CHAD
Impact of floods

OVERVIEW

Since late July 2024, Chad has been experiencing floods amid the heavy rains of the lingering rainy season (typically from May–October), affecting all 23 of the country's provinces, 119 of 125 departments, and nearly two million people (AN 14/10/2024; VOA 21/09/2024; OCHA 18/10/2024; IFRC 2024). The current flood situation has surpassed the catastrophic floods of 2022 that lasted from the end of July to mid-September, previously classified as the worst in a decade and which affected 1.4 million people in the country (IFRC 15/10/2024; Sida 31/03/2024; OCHA 23/01/2023). Rainfall floods are most commonly recorded between July–August, when rainfall intensity is at its peak (IFRC 26/08/2024).

Recently, floods, especially those resulting from sudden bursts of heavy rainfall over short periods, have become a major concern for Chad. When an area receives a lot of rain after one or more rainfall events, poor hydraulic systems are unable to properly absorb it. At the same time, low soil permeability allows water to get into homes and infrastructure. Together, these can cause significant human and material damage (IFRC 26/08/2024).

Table 1. The hardest-hit provinces by 29 September

PROVINCE	PEOPLE AFFECTED
Lac	277,409
Mandoul	267,408
Moyen Chari	245,531
Tandjilé	226,535
Mayo Kebbi Est	218,238
Batha	172,750
Logone Oriental	107,906
Salamat	99,670
N'Djamena	61,375

Source: IFRC (15/10/2024)

By 18 October, there were a total of 576 related fatalities across the country (OCHA 18/10/2024).

Until 2 October, the floods destroyed approximately 218,000 homes and damaged over 342,000, affecting at least two million people (VOA 07/10/2024; UNFPA 08/10/2024). By 30 September, nearly 1.9 million hectares of cropland were submerged, and by 11 October, over 72,000 livestock had died from related causes, an indication of the severe impact of the floods on livelihoods (UN 11/10/2024; IFRC 15/10/2024; FAO 17/10/2024).

Populations affected by flooding require food, shelter, healthcare, NFIs, and WASH services (UNFPA 08/10/2024; VOA 07/10/2024; IFRC 15/10/2024; UNICEF 17/09/2024).

On 12 March, several months before the floods, six million people were reported to be in need across the country (OCHA 12/03/2024). Their needs continue to grow, with the floods necessitating extensive humanitarian aid for both affected populations and those remaining at risk (IFRC 15/10/2024).

ANTICIPATED SCOPE AND SCALE

The most severe riverine flooding is anticipated between October–November, when river water levels reach their peak across the country (UNICEF 25/10/2024). Since 21 September, the Ministry of Water and Energy has issued warnings about the rising levels (at approximately 10cm daily) of the Chari and Logone Rivers, the largest rivers in the country (IFRC 15/10/2024; VOA 21/09/2024; Logistics Cluster accessed 25/10/2024).

More flooding is expected in provinces, especially in southern and central Chad, which are located along the Chari Riverbank (IFRC 15/10/2024). On 24 October, the Chari River reached 8.42m, exceeding the 8.14m peak recorded in November 2022 after the July to mid-September floods, previously the most severe flooding the country had experienced in a decade (OCHA 08/10/2024, 18/10/2024, and 23/01/2023; IFRC 15/10/2024; UNICEF 25/10/2024).

The French National Research Institute for Sustainable Development, in collaboration with the University of N'Djamena, forecasts that the Logone River will reach a level of 8.6m in October 2024. This will submerge areas in N'Djamena, where both Logone and Chari Rivers flow into each other. The impact will aggravate the humanitarian situation in the capital and affect a population of 1.8 million. By 29 September, the floods had affected more than 61,000 people in the city (OCHA 08/10/2024 and 18/10/2024; IFRC 15/10/2024; VOA 21/09/2024; UNFPA accessed 17/09/2024).

Given poor and limited water drainage and debris management, urban flooding may worsen in developed areas with easily overwhelmed storm water drainage systems. The rapid growth of unsafe settlements near drainage areas increases stagnant water retention and poor hygiene, especially in N'Djamena and other major cities in the affected provinces (IFRC 15/10/2024; Crisis24 11/10/2024). The riverbanks in the area are especially vulnerable to floods because of prolonged erosion caused by elevated water levels (OCHA 08/10/2024).

