



Niger

This climate fact sheet summarizes the available information on the climate of Niger and the impact of climate change on humanitarian activities in-country. Each fact sheet in the series was written using information from peer-reviewed academic papers, government publications, and other documentation from international non-governmental organizations.

1. Climate overview

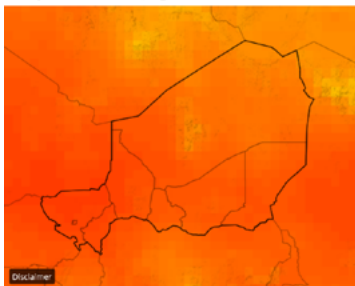
Average annual temperature: Temperatures range between 21–36°C with a decreasing gradient from the south-west to the north-east. Substantially cooler temperatures are found in the mountainous regions.

Average annual rainfall: Lower rainfall is experienced in the north with less than 100mm, while higher amounts are found in the south (400–600mm).

Short overview

Niger’s climate is largely hot and dry with the northern half being classified as a desert and most of the southern parts having a semi-arid climate. The country’s climate alternates between two seasons: a long, dry season from October to May and a short, rainy season from May to September. The highest average temperatures are recorded between March and April, when they exceed 40°C. The lowest average temperatures are recorded from December to February when they can be around 10°C.

Observed Climatology of Average Mean Surface Air Temperature 1991-2020; Niger



Observed Climatology of Precipitation 1991-2020; Niger

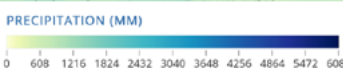


Figure 1: Observed climatology of (left to right) mean temperature and annual mean total precipitation between 1991–2020. (from World Bank, 2021).

Monthly Climatology of Average Minimum Surface Air Temperature, Average Mean Surface Air Temperature, Average Maximum Surface Air Temperature & Precipitation 1991-2020; Niger

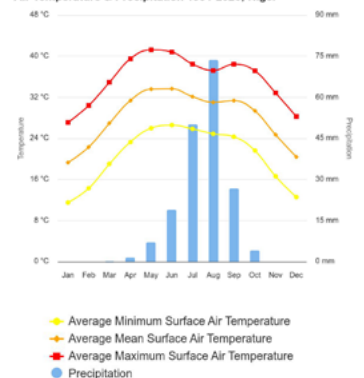


Figure 2: Observed average monthly climatology between 1991–2020 (from World Bank, 2021).

The El Niño–Southern Oscillation (ENSO) creates irregular periodic variation in the temperature as well as sea surface temperature, influencing year-to-year variability and extreme weather events such as droughts, floods and heatwaves. During El Niño periods, parts of Niger typically experience drier than normal conditions and during La Niña periods, wetter than usual conditions typically occur.

The diverse and varied geography of Niger means that it is exposed to a broad array of environmental hazards (hydrometeorological as well as geophysical) which are directly impacted and exacerbated by the impacts of climate change across the country. Niger is one of the most vulnerable countries to climate change, ranked 19th out of 191 countries by the 2024 Inform Risk Index (DRMKC, 2024).

1.1 Climate change in Niger

Historical climate change

Projected climate change

Temperature

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| <ul style="list-style-type: none"> ▪ The mean annual temperature over Niger has increased at a rate of approximately 0.2–0.3°C/decade in 1961–2015 (Gutiérrez <i>et al.</i>, 2021). ▪ The frequency and intensity of hot extremes have increased, and cold extremes have decreased (Seneviratne <i>et al.</i>, 2021). | <ul style="list-style-type: none"> ▪ Mean temperatures over the region are projected to rise until 2050 by at least 3–4°C for a high greenhouse gas concentration scenario (SSP5–8.5) and by 2–3°C for a low greenhouse gas concentration scenario (SSP2–4.5) (Gutiérrez <i>et al.</i>, 2021). ▪ Maximum and minimum temperature will increase, and heatwaves will intensify in duration and peak temperatures for every increase in global warming levels above the pre-industrial values. In line with rising mean annual temperatures, the annual number of very hot days (days with daily maximum temperature above 35°C) is projected to rise and with high certainty (Gutiérrez <i>et al.</i>, 2021; Ranasinghe <i>et al.</i>, 2021; Seneviratne <i>et al.</i>, 2021). |
|---|--|

