

# CLIMATE CHANGE, FOOD SECURITY AND MIGRATION IN CHAD: A COMPLEX NEXUS

A joint report developed by  
American University, IOM Chad and  
the Chad Food Security Cluster



CHAD  
FOOD SECURITY  
CLUSTER

# PUBLISHER

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## COVER PHOTO:

A woman in the Lac Province weaving a straw mat for the construction of a semi-durable shelter for displaced persons © IOM Chad 2021/Andrea Ruffini

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<sup>1</sup> Comité permanent Inter-états de Lutte contre la Sécheresse au Sahel (CILSS)  
Système d'Informations sur la Sécurité Alimentaire et l'Alerte précoce (SISAAP)

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# DEFINITIONS

**Internally Displaced Persons (IDPs):** As defined by the UNHCR’s Guiding Principles on Internal Displacement, IDPs are “persons or groups of persons who have been forced or obliged to flee or to leave their homes or places of habitual residence, in particular as a result of or in order to avoid the effects of armed conflict, situations of generalized violence, violations of human rights or natural or human-made disasters, and who have not crossed an internationally recognized State border.”<sup>2</sup> In this report, IDPs describe those who have moved or fled within Chad.

**Displacement:** Displacement refers to the involuntary movement of persons—individually or collectively—from their homes, community, or State, “as a result of or in order to avoid the effects of armed conflict, situations of generalized violence, violations of human rights or natural or human-made disasters.”<sup>3,4</sup> The term is interchangeable with “forced displacement” and “forced migration.”

**Migration:** Migration describes the movement of persons—migrants—away from their place of usual residence, either across an international border or within a State. Migration is “a population movement, encompassing any kind of movement of people, whatever its length, composition and causes; it includes migration of refugees, displaced persons, economic migrants, and persons moving for other purposes, including family reunification.”<sup>5</sup>

**Migrant:** A migrant refers to “a person who moves away from his or her place of usual residence, whether within a country or across an international border, temporarily or permanently, and for a variety of reasons.”<sup>6</sup> “Migrant” is an umbrella term to include all forms of movement. The term has not been defined under international law; this definition was produced by IOM.

**Refugee:** Defined in the United Nations 1951 Refugee Convention, a refugee is a person who “is outside the country of his nationality and is unable or [...] unwilling to avail himself of the protection of that country,” due to a “well-founded fear of persecution for reasons of race, religion, nationality, membership of a particular social group or political opinion.”<sup>7</sup> A refugee also describes someone “who, not having a nationality and being outside the country of his former habitual residence as a result of such events, is unable or, owing to such fear, is unwilling to return to it.”<sup>8</sup>

**Returnee:** A returnee takes part in return migration, which is “the act or process of going back or being taken back to the point of departure.”<sup>9</sup> Returnees may be former refugees (i.e., return is cross-national) or former IDPs (i.e., return takes place within the territorial boundaries of a country). In this paper, “returnees” are Chadian nationals who were living abroad and were then forced to return ‘home’ generally due to conflict.

**Transhumance:** Transhumance describes the “seasonal movement of people with their livestock between pastures, [...] often over long distances, and sometimes across borders.”<sup>10</sup>

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<sup>2</sup> UN High Commissioner for Refugees (UNHCR). *Guiding Principles on Internal Displacement*, 22 July 1998. <https://www.refworld.org/docid/3c3da07f7.html>.

<sup>3</sup> International Organization for Migration. *Glossary on Migration 2nd Edition*, 2017. P 29. <https://www.corteidh.or.cr/sitios/observaciones/11/anexo5.pdf>.

<sup>4</sup> International Organization for Migration. *Glossary on Migration*, 2019. [https://publications.iom.int/system/files/pdf/iml\\_34\\_glossary.pdf](https://publications.iom.int/system/files/pdf/iml_34_glossary.pdf).

<sup>5</sup> International Organization for Migration. *Glossary on Migration 2nd Edition*, 2017. P 62.

<sup>6</sup> IOM. *Key Migration Terms*, 20 January 2020. <https://www.iom.int/key-migration-terms>.

<sup>7</sup> UN General Assembly. *Convention Relating to the Status of Refugees*, 28 July 1951. <https://www.refworld.org/docid/3be01b964.html>.

<sup>8</sup> Ibid.

<sup>9</sup> IOM Global Migration Data Analysis Centre. *Return Migration*, 11 May 2021. <https://migrationdataportal.org/themes/return-migration>.

<sup>10</sup> IOM. *Glossary on Migration*, 2019. [https://publications.iom.int/system/files/pdf/iml\\_34\\_glossary.pdf](https://publications.iom.int/system/files/pdf/iml_34_glossary.pdf).



# DATA & METHODOLOGY

Consultation with IOM staff led to the selection and analysis of the data sets and qualitative findings listed below in Table 1, including: (1) the potential impact of climate and food insecurity (e.g., economic drivers) on transhumance and other forms of population movement, (2) links between conflict and food insecurity and return intentions of displaced and returnee populations, and (3) whether particular vulnerability of regions throughout Chad to food insecurity might be an important driver that causes people to migrate. This paper draws on data collected by IOM Chad and the Food Security Cluster through the IOM Displacement Tracking Matrix (DTM) flow monitoring survey (FMS), the CILSS Harmonized Framework supported by the Food Security Cluster (CH), the IOM Return Intention Survey, and the Climate Change Pilot Study. Data was collected in Chad in general or for the Lake Chad Basin Region in particular, from 2018-2020. Qualitative data were collected from Focus groups (FGs) in the Lac Province region that were conducted to understand the displacement of interviewees, their current situations, as well as their future intentions. The FGs analysis specifically explores the impact of forced displacement on livelihoods and food insecurity.

For this report, a subset of the sample sizes was analysed, due to data gaps or not directly irrelevant to the study. For instance, a small percentage of respondents in FMS did not provide consent, so no data was reported in these cases. Furthermore, not all data was relevant (e.g. data on IDPs within Nigeria would not support an assessment of migration patterns to, within, or from Chad).

**Table 1: DATA SOURCES**

Source	Collection Method	Collection Location(s)	Collection Date(s)	Sample Size	Respondent Profiles
IOM Displacement Tracking Matrix Flow Monitoring Survey (FMS)	Survey	Chad	April 2018 - December 2020;	Total: 15,116 migrants	82% male, 16% female, 2% unreported;  63% married, 31% single, 4% other (separated, divorced, widowed), 2% unreported  88% Chadian nationality, 10% other nationality, 2% unreported
Harmonized Framework (CH)	Analysis	Chad	October, March 2018; October, March 2019; October, March 2020	Not applicable	69 Country Departments (National-level analysis)

Source	Collection Method	Collection Location(s)	Collection Date(s)	Sample Size	Respondent Profiles
IOM Return Intention Survey	Household Survey	Chad, Lac Province	21 October-4 November 2019	1,527 households	35% IDPs, 30% returnees, 34% host community members in household survey;  IDPs were Chadians. Returnees were Chadians forcibly displaced, previously residing predominately in Niger and Nigeria
Focus Groups	Focus Group Interviews	Chad, Lac Province	Eight of 12 focus groups took place between 26-31 October 2019. Two IDP and 2 returnee focus groups were not dated.	12 focus groups	Focus groups were composed of 30 IDPs (18 male respondents, 12 female respondents) and 46 returnees (28 male respondents and 18 female respondents)
IOM Climate Change Pilot Study	Questionnaire	Cameroon, Chad, Niger, Nigeria	July 2018 - October 2018	4,779 households	48% male, 52% female;  84% married, 11% widowed, 5% other (divorced, separated, single);  32% host member, 56% IDP, 9% returnee, 3% other (migrant, refugee, transhumance)

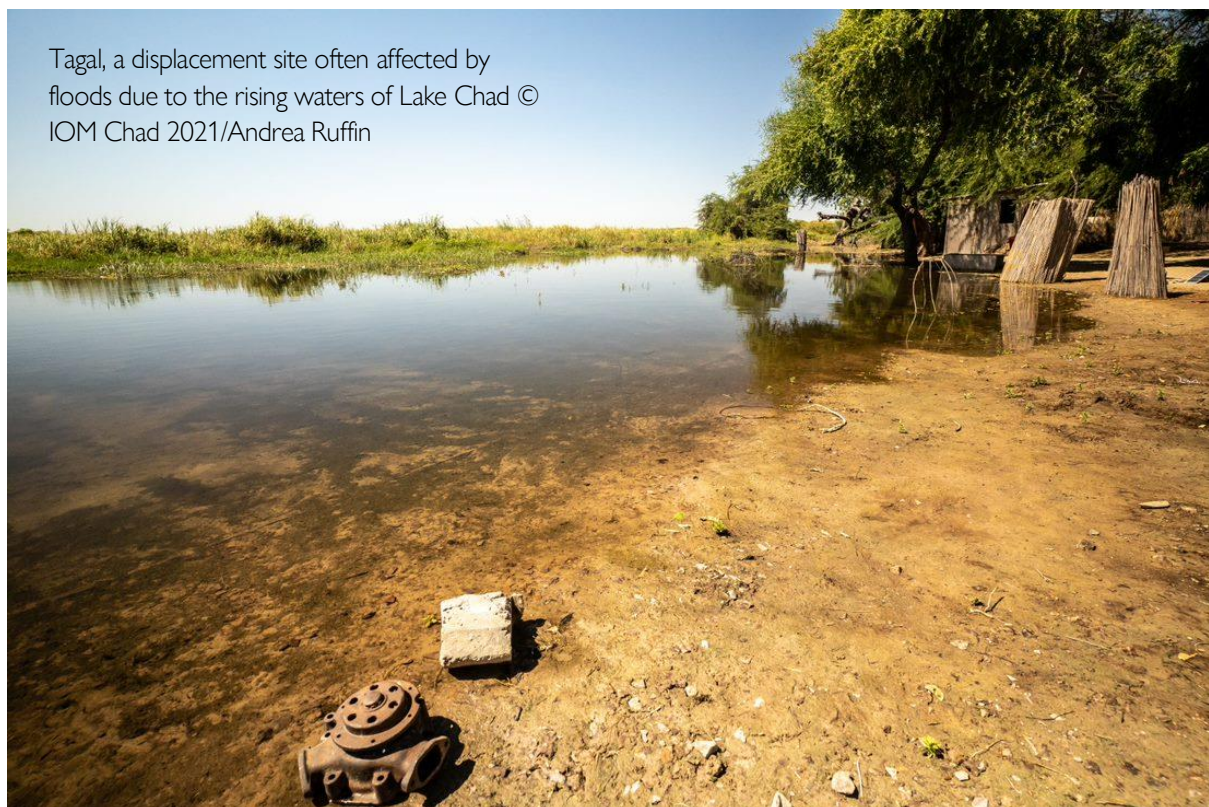
The background and goal of each methodology are as follows:

***IOM Displacement Tracking Matrix Flow Monitoring Survey (FMS):*** This is a national-level study of migrant profiles along the main migration routes in Africa. The goal of the surveys was to collect information on migrants' demographic and socio-economic profiles, countries of departure and destination, journey timeline, reasons and expectations of travel, and needs.

*CILSS's Harmonized Framework implemented by the Chad SISAAP and supported by the Food Security Cluster (CH):* A national-level analysis, the harmonized framework helps to plan the response to food and nutrition crises, as part of intervention analysis, planning, implementation, and monitoring and evaluation (M&E). Results of the CH are primarily meant to support decision making--for organizations to address the food crisis and implement action to strengthen resilience. CH analysis is conducted every six months.

*IOM Return Intention Survey:* The survey was conducted at the household level in Chad's Lac Province, with the purpose to understand the intentions of displaced populations in order to support nexus and durable solution programming. Focus groups were carried out to complete information collected by the survey, gathering in-depth information on displacement history, current situations, and future intentions of both IDPs and returnees.

*IOM Climate Change Pilot Study:* The study aimed to provide a greater understanding of the links among climate change, livelihoods, migration, and conflict in populations considered as part of the ecologically important but vulnerable Lake Chad Basin region. Its ultimate goal is to contribute to the development of climate change adaptation and mitigation strategies.



Tagal, a displacement site often affected by floods due to the rising waters of Lake Chad © IOM Chad 2021/Andrea Ruffin



# EXECUTIVE SUMMARY

Migration in and through Chad and the Sahel has occurred for a variety of reasons over many generations. Migration is a natural process of populations and often is driven by actions of development and social transformation. It also can be triggered in certain circumstances by food insecurity, livelihood instability, violence, and climate change. This paper will draw on existing sources and data analysis to explore the interaction and correlation between two important recent drivers—and disruptors—of migration patterns in Chad: climate change and food insecurity. Identifying and understanding the interactions between migration, climate change, and food insecurity is instrumental in the design of systemic interventions that aim to promote sustainable societies and livelihoods.

Working in conjunction with the International Organization for Migration (IOM) - Chad, the American University team has been charged with research and data analysis to support the following strategic goals:

1. To characterize the impact of climate change on migration in Chad
2. To improve understanding of current migration patterns related to food insecurity in Chad

In its overview of existing research on these topics, this paper will provide a context for the Team's analysis of data from IOM's surveys and focus group inputs from Chadian migrants.

