

Environmental change is increasingly recognized as a central and cross-cutting issue, especially in the Sahel region of West and Central Africa (WCA), where land-locked Chad is located. The frequency and intensity of natural hazards, such as floods, droughts, and extreme heat, are increasing due to climate change, leading to the escalation of disasters and contributing to conflicts that may force or incentivize people to move. Chad, one of the most vulnerable countries globally to climate change, faces significant challenges such as desertification, the depletion of water resources, and irregular rainfall patterns, all of which threaten the livelihoods of its largely agrarian and pastoral population. Historically, Chad has been a point of origin, destination and transit for various migration flows. However, comprehensive data on environmental migration in the country remains scarce, hindering a complete understanding of the connections between climate change, natural hazards and migration dynamics. Nevertheless, IOM is among the institutions systematically collecting and analysing data on population movements at multiple levels, thus placing it in a good position to leverage its data collection tools to address existing data gaps on human mobility in the context of climate change, environmental degradation and disasters.

In Chad, IOM's Displacement Tracking Matrix (DTM) gathers and analyses data to disseminate critical multi layered information on the mobility, vulnerabilities, and needs of displaced and mobile populations that enables decision makers and responders to provide these populations with better context specific assistance.

This dashboard presents data on the impact of climate change, environmental degradation and natural hazards on human mobility in Chad based on DTM datasets collected in 2023 using different tools. However, these tools were not developed to specifically collect data on climate change, environmental degradation and disasters on human mobility. Therefore, this dashboard provides only a limited presentation of data on the climate and environmental impacts on human mobility and migration in Chad during 2023.

1. METHODOLOGY

The **Solutions and Mobility Index** helps to identify areas where the necessary conditions for lasting and sustainable development are met to support integrated responses. It aims to facilitate the durable return of displaced populations to their communities of origin and prevent future forced displacements by identifying key thematic areas of intervention. The tool collects data on four key themes essential to stability (safety and security, livelihoods and basic services, social cohesion and disaster frequency and level of adaptation) to understand the needs of the displaced population and areas for sustainable solutions to protracted internal displacement. SMI data was collected in March, April and May 2023 in 250 localities through Key Informants (KIs) in the 7 sous-prefectures of the departments of Foulï, Kaya and Mamdi.

The **Transhumance Tracking Tool** (TTT) collects data on transhumance movements along major transhumance corridors across the WCA region, including within Chad. The TTT maps formal and informal transhumance corridors, crossing points, risk zones and pastoral infrastructures. It also enables to estimate transhumance flows and share real-time information on events and movements related to and affecting pastoral mobility. In 2023, as part of the TTT, individual surveys were conducted in Ouaddaï, Sila and Salamat provinces between June and August.

The **Emergency Tracking Tool** (ETT) collects information on sudden and significant population movements, provides frequent updates on the scale of displacement, and quantifies the affected populations at the time of each ETT alert. In Chad, information was collected through KI interviews or direct observations over the course of 2023. For this dashboard, only ETT alerts related to flood-induced displacement were included.

2. LIMITATIONS

SMI: Some locations were not accessible or evaluated during the collection period for security or logistical reasons; this limited coverage may introduce bias in the analysis and limits the generality of the SMI in extremely insecure locations. Data reflects KIs' perceptions of stability and conditions in their locality and thus does not claim to provide an objective measure of this complex subject. The analysis in pages 2-4 is informed only by the main data collection Round in March, April and May 2023, which included climate mobility-related questions.

ETT: Data is collected in Lac Province only.

TTT: Although efforts are made to ensure that the methodology deployed provides the most accurate and representative data possible, the figures in the flow monitoring component are only estimates for given periods and locations. Further, the ad hoc implementation of the Transhumance Tracking Tool on specific borders and periods limits the informative and analytical scope of the tool.

The SMI, ETT and TTT methodologies are implemented separately and thus cannot be combined to aggregate all different datasets, hence why information from the different tools are presented separately in this dashboard. Only respondents over 18 years old were interviewed, hence the absence of information on children for tools that collected data at the individual level.