Precipitation

- | | |
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| <p>Overall, long-term trends (1979–2015) in annual total rainfall show an increase (AfDB, 2018).</p> | <ul style="list-style-type: none"> ▪ Mid-century (2040–2050) estimates of precipitation during Niger’s rainy season (June to September) under a low emissions scenario (SSP2–4.5) and high emissions scenario (SSP5–8.5) show a projected increase in rainfall by an average of 18 per cent and 28 per cent, respectively, with enhanced interannual variability (World Bank, 2021a). ▪ The frequency and intensity of heavy precipitation events are projected to increase with potential impacts on flooding and soil erosion (Seneviratne <i>et al.</i>, 2021). |
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2. Priorities of the Red Cross Red Crescent Movement under climate change

2.1 Scale up climate-smart disaster risk reduction (DRR), early action and preparedness

Existing hydrometeorological hazard	Projected risks
<p>Floods</p> <p>Flooding and drought represent the greatest climate-related risks in Niger. In particular, riverine flooding poses a threat, mostly in the River Niger basin where floods impact approximately 100,000 people each year (GFDRR, 2019). About 40 per cent of the country’s population is estimated to live within the River Niger basin, meaning a significant number of people are exposed to the impacts of flooding in the region.</p> <p>The year 2012 saw the worst flooding reported in 80 years, resulting in over 300 deaths, 6,000 people injured and 4 million people impacted by the ensuing impacts of the floods (GFDRR, 2019). In 2022, above-average rainfall from May onwards saw 266,000 people affected by flooding, and 169,000 in 2023, with Maradi, Niger’s most densely populated area, remaining the worst affected region (Humanitarian Action, 2023).</p>	
<p>Droughts</p> <p>Since 2011, Niger has faced recurrent droughts leading to millions of people requiring food assistance. The drought in 2011, for example, led to food challenges and impacted the livelihoods of thousands of people; livestock, in particular, were severely affected. In 2021, a severe drought during the usual rainy season affected over one million people, and caused an agricultural deficit of over 50 per cent, triggering widespread food insecurity (USAID, 2022).</p>	

It is important to note that many of these hazards are interrelated and produce compound risks in the same areas and communities. In addition, risk must be understood as the interplay between hazard, exposure and vulnerability which makes certain individuals, communities and sectors more impacted by the hazards. All project design should take such compounding risks into account.

Disaster risk management strategies

In 1973–2013, Niger reported over 3,700 disasters, which led to significant economic damage as well as the loss of over 10,500 lives (GFDRR, 2022). In 2012, the National Platform for DRR (NP-DRR) was established as a mechanism to coordinate, analyse and provide advice with regards to DRR activities across the country. The NP-DRR is also responsible for coordinating risk prevention and designing integrated information and communication systems for DRR.

Disaster risk management law and policies

- The **Ministry of Humanitarian Action and Disaster Management** oversees the National Food Crisis Prevention and Management Mechanism, which consists of three units and contributes to DRR in Niger: Early Warning System Coordination, Food Crisis Unit, and Social Safety Net Unit.
- The **National Strategy on Disaster Risk Reduction 2019–2030**. This is the overarching framework for the implementation of DRR activities in the country. The strategy involves four strategic goals, which are aligned to the four priorities of the Sendai Framework for Disaster Risk Reduction (2015–2030).
- **Law No. 2017–06** (of 31 March 2017). This law determines the fundamental principles of the organization of civil protection, and stipulates that relief operations in each region and/or department are coordinated through the Relief Organization Plan (ORSEC plan).
- **Law No. 2007–28** (of 3 December 2007). This law created the National Locust Control Centre (CNLA) with the mission of preventing any invasion of the desert locust into Niger; and of raising the alarm and coordinating action in the event of a strong upsurge or invasion of the pest.
- **Decree No. 2018–538** (of 27 July 2018) defines the alert code in Niger.
- **Decree No. 2016–344/PRN** (of 8 July 2016) determines the fundamental principles of the organization of civil protection.