This report explores the causes and effects of migration in greater depth with reference to research reports and to data collected by IOM and its partners in surveys, questionnaires, and focus groups, with emphasis on the following:

- *Chadians' characterization of their own migrations, circumstances, and needs.* Over 90 per cent of respondents to the national-level IOM Displacement Tracking Matrix Flow Monitoring Survey (FMS) do not cite their migration or displacement as forced, but rather as movement towards economic and other opportunities, a culturally customary and positive adaptive action. Yet data from the ecologically-vulnerable Lac Province -- while collected at a different time, place, and for different reasons -- presages the consequences of climate variability and insecurity to come. For example, 83 per cent of respondents to the Climate Change Survey have reported that they had lost their livelihoods, with only 23 per cent of respondents reporting that they had found new livelihoods. Focus group findings depict the extent of loss among Chadians affected by these changes.
- *The likely extent of the impacts of climate variability in Chad on ecology, economy, and equity,* with considerations of food security, resource scarcity, increased desertification, the likelihood of infectious disease, the question of gender roles and vulnerability, the experience of intensified social conflict, and other relevant issues. The report considers the consequences of the nexus of climate change, food insecurity, and conflict in Chad. Increased loss of traditional livelihoods and instability (whether due to conflict, climate change, or both), coupled with the lack of alternative or new livelihoods, leaves people with few choices, a circumstance likely to lead to shifts in societal, familial, and economic structures and norms.

The report identifies key recommendations both to mitigate and facilitate adaptive migration through

the lens of food security and a changing climate. These include establishing better integration policies for persons in protracted displacement, for whom there may be no return; a focus on learning from bottom-up climate adaptation methods; prioritizing resilience-building assistance targeted to the needs of the displaced rather than security assistance; and increasing the role of women in leadership. The report concludes with a short list of further research needs. A reframing of the vocabulary of migration and displacement in Chad may be in order, as this vocabulary affects data collection and subsequent responses of governmental and non-governmental organizations to affected populations.

## KEY RECOMMENDATIONS:

1. Increase the role of women in leadership
2. Establish timely and better integration policies for displaced populations
3. Increase bottom-up climate resilience efforts
4. Resilience-building assistance over security assistance

# 1. INTRODUCTION: THE CONTEXT AND CHANGING TYPOLOGY OF MIGRATION IN CHAD

Geographically and culturally, the nation of Chad embodies variation and movement. Composed of adjacent but distinct climate regions, from the northern desert Saharan zone to the central semi-arid Sahel to the southern tropical woodlands and savannas, it borders Lake Chad in the southwest, important to the nation and the entire region for its supply of freshwater and fish. Enclosing an area twice the size of the nation of France, the extraordinary length of Chad's border with six nations and its place within the centre of Africa makes understandable its history as a transit landscape for humans and other migratory species. Within its borders, seasonal migration and return to place of origin has been a regular pattern, whether on the part of transhumant herders practicing their livelihoods, or families temporarily displaced by southern flooding due to rainfall. These long-enduring patterns are now, for a variety of socio-political and environmental reasons, poised to experience more considerable disruption than ever before; in the context of resource scarcity, political instability, and external pressures, all types of people on the move within and through Chad are at risk. Regional and world institutions seek to understand the reasons behind this disruption in order to address its negative consequences.

Existing literature concerning recent migration in and through Chad has variously characterized this migration as a failure of governance, as forced displacement at the hands of non-state armed actor groups, and as a response to rescission of Lake Chad's shoreline/shrinkage of basin water resources. The data from IOM surveys and focus groups reveals a far more nuanced reality. Although migrants' perceptions and the objective science of climate change may part in a few instances, these perceptions are important to understanding why individuals and groups move, because ultimately every decision to move is the subjective choice of the individual or group choosing migration as their adaptation measure to conflict, food insecurity, economic opportunity, and/or climate change. The analysis of IOM data presented here, synthesized with outside research, has revealed the complex nature of Chad's migration, and the multidimensional layers that drive people to relocate forcibly or voluntarily.

## 2. FINDINGS FROM IOM-DTM DATA

### 2.1 Flow Monitoring Survey Findings (FMS; National level)

The national-level FMS data yields a picture of recent human migration within Chad that is predominantly male (over 80%), mature (average age of around 30 years old), and driven by economic circumstances. Ninety-two per cent (92%) of those surveyed between April 2018 - June 2020 - both IDPs and migrants, including Chadians and non-Chadians -- conveyed that they were not forcibly

displaced, but rather that they moved for other reasons. By far the most frequent response in the April 2018 – June 2020 FMS was economic reasons, as cited by 54.9 per cent (6088) of individual respondents, followed by ‘rejoining family,’ as cited by 15 per cent (1688) of individual respondents. This is in contrast to those citing ‘conflict’ (774), ‘war’ (34), or ‘violence’ (380) as main drivers of their trip at the time, which combined account for 11 per cent (1188) of responses. For the moment one can infer, given the majority citing economic motivations from the FMS dataset, that the search for livelihoods underscores the role of migration as an adaptive measure.

Most migration occurs within Chad’s borders. Of those surveyed (FMS) between April 2018 - June 2020, 9518 (87%) migrants did not attempt to settle in another country. When asked from where they began their journey, of migrants surveyed in the April 2018- December 2020 FMS, 12,297 (82.3%) cited Chad. When asked about their next destination as considered at the time of the interview, a plurality of 3636 (32.8%) of those surveyed (FMS April 2018 - June 2020) who specified a location cited “birth country.” It can be inferred that most of those who do plan to leave Chad are not native Chadians themselves. When asked about their final destination as envisaged at the time of the interview, of those surveyed (FMS April 2018 – June 2020 and July 2020- December 2020) 6831 (45.7%) cited Chad, 5021 (33.6%) did not given an answer, 2227 (14.9%) cited another African country, 679 (4.5%) cited country of birth, and only 64 (0.43%) cited somewhere in Europe or America. These data points underscore the extent of movement of persons within Chad. They also reveal the extent to which migration for economic motives within Chad is not only usual, but frequent. Of those interviewed in the FMS conducted between April 2018 and June 2020, to the question “How long do you plan to stay,” 25.9 per cent indicated intentions to leave their destinations within one year, with 21 per cent reporting that they would leave within one week.

In the context of intensifying climate change leading to food insecurity and conflict – a dynamic this report will analyse in later pages -- the gendered aspect and frequency of usual migration, as they intersect with increasing scarcity, are red flags for the future. Of those surveyed in the April 2018 – June 2020 FMS, 9372 (84.4%) were men, with an average age of around 30 years old. As the lack of or access to available resources becomes more evident and widespread, men are likely to have to travel increasing distances from home to fish or farm or find alternative livelihoods to provide the same economic opportunity and food security they were once able to provide with far less travel. Migration is an adaptation strategy, but is not a guaranteed escape from climate change nor food insecurity. It is not certain that migrants find new economic opportunities or the chance to re-engage with the livelihoods they once knew. The COVID-19 pandemic has further intensified the issues mentioned and revealed how deep the interconnectedness of climate change, food insecurity, and conflict run. Indeed, the later pandemic-era FMS survey conducted between July and December 2020 offers as a ranked choice for the “main reason for your journey” (Q4.3) the following:  
Slow environmental change (e.g. livestock died due to drought, loss of agriculture due to drought/poor rainfall, sea level rise destroyed homes/assets, reduced fish stocks)

Strikingly, nowhere is this option selected by respondents as a top-three ranked choice in the July 2020 – December 2020 FMS dataset supplied for this analysis. As the top-ranked or first choice, economic motivation as a driver of movement remains the most frequent (44%) answer cited, followed by travel for education or training (26% -- this, as a possible consequence of pandemic closures of schools and universities) and then movement to rejoin family/marriage (21%). More immediate pull and push factors are clearly top-of-mind.

These answers reveal the complexity of migration, in that those surveyed do not describe or choose

to describe the impact of certain drivers on their choice to leave. They do not explicitly connect the relationship between drivers (such as climate change's impact on economic opportunities or exacerbating conflict), preferring instead to frame their adaptive responses in more positive terms, as moving toward new economic opportunity. This relatively positive, even proud, point-of-view may perhaps be interpreted as the mental/emotional embodiment of adaptive migration. Through data collected by IOM and discussed below in the Climate Change section, it seems clear that migrants understand and experience that certain resources like water and arable land are becoming scarce, that rainfall is becoming far more variable and sporadic, and that other natural resources are also experiencing variability. While objective science underscores these as impacts of climate change, and while migrants identify these as reasons for their inability to return home and as factors that intensify conflict and the lack of economic opportunities, migrants do not cite these same reasons-- such as variable rainfall, natural resource depletion, or rising temperatures -- as an explicit factor in their decision to migrate, even though citing the signs of climate change was a survey option. The difference between identifying the impacts of climate change and citing climate change itself as the driver of those impacts suggests possible disconnections. One may be between the way Chadians perceive the essence of climate change -- what it is and what it entails -- and its direct impact on their daily lives and livelihoods. Another possible disconnection may be in the vocabulary Chadians use to talk about climate change and the way in which IOM has framed the issue in their FMS surveys. Are Chadians making the connection that their lack of economic opportunities and increase in conflict are partly due to climate change and thus that climate change is a main factor in their migration? Further research and possible modifications in survey design could help clarify this point, whether it is in fact a divergence in how Chadians describe weather events related to climate change rather than climate change itself, or a general gap in how Western language describes the phenomenon as opposed to how Chadians describe it. It is important for decision-makers in developed countries to understand whether Chadians have a conceptual understanding of the larger phenomenon of climate change even if they do not use the same language, and for Chadians to be able to report to the world the long-term implications of climate change's effects on the landscape. This has the potential to serve as an important accountability tool for the developed countries driving the phenomenon.

## 2.2 Climate Change Pilot Study of the Lake Chad Basin Region Findings

The Climate Change Pilot Study sheds light on conflict, food insecurity and climate change as root causes that are inseparable from conflict and economic scarcity, in this case in the Lake Chad Basin region, an area with significant population concentration. The effects of climate change decrease availability and access to water resources, arable farmland, crop yields, and, subsequently, livelihoods. This lack of availability, accessibility, stability, and utility of resources necessary for life and livelihood, pressures Chadians to migrate for food and work. According to the Climate Change Survey data conducted from July 2018-October 2018 in the Lac Province, of a sample size of 892 people 83 per cent of those surveyed reported that they had lost their livelihood. How the respondents lost their livelihoods was not asked and therefore not indicated in the responses. Only 23 per cent of respondents reported that they had found a new livelihood. This data reveals that the issue of increased livelihood loss and instability (whether due to conflict, climate change, or both), coupled with the lack of alternative or new livelihoods, leaves people with few choices. This suggests that in the future the people of Chad's Lac Province may increasingly switch livelihood activities, possibly leading to shifts in societal, familial, and economic structures and norms. Given how tightly bound agricultural and fishing output is to the economic opportunity and food security of the Lac Province of Chad, this scarcity of economic opportunity creates ideal conditions for conflict to thrive.



The conflict—mostly brought about by non-state armed actor groups (NSAGs)—drives the very migration at the core of this research. All the while, the effects of climate change rage on. Temperatures continue to increase, areas continue to be decimated by damaging storms and floods, disease forms and spreads, and reliable freshwater resources continue to disappear. Migration becomes cemented as the default method of adaptation not only to the presence of conflict, but to the effects of climate change and food insecurity. Among other critical drivers, migration within Chad and beyond its borders serves as a means of escape from conflict but also leaves migrants exposed and vulnerable to the very conflict they are attempting to flee as they seek new areas less affected by climate effects.

The effects of climate change and conflict proceed to heighten and intensify one another in the Lac Province. In the Climate Change Pilot Study, an overwhelming majority (92%) of internally displaced persons (IDPs) cite conflict as their root cause for migrating. Climate change plays a key role here. First, climate change helps intensify conflict through limiting availability of resources. Second, the internally displaced cite climate impacts such as flooded landscapes, desertification, and weather variability as a main reason for their unwillingness or inability to return. This could prove to be a useful data point to explore further. Those internally displaced may end up migrating even further away as the impacts of climate change are not exclusive to the area from which they fled.

In short, climate-induced events stress an already food-insecure region by affecting agriculture – Chad’s main source of food and livelihoods. This exacerbated food insecurity necessitates the need for migration and exposes vulnerabilities to conflict; the conflict drives further migration, the instances of which are intensified by climate variability; the increased temperatures, variable rainfall, and decimated landscapes often prevent a return home; and the feedback loop continues. Migration is cemented as the central adaptation pathway but does not guarantee return to a semblance of normalcy, food security, or economic opportunity, which migrants seek when they leave home while exposing themselves along the way to the conflict they intend on escaping. This report explores the causes and effects of migration in greater depth and identifies key recommendations both to mitigate and facilitate adaptive migration through the lens of food security and a changing climate.