HUMANITARIAN CONSTRAINTS

The flooding of roads and bridges has rendered critical infrastructure in some regions inaccessible, severely obstructing humanitarian access to flood-affected areas. Many villages, including Koukou in Sila province (eastern Chad) and Bédaya in Mandoul province (southern Chad), remain inaccessible (UNICEF 03/10/2024). Although the impact is widespread, there is a lack of granular information on other areas affected by flooding-related access constraints (AN 14/10/2024).

Floods have also affected access to healthcare facilities and hindered the evacuation of patients by medical staff and the transportation of samples to laboratories (WHO 03/10/2024). There is a lack of information on what the most affected regions are.

At the same time, conflict between non-state armed groups (NSAGs), particularly those affiliated with Boko Haram, affects Chad. Incidents include armed violence, kidnapping, and civil unrest, security constraints that could impede humanitarian access to flood-affected areas (Smartraveller accessed 18/10/2024). On 7 September, an armed group attacked a health facility in Fende 2, Lac province, killing a nurse and resulting in the abduction of two female health workers. Consequently, humanitarian organisations have suspended all operations in the province (OCHA 10/09/2024).

The current floods in Chad have hampered the distribution of food assistance in the eastern provinces hosting refugees (FEWS NET 27/09/2024).

Chad currently has a weak data collection system and lacks an effective communication system for data collection and sharing. Compounding this, poor infrastructure hinders access to certain regions for data collection (IFRC 26/08/2024; SOFF 08/10/2024).

CRISIS IMPACTS

There is an absence of detailed information regarding the impacts of the crisis throughout the country, particularly concerning the extent of the effects and the specific locations affected.

Shelter

Chad officials report that incessant floods in 2024 have rendered at least two million people homeless (VOA 07/10/2024). By 2 October, around 218,000 houses were destroyed, and over 342,000 were damaged. The large number of damaged and destroyed houses can be attributed to the fact that many structures are constructed from soil or materials that are not weather-resistant (UNFPA 08/10/2024; IFRC 15/10/2024). Many people are seeking refuge in schools and other temporary sites. The school year was due to start in early October, but until 22 October, there were no updates on whether the schedule has pushed through and whether families sheltering in these sites have been asked to relocate (OCHA 28/08/2024; UNICEF 03/10/2024).

WASH and health

The floods have damaged health facilities, though the precise number remained unknown until 11 October (UN 11/10/2024). The water distribution network was already limited even before the flooding in most of the affected regions. Many communities depend on wells, boreholes, and rivers as their primary water source, the majority of which have been submerged in the floods (IFRC 15/10/2024). Backflow from drains mixed with floodwaters can become trapped in open areas after flooding, increasing the risk of waterborne diseases as people are exposed to contaminated water (UNFPA 08/10/2024). State officials have recommended that all water from private wells across the country be treated with chlorine before consumption (VOA 21/09/2024). Stagnant water also serves as a breeding site for mosquitoes and bacteria, elevating the risk of vector-borne diseases (Crisis24 11/10/2024).

People in temporary shelters do not have access to reproductive health services, such as maternity care, clean drinking water, and WASH facilities, rendering pregnant women especially vulnerable to the effects of flooding (UN 11/10/2024; AN 14/10/2024).

Water scarcity, inadequate hygiene and sanitation services, water contamination in some areas, and a cholera epidemic in the neighbouring countries of Sudan and Cameroon elevate the risk of a health epidemic in Chad (UNICEF 03/10/2024).

Chad is already experiencing an outbreak of hepatitis E. Between 2 January and 8 September, a total of 3,455 suspected cases and 177 laboratory-confirmed cases, including 11 deaths,

were reported in refugee camps and sites in eight health districts across four provinces (Ennedi-Est, Ouaddai, Sila, and Wadi Fira). Hepatitis E is transmitted primarily through drinking water contaminated with the faeces of infected people (WHO 29/09/2024 and 20/07/2023; CDC 14/05/2024; Govt. Chad/WHO 08/09/2024).

Between 1 January and 5 May, about 5,600 measles cases, including 20 deaths, were reported in the health districts of Amtiman, Arada, Dono Manga, Gagal, Gore, Guelo, Koukou Angarana, Kouloudia, Kouno, Massakory, Moissala, N'Djamena Centre, N'Djamena East, N'Djamena North, and Pala. Measles cases can easily spread through infected people breathing, coughing, or sneezing. This is especially of concern in crowded places, such as overcrowded shelters housing displaced people from the flooding (WHO 29/09/2024 and 12/07/2024).