2.2 Reduce health impacts of climate change

Temperature rises, increased variability in rainfall patterns, and more intense and frequent droughts and floods threaten human health in Niger. The most significant health risks are related to increased food insecurity and malnutrition, a surge in the spread of diseases (vector-borne, waterborne and respiratory diseases), increased death and injuries and more cases of heat stress (USAID, 2017; World Bank, 2021).

Food insecurity and malnutrition are the most pressing health challenges in Niger, especially among children and mothers (USAID, 2021). Food insecurity is caused by a disruption in agricultural production due to frequent droughts and floods that are expected to increase with climate change (Egbuonye *et al.*, 2021). In 2022 alone, over 4.4 million people needed humanitarian assistance as crops had failed due to droughts (IFRC, 2022). Notably, as many as 50 per cent of children in the country are stunted (Egbuonye *et al.*, 2021).

An increase in temperature and rainfall variability (with the associated risk of floods and droughts) threaten human health and sanitation by **increasing cases of infectious diseases** such as malaria, meningitis and measles (MSF, 2021; World Bank, 2021). The geographic range and activeness of disease vectors, such as mosquitoes, will likely increase due to the rising temperature and increased incidence of floods (Potsdam Institute, 2021).

Higher temperatures will also increase the **risk of heatwaves**. The population impacted by heatwaves is expected to rise from 1.7 per cent in 2000 to about 12 per cent in 2080 (*ibid*). Furthermore, **frequent floods will increase injuries as well as mortality**. For example, in 2021, floods in Niger killed 77 people (OCHA, 2021). Another climatic risk to human health is the increase in the frequency of **sandstorms that affect both physical health and mental wellbeing** (World Bank, 2021).

2.3 Ensure sustainable water supplies

Water, Sanitation and Hygiene (WASH)

Recurrent droughts are by far the greatest climatic threat to WASH infrastructure in Niger, and are already reducing the availability and quality of surface- and groundwater resources (Boko *et al.*, 2020). Overall, droughts slow down the country's progress in achieving universal water and sanitation services.

In Niger, 4 per cent and 27 per cent of the population respectively use surface water and unimproved sources for drinking water (JMP, 2021). Surface water in bodies such as the River Niger will likely be reduced following long periods of drought (Water Aid, 2021). People who rely on surface water will have to shift to groundwater – a significant amount of which is low quality and insufficient for consumption (Salhou Djari *et al.*, 2018). Increased evaporation rates during higher temperatures will also reduce and mineralize the limited groundwater resources (Water Aid, 2021). In addition, a projected increase in sand and dust storms (SDS) due to temperature rises could deteriorate water quality across the country, due to SDS contaminating water sources with microorganisms, salts and pollutants (World Bank, 2021; FAO, 2023).

Infrastructure and electricity

Hydropower efforts are another victim of a changing climate. Although Niger is investing heavily in building capacity – it is currently constructing the Kandadji Dam, for example – projected variability in rainfall and climate conditions could render this a very unpredictable and unreliable investment (Potsdam Institute, 2021).

2.4 Enable climate-resilient livelihoods and economic security

Niger has experienced an average of one flood per year and one drought every three years over the past two decades (Gao & Mills, 2021). **Droughts and floods pose the most significant threat to agriculture in the country.** In 2022, floods and droughts disrupted agricultural production and resulted in the highest number of food-insecure people in the last eight years (FAO, 2022). Agriculture – primarily rainfed and subsistence – is the most significant livelihood sector in Niger. The sector (including livestock and crop farming) employs about 80 per cent of the population and contributes over 43 per cent to the country’s GDP (Ado *et al.*, 2019, 2020). Less than one per cent of arable cropland is irrigated (Potsdam Institute, 2021).

On the one hand, **increasing flooding due to climate change destroys and inundates crops and kills livestock.** In 2020, Niger faced one of the largest floods in its history which submerged over 3,082 hectares (ha) of irrigated land (World Bank, 2022). Previously, in 2021, similar flooding following torrential rains submerged as much as 6,000ha of cultivated land and killed over 10,000 livestock (OCHA, 2021). Flooding is mainly a challenge in the southern part of the country (World Bank, 2021).