### 3. MIGRATION IN THE CONTEXT OF FOOD SECURITY AND CLIMATE CHANGE

Food security, climate change, and migration are linked in complex and multifaceted ways.<sup>11</sup> Their linkages increasingly are being analysed by both international agencies and through academic research. The Food and Agriculture Organization (FAO) has recently highlighted that agriculture and rural development are important considerations for migration.<sup>12</sup> In alignment with the findings of the UN

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<sup>11</sup> Luca Mulazzani et al., "Food security and migration in Africa: a validation of theoretical links using case studies from literature," *New Medit* 19, no. 2 (2020): 19-37.

<sup>12</sup> FAO, *Migration, Agriculture, and Rural Development*, 2016.



Women in Chad's Lac Province, building emergency shelters after their displacement  
© IOM Chad 2021/Andrea Ruffini

Intergovernmental Panel on Climate Change (IPCC), this report assesses the linkages between food insecurity and migration in Chad. A 2019 Report from the IPCC on Climate Change and Land gives high confidence ratings to the ways in which climate change is a driving factor behind food insecurity broadly.<sup>13</sup> The IPCC report states that climate change is affecting food security through increasing

temperatures, changing precipitation patterns, and an increase in extreme weather events such as droughts and floods.<sup>14</sup> The report also predicts that food security will be increasingly affected by projected future climate change and that the vulnerability of pastoral systems and agricultural production to climate change is and will continue to be very high.<sup>15</sup> Climate change is projected to negatively impact the four pillars of food security—availability, access, utilization, and stability—and their interactions that will be addressed in this report.<sup>16</sup>

A UNEP Report from 2011 explores how the Sahel has faced massive population growth, poverty, food insecurity, and chronic instability as a result of climate change and other factors.<sup>17</sup> With a majority of the Sahelian population directly dependent on natural resources for its livelihood, the impacts of climate change driven food insecurity in the region will continue to grow. Persistent food insecurity continues to perpetuate the disruption of livelihoods, exacerbate grievances, and often leaves people with few options for adaptation in the African Sahel. As noted above, agriculture occupies above 60 per cent of the working age population in many African countries and an estimated 85 per cent in Chad, and so is particularly vulnerable to climate change.<sup>18</sup> Agriculture is mostly rain-fed in the Sahel region and climate change has brought increased rainfall variability, leading to lower rain cycles and disrupted planting and cropping patterns, which in turn results in lower yields and falling household income.<sup>19</sup>

While the seasonal migration and movement of people and livestock has been an important part of ancestral livelihood strategies in the Sahel, migration can also occur as a result of these livelihoods no longer being viable, coupled with the absence of alternative livelihoods. Migration, as an adaptation strategy to climate change and food insecurity, is a mechanism that has been occurring in the Sahel for decades and will continue to increase in the future. UNEP has reported on the significant movements of population from the northern regions of the Sahel toward the south and coastal countries, following the ecological crises of the 1970s, 80s and 90s. A report from the World Bank in 2018, projects that by 2050 the world could see over 140 million climate-related migrants, with a

<sup>13</sup> IPCC, *Special Report on Climate Change and Land*, 2016.

<sup>14</sup> Ibid.

<sup>15</sup> Ibid.

<sup>16</sup> FAO, IFAD, UNICEF, WFP, and WHO, *The State of Food Security and Nutrition in the World*, 2018.

<sup>17</sup> UNEP, *Livelihood Security: Climate Change, Migration and Conflict in the Sahel*, 2011.

<sup>18</sup> Felix Kwame Yeboah, and Thomas S. Jayne, "Africa's evolving employment trends," *The Journal of Development Studies* 54, no. 5 (2018): 803-832.

<sup>19</sup> Ahmadou Mbaye, "Africa's climate crisis, conflict, and migration challenges," *Brookings*, 2019. <https://www.brookings.edu/blog/africa-in-focus/2019/09/20/africas-climate-crisis-conflict-and-migration-challenges/>

projection of 86 million climate migrants in Sub-Saharan Africa alone.<sup>20</sup>

## 4. A CLOSER LOOK AT CLIMATE CHANGE

Of 186 countries assessed in the 2016 Climate Change Vulnerability Index (CCVI),<sup>21</sup> Chad was rated the nation most at risk of effects of climate change.<sup>22</sup> Migration is inherently defined by borders, whereas climate change and its impacts materialize without respect for borders. Increasing temperatures, variable precipitation, and environmental degradation create dangerous feedback loops that catalyze migration in the state of Chad.

### 4.1 Organizations Addressing Climate Change in Chad and the Sahel Region

Organizations such as the Food and Agriculture Organization (FAO) and the World Food Programme (WFP) both have strong commitments to address climate change as they join forces to achieve food security for all and to ensure that people have regular access to enough high-quality food to lead active, healthy lives. Their organizational goals are directly affected by the consequences of climate change and they each have brought together their specific thematic areas of expertise as partners to focus on ways to improve the mainstreaming of migration into rural development and agriculture, as well as the important role of migrants in agri-food systems.<sup>23</sup>

FAO works toward an environment in which vulnerable livelihoods and food and agricultural systems can withstand the impacts of climate change through behaviour or systems modifications and actions to limit global warming and its related effects. Three outcomes frame FAO's Climate Change Strategy and Plan of Action: 1) Enhanced capacities of Member Nations on climate change, through FAO leadership as a provider of technical knowledge and expertise; 2) Improved integration of food security, agriculture, forestry, and fisheries within the international agenda on climate change, through reinforced FAO engagement and 3) Strengthened coordination and delivery of FAO work on climate change.

The World Food Programme (WFP) also works to combat the effects of climate change. It is the leading humanitarian organization that saves lives through delivering food assistance in emergencies and working with communities to improve nutrition and build resilience. A critical role of WFP is to help meet the internationally agreed upon objectives of global climate action established in the Paris agreement by helping governments take advantage of climate finance opportunities and expand innovative risk financing programs to promote food security and nutrition.

These organizations and IOM Chad can jointly help achieve the goals and aspirations of the 2030 Agenda for Sustainable Development to end hunger, reduce rural poverty and manage natural resources in a sustainable manner, particularly in Chad and the Sahel Region. Developing approaches to mitigate climate change and associated impacts, as well as strategies to adapt to the consequences of these changes can facilitate global cooperation and help determine an optimal mix of adaptation

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<sup>20</sup> World Bank Group, *Groundswell: Preparing for Internal Climate Migration*, 2018.

<sup>21</sup> The CCVI analyzes 42 social, economic and environmental factors to determine national-level vulnerabilities. Factors evaluated include agricultural dependency, adaptive capacity of the government, and exposure to natural disasters ([Climate-ADAPT, 2010](#)).

<sup>22</sup> ReliefWeb, *Climate Change and Vulnerability*, 2015.

<sup>23</sup> Food and Agriculture Organization of the United Nations. IOM and FAO: Linking migration and agri-food systems. 10/3/21. <http://www.fao.org/brussels/news/detail/en/c/1392240/>

and mitigation strategies that result in strengthened resilience to climate change. Although focused on refugees and host communities, the Prospects Partnership recently launched in Sudan, is a noteworthy example of a collaboration between multiple organizations with unique strengths that jointly help refugees and forcibly displaced individuals with sustainable solutions to support better integration and inclusion.<sup>24</sup> Similarly, organizations that focus specifically on food security and agri-food systems, conflict, and the impact of climate change in relation to population movement might also build stronger partnerships to address shared goals and aspirations of the 2030 Agenda for Sustainable Development.

## 4.2 Climate Change: Increasing Temperatures

Temperatures in the Sahel rise 1.5 times faster than the global average, with near surface temperatures increasing over the last 50 years.<sup>25</sup> <sup>26</sup> The Sahel is expected to warm by 3°C to 5°C by 2050.<sup>27</sup> In Chad, mean annual temperatures have risen by 0.7°C since 1960. The highest rate of change has occurred in the wet season, during which the rate of increase is 0.36°C.<sup>28</sup> Under Representative Concentration Pathways 8.5<sup>29</sup> (RCP8.5) — the high end of future emissions pathways — Chad is projected to warm by 5°C in boreal winter (January–March) and up to 6°C in the summer (July–September).<sup>30</sup> <sup>31</sup> This unparalleled warming has implications for the environment, human health, and livelihood dynamics.

Increased levels of heat lead to extreme events, such as droughts, wildfires, and heat waves.<sup>32</sup> One of the primary causes of droughts in the Sahel is temperature rise, in addition to land degradation and dust feedbacks.<sup>33</sup> Droughts, in turn, have contributed to fire frequency and biodiversity loss.<sup>34</sup> Tree mortality has been linked to Sahelian droughts, which can further exacerbate climate change impacts by diminishing the ability of plants to uptake carbon dioxide.<sup>35</sup> Heat waves—periods of atypically high temperatures—in the region also have increased.<sup>36</sup> Studies have shown that heat waves in the Sahel in recent decades have become more frequent, more intense, and longer-lasting.<sup>37</sup> <sup>38</sup> These heat-induced extreme events negatively impact crop yield and ecosystem functions and services.

Warmer temperatures and the resulting effect on the environment have ramifications for livelihood

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<sup>24</sup>Reliefweb. UNHCR. A new Partnership, "Prospects" changes the ways of supporting displaced groups and their host communities in Sudan [EN/AR]. 19 Feb 2020. <https://reliefweb.int/report/sudan/new-partnership-prospects-changes-ways-supporting-displaced-groups-and-their-host>

<sup>25</sup> Isabelle Niang and Oliver Ruppel, *Africa*, IPCC, 2014.

<sup>26</sup> World Bank, "Climate Data: Historical," 2015. <https://climateknowledgeportal.worldbank.org/country/chad/climate-data-historical>

<sup>27</sup> Malcolm Potts, Elya Zulu, Michael Wehner, Federico Castillo, and Courtney Henderson, *Crisis in the Sahel*, 2013.

<sup>28</sup> World Bank, "Climate Data: Historical." 2015.

<sup>29</sup> Representative Concentration Pathways (RCPs) describe the scenarios—or pathways—for the concentration of greenhouse gases, aerosols and chemically active gases, and land use, usually up to the year 2100. Adopted by the IPCC, they are used to project consequences and assess adaptation measures. RCP8.5, the highest of four pathways, assumes radiative forcing of greater than 8.5 W m<sup>-2</sup> by 2100 (IPCC, 2014).

<sup>30</sup> Alessandro Dosio, "Projection of temperature and heat waves for Africa with an ensemble of CORDEX Regional Climate Models," *Climate Dynamics* 49, no. 1 (2017): 493-519.

<sup>31</sup> IPCC, *Technical Summary*, 2019. [https://www.ipcc.ch/site/assets/uploads/sites/3/2019/11/SROCC\\_FD\\_TS\\_Final.pdf](https://www.ipcc.ch/site/assets/uploads/sites/3/2019/11/SROCC_FD_TS_Final.pdf)

<sup>32</sup> IOM, *Extreme Heat and Migration*, 2017.

<sup>33</sup> Epule Terence Epule et al., "The causes, effects and challenges of Sahelian droughts: a critical review," *Regional Environmental Change* 14, no. 1 (2014): 145-156.

<sup>34</sup> Bruno A. Walther, "A review of recent ecological changes in the Sahel, with particular reference to land-use change, plants, birds and mammals," *African Journal of Ecology* 54, no. 3 (2016): 268-280.

<sup>35</sup> Epule et al., 2014.

<sup>36</sup> Polioptro Martinez, and Erick R. Bandala, "Heat Waves: A Growing Climate Change-related Risk," *Brief for GSDR—2016 Update Secretariat of the United Nations* (2016).

<sup>37</sup> Boutheina Oueslati et al., "Characterization of heat waves in the Sahel and associated physical mechanisms." *Journal of Climate* 30, no. 9 (2017): 3095-3115.

<sup>38</sup> Jessica, F. Barbier et al., "Detection of intraseasonal large-scale heat waves: Characteristics and historical trends during the Sahelian spring," *Journal of Climate* 31, no. 1 (2018): 61-80.

dynamics and human health. First, unusually warm weather adversely affects crop growth by influencing the length and timing of seasons and diminishing nutritional content. This—coupled with variable precipitation—contributes to food insecurity in Chad, a country ranked 187th of 189 countries in the 2020 Human Development Index and in which 2.3 million people are food insecure.<sup>39 40</sup> A second impact of warmer temperature on livelihoods is decreased labor productivity.<sup>41</sup> An analysis on the impact of climate-induced temperature and humidity estimates that up to 20 per cent of annual daylight in-shade work hours in Chad is expected to be lost by 2085.<sup>42</sup> Finally, there is evidence that temperature has an effect on mortality in the Sahel. In high temperatures (above 30°C), mortality rate increases by 3.7 per cent and disproportionately affects younger and older populations.<sup>43</sup>

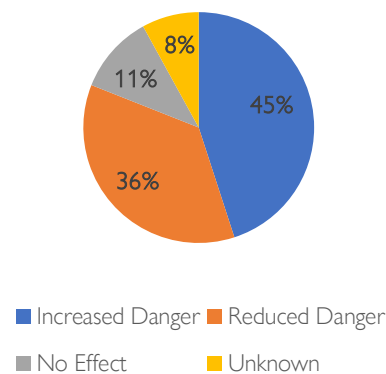
Chad is among the Sahelian nations most likely to have fatal extreme heat on its warmest days, limiting the region’s habitability and survivability.<sup>44</sup> Extreme heat disrupts the environment and impacts livelihoods, limiting the potential for “in situ” adaptation.<sup>45</sup> Indirect consequences of temperature rise may drive people to move internally or internationally, to adapt to the ramifications of warmer temperatures.