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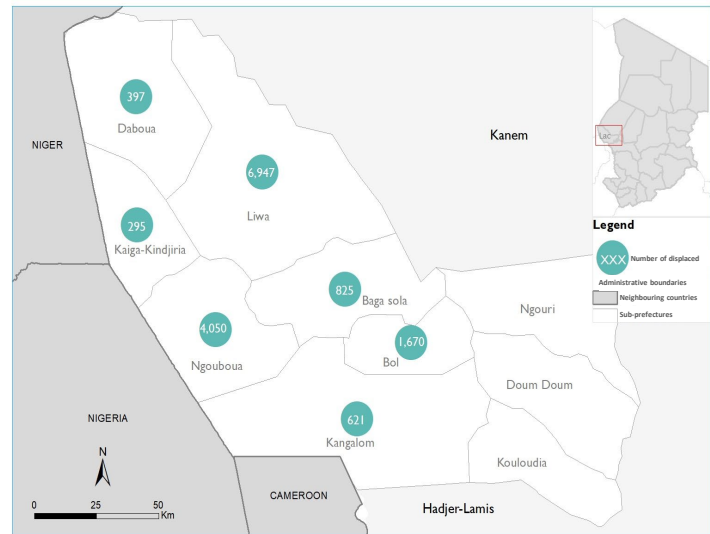
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3. CLIMATE CHANGE IMPACTS: NATURAL HAZARDS IN THE LAKE CHAD BASIN

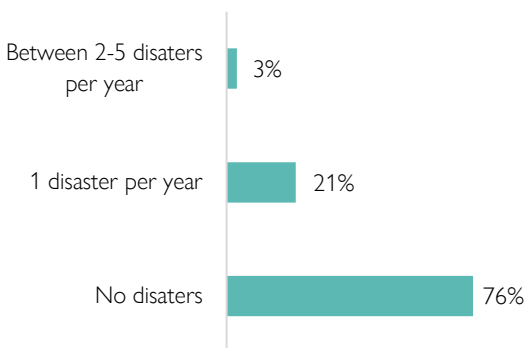
For the main Round of SMI conducted in seven sous-prefectures in the Lake province (Daboua, Liwa, Baga-Sola, Bol, Kanganom, Kaiga-Kindjiria and Ngounoua) in 2023, it was estimated that **14,805 individuals were displaced due to flooding or rising water** with majority of them arriving between October 2022 and April 2023 (Fig 1). Yet only 2 per cent (5 localities) of the 250 assessed localities reflected that natural hazards (specifically, floods and rising water levels) were the primary reason for internal displacement in their respective locality. Armed conflict or confrontations are largely put forward (72%), with preventative displacement or fear as the second most common reason (13%) for displacement. Displacement due to conflict stems from the Lake Chad Basin Crises, which has resulted from a complex combination of factors, including conflict with non-state armed groups, extreme poverty, and underdevelopment. These factors are further exacerbated by climate change and its impacts, such as climatic variation, weather events, and natural resources degradation.

Figure 1: Number of individuals who were displaced due to flooding or rising water in 2023, by sous-prefecture.



This map is for illustration purposes only. The depiction and use of boundaries, geographic names and related data shown on maps and included in this report are not warranted to be error free nor do they imply judgment on the legal status of any territory, or any endorsement or acceptance of such boundaries by IOM.

Figure 2: Summary of the frequency of disasters in the past 5 years in the assessed localities



Shown in Fig. 2, twenty-four per cent (24%), or 61 localities, experienced at least one disaster per year in the past 5 years. The three most affected sous-prefectures that experienced at least 1 disaster per year were Liwa, Baga-Sola, Ngouboua, and Bol.

Figure 3: The type of natural hazard that affected localities the most significantly over the last five years in the 61 localities that have been affected by disaster

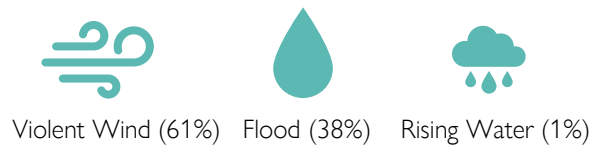
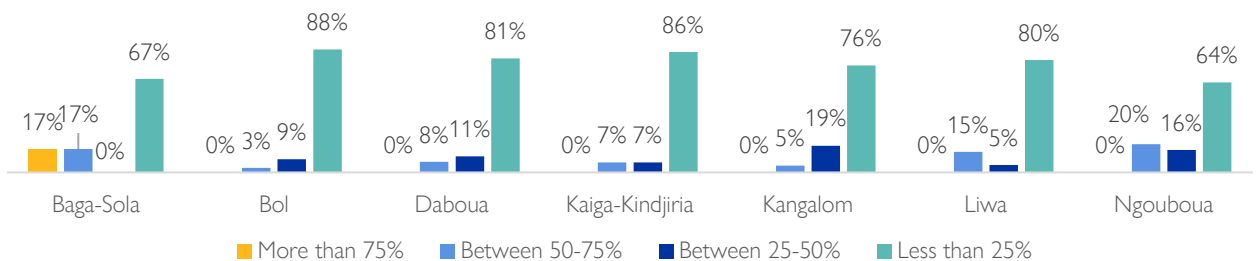