Protection

The protection risks for women and girls in temporary sites can become greater as they experience minimal privacy and face danger when seeking food and firewood in an unfamiliar setting (UN 11/10/2024).

The floods have profoundly affected communities, leaving them mentally exhausted. The psychological effects are particularly significant in regions that have endured comparable losses from previous floods. Devoid of alternatives, the affected people may resort to coping mechanisms with potentially negative outcomes, such as child labour, begging, early marriage, and the selling of assets. These can increase their exposure to risks and worsen mental health conditions (IFRC 15/10/2024; OCHA 29/10/2024).

Livelihoods and food security

By 30 September, almost 1.9 million hectares of cropland were flooded, and by 11 October, over 72,000 livestock had died from relevant causes. The floods have significantly affected food accessibility, and agricultural losses may result in critical food shortages for the affected population. Chad has already announced a food security and nutrition emergency in February, with 3.4 million people suffering from acute hunger (UN 11/10/2024; IFRC 15/10/2024; FAO 17/10/2024).

An estimated 88% of the population depends on agriculture as their main source of livelihood, but the contribution of agriculture to the country's GDP has been declining. Between 2010–2018, the agricultural sector employed approximately 75% of the country's labour force (WB 09/06/2022). The current floods have also affected pastoralists (DW 23/10/2024). The reliance on agriculture, whether for livelihood or subsistence, puts the population at risk of fluctuations in agricultural production, often caused by the unpredictable effects of climate change and a significant driver of food insecurity (WB 09/06/2022; FEWS NET 17/11/2023).

Floods from 2022–2023 significantly affected the population's livelihoods (WFP 14/09/2023; OCHA 23/11/2023). Between August–September 2023, flooding in the provinces of Logone Oriental, Mandoul, Mayo Kebbi Est, and Tandjilé destroyed around 18,130 hectares of crops and caused extensive livestock losses. The current floods could be expected to compound the impacts in these provinces (OCHA 23/11/2023). The recurrence of floods, which frequently affect the same communities annually, significantly affects people's livelihoods and food security situation as a whole (OCHA 28/08/2024). The general topography of Chad, characterised by plains, makes it susceptible to recurrent rain-induced flooding (IFRC 26/08/2024).

DRIVERS OF THE CRISIS

Rainy season

Chad generally experiences two seasons: rainy (May–October) and dry (November–March). The rainy season usually sees an average of 150mm of monthly rainfall. During the wettest months of July–August, monthly totals could rise to 300mm. Overall, rainfall varies widely across the country, with a wider gradient from north to south. The desert north receives less than 100mm of rain annually. The central part, with 100–800mm annual rainfall, contrasts with the arid north, while southern Chad can receive 800–1,200mm per year. This part of the country is wetter because of its proximity to the equator. Precipitation, coupled with Chad's predominantly flat topography, renders it susceptible to two forms of flooding: riverine and rainfall. A weak data collection system leads to a lack of distinction between flood types when reporting impacts. As a result, data on flood impacts can be applicable to both rainfall and rivering floods (IFRC 2024 and 26/08/2024; WB accessed 25/10/2024).

Usually, rain flooding happens when a large volume of rain falls on an area, after one or more consecutive rainfall occurrences, and the drainage systems and soil cannot take in the excess water (IFRC 26/08/2024). Riverine floods happen when a river's water level rises and overflows its boundaries. The river's elevated water level may result from excessive rainfall. The damage from a riverine flood can be extensive, as the overflow affects smaller rivers downstream, potentially leading to the failure of dams and dikes and overflowing surrounding areas (Zurich 25/04/2024).

The climate crisis has increased the frequency and intensity of rains. Compared with the records from 1991–2020, July–September 2024 rainfall levels rank 2024 as one of the five wettest years in Chad so far (CNBC 15/10/2024). The most recent summer (June–August) in the country was also the hottest globally, characterised by multiple record temperatures,

heatwaves, droughts, and severe floods (VOA 21/09/2024). At the end of July, torrential rain caused flooding in western and southern Chad, which later spread to all 23 provinces (UNFPA 22/08/2024; AN 14/10/2024).