### 4.3 Climate Change: Variable Precipitation and Climate Events

Chad’s unpredictable rainfall patterns, flooding, and droughts cause economic and social problems, exacerbating conflict and contributing to migration and internal displacement. If the blame for this transhumance is placed solely on conflict, important dynamics between the environment and security are being ignored.

It is true that of the 708 surveyed individuals in the Climate Change Pilot Study who responded yes to “Have you been forced (or was one or more members of your household forced) to flee your place of origin?”, zero per cent indicated sudden climate events such as droughts and flooding were the factor, only 2 per cent said precipitation was a factor, and just 3 per cent said temperature changes. However, of the same group, 45 per cent felt there was increased danger due to weather changes in the last ten years (Figure 1) and 81 per cent total noticed a change in danger and hazards from weather, climate, and climate events.<sup>46</sup> What can be inferred from the intersection of these survey answers with desk research is that while climate events and changes in rain and temperature may not be considered or perceived as the main factor in the movement of IDPs and migrants, they

Figure 1: Perceived Change in Danger Levels Due to Climate/Weather



<sup>39</sup> UNDP, “Latest Human Development Index Ranking,” 2020, <http://hdr.undp.org/en/content/latest-human-development-index-ranking>

<sup>40</sup> OCHA, “Chad,” 2020, <https://reports.unocha.org/en/country/chad/card/uerjZCl3pk/>

<sup>41</sup> IOM, *Extreme Heat and Migration*, 2017.

<sup>42</sup> Tord Kjellstrom et al., “Heat, human performance, and occupational health: a key issue for the assessment of global climate change impacts,” *Annual review of public health* 37 (2016): 97-112.

<sup>43</sup> Papa Daouda A. Diène et al., “Heat-related mortality in the Sahel: who is sensitive to short-and long-term heat exposures?,” In *EGU General Assembly Conference Abstracts*, p. 12054, 2018.

<sup>44</sup> IOM, 2017.

<sup>45</sup> IOM, p. 9, 2017.

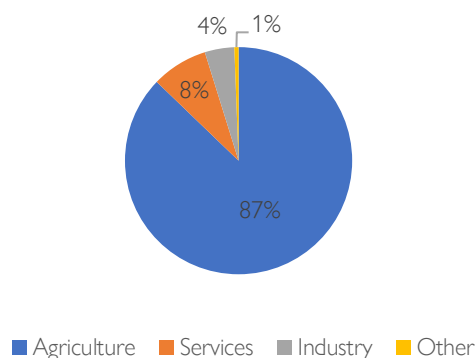
<sup>46</sup> Figure 1



are strong contributors to the disruption in Chadian lives and what we can call an *intensifier* of the root causes- conflict and economic issues- that cause migration. Furthermore, it is possible that the survey respondents may be unaware of the multiple connections between symptoms of climate change and the disruption in their lives.

The largest difficulty in adapting to precipitation changes in Chad is that they remain difficult to predict. The World Bank Group has found no trend in mean annual rainfall since 1960.<sup>47</sup> Other studies have concluded that rainfall is decreasing or increasing annually, with no clear consensus between studies.<sup>48</sup> One complication arises from the fact that Chad has three climatic zones: the arid Northern Chad, the semi-arid central Chad, and a tropical savanna in Southern Chad. Additionally, while most of Chad appears to be receiving more rainfall annually, “countervailing mechanisms... might induce a large decrease of Sahel rainfall,” causing the total amount of precipitation to not accurately reflect these shifts.<sup>49</sup> While a clear trend in increasing or decreasing rainfall has not yet been defined, it is known that rainfall extremes, meaning both high and low amounts of rainfall, have increased over Africa and in Chad.

Figure 2: Employment by Sector (2016)



With nearly 90 per cent of the country depending on agriculture for subsistence and employment<sup>50</sup> (Figure 2), Chad is especially sensitive to variability in precipitation, making changes in precipitation and unexpected climate events all the more disruptive to the Chadians. “For example, local farmers have described how their traditional shifts between different agricultural practices depending on the rain are not able to cope with the weather extremes and variability of the past years.”<sup>51</sup> This impact on the lives of the Chadian people means precipitation

changes and flooding and drought increases are both an environmental, economic, social, and security concern.<sup>52</sup> For example, in 2020 alone, heavy rainfall affected almost 400,000 people, with government statistics and humanitarian partners estimating that 20 out of 23 of Chad’s provinces were impacted by the subsequent flooding.<sup>53</sup> A 2020 UN Security Council document on Chad stressed that displacement was occurring not only due to conflict, but also because of the intense and unpredictable rainfall, flooding, and droughts.<sup>54</sup> Violence often erupts over depleting land and water availability, low food levels, and competition between groups for limited resources. Unpredictable rainfall also causes disruption in the traditional patterns of transhumant herder movement, leading to conflict with farmers themselves trying to adapt to changes in the growing season. The Food and Agriculture Organization of the United Nations put it best when they stated: “Focusing solely on the conflict and

<sup>47</sup> World Bank, “Climate Data: Historical,” 2015, <https://climateknowledgeportal.worldbank.org/country/chad/climate-data-historical>

<sup>48</sup> Kanhu Charan Pattnayak et al., “Changing climate over Chad: is the rainfall over the major cities recovering?” *Earth and Space Science* 6, no. 7 (2019): 1149-1160.

<sup>49</sup> Adelphi, *Climate-Fragility Profile: Lake Chad Basin*, 2018.

<sup>50</sup> Figure 2

<sup>51</sup> Adelphi, *Climate-Fragility Profile: Lake Chad Basin*, 2018.

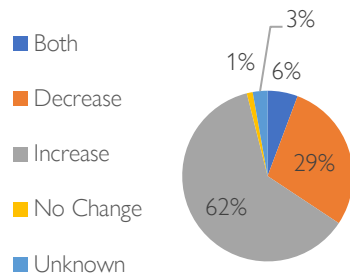
<sup>52</sup> Ibid.

<sup>53</sup> OCHA, *Chad Situation Report*, 10 Nov 2020.

<sup>54</sup> United Nations, “Sahel, Lake Chad Region Walking ‘Tightrope of Survival’ as Result of Environmental Degradation, Humanitarian Organization President Tells Security Council,” 17 September 2020, <https://www.un.org/press/en/2020/sc14307.doc.htm>

insecurity as the cause of the crisis oversimplifies the complex, interrelated socioeconomic and ecological issues affecting rural and urban livelihoods in the Lake Chad Basin region.”<sup>55</sup>

Figure 3: Perceived Precipitation Changes in the Last 10 Years



The surveys from IDPs in Chad confirmed the research, with only 4 per cent of those interviewed saying they either didn't know or there was no change in precipitation in the last ten years, showing that 96 per cent of those surveyed noticed the variability in the precipitation (Figure 3). Furthermore, from those 96 per cent, nearly 73 per cent felt that the changes in precipitation, ecosystems, or weather led to an increased number of disputes and conflicts over land and resources. Thus, while those surveyed may not make the

decision to relocate because of climate-related changes, these changes have an indirect impact that contributes to the ultimate decision of movement.

#### 4.4 Climate Change: Environmental Degradation and Impacts on Human Health

Heat waves and variable rainfall patterns from climate change both contribute to, and exacerbate existing, environmental degradation. While there are myriad lenses through which to examine environmental degradation, the main—and most immediate—areas of concern include desertification, emergence and spread of zoonotic disease, and crop destruction.

The historic recession of Lake Chad and the depletion of freshwater resources within the Lake Chad Basin are a direct result of desertification induced by variable precipitation and ever-increasing temperatures. Though variable rainfall can result in extreme wet seasons and flooding, which in turn can result in a temporary expansion of Lake Chad, the lake and the basin's water resources have seen a continuous long-term downward trend.<sup>56</sup> As these challenges converge, we continue to witness a growing population in Chad fighting for diminishing water resources.<sup>57</sup>

As it concerns disease, climate change exacerbates disease, its vectors, and the impact it has on human beings. Erratic storms from variable precipitation bring heavy rains which sweep up and mix human waste from waste infrastructure such as pit latrines into drinking water and other water resources. This helps diseases like Hepatitis A, E, and Typhoid fever to arise and thrive.<sup>58</sup> Other forms of disease such as vector-borne illnesses also thrive in increased temperatures and heavy rain patterns. According to the Center for Disease Control and Prevention, African Tick Bite Fever, African Sleeping Sickness, Malaria, Yellow Fever, and cholera are diseases carried by ticks, tsetse flies, or mosquitoes, all of which thrive in or near warm and stagnant bodies of water such as flooding after a heavy rain event or Lake Chad itself.<sup>59</sup> Oftentimes, the heavy rains have the potential to awaken and spread the dormant eggs

<sup>55</sup> FAO, *Lake Chad Basin Crisis - Response Strategy (2017–2019)*, 2017.

<sup>56</sup> United Nations, Drying Lake Chad Basin gives rise to crisis

<https://www.un.org/africarenewal/magazine/december-2019-march-2020/drying-lake-chad-basin-gives-rise-crisis>

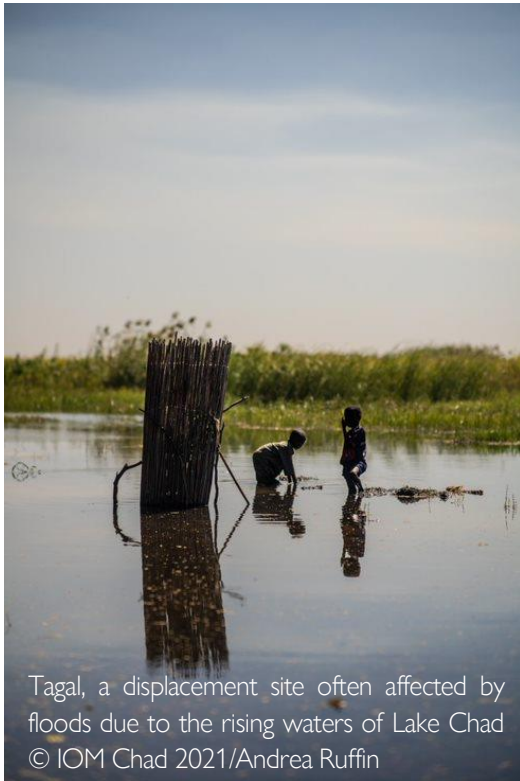
<sup>57</sup> United Nations, Drying Lake Chad Basin gives rise to crisis

<https://www.un.org/africarenewal/magazine/december-2019-march-2020/drying-lake-chad-basin-gives-rise-crisis>

<sup>58</sup> Yana Emets, "Preventing the Spread of Common Diseases in Chad," Borgen Project, 2017, <https://borgenproject.org/preventing-common-diseases-in-chad/>

<sup>59</sup> CDC, "Chad Clinician View," 2021, <https://wwwnc.cdc.gov/travel/destinations/clinician/none/chad>

of these pests. Additionally, as freshwater resources become scarce because of desertification, unpredictable precipitation, and increased temperatures, wildlife will come in more frequent contact with humans. This risks further human exposure to zoonotic diseases like wildlife rabies, as well as possible future pandemics similar in impact to the coronavirus through which we are currently living. Another disastrous impact brought by climate change is crop destruction. This manifests in a couple of forms of climate events. The most immediate is the heavy, destructive rains as described by a recent UN Office for the Coordination of Humanitarian Affairs report.<sup>60</sup> If the rains and winds themselves



Tagal, a displacement site often affected by floods due to the rising waters of Lake Chad  
© IOM Chad 2021/Andrea Ruffin

do not destroy the crops, then the subsequent flooding likely will. The increasing temperatures decrease crop yields as well as the nutritional content of the remaining crop. More catastrophically, we have witnessed the rise of locust swarms in Eastern Africa which has tangential impacts to Chad and other African countries which seemingly escaped unscathed from such a plague. Originating in the Middle East and Kenya, these locust swarms can build tens of millions strong swarms across a square kilometer and fly as far as 150 kilometers a day. They feed on local crops, thereby exacerbating food scarcity in the region. And when there is a food shortage in Kenya and/or the Middle East, outside aid—as finite as it already is—is stretched thin. Much like mosquitoes, ticks, and tsetse flies, locusts breed in large numbers. So, getting rid of one swarm does not insure reprieve from their descendants. Per a recent BBC report, prolonged droughts followed by heavy rains create the ideal environment for these pests – conditions quite similar to what Chad has been experiencing for some time now.<sup>61</sup> According to Business Daily Africa “Scientists say

warmer seas are creating more rain, waking dormant eggs, and cyclones that disperse the swarms are getting stronger and more frequent.”<sup>62</sup>

## 5. FOOD INSECURITY AND MIGRATION IN THE LAC PROVINCE

The Lake Chad Basin is crucial for the livelihoods of approximately 30 million people from Nigeria, Cameroon, Niger, and Chad that share this transboundary water resource.<sup>63</sup> Over 80 per cent of the population in the Lake Chad Basin rely on the agriculture sector as their main source of employment and income.<sup>64</sup> Its shrinkage over the decades has left many of those in Chad who depend on it for livelihood facing food insecurity, loss of income, and lack of alternative livelihood sources. The principal

<sup>60</sup> OCHA, “Chad,” 10 November 2020, <https://reports.unocha.org/en/country/chad/card/4N6LzoDRhD/>

<sup>61</sup> David Njagi, “East Africa is seeing its worst swarms of locusts in many decades. How can these ravenous pests be stopped?” BBC, 6 August 2020.