On the other hand, **droughts reduce water availability for crop farming, pasture growth and hydrating animals.** With the changing climate, the crop area exposed to drought will increase significantly (Potsdam Institute, 2021). Droughts will also increase damage to crops and rates of livestock mortality (Issaharou-Matchi *et al.*, 2019). In addition, droughts pose a threat to the county’s fish production through declining water levels and reductions in water quality (*ibid*). Food insecurity is already an acute issue in Niger, which ranks third-to-last out of 189 countries when it comes to vulnerability to climate change in terms of food production and access (ND-GAIN, 2021).

2.5 Address climate displacement and protection

Current and future displacement challenges

According to the UN Refugee Agency (UNHCR) as of September 2023, Niger had more than 705,968 internally displaced persons (IDPs) (World Bank, 2024). Political instability arising from the military coup in July 2023 that overthrew the democratically elected President Mohamed Bazoum caused the displacement of 335,000 people due to violence, with coups in neighboring Mali and Burkina Faso contributing to increased instability (European Commission, 2024). Disasters – mainly flooding – triggered 118,000 displacements in 2021, which was also lower than 2020 displacements (*ibid*) due to government intervention. The country is also a main refugee-hosting country, with almost 600,000 refugees and asylum seekers in 2022 (UNHCR, 2022a).

If no action is taken, by 2050, Niger is projected to be the country in West Africa with the highest number of internal climate migrants – up to 19.1 million people (IOM, 2021; Rigaud *et al.* 2021). One study found that more than half of respondents had a family member who had been forced to migrate for work because droughts, floods, wildfires or changing rainfall patterns, and/or desertification had impacted their livelihoods (*ibid*).

Both rural and urban migration is predicted to rise as rainfall fluctuations and rising temperatures continue (Hassan & Tularam, 2018). Modelling finds a strong correlation between varying amounts of rainfall and higher temperatures and both rural and urban migration in Niger (*ibid*). Drought is already and will remain a significant driver of migration and displacement (IOM, 2021).

Displacement in Niger is both caused by conflict and a cause of conflict, as scarce resources lead to competition when displaced people move to other areas (IDMC, 2022). Tensions over scarce resources have been cited as a reason for rising tensions in the Sahel region in recent years, and the military junta claimed the deteriorating security situation as justification for the recent coup in Niger (UNHCR, 2022c; MMC, 2023). Significant climate out-migration hotspots are predicted in southern Niger (Rigaud *et al.* 2021).

Climate-induced IDPs have not always been perceived as IDPs in Niger unless they were also displaced by conflict (d'Orsi & Naldi, 2022).

Potential needs of migrants and displaced people

Agricultural adaptation strategies to help people avoid migration in the first place as well as support for those already displaced can help generate livelihoods and food security in Niger (UNHCR, 2022b). With support from UNDP, Niger submitted its National Adaptation Plan to the UNFCCC in 2022, outlining plans to upscale peri-urban livestock, develop pastoral areas and increase access to agro-meteorological information (UNDP, 2023). Research on climate change and its impact on household income in southern Niger found that household income increased significantly when appropriate adaptation strategies were used, such as crop diversification, adjusted planting times, and more efficient irrigation and water conservation practices (Zakari *et al.*, 2022).

Protection

The impact of climate change on the security situation in the Sahel is a widely recognized and documented issue (OECD, 2010). The confluence of climate and non-climate stressors is producing a volatile and deteriorating security situation in Niger. Stressors such as increased temperatures, increased hazard risk of droughts and floods, increased desertification and evapotranspiration, decreased access to water and pastoral lands, population growth, historic tensions between tribal and state government, historical grievances between tribal groups, and weak social protection systems, have been contributing to persistent conflict and instability in Niger (USAID, 2012). The severity of this trend has intensified in recent years under the rising political, security and economic tensions of the Sahel region, culminating in several coups that have worsened humanitarian crises and are expected to deteriorate further in 2024 (UNHCR, 2024).

Protection crises are also emerging through the impacts of climate change on the livelihoods of livestock herders in Niger. These pastoralists must grapple with competing and compounding threats: shrinking pasture as desertification increases, decreased access to water as sources dry up, insufficient fodder or crops to sustain their livestock or themselves as agricultural yields plummet, and increased disease prevalence as these stressors erode the health of their livestock (ICRC, 2020).