Figure 4: The proportion of land that is affected by natural hazards, per sous-prefecture



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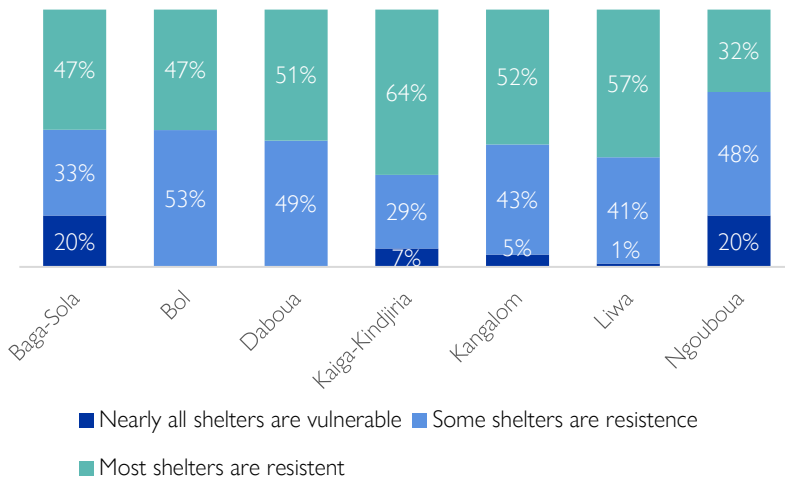
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4. INFRASTRUCTURE DAMAGE, LIVELIHOOD DISRUPTION AND DISASTER RISK REDUCTION IN THE LAKE CHAD BASIN

Natural hazards can damage or destroy community infrastructure and disrupt the provision of critical services, leading to disaster situations. Without or with limited access to these offerings, living conditions are difficult and may incentivize or force movement to other areas.

Figure 5: Summary of shelter resistance to disasters in 250 assessed localities



Aerial view of the city of N'Djamena by IOM staff ©IOM 2024 / Faye Basile

Figure 6: Frequency of disaster-related damage to educational infrastructure in the last 5 years in the 61 localities affected by disasters

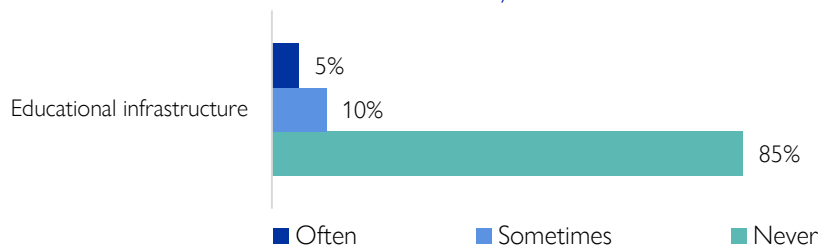
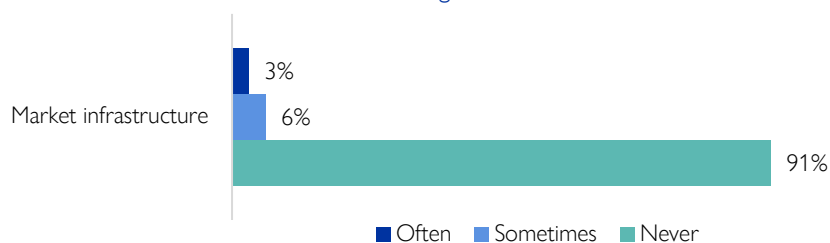


Figure 7: Frequency of disaster-related damage to market infrastructure in the last 5 years in the 175 localities with functioning markets



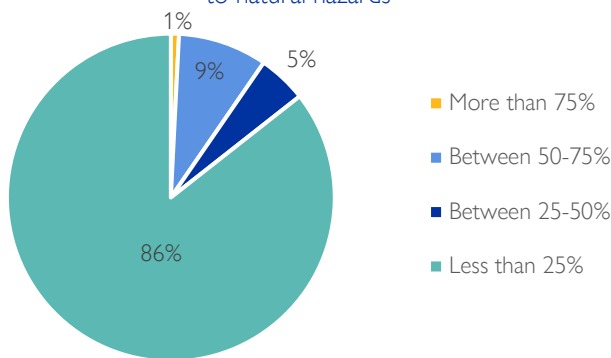
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Over the past five years, key informants (KIs) reported that the majority of localities within the seven sous-prefectures assessed through the SMI experienced relatively minor disruptions to livelihoods caused by natural hazards. As shown in Figure 8, 86 per cent of these localities reported disruption levels of less than 25 per cent, indicating that the overall impact of natural hazards on livelihoods has been minimal in most areas.