<sup>62</sup> Business Daily, “Making animal feed: How farmers are fighting back against locust invasion,” 22 February 2021, <https://www.businessdailyafrica.com/bd/news/making-animal-feed-how-farmers-are-fighting-back-against-locust-invasion-3300256>

<sup>63</sup> L Usigbe, Drying Lake Chad BASIN gives rise to crisis, *Africa Renewal*, 2019.

<sup>64</sup> FAO, *Lake Chad Basin Crisis Response strategy (2017–2019)*, 2017 <http://www.fao.org/3/i7078e/i7078e.pdf>

root causes of food insecurity in Chad -- defined as a lack of available financial resources for food at the household level -- include poverty, conflict, lack of investment in agriculture, unstable markets, and climate change, factors often tightly intertwined. It should also be noted that factors such as poor governance, ineffective policies, and corruption can also contribute to insufficient access to food and ultimately, food insecurity.<sup>65</sup> A 2020 report from OCHA featuring the latest available figures found that more than 2.3 million people were facing food insecurity, including 450,000 in severe food insecurity in Chad.<sup>66</sup> Food security—availability, access, utilization, and stability—and their interactions in relation to migration are considered here.

Agriculture is the main livelihood for communities across the Lake Chad Basin, but the drastic depletion of the region's water has affected livestock, crop, and fish production. The impact of this has led to the increase in environmental migration, population displacement, poverty, and food insecurity throughout Chad.<sup>67</sup> This has heightened competition and tension over resources such as water, land, and food. Alongside these pressures, non-state armed actor groups (NSAGs) are taking advantage of these vulnerabilities to recruit youth and strengthen their influence across the region.<sup>68</sup>

Poverty linked to livelihood instability is a principal cause of hunger not only in Chad, but in neighbouring countries. Individuals living in poverty often cannot afford food or sufficient quantity or quality to sustain a healthy life. Other long-term consequences include decreased income earning potential and labour productivity. Within the last six decades, climate change, over-exploitation and demographic pressure have contributed to the shrinking of the Lake Chad Basin waterbody by over 90 per cent, leading to the loss of sustainable livelihoods for inhabitants and lack of access to food.<sup>69</sup>

Violence and conflict can have both direct and indirect impacts on the various levels of the food system, resulting in hunger and food insecurity. On a local level, conflict can negatively impact income opportunities and employment, which leads to an individual's ability to acquire food for themselves and their families. On a larger scale, conflict can also affect imports and exports, which can affect food availability and its pricing. The destruction of resources (land and equipment) and means of transport and related operations (air, seaway, roads) can affect food availability. Chad is one of the countries in the Sahelian region where security is fragile due to conflicts within neighbouring countries as well as within its borders. Since 2003, the country has been hosting a large number of displaced persons, including more than 451,000 refugees from Sudan, the Central African Republic and Nigeria, further exacerbating food insecurity.<sup>70</sup> Environmental stressors add to other social, political, and economic vulnerabilities that help to increase the presence of non-state armed groups (NSAGs) across Chad, particularly in the Lac and North..<sup>71</sup> NSAGs are broadly defined as "groups that challenge the state's monopoly and its capacity to control violence in part or all of its territory".<sup>72</sup> The heightened food insecurity and resource scarcity in the Lac offers recruitment opportunities to NSAGs, as they offer promises of alternative livelihoods and economic incentives to those most affected by climate and food impacts.<sup>73</sup>

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<sup>65</sup> Ibid.

<sup>66</sup> UN OCHA, "Chad," 2020, <https://reports.unocha.org/en/country/chad/card/uerjZCI3pk/>

<sup>67</sup> Truett Sparkman, "New Report Addresses Climate and Fragility Risks in the Lake Chad Region," The Wilson Center, *New Security Beat*, 2019.

<sup>68</sup> Ibid.

<sup>69</sup> L Usigbe, Drying Lake Chad BASIN gives rise to crisis, *Africa Renewal*, 2019.

<sup>70</sup> OXFAM International. Chad. <https://www.oxfam.org/en/what-we-do/countries/chad>

<sup>71</sup> Mervyn Piesse, "Boko Haram: exacerbating and benefiting from food and water insecurity in the Lake Chad Basin," *Future Directions International* 19 (2017).

<sup>72</sup> Ibid.

<sup>73</sup> Ibid.

As indicated earlier in the report, environmental challenges including flooding, drought and water shortages, desertification, erosion, and deforestation can have detrimental impacts on food security. The consequences from drought can increase hunger and poverty by reducing livelihood opportunities, income, and agricultural production. Environmental challenges pose particular hardships on the Lake Chad basin region since the basis of almost all household livelihoods is a blend of agriculture, livestock, fisheries. The pastoral situation in Chad remains characterized by the scarcity of pastoral resources which affect the movement of herders, the livestock body conditions, and thus, livestock prices are often below average. Other economic slowdowns and downturns, such as the economic crisis in 2018 and beyond, and the unanticipated Covid-19 catastrophe, have disproportionately affected food security, particularly in already fragile states. Utilizing supporting data from IOM surveys, the following sections explore perceptions of people in Chad surrounding livelihoods, and access to vital economic resources and food.

## 5.1 Food Security and Climate Sensitive Livelihoods: Implications from the 2018 Climate Change Pilot Study

According to an Adelphi Climate Fragility Profile of the Lake Chad Basin from 2018, 90 per cent of livelihoods are considered “Climate Sensitive”.<sup>74</sup> Many of the lake’s residents have made their living from a combination of fishing, agriculture, livestock, and trade. It is important to note that Chadians have switched between different occupations in response to variations in the lake and climate, among other factors, for generations. However, the tactic of diversifying livelihoods is increasing and is also becoming more and more challenging for Chadians. For example, people will shift from flood recession-based agriculture to livestock herding or fishing if the risks for early flooding are high.<sup>75</sup> While diversifying livelihoods has been a strategy to cope with climate and weather variability in the past, this strategy is less and less viable when access to land and water is restricted. Due to increasing pressures on traditional livelihoods like farming and fishing, it is not always possible or feasible for Chadians to change cropping patterns, planting times, and grazing routes. Traditional dispute resolution mechanisms, such as compensation, are also no longer proving effective as prolonged cycles of conflict and rainfall variability have depleted people’s savings and ability to pay. Many of the displaced populations have experienced displacement more than once, further straining their financial capacity to respond and adapt to their changing circumstances. As a result, crop diversification, one of the key ways populations have responded to variations and unpredictability in weather, is less possible as farmers no longer have the financial resources or land to engage in planting multiple crops or move to different locations. Much of the information which this report collects from existing literature on the linkages between climate change, food insecurity, and migration were confirmed in the most recent FMS and Climate Change Study data from IOM.

Many findings from IOM-Chad’s 2018 pilot study align with the research and overall assessment of Chad in the Adelphi report. The 2018 IOM climate change study was collected from interviews organized as part of a quantitative study aiming to better understand the link between climate change, livelihoods, migration, and dynamics of conflict. This study was meant to respond to these issues and to suggest development of climate change adaptation and mitigation strategies. The questionnaire centred on temperature and rainfall variability, availability of resources, livelihoods, and information relating to migration or forced displacement. The survey was conducted between July 2018 and October 2018 in Chad, Cameroon, Niger, and Nigeria. For purposes of this study, the focus is only

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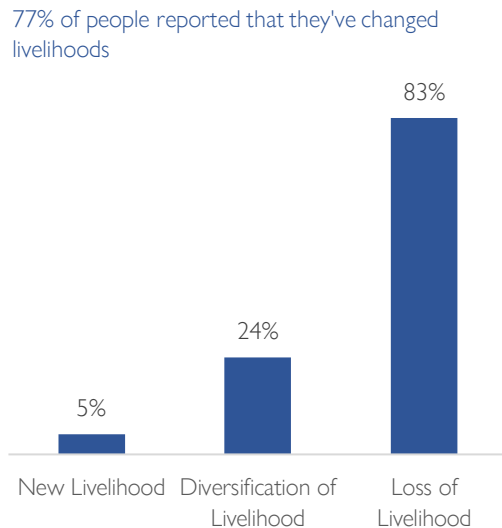
<sup>74</sup> Chitra Nagarajan et al., "Climate-fragility profile: Lake Chad basin," *Berlin: adelphi* 32, 2018.

<sup>75</sup> Ibid.



on responses from those in or displaced from Chad, with a sample size of approximately 892 people. The sample subset consisted of internally displaced people, returnees, migrants, refugees, host members, and transhumance populations in the Lac province of Chad.

Figure 4: Percentage of individuals reporting they have changed livelihoods



One of the questions asked in the questionnaire was: “Has your livelihood changed since you’ve been here (in Chad)?”, in which 77 per cent of people responded “yes”, that they had in fact changed livelihoods, and only 23 per cent of respondents said “no.” This affirms the notion that people are increasingly changing their livelihoods (whether by choice or because they have no alternative) in response to factors such as climate change and conflict. While this has been a coping mechanism or adaptation strategy for generations, the perception of those surveyed shows us that this is becoming increasingly more and more common.

Directly preceding this question, respondents who said that they had changed livelihoods were asked how their livelihoods had changed (Figure 4). Respondents could select more than one of the options, which included the following: diversification

of livelihoods, loss of livelihoods, new livelihoods, other, or I don’t know. Twenty-four per cent of respondents reported that they had diversified their livelihoods, meaning that they practiced more than one activity. Whereas 83 per cent of respondents said that they had lost their livelihood, and 5 per cent of respondents reported that they had new livelihoods. These responses demonstrate that a significant number of people report that they have lost their livelihoods, whether due to conflict or climate change or another reason, and that more than one in four people are diversifying their livelihoods or seeking new livelihoods as a result of this loss. Seeking these “new livelihoods” may involve migration as opportunities become scarce or too risky in certain parts of the country. This finding suggests that there are considerable threats to the stability of Chadian livelihoods in the Lac region, and that while seeking new livelihoods may be the only available option it is not necessarily a positive one. This may presage a larger problem, that there may not be enough “new livelihoods” to compensate for the significant loss of original livelihoods, as more people are reporting losses than they are reporting that they found new livelihoods. While a large number of people may cite these changes as a response to conflict, we also saw responses from the data that suggest that people also perceived a lack of access to resources for food and income. As noted earlier, diversification of livelihoods, while at times a positive adaptation strategy, is becoming increasingly more limited, leading to the possibility of forced migration, or migration to seek alternative livelihoods.

## 5.2 Food Security, Resource Access, and Availability: Implications from the 2018 IOM Climate Change Pilot Study

According to the 2019 Adelphi report on addressing climate and fragility risks in the lake Chad region, the increase in numbers of internally displaced people (IDPs) has resulted in the clustering of large

numbers of people into already resource-stressed and/or -deficient areas in search of safety.<sup>76</sup> This places significant pressure on locally limited resources and existing resource governance systems, increasing the potential for escalating conflict or competition over natural resources.<sup>77</sup> For many, finding arable land that is safe is quite a challenge, particularly given that host communities tend to have prior claims to the land creating tensions. In particular, women have difficulties accessing, or owning land, especially if their husbands or fathers have been killed, detained or separated from them.<sup>78</sup> Literature has documented how widespread social inequalities that disproportionately affect women can aggravate their vulnerability to disaster risk.<sup>79</sup> Social inequalities may lead to gender-based violence during and after disasters. In Dar Sila and Barh el Gazal regions in Chad, Masson et al. (2019)<sup>80</sup> conducted a study that concluded violence against women and girls (VAWG) negatively affects resilience-building because it prevents survivors and their dependents from proactively and positively managing ongoing challenges and crises.

Women also face increased levels of risk and vulnerability to sexual and gender-based violence when going about daily tasks to gather or access essential resources. Widespread deforestation, especially around internally displaced or refugee settlements and camps, is driving the need for people to travel further to collect essential firewood.<sup>81</sup> This is one example of how people, especially women, can be at a higher risk of sexual and or gender-based violence. All of these factors, pressures, and threat multipliers are also eroding social cohesion and trust at the individual, household, and community levels. For example, inter-communal tensions have grown in the Lac province of Chad. In areas with high IDP and refugee populations, relations have grown tense over the perception that the displaced communities are benefiting more from humanitarian aid than are host communities.<sup>82</sup> This erosion in social cohesion and trust is exacerbated by conflict and climate change and can in turn exacerbate conflict. It is important to note that conflicts over natural resources can vary in severity, ranging from increased tension and the breakdown of community trust to violent conflict. Natural resource-related conflict can have a number of different drivers and can be the tipping point for escalation of pre-existing conflict dynamics. Climate change may not solely or directly lead to conflict over resources. These disputes take place in the context of a variety of other social, political, and economic factors which can be exacerbated by climate change.