The Sahel faces increased flood risks owing to shifts in natural climate patterns, heightened rainfall intensity, and inadequate urban planning. This year, extreme temperatures in the Sahara have shifted the monsoon belt northward, resulting in precipitation in typically arid desert regions (CNBC 15/10/2024; LS 14/09/2024).

Climate-related challenges

Chad is among the countries most vulnerable to climate change and faces rapid desertification and environmental degradation (WFP 14/09/2023; UNDP 06/12/2023). The country's INFORM Climate Change Risk score is 7.7/10, while it scores 6.6/10 for hazards and exposure, indicating that Chad is highly vulnerable to climate-related issues (EC accessed 20/12/2023). The country also scores 8.6/10 for lack of coping capacity, meaning that crisis impacts likely overwhelm response capacity. With recurrent climate hazards, affected people's ability to recover may be constrained.

Chad is a landlocked country and ranks among the hottest and driest globally, with 58% of its territory classified as desert and enduring prolonged drought for decades. Heavy rainfall during a wetter-than-average season frequently results in climatic hazards, intensifying community vulnerability to flooding (UNDP 06/12/2023; NRC 14/02/2024; Djibril 10/2013). The desertification of land raises the risk of flooding in the affected areas during heavy rainfall. The extended duration of drought alters the nature of soil by reducing its capacity to absorb water, heightening the risk of floods (Wired 19/08/2022). Surface erosion also adds sediment to water, which makes it flow more slowly and makes flash floods worse (UNDRR 11/09/2024).

Urbanisation and poor drainage systems

Because of water scarcity and the drying up of certain waterways triggered by droughts, Chadians tend to settle close to water sources in urban areas (UNDP 06/12/2023). Urban centres, especially N'Djamena, which is where the Logone and Chari Rivers flow into each other, are very vulnerable to flooding. Poor storm water drainage and flood management systems, frequently obstructed by improper waste disposal, heighten the probability and consequences of flash floods. The unregulated expansion of settlements and inadequate construction methods aggravate flood risks in urban regions. As climate change causes more frequent and severe rainfall events, urban areas have become increasingly incapable of dealing with the flash floods caused by rains (WB 10/07/2023; VOA 21/09/2024).

COMPOUNDING/AGGRAVATING FACTORS

Prevalence of poverty

Chad is one of the poorest countries in the world, with 42.3% of the population living below the national poverty line of USD 2.15 per day. Extreme poverty in the country has increased significantly, from 31.2% in 2018 to 35.4% in 2023. Extreme poverty is predominant in rural regions, with 47.4% of the rural population classified as extremely poor according to the global average, underscoring notable regional disparities (WB accessed 18/10/2024; WB 10/07/2023; NRC 14/02/2024 and 03/06/2024; WHO accessed 22/10/2024). This high level of poverty has an impact on the country's capacity to cope with and recover from various natural hazard-related disasters, which deteriorate food security by making it difficult for people to access adequate and nutritious food. This can lead to a severe food crisis. The lack of access to food and basic social services, along with limited income-generating opportunities, worsens the situation (WB accessed 18/10/2024; NRC 03/06/2024).

A high influx of refugees from neighbouring countries compounds already-existing poverty and resource scarcity; natural hazards make matters worse by heightening the competition for scarce resources (CNBC 15/10/2024).

Cross-border displacement to Chad

The response capacity in Chad is currently under significant strain because of the crisis in the eastern regions, where many Sudanese refugees are seeking refuge from the conflict in neighbouring Sudan (OCHA 28/08/2024). By 13 October, Chad was hosting more than 1.2 million refugees, over one million of whom were from Sudan. The country is currently hosting over 45% of Sudanese refugees worldwide and experiences thousands of new arrivals weekly (UNHCR accessed 18/10/2024; WHO 03/10/2024). The refugee population in Chad is spread throughout the country, with Sudanese refugees mainly concentrated in the east, Central Africans in the south, and Nigerians in Lac province. Until 30 September, there were also 220,000 IDPs in the country because of insecurity (UNHCR accessed 18/10/2024; WHO 03/10/2024; UNFPA 12/09/2024; WVI accessed 25/10/2024).

Flooding is also causing displacement from Cameroon to Chad. According to Cameroonian authorities, the current floods in Cameroon have displaced at least 70,000 people from temporary camps established for flood victims near the border with Chad and Nigeria. Many displaced flood victims have moved to Chad, although the exact number of people is unknown (VOA 07/10/2024).