Figure 8: Summary of level of disruption to livelihoods due to natural hazards



Evaluation of the Koundoul site
by IOM staff ©OIM 2022 / SAINZOUMI Laye

Disaster Risk Reduction and Preparedness

IDPs and other mobile populations are vulnerable and at risk in the wake of natural hazards and other types of disasters. With fewer resources available as non-residents, they can be left out of post-disaster response and services. Disaster Risk Reduction (DRR) and preparedness are important actions that governments, community leaders and households can take to strengthen their resilience to such events. However, only 9.6 per cent of localities have some or most policies to prepare for climate hazards.

Figure 9: Summary of the existence of local policies to prepare for day-to-day climate hazards in assessed localities



In the 61 localities affected by disasters, 85 per cent (52) do not use public infrastructure (schools, health centers etc.) to house displaced persons after disasters, a shortcoming that places community members at risk in post-disaster contexts.



The proportion of latrines destroyed by disasters in assessed localities over the last 5 years was:

<25%	236 localities
25-50%	6 localities
50-75%	8 localities

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5. NATURAL RESOURCES: ACCESSIBILITY AND USE IN THE LAKE CHAD BASIN

People living within the Lake Chad Basin are heavily dependent on the region’s natural resources. Across all localities, KIs report that communities are experiencing very high utilization rates of cultivatable land, wood, and water. Yet, even at elevated rates, the availability of natural resources is not meeting the communities’ needs. The proportion of highly resource-dependent localities that have no alternatives to these critical resources is: 54 per cent (arable land), 67 per cent (wood), and 65 per cent (water resources).

Figure 10: Arable Land

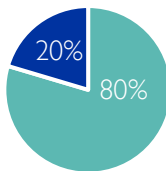


Figure 11: Wood

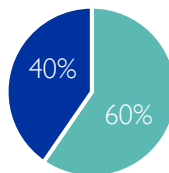
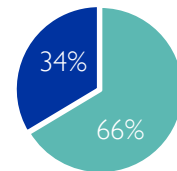


Figure 12: Water Ressources



- Level of utilization is very high and does not meet the needs of the community
- Level of utilization is reasonable and meets the needs of the community

Figure 13: Agricultural land

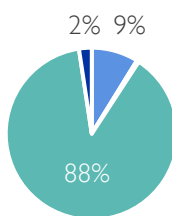


Figure 14: Grazing land

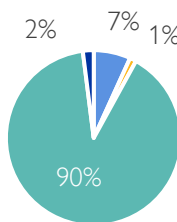
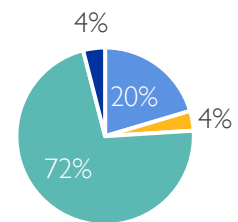


Figure 15: Fishing zones



- None
- Not accessible or used
- Some are used
- All are used

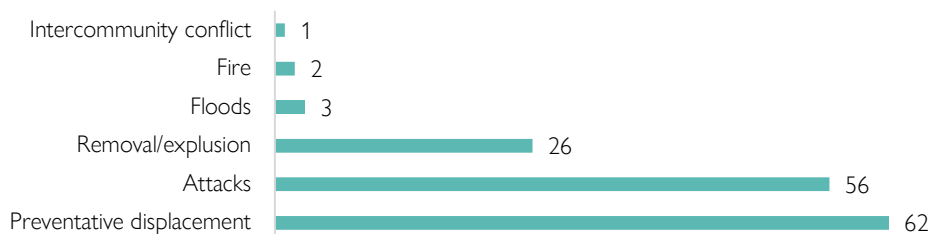
EMERGENCY TRACKING TOOL

In 2023, IOM Chad registered 150 emergency movements in the Lac Chad Province, of which three (3) were due to flooding events that occurred in February and April:

February: in Liwa (Fouli Department), a flood displaced an estimated 780 households (1,750 people).