The IOM Chad Climate Change pilot study also yielded results and perceptions from respondents that affirmed the linkages this research paper has made between climate change and access/availability to food and other essential resources. The questionnaire sought to get a better understanding of which were the primary natural resources that people in the Lake Province of Chad depended on most, and how their availability has varied over the timeframe of approximately 10 years. When asked what the main natural resources were in Chad (Figure 5), 75 per cent of respondents reported farmland, 65 per cent of respondents reported wood, and 38 per cent of respondents reported both water and pasture land. When asked why respondents felt there were perceived variations in the availability of these main resources, respondents cited the following reasons: variation in rainfall, variation in temperature, disappearance of animals and plants species, appearance of new animals and plants species, population growth, and conflict.

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<sup>76</sup> Janani Vivekananda, "Shoring up stability: addressing climate and fragility risks in the Lake Chad Region," *adelphi*, May 2019.

<sup>77</sup> *Ibid*, 50.

<sup>78</sup> *Ibid*, 51.

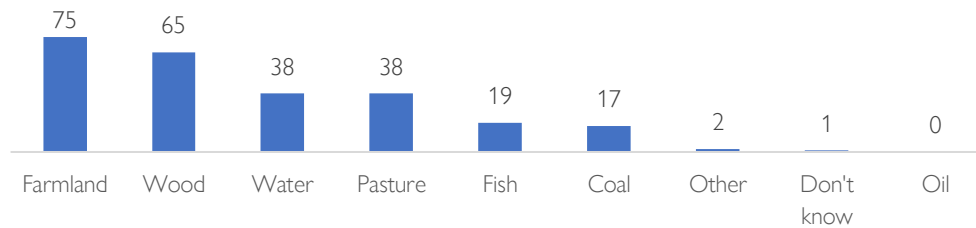
<sup>79</sup> Sarah Bradshaw and Maureen Fordham, *Women, Girls, and Disasters*, 2013.

<sup>80</sup> Virginie Le Masson et al., "How violence against women and girls undermines resilience to climate risks in Chad," *Disasters* 43 (2019): S245-S270.

<sup>81</sup> *Ibid*, 53.

<sup>82</sup> *Ibid*, 56.

Figure 5: What are the main natural resources available (%)?



This data reveals the heavy dependence people have on farmland, water, pasture, and wood, and how the variations in access and availability disrupt the stability of their livelihoods and food security. Additionally, respondents were asked a number of questions relating to resource access and availability compared to before they were displaced, answering as follows:

- When asked about the availability of resources needed for their economic activities, 90 per cent of respondents reported a decrease in availability of economic resources compared to before they were displaced.
- When asked about the availability of food, 91 per cent of respondents reported that there was a decreased availability of food compared to before they were displaced. (Figure 6)
- Respondents were asked about their overall resource production, of which 87 per cent reported a decrease in their resource production compared to before they were displaced. (Figure 6).
- Respondents were asked whether there had been an increase in competition for access to resources or more disputes over access to land and property. 72 per cent reported an increase in conflict and competition, 52 per cent reported an increase in disputes over land and 20 per cent reported an increase in competition for access to resources compared to before they were displaced. (Figure 6).
- Respondents were asked about the overall cost of resources and goods (including both food and non-food items) of which 80 per cent reported that there was an increase in market prices of goods compared to before they were displaced. (Figure 6)

Figure 6: Percentage of People that Reported Variations



Based on these reported perceptions, there appears to be a correlation between the amount of people that reported a variation and the variation itself, indicating (1) a significant decrease in availability of food, economic resources, and the production of resources; (2) a significant increase in competition over resources and land, and (3) an increase in cost of food and goods. The linkages across these various factors and their drivers such as climate change induced rainfall and temperature variations lead to increased difficulty in accessing basic needs such as food and other resources needed for livelihoods and economic well-being. As a result, resource production capital to enable production of food and other resources is decreasing. This then leads to an increase in prices, as the demand increases and the availability decreases. Conflict and competition over resources and land is increasing. There is less availability, high demand, high cost, and low production rates. Faced with these realities, to some extent families and individuals can adopt coping mechanisms to account for these variations that are impacting their stability. When respondents were asked if they or their household adopted coping mechanisms in the face of these resource and livelihood changes, only 21 per cent reported yes. The top three coping mechanisms that people listed were: 1) changed material or method for the construction of shelters, 2) modified my eating habits, and 3) modified my consumption habits/ changed jobs. While only 21 per cent of people surveyed reported that they had adopted coping mechanisms, climate and conflict related shocks seem likely to drive this number up over time.

### 5.3 Food Security and Migration: Chad Country-Wide Data from Food Security Cluster CH and IOM FMS

To better understand and map the linkages between movement of people in Chad and food insecurity, two datasets were compared to find significant overlap. Utilizing the International Organization for Migration DTM flow monitoring survey (FMS) data from April 2018 to June 2020, as well as the Harmonized Framework supported by the Food Security Cluster, for identifying areas at risk and food and nutrition insecure populations in the Sahel and West Africa (CH), Chad data from 2018-2020, the following linkages were assessed. The FMS data involved interviews with a randomly chosen sample of migrants travelling through flow monitoring points (FMPs) to collect more detailed information about their profiles and migration background. The FMS survey collected data on the demographic profile; nationality; level of education; employment prior to migration; reasons for migrating; route taken; needs and difficulties faced; and vulnerabilities of interviewed individuals. The Food Security

Cluster CH data -- the “harmonized framework” -- is a platform that helps plan the response to food crises as part of a framework of intervention analysis, planning, implementation, and monitoring and evaluation. This framework classifies the current and projected severity of food security at the national and regional level. The current situation analysis is done after the harvest, when food is available. Then the projected situation is developed which takes into account June, July, and August, which is the lean season. Finally, the food security outcomes are classified in 5 different phases, 1) minimal, 2) stress/pressure, 3) crisis, 4) emergency, and lastly, 5) famine.

The IOM FMS 2018-2020 data had a sample size of 11,096 people, all surveyed in Chad. When respondents were asked their main reason for migrating, 55 per cent of respondents cited economic reasons. Of those 11,096 people surveyed in Chad, 13 per cent of them started their migration journey from Ouaddai, 12 per cent reported that they started from Borkou, and 11 per cent of respondents reported that they started from Moyen-Chari. When the top three regions reported as locations of departure in the FMS data are compared to the level of food insecurity in those same locations from the CH data, clear patterns emerge identifying food insecurity as a key driver of movement. For example, Ouaddai has been in Phase 2 or the “pressure phase” from 2018-2020. Phase 2 means that even with humanitarian aid, at least one in five households in the area is in the following condition or worse: “reduced and minimally adequate food consumption but inability to afford certain essential non-food expenses without engaging in irreversible coping strategies.” While respondents from Ouaddai did not need immediate food assistance, they did need more support to build resilience, develop livelihoods and maintain acute malnutrition rates at acceptable levels. Similarly, Borkou experienced the pressure of Phase 2 for 2018 and 2020, and reached the crisis Phase 3 in 2019. Phase 3 “crisis” means that even with humanitarian aid, at least one in five households in the area is in the following condition or worse: “extreme food deficits, resulting in very high acute malnutrition or excessive mortality; or an extreme loss of livelihood assets, which will lead to food consumption deficits in the short term.” Moyen-Chari was in Phase 2 from 2018 to 2020, and thus in a similar state to Ouaddai with its looming pressure of food insecurity. The CH data shows the vulnerability of regions throughout Chad to food insecurity, and the associated impacts of livelihood instability, malnutrition, and reduced accessibility to essential food and goods. With the top three regions of departure from the FMS data in Chad also consistently under food security pressure or in crisis from 2018-2020, it appears that food insecurity is a clear driver of migration.

## 5.4 Food Security Impacts: Agriculture and Livestock Livelihoods

While climate change is a root cause of food insecurity in Chad, conflict has also had an impact on food security, particularly in agricultural communities in the Lake Chad Basin. According to the FAO, vulnerable communities are often targeted by non-state armed groups (NSAGs) to acquire resources and force community members from their homes. The looming threat of violence from NSAGs has prevented farmers from feeling safe and being able to fully engage in their livelihood practices.<sup>83</sup> In recent years, NSAGs have been involved in the looting of harvests and cattle, along with the destruction of infrastructure, and the disruption of important services in the Lac province of Chad. Arable land has been used to shelter displaced populations, further fragmenting farmlands, while the production of important staple cereal crops such as maize and sorghum have been restricted to avoid creating hideouts for the NSAGs.<sup>84</sup> The use of fertilizers for agriculture have also been restricted as

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<sup>83</sup> FAO, *Lake Chad Basin Crisis Response strategy (2017–2019)*, 2017, <http://www.fao.org/3/i7078e/i7078e.pdf>.

<sup>84</sup> *Ibid.*



they can be used to produce bombs.<sup>85</sup> Overall, finding farmland that is fertile and safe from insecurity threats has proved difficult, especially since host communities tend to have prior claims on such land.<sup>86</sup> The conflict crisis has limited the three traditional farming options of rainfed farming, irrigation farming, and moving towards the lake shores to plant crops. This is in part due to security threats and restrictions on the places that people can live and travel to, often impacting the ability for people to move to more fertile land. Along with the fear of violence, security threats have shut down markets, banned certain livelihoods, and restricted the movement of items such as fertilizers and crop height.<sup>87</sup> If one of the options fails due to rainfall variability or security threats, communities have no other options towards which to turn, and as a consequence adaptation strategy are no longer available to them.<sup>88</sup>

In addition to agriculture, livestock is another important pillar of Chad's overall economy. For both farmers and herders, rain-fed agriculture is the dominant method used at the subsistence level.<sup>89</sup> Seasonal migration often sees herders grazing their livestock in the Northern region of Chad during the wet season and moving to the Southern region of Chad during the dry months.<sup>90</sup> While climate change has led to constraints on resources, traditionally farmers and herders have been able to cooperate, with



livestock waste enriching the cropland and other mutually beneficial outcomes.<sup>91</sup> Conflict has also resulted in the looting or killing of livestock, or the abandonment of livestock by herders fleeing potential violence.<sup>92</sup> The drying out of pastures and crucial water points has also hindered livestock conditions, further impeded by border closures due to the pandemic which disrupt transhumance flow across borders. The limited water and fertile pasture resources threaten livestock survival as well as heightening tensions between herders and farmers, and further destabilizing the region. Growing mistrust between farmers and herders has led to a perception among farmers that pastoralists are largely to blame for food insecurity and dwindling natural resources.<sup>93</sup> As a result of forced movement and scarce pasture land, pastoralists and their animals are ending up closer to more populated areas, adding to the stress on the available and fertile land. It is important to note that incidents of conflict or tensions are not limited to farmers and pastoralists. Recent years have also experienced rising tensions between groups pursuing the same livelihoods, such as the Buduma pastoralists belonging to different sub-groups that have clashed over island ownership in Lake Chad.<sup>94</sup>

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<sup>85</sup> Ibid.

<sup>86</sup> Vivekananda, 2019.

<sup>87</sup> Ibid.

<sup>88</sup> Ibid.

<sup>89</sup> United Nations Environment Program (UNEP), "Livelihood security: Climate change, migration and conflict in the Sahel," 2011.

<sup>90</sup> Ibid.

<sup>91</sup> Ibid.

<sup>92</sup> FAO, *Lake Chad Basin Crisis Response strategy (2017–2019)*, 2017, <http://www.fao.org/3/i7078e/i7078e.pdf>.

<sup>93</sup> Ibid.

<sup>94</sup> Vivekananda, 2019.

## 5.5 Food Security Impacts: Fishing and Fisheries Livelihoods in Lac Province

Fishing is a livelihood with deep roots in food security for the Lake Chad Basin (LCB) communities. Despite the estimated 90 per cent shrinkage of LC since the 1960's, it supports nearly 30 million people who share its shores between Chad, Cameroon, Nigeria and Niger. Fish remains one of the most vital sources of protein, particularly for those living along the shores in these countries. Environmental changes have resulted in spatio-temporal variations, and population pressure and unplanned irrigation have all impacted the lake levels, affecting fishing as a livelihood and threatening food security.<sup>95</sup> These changes have led to competition for land, water, and food resources internally and across borders.