RESPONSE CAPACITY

On 6 August, the Government of Chad activated the National Flood Response Plan (UNICEF 03/10/2024).

On 28 September, the National Flood Prevention and Management Committee received a substantial batch of humanitarian cargo. The batch included motor pumps, emergency and paediatric medication, and tents, among other items (OCHA 04/10/2024).

On 4 October, the Prime Minister of Chad announced that the Chad Humanitarian Country Team had implemented an anticipatory action framework to alleviate the imminent effects of the anticipated severe flooding in N'Djamena (OCHA/A RC/HC Chad 09/10/2024).

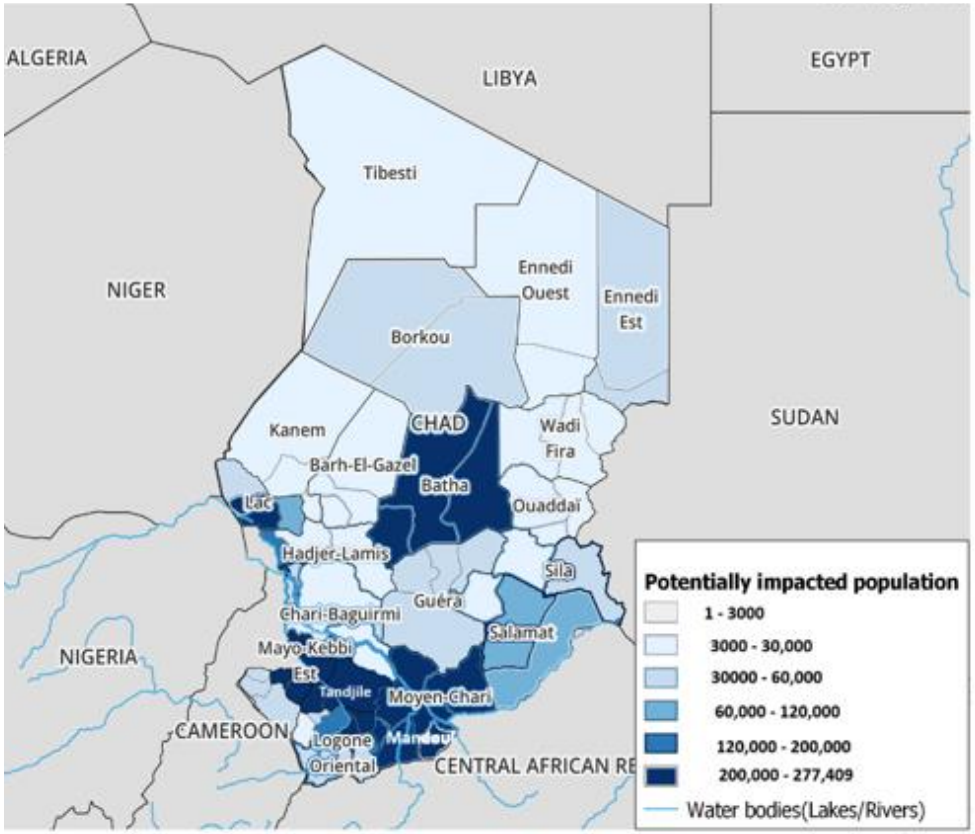
Collaborating with IOM and UNHCR, UNICEF registers people affected by floods at displacement sites. It also distributes NFIs to the Chadian Red Cross, including tents, plastic mats, blankets, clothing, and shoes (UNICEF 12/09/2024).

In response to the floods in Chad, the IFRC is providing technical support and aiding the community-led resilience teams' resource mobilisation efforts through multiple platforms, involving both members and external organisations (IFRC 15/10/2024).

In West and Central Africa, WFP has partnered with diverse public and private sector bodies to establish climate risk finance initiatives, providing capacity building in risk assessment and contingency planning to assist governments and community members in anticipating and quickly recovering from climate shocks (WFP 06/09/2024).

In 2023, the World Meteorological Organization and several other international organisations initiated an action plan to enhance early warning systems for imminent natural disasters in Africa, which possesses the lowest access rate to such systems globally (CNBC 15/10/2024).

Map 1. floods across chad BY 15 October



Source: IFRC (15/10/2024)