April: in Liwa (Fouli Department), two flooding events displaced an estimated 150 households (650 people).

Figure 16: Emergency Movements in the Lac Chad Province, 2023



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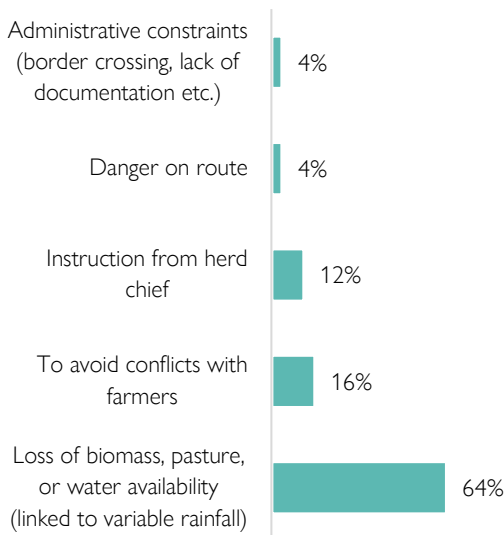
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6. TRANSHUMANCE TRACKING TOOL– CLIMATE CHANGE IMPACTS

Between June and August 2023, 615 transhumant pastoralists were surveyed, all of which identified as the heard leader. More than Ninety-nine per cent were Chadian and less than one per cent were of Nigerian nationality. The respondents' ages ranged from 18 to 87 years. Among them, 97 per cent were male, while 3 per cent were female. Chad was the country of departure for all surveyed individuals, while 98 per cent listed Chad as their final destination and 2 per cent listed Nigeria. Twenty-five (25) respondents indicated they had changed their initial destination while en route. Of those, the primary reason was reported as following:

Figure 17: Summary of primary reason of destination change



Over half (64%) of respondents indicated limited availability of natural resources on their routes, while another 16 per cent reported that they changed their route to avoid conflicts with farmers over competition for natural resources. Taken together, 88 per cent of diverted transhumance routes were linked to limited natural resources.

When asked how the timing of their departure and return has changed over the past 20 years (from direct experience, or based on their father's stories), 71 percent believed that their departure month often changed from year to year, while 85 per cent believed that their return month often changed from year to year. Of the 24 who provided a reason for why they thought the timing varied, the primary cause was:

- Loss of biomass, pasture or water availability (64%)
- Dangers on route (4%)
- To avoid conflicts with farmers (16%)



Facha Livestock Parking Zone in Ouaddai Province, July 2023; Credit: IOM Chad

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Transhumant herders are facing significant disruptions to their traditional practices and routes due to climate change, with variability in rainfall emerging as a key challenge. Seventy-four percent (74%) of herders reported difficulties in planning their transhumance routes and calendar due to unpredictable rainfall patterns. These climate impacts are also linked to water scarcity, degradation of pasture land, rising temperatures, and increased agro-pastoral conflicts over natural resources, further undermining the viability of traditional transhumant practices.

Of those who responded when asked if they could maintain their seasonal pastoral itineraries in the years to come, surveyed transhumant herders remained largely hopeful but only if access to water and land resources are accessible.

