including the Poonamallee High Road in Chennai and the Grand Southern Trunk Road (which runs from Chennai to Theni) have been affected (India Today 13/11/2015). Railway tracks in and around Chennai have been flooded, leading to the cancellation or delay of numerous suburban and long-distance trains (Times of India 13/11/2015). Bus routes have also been affected (The Hindu 14/11/2015).

Humanitarian and Operational Constraints

Damaged infrastructure is hampering humanitarian assistance.

Heavy rain is forecast in the coming days, which will further challenge the delivery of assistance.

Aggravating Factors

Weather Forecast

The India Meteorological Department has issued a yellow warning for Tamil Nadu and Kerala states for 14-15 November. A red warning is in place for Tamil Nadu and coastal areas of Andhra Pradesh 16 November, and, from 17 November, including Rayalaseema and Karnataka states too (India Meteorological Department 14/11/2015).

Type of Housing

Mud and thatch are the most prevalent housing materials in Tamil Nadu, particularly in rural and slum areas. Mud houses are usually most affected during flooding and are prone to collapse (ACT Alliance 13/11/2015; DakshinaChitra Museum 2015; Journal of Himalayan Earth Sciences 2013).

Population Density

Population density of Tamil Nadu state: 555/km^2 (Tamil Nadu Government 2015). Population density of Cuddalore district: 707/km^2 (Cuddalore District Administration 2015). 20% of Tamil Nadu's population live in densely populated slum areas, making the population more vulnerable to floods. Around 250 slums in Chennai have been affected by floods (Sphere India 14/11/2015; ACAPS 2011; WFP 2010).

Dengue Fever

A child succumbed to a viral fever at a hospital in Chennai in October. If the case is confirmed to be dengue, it would make it the seventh dengue death in Tamil Nadu this year. The floods may facilitate the spread of mosquito-borne diseases due to the increase in reservoirs for mosquitoes (Times of India 12/11/2015; The New Indian Express 21/10/2015).

Key Characteristics of Tamil Nadu

Demographic profile: 72.15 million; 2.6 million in Cuddalore district. 37.23 million rural; 34.92 million urban. Sex ratio: 996 females per 1,000 males (Government 2011).

Food security: 21.3% of the populations consumes under 1,890 kcal per day (2005) (WFP 2010).

Nutrition: Children under five suffering from SAM: 0.5% (Times of India 2012). GAM: 22% Chronic malnutrition among under-fives: 31%. (Government 2008).

Health: Infant mortality rate: 22 per 1,000 live births (UNICEF 2015). Maternal mortality: 97 deaths per 100,000 live births (Government 2010).

WASH: 94% of households have access to improved sources of drinking water; 43% have toilet facilities (Government 2008).

Lighting and cooking sources: Liquefied petroleum gas (LPG)/natural gas: 50.9% of households; Wood: 33.7%; Kerosene: 13.1% (Government 2008).

Literacy 80.09 % (Government 2011).

Response Capacity

Local and National Response Capacity

The Tamil Nadu State Disaster Management Authority (SDMA) is responsible for disaster management (NDMA 07/2010). An early warning system is used as part of disaster response in Tamil Nadu. A hotline between the Indian Meteorological Department and the State Emergency Operation Centre, run by the Tamil Nadu SDMA, has been established (Times of India 11/11/2015; Disaster Management in Tamil Nadu).

A special team of senior state officials has been set up to oversee relief work and assess the damage in Tamil Nadu. People in coastal and low-lying areas have been evacuated. A National Disaster Response Force team has been deployed by the government to the affected areas and is carrying out relief and rehabilitation work (ACT Alliance 13/11/2015; Times of India 11/11/2015).

Cuddalore district administration has stepped up relief work and established 30 relief centres (Sphere India 14/11/2015).

International Response Capacity

Caritas and World Vision are providing assistance through their national branches (Sphere India 14/11/2015). ACT Alliance is requesting funding to respond to the floods through local partners (ACT Alliance 13/11/2015).