These climate-related developments, in turn, impact the socioeconomic fabric of society, in which tensions soar as herders compete for scarce resources and access, non-state armed groups line traditional transhumance routes, and population growth exerts additional pressure on resources (ICRC, 2020). Historical and cultural considerations must also be factored in: the Tuareg people feel these impacts especially acutely, as they have a long history of marginalization that interacts with their livelihood dependence on pastoralism (USAID, 2012). When left unaddressed, and combined with threats to their lives and livelihoods, this creates a context for recruitment by extremist groups (Wesch & Rheinbay, 2021).

It is important to note that escalating conflict in the area is further affecting people through constraining their access to humanitarian support, as more and more organizations are unable to access the region due to the rising violence (ICRC, 2020).

People in detention frequently have heightened vulnerability to natural disasters due to spatial marginalization resulting from prison locations on hazard-prone land and/or isolation from emergency evacuation services; limited to no connections to social networks, which are crucial aspects to hazard resilience; and political marginalization, including lack of policies and services to prevent disaster impacts on imprisoned populations (Gaillard & Navizet, 2012). These vulnerabilities, coupled with more frequent and intense disasters due to climate change, may leave prison populations in especially precarious positions to hazards such as extreme heat and flooding.

2.6 Policy

Relevant information from the [Nationally Determined Contribution \(NDC\) \(2021\)](#)

Emission target: Niger has targeted emissions reduction in the energy sector and land management sector. A 6.7 billion US dollars budget is expected for adaptation – over double that of the mitigation budget – for the 2021–2030 period. This budget is largely expected to be funded by international support.

Area of focus on adaptation: Agriculture, forests, livestock, water and resources management, health.

Inclusion of DRR: Yes, it is part of the priority adaptation measures. It includes climatic data, an early warning system, DRR, insurance, gender and social inclusion.

National designated entity: Prime Minister’s Office / Cabinet du Premier Ministre

Key stakeholders: Le Conseil National pour l’Environnement et le Développement Durable (CNEED); Centre Africain pour les Applications de la Météorologie au Développement (ACMAD); l’Institut de Recherche pour le Développement (IRD); ECOWAS; UNDP; Japan; European Union; World Bank.

Additional climate policies

- [National Policy on Climate Change \(PNCC\) \(2012\)](#). This document aims to coordinate the national approach on climate change. DRR is mentioned in relation to food security, but does not occupy a central place. The document presents the legal environmental framework in the country, specifying that the right to a healthy environment is part of the Constitution (article 35).
- Niger has not submitted a National Adaptation Plan, its [National Adaptation Programme of Action](#) (NAPA) was submitted in 2006 and reflects similar priorities to the NDC.

Climate finance

National Societies cannot apply directly for climate finance from the [Green Climate Fund \(GCF\)](#), but they can be an implementing partner for an accredited entity (Climate Centre, 2022a).

In addition to regional projects, Niger has two GCF national projects combining mitigation and adaptation: 'Inclusive green financing for climate resilient and low emission smallholder agriculture' and 'Hydro-agricultural development with smart agriculture practices resilient to climate change in Niger' (GCF, 2022).

National Societies can explore options for accessing climate funds through smaller funds, such as the [GEF's Small Grants Programme](#) or the [FFEM's Small Scale Initiatives Program](#). These grants range from 20,000–50,000 US dollars and are intended to support community-level initiatives. The Global Environment Facility (GEF) Small Grants Programme sits under the United Nations Development Programme (UNDP) and has a [National Coordinator in each country](#). Some countries have National Climate Funds, which may be accessible to the National Society. Other funding from bilateral donors or multilateral climate funds like the Adaptation Fund, CREWS, or GCCA+ could be explored (Climate Centre, 2022a).

Engaging in national climate adaptation planning is vital for accessing climate finance.

Additional resources

Climate Centre. (2022a). *Fact sheet on climate finance*. Red Cross Red Crescent Climate Centre. <https://www.climatecentre.org/wp-content/uploads/Fact-Sheet-on-Climate-Finance.pdf>

Climate Centre. (2022b). *Entry points for National Societies on climate finance partnerships*. Red Cross Red Crescent Climate Centre. <https://www.climatecentre.org/wp-content/uploads/Entry-Points-for-Climate-Finance-Partnerships.pdf>

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