Figure 18: Temperatures are rising

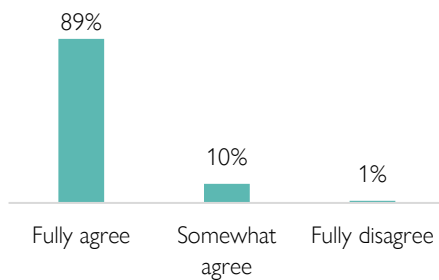


Figure 19: Seasonal rainfall is favorable

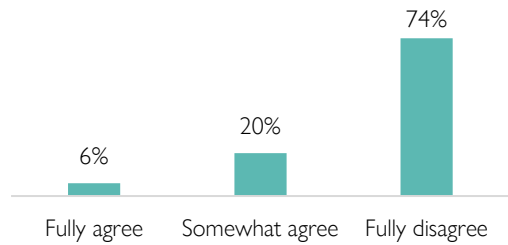


Figure 20: Grazing land has increased in the past 20 years

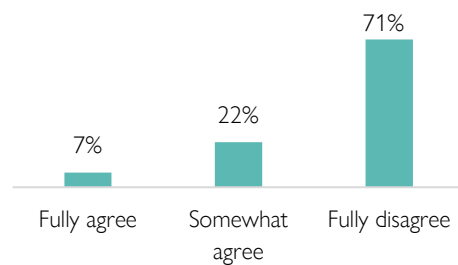


Figure 21: Agro-pastoral conflicts are decreasing

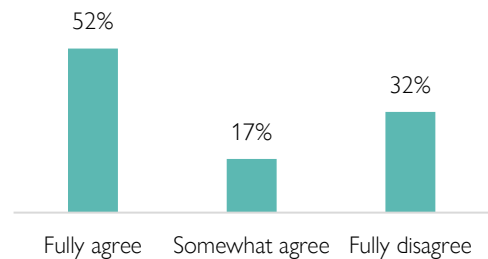
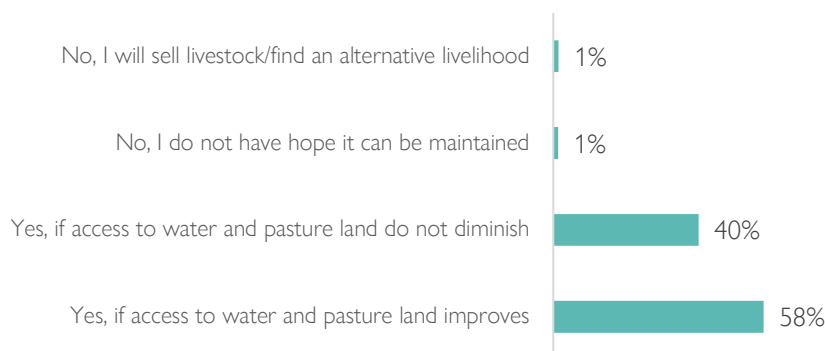


Figure 22: Perspectives on whether transhumants will maintain their pastoral practices in the future



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7. INTERVENTION STRATEGY

Migration and climate change are interconnected, significantly impacting vulnerable populations and communities. IOM Chad works to address human mobility in the context of climate change, environmental degradation and disasters, focusing on interventions that tackle challenges and identify opportunities for youth and people on the move, including the most vulnerable.

PILLAR I - Integrating climate and environmental mobility into public policies

This focuses on research and data collection to understand migration dynamics related to climate change, aiming to inform policies that integrate migration and climate change issues.

PILLAR II - Developing adaptation and resilience solutions for climate and environmental changes

This is related to support climate-affected communities by building resilience and reducing vulnerabilities. The intervention strategy includes vocational training and community-based interventions.

PILLAR III - Preventing disaster risks and tensions related to the management of natural resources

This pillar includes a wide range of operations covering displacement management, disaster risk reduction and emergency preparedness combined with early warning and anticipatory approaches.

DATA AND EVIDENCE

IOM Chad is actively working to improve the availability of data to inform humanitarian and development actors' responses to climate shocks, mobility pressures and disasters. Through its Displacement Tracking Matrix (DTM), the Organization provides critical information on populations on the move in contexts of disasters, climate change or environmental degradation. Several tools such as Solutions and Mobility Index, Transhumance Tracking Tool and Emergency Tracking Tool are already deployed in Chad. These tools can be supplemented by ad hoc studies to develop a more detailed expertise of certain issues of interest.



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8. RECOMMENDATIONS

The **first recommendation** informed by data presented in this dashboard is for IOM to continue to train enumerators and Key Informants on environmental and climatic concepts in order to make sure that they perfectly understand and can convey the notions of climate change, environmental degradations, disasters to surveyed persons, as well as the predominant role that such drivers can play on the decision to migrate. This will help build broader understanding on how climate change, environmental degradation and disasters influences elements of human mobility and provide better and more data to IOM Chad.

The **second recommendation** is for governments, community leaders, NGOs, and other institutions to be proactive about disseminating information, guidance, and resources to strengthen the communities of origin's capacity for adaptation to climate and environmental changes, as well as provide assistance and protection to migrants displaced by climate change, environmental degradation or disasters. Host community DRR and disaster planning is a notable opportunity to increase resilience for local and mobile populations. Additionally, supporting mobile populations by delivering solutions tailored to their needs, whether facilitating safe and dignified movement, supporting their capacity to stay, or providing assistance while they are on the move, can ensure comprehensive and inclusive support for those affected by displacement.

The **third recommendation** is for governments, community leaders, NGOs and other institutions to recognize the necessity of supporting climate-resilient transhumant populations and practices. While most surveyed pastoralists intend to continue their traditional livelihood, reduced access to land and water resources threatens pastoralist and livestock's security and lives. Without action and support, they may face a humanitarian crisis.

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