Information Gaps and Needs

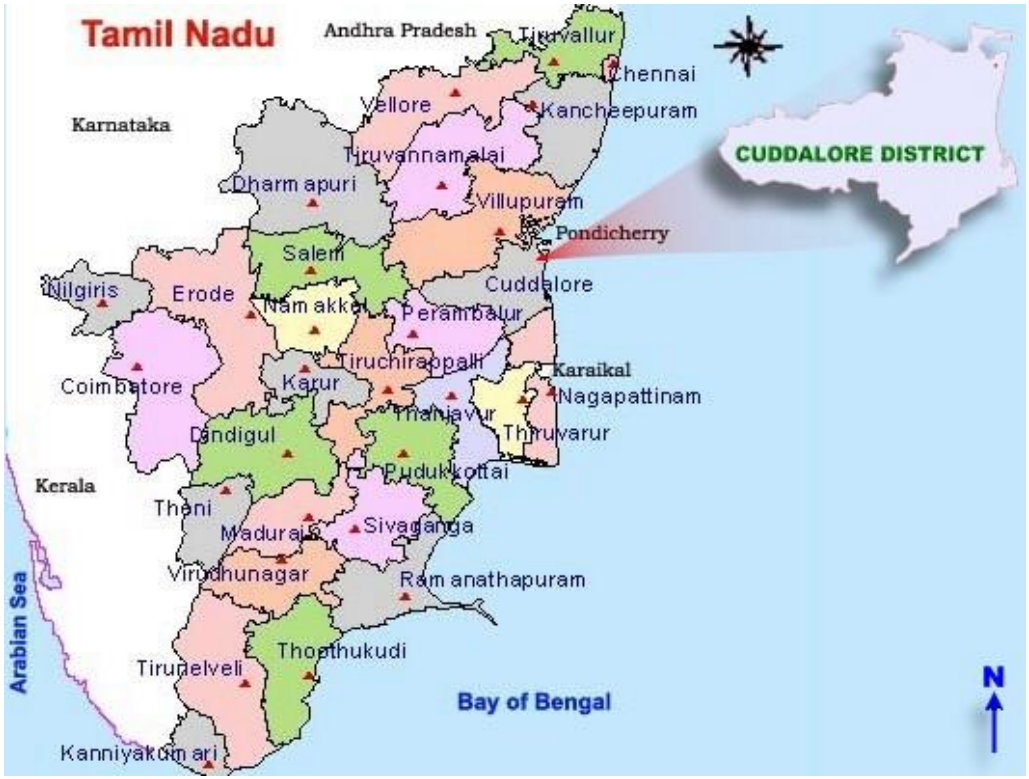
- The number of total affected or displaced is not available.
- Limited information is available on the needs of the affected population, particularly the needs of vulnerable groups, including the Dalit population.

Lessons Learned

- Since the catastrophic 2004 Indian Ocean Tsunami, the Indian government and funders have taken steps to improve early warning systems and build resilience to natural disasters. Coastal districts in Tamil Nadu established public address systems and wireless communication networks for early warning (UNDP 30/12/2014).

- Previous cyclones in India have also underlined the importance of having good infrastructure to enable evacuation, including sufficient roads, bridges, and shelters (World Bank 01/06/2015).
- Cyclone Thane in 2011 was the last major cyclone to hit Tamil Nadu. Human casualties were relatively few, but shelter and livelihood impacts were long lasting (ACTED 31/01/2012). Cuddalore and Puducherry were worst affected, and Cuddalore was inaccessible due to damage to the primary road network. In addition the water supply in several villages in Cuddalore was almost destroyed by the storm (Women's Federation 07/01/2012).
- Sporadic incidents of violence were reported as communities struggled to live with limited resources in the weeks following the cyclone. These incidents were often presented along caste lines. In general, vulnerable and disadvantaged castes were reported to be disproportionately affected by the disaster (Dalit National Watch 11/02/2012).

Map of Cuddalore district



Source: Cuddalore District Administration