[Okpara et al. \(2016\)](#) explored the dynamics of change in the livelihood of Lake Chad basin dwellers, composed of farmers, fishermen, and pastoralists, and the various challenges confronting them. Seven villages were studied in 2013–2014 using household surveys and semi structured interviews stratified by livelihood groups.<sup>96</sup> Information was also collected from focus group discussions and key informant interviews. Fishing takes place along the water channels and pools as well as in open water in the centre of the lake. Access to fishing, particularly in the open waters, is controlled by the Chadian government and requires a usage fee. Study results indicated general agreement that the size and quantity of fish have declined.<sup>97</sup> There were also complaints about the high cost of accessing boats and high-water charges, and stringent rules about the kind of fishing equipment to be used. Some denounced the encroachment of unlicensed migrants from neighbouring countries which has led to violence.<sup>98</sup>

The way fishing contributes to the livelihoods of households is complex. [Béné et al. \(2003\)](#) recently demonstrated that access to fishing resources and grounds is strongly determined by wealth.<sup>99</sup> However, it represents the most vital activity on which the most deprived households rely to generate income and food in the absence of equitable access to land. Many of these communities face chronic food insecurity, while others face seasonal food shortages. Béné et al.'s<sup>100</sup> study indicated that in those households facing chronic food insecurity, fishing is an activity used primarily to generate income, where the catch is sold to buy cheaper food (millet), sacrificing nutritional value for volume and longevity of the product. In contrast, in households facing seasonal food shortages, self-consumption of their catch was higher, illustrating the complexity of how fishing contributes to households.

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<sup>95</sup> Binh Pham-Duc et al., "The Lake Chad Hydrology Under Current Climate Change," *Scientific reports* 10, no. 1 (2020): 5498–5498.

<sup>96</sup> Uche T. Okpara, Lindsay C. Stringer, and Andrew J. Dougill, "Lake Drying and Livelihood Dynamics in Lake Chad: Unravelling the Mechanisms, Contexts and Responses," *Ambio* 45, no. 7 (2016): 781–795.

<sup>97</sup> Ibid.788.

<sup>98</sup> Hector Morales-Munoz et al., "Exploring Connections-Environmental Change, Food Security and Violence as Drivers of Migration-A Critical Review of Research," *Sustainability (Basel, Switzerland)* 12, no. 14 (2020): 5702–.

<sup>99</sup> Christophe Béné et al., "Inland Fisheries, Tenure Systems and Livelihood Diversification in Africa: The Case of the Yae're' Floodplains in Lake Chad Basin," *African studies (Johannesburg)* 62, no. 2 (2003): 187–212.

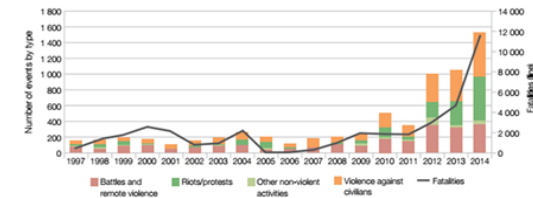
<sup>100</sup> Ibid.

Over the last 15 years particularly, the impact of climate change has exacerbated conflict and violence over land and water resources experienced by populations in Chad, as well as other communities along the LCB. Work published by Okpara and colleagues shows the trends of violence and fatalities in the Lake Chad region between 1997–2014<sup>101</sup> (Figure 7). The 3 largest groups of events, battles and remote violence, riots and protests, and violence against civilians escalated dramatically beginning in 2012. Regarding the latter, the arming of different ethnic militias and the recent non-state armed actor groups, who take control of community’s fishing resources along the Lake, conduct tax exploitation, and commit fisher massacres have been particularly devastating, resulting in significant fear and people displacements affecting livelihoods and increasing food insecurity of these communities. Fishing continues to be an important livelihood in the LCB region and is threatened by climate change and forced displacement. The nexus of fishing and other livelihoods in relation to food insecurity and forced displacement is explored next through an analysis of the Return Intention Survey, and focus groups conducted in the Lac Province region.

Figure 7: Trends of Violence and Fatalities in the Lake Chad Region (1997-2014)

**Trends of Violence and Fatalities in the Lake Chad Region (1997–2014)**  
Exploring Food Security and Conflict Nexus

- Drying of water sources; reduction in fish stock; Causing movement within or outside country can cause tensions
- NSAGs growth around Basin controlling fishing resources; exploitation through taxing fees
- NSAGs commit fisher killings along Lake causing fear and displacements affecting livelihoods



Trends of violence and fatalities in the Lake Chad region (1997–2014). Source: Extracted from the Armed Conflict Location and Event Database (ACLED) version 5 (<http://www.acleddata.com/data/version-5-data-1997-2014/>)



## 5.6 Impact of Forced Movement on Livelihoods and Food Security in the Lac Province: Return Intention Survey Findings

To better understand the scope of displacement and to assess the needs of the affected populations, the International Organization for Migration (IOM) Chad office, in collaboration with other agencies began its Displacement Tracking Matrix (DTM) program in September 2014. The main objective of the DTM program is to provide support to the Government and humanitarian partners by establishing a comprehensive system that collects and analyses data, and disseminates information on IDPs and returnees in order to ensure effective and timely assistance to the affected populations. As part of its DTM program, the IOM utilizes the Return Intention Survey (RIS) conducted at household level to provide accurate and reliable information on the return intentions of the displaced population to assist in their movement, security, and finding livelihood opportunities.

Survey respondents that participated in the survey are randomly selected from the displaced population living in the locations surveyed. Before participation, the voluntary nature and the objectives of the survey are clearly explained to the respondents. To ensure the accuracy of the data collection, the survey of displaced households is conducted by trained IOM DTM enumerators and in close collaboration with the administrative authorities of the respective locations.

The findings presented in this section of the report were generated by the IOM from survey data

<sup>101</sup> Okpara, Lake Drying and Livelihood Dynamics, 786.

collected between 21 October and 4 November 2019 from 1527 household respondents (full data set) in the Lac Province Region. The Departments of Fouli (45%), Kaya (33%) and Mamdi (22%) were the places of residence for the 1527 respondents. The full data set included 45 per cent women and 55 per cent men. The respondent status was 34 per cent host community, 35 per cent IDPs and 30 per cent Returnees. The Returnees were predominantly Chadian returnees from Nigeria (59%) and Niger (36%). The RIS also encompasses members of the host communities. The inclusion of host community members lessens the potential for tensions arising from the perception that IDPs or Returnees have been singled out for government or international support. It also helps to gauge the host community’s perception on the impact of migration on community resources as well as their desirability or acceptance of these individuals in their community. The findings presented below will include **only** IDPs (540 individuals) and Returnees (461 individuals) and will focus predominantly on the food insecurity aspect and rationale for respondent movement in these 2 groups. Because the RIS sampled separately IDPs and Returnees, the groups are analysed separately, and no single result is presented for both groups. Several specific food security questions were analysed for IDPs and Returnees.

**Table 2: Household Food Insufficiency**

Household Food Insufficiency				
“Has there been household food insufficiency within the last 2 weeks such that family members have missed a meal?” (Data source RIS)				
Respondent Status	Response (#)			
	Yes	No	Don't Know	Total
IDPs	509	29	2	540
Returnees	409	52	0	461
Respondent Status	Response (%)			
	Yes	No	Don't Know	Total
IDPs	94.3%	5.4%	0.4%	100.0%
Returnees	88.7%	11.3%	0.0%	100.0%

- The top 2 most urgent needs of RIS respondents were food and cash. Food was identified as the number 1 priority need by 51.5 per cent and 44.7 per cent of IDP and Returnee respondents, respectively. Cash was identified as the second priority need by 24.6 per cent and 21.3 per cent of IDP and Returnee respondents, respectively.
- When asked about food insufficiency, defined as within the last two weeks their household had experienced food insufficiency such that someone missed eating a meal, 94.3 per cent of IDP respondents indicated yes to this question and 88.7 per cent of Returnees responded yes to food insufficiency over the last two weeks. (Table 2)
- Buying food on credit is practiced by 73.7 per cent of IDPs and 62.9 per cent of Returnees (RIS data source)

The RIS findings indicate that food insecurity is marked in the surveyed populations, consistent with the Climate Change pilot study findings above. To better understand the impact on the principal means of household support of IDPs and Returnees, the percentage of engagement in specific livelihood activities before and after displacement, respectively, was assessed.

Displacement had a devastating impact on employment for both respondent populations consistent with FG discussions of having little to no work-related activities, significant food insecurity, and lack of resources to care for families. A more in-depth look at displacement and its relation to specific livelihoods on IDPs before and after displacement is presented (Figure 8). A significant negative impact can be seen on unemployment before and after displacement (2.41% versus 34.51%), respectively. Similarly, detrimental effects before and after displacement can be seen on other livelihoods such as stockbreeder (8.15% versus 1.679%), merchant (19.63% versus 9.09%) and a sizable decline in agricultural livelihood activities (57.22% versus 38.22%).

Figure 8: Impact on IDP Households Before and After Displacement

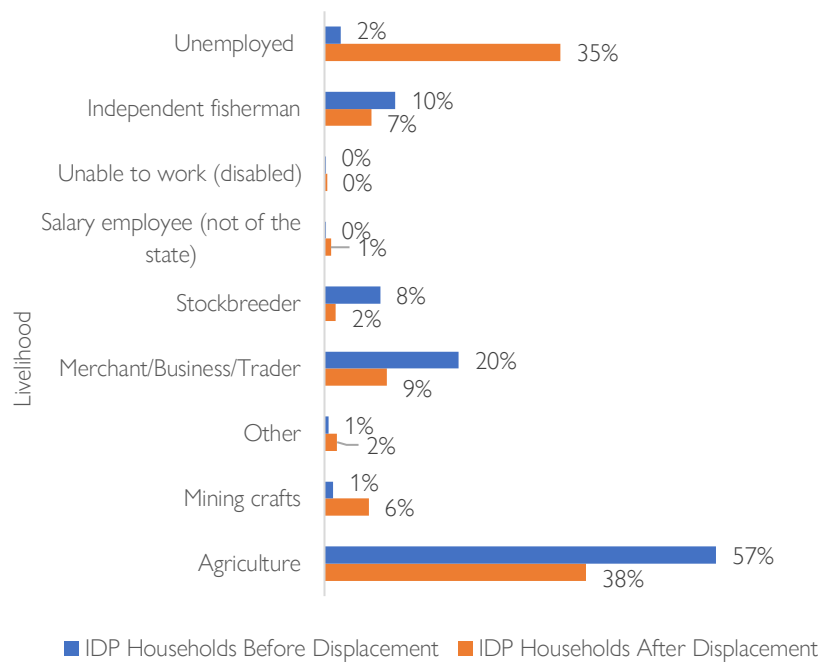
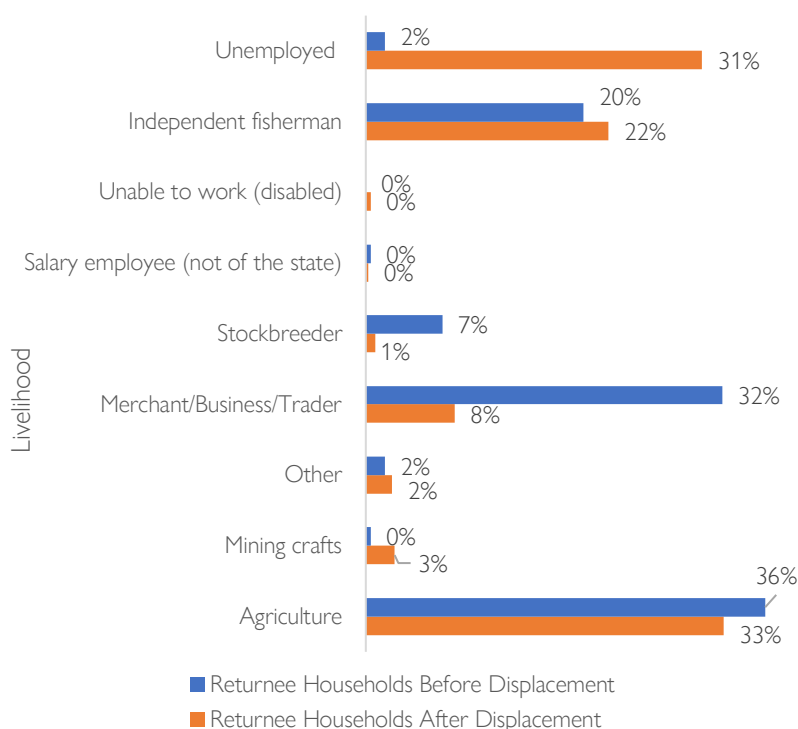




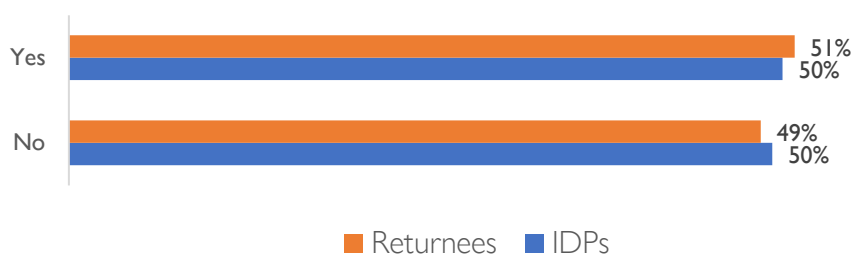
Figure 9: Impact on Returnee Households Before and After Displacement



Returnees' households faced similar declines in livelihoods, particularly in the merchant livelihood area 32.46 per cent before displacement down to 8.10 per cent after displacement (Figure 9). Agricultural livelihood for Returnees appears relatively sustained and was overall less affected (36.38% versus 32.60%) than IDP agricultural activities (57.22% versus 38.22%). Findings indicate that before displacement, IDPs were more likely than Returnees to use agriculture as the principal means of livelihood. Returnees were more likely to have utilized the merchant livelihood as one of the principal means of household income.

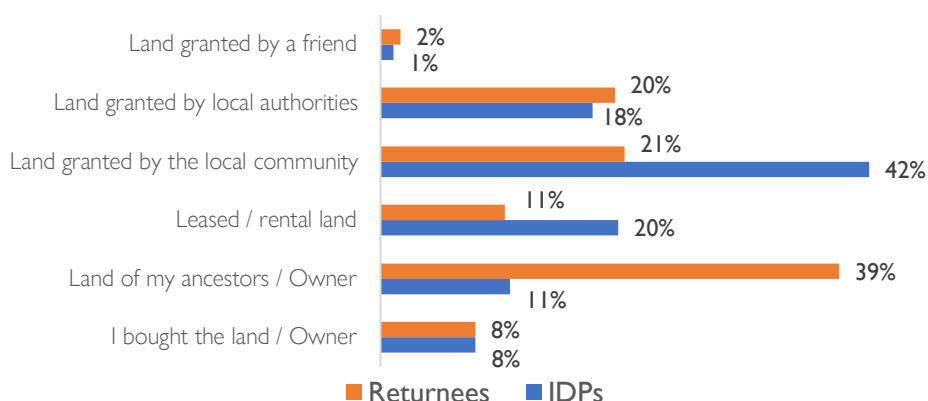
To better understand the demonstrated resilience of agriculture/farming as the principal means of household support among IDPs and Returnees even after displacement, several land access and ownership questions were asked of survey respondents. "Do you have access to arable land? If yes, how do you have access to this land/by what means do you have access to this land? If you are the landowner, do you have the land titles (documents)?" Returnees and IDPs reported similar access to arable land, 51.19 per cent and 50.37 per cent, respectively (Figure 10A).

Figure 10A: Access to Arable Land



The means by which the two groups have access to arable land varied. Returnees were 3.5 times more likely to have access to arable land by ancestral ownership than do IDPs, who were twice as likely to lease or rent land (Figure 10B).

Figure 10B: Means of Access to Arable Land



Less land ownership on the part of IDPs and their need to lease land without income resources, may have contributed to the more impactful decline in agricultural livelihood after displacement. Migration requires resources. Although conjecture, it is possible that the Returnees land ownership enabled travel to neighbouring countries for opportunities and to start businesses. Of the total respondents who indicated land ownership, only 3.8 per cent and 3.6 per cent IDPs and Returnees, respectively indicated possession of land titles.

## 5.7 Impact of Forced Movement on Livelihoods and Food Security in the Lac Province: Focus Group Findings

The benefits of mixed methods research have been well established.<sup>102</sup> The IOM focus groups (FGs) add a qualitative dimension to this research and a means to triangulate RIS data findings. IOM experts conducted twelve focus groups (FG) in the Lac Province region. The primary aim of the FGs is to better understand the travel history of the respondents, their current situations, and future intentions, as well as to act as a qualitative complement to the quantitative RIS. The twelve FGs were coded and analysed.<sup>103</sup>

The FGs were all-men and all-women groups and 5 were conducted with IDPs from the Lac Province (Yakirom, Kiskra, and Kousseri) and 7 were conducted with Returnees also from the Lac Province (Kiskra, Darnahim, Kousseri, Ngomirom Doumou, and Mélea). These are the host communities occupied by the IDP and Returnee respondents. The responses to the major FG group questions which follow are discussed below; the major questions posed were: “What was your life like before the displacement? What was life like during the displacement? What is your current situation like? What are your future intentions?”

Both IDPs and Returnees indicated that overall life before the displacement was one of contentment and that their needs were adequately met, including having children in school, cultivable land, and employment activities. This finding is consistent with the low level of unemployment before

<sup>102</sup> Joseph K Teye, “Benefits, Challenges, and Dynamism of Positionalities Associated with Mixed Methods Research in Developing Countries: Evidence from Ghana,” *Journal of mixed methods research* 6, no. 4 (2012): 379–391.

<sup>103</sup> Velida Dzino-Silajdzic, “Practical guide Focus Group Discussions,” Catholic Relief Services, 2018, [https://www.crs.org/sites/default/files/tools-research/fgds\\_april\\_24\\_final\\_lo\\_res\\_.pdf](https://www.crs.org/sites/default/files/tools-research/fgds_april_24_final_lo_res_.pdf).

displacement identified in the RIS. In addition, Focus Group respondents indicated that they participated in fishing, farming, and trade activities in their original place of residence. The Returnees more often than the IDPs identified themselves as being merchants and having profitable businesses, again consistent with the RIS findings demonstrating a slightly larger percentage of Returnees that were merchants.

Regarding life during the displacement, both groups indicated their property and goods were destroyed. In general, there was no time for reflection before the attacks of NSAGs. Most interviewees indicated the attacks were abrupt and those that had warning by local officials left as a preventative measure due to fear. Many families reported having left with other families on foot, as their houses and belongings were burned, and who often hid in the bush for days for protection. One FG respondent indicated “Everything is powdered, nothing remains in this village and even humans are in these ashes.” Some recounted the death of family, friends, and neighbours, including women who experienced the death of their babies and small children. The displacement was noted by some women as particularly difficult for pregnant and lactating women, disabled, and small children. One female respondent indicated the vulnerability of males who were specifically targeted by the attackers. The head of the household usually made the decision to leave the area out of fear and many men expressed concern for their families during the difficulties of displacement.

Both IDPs and Returnees identified benefits of their current situation and future intentions. Safety was identified as a primary benefit. Comments such as, “You can sleep at night; We are safe” were sentiments unanimously expressed by the interviewees. Beyond the issue of safety, both groups of interviewees indicated that living conditions were poor, with few work opportunities and water and food insecurity. The latter is consistent with the RIS survey results. Most men expressed dismay about not being able to have gainful employment to take care of and adequately feed their families. “We sit and wait for handouts.” There is no way out.” Women expressed concern for their husbands knowing they wanted to care for the family but had no means to do so.

When RIS respondents were asked whether they would like to leave their current place, 90.2 per cent of IDPs and 91.9 per cent of Returnees responded no and indicated they had no intention of leaving their current place. It is interesting to note that the Returnees in the FGs expressed a desire to remain in their current area even though they indicated living conditions were extremely poor, primarily because of economic concerns to care and feed their family. Most male Returnees indicated that when the security situation improves in the place of residence from which they left, they hope to return and restart their businesses. Several commented they are drawn back to their place of residence because of economic opportunities but are also drawn to Chad as their ancestral land. It may be prudent to empower those with business skills to help merchants develop businesses in their current place of residence. The IDPs indicated they have nothing to return to, were economically destitute and thus, want living conditions to improve in their current place so that they may remain. Many feel they are well integrated in the community and desire to stay but want to be able to contribute socially and economically to the community. Some have developed strong bonds with the community and no longer see themselves as outsiders.

Findings from these two data sources and others highlighted in this paper provide insight into the complexity of unforced, as well as forced migration. Heads of State must be prepared for protracted displacements and adjust resources appropriately. Quite often, there is more than one cause (encompassing political, economic, climate change and security drivers) that contributes to migration. Climate change, food security and human safety as explored here are important links between several drivers and the ultimate decision to migrate. Because of this complex nexus, migration must be approached in a holistic manner to effect change for vulnerable communities.

## 6. CONCLUSION

This paper has explored the impact of climate change, food insecurity, and conflict on IDP and Returnees populations in Chad. The need to address climate change is among the most important issues facing our world today, affecting developed and developing countries and placing a disproportionate burden on the latter. Developing countries, such as Chad, whose survival is heavily dependent on subsistence agriculture encompassing farming, livestock-centred, and fishing livelihoods, are especially affected by climate change. The disproportionate impact of climate change on developing countries should be of major importance to the global citizenry as these countries are the smallest contributors to climate change. Thus, the environmental pollution inequalities experienced by poor and marginalized countries affects their ability to reach the UN's Sustainable Development Goals (SDGs) with respect to economic growth (SDG 8) as well as inequality (SDG 10), since climate change acts as a poverty multiplier by increasing the number of poor people and their vulnerability to added threats.<sup>104</sup> The findings of this study indicate that climate change can impact aspects of the food system such as availability and access. Clear patterns emerge linking food insecurity as a clear driver of movement. In addition, conflict (e.g., with NSAGs) has led to significant displacement resulting in food insecurity. The appreciation and importance of humanitarian efforts for the provision of food was acknowledged in both the IDP and Returnees FGs. However, food insecurity, and social and economic challenges were identified as daily obstacles. The respondents recognized the lack of integrated humanitarian and development responses that focus on building their resilience and self-reliance through improved skills and assets. Without the latter, displaced populations can become even more marginalized which could lead to further instability in the region. The need to envision displacement not just as a humanitarian response, but as a development effort will help ensure that displaced persons are integrated in strategic development initiatives. Cross-country dialogue and economic initiatives that incorporate more development objectives into efforts that address forced displacement will enable those affected to better flourish whatever their location, whether they remain in new communities or are able to return.

In conclusion, climate change, conflict, and food insecurity create linkages that destroy livelihoods, drive displacement, widen inequalities (including gender) and weaken sustainable development particularly, in developing countries. The impact of this complex nexus calls for cooperation, collaboration, and shared resources and knowledge on the local, regional, and international levels at an unprecedented pace. Recommendations moving forward are provided below.

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<sup>104</sup> Sustainable Development Goals. United Nations <https://sdgs.un.org/goals>

## 7. RECOMMENDATIONS

This report recommends further work to:

- Increase the role of women in leadership:

Involve women in leadership roles in community processes and local climate change politics, as women are recognized as key agents of change. The above findings indicate that women do move but are less likely to do so than men. Better understanding through IOM surveys or focus groups, can identify patterns of resilience which may impact stability and commitment and contribute to development in a region. Thus, IOM should also consider partnerships with organizations (e.g., UN Women) to include female leaders in relevant training to build local capacity and knowledge around various issues (in preparation for higher levels of participation) and to connect local participants with key allies to help create beneficial new policies. Efforts to increase women's participation in national and international political decision-making processes, including the UNFCCC, should be fostered. Particularly at the international level, WFP, FAO, and IOM Chad could sponsor joint workshops to ensure the perspectives of women and indigenous communities are included in the development of international climate change policies and in the development and implementation of global food security-related initiatives.

- Establish timely and better integration policies for displaced populations:

Governments in Chad and throughout the Sahel region need to plan for better integration of their displaced populations by empowering them to start businesses or pursue collaborative farming, so that they can take care of their families. Many IDPs and returnees have already become part of their local communities and feel accepted. However, in the Lac Province FG discussions, some returnees commented that they feel labelled and detached from their communities because they have not been granted their 'papers,' a legal step which promotes a sense of identity. The 'papers' also enable the provision for employment and other social contributions. Developing collaborations and a regional framework (e.g., ECOWAS) like other countries would establish freedom of movement and the right of residence and establishment for nationals of member states. Although the ECOWAS Free Movement Protocol does not come without challenges, regional cooperation and integration has the potential to promote economic development through the exposure and ability to move in search of employment, as well as social, political benefits not only for the immediate region, but for the country and the region.<sup>105, 106</sup> Being able to meet family commitments, community expectations, and a sense of belonging, without labelling, through integration can support resilience in the face of climate change, food insecurity, and conflict. (See Further Research Needs below).

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<sup>105</sup> A. Opanike and Aduloju AA (2015) ECOWAS Protocol on Free Movement and Trans-border Security in West Africa. *J Civil Legal Sci* 4:154. doi:10.4172/2169-0170.1000154

<sup>106</sup> Samuel K. Okunade and Olusola Ogunnubi. "A 'Schengen' Agreement in Africa? African Agency and the ECOWAS Protocol on Free Movement." *Journal of borderlands studies* 36, no. 1 (2021): 119–137.



- Increase bottom-up climate resilience efforts:

Concerning the impact of climate change on conflict and violence, the gap between the perception of those surveyed and the research's findings shows that while climate change related issues- variable rainfall, increasing temperatures, droughts, floods, ecosystem degradation- are undoubtedly exacerbating conflict and violence in Chad, IDPs and migrants within Chad may not establish the connection between these conditions. Thus, while government-led efforts to adapt to climate change will be crucial, it is equally important to spread education and resources at the local and grassroots levels. Understanding the impact of climate change can inspire local peoples and grassroots organizations to revive traditional and cultural climate adaptation methods to help address climate change. Because the people of Chad are affected by climate change in ways so-called developed nations are not, using techniques from international and top-down sources are not enough to improve the lives of those impacted most by climate change in Chad.<sup>107</sup> The 'local' methods of adaptation and conservation have proven to be effective in combating climate change in Africa and are necessary in combination with top-down methods in order to improve Chad's climate resilience.

- Resilience-building assistance over security assistance:

In bilateral and multilateral negotiations with states, NGOs, and other entities providing forms of foreign aid to Chad, there should be a movement away from security assistance and toward more beneficial, resilience-building forms of aid. Security assistance in the form of weapons, money, or training to deal with the widespread conflict in the region only exacerbates said conflict as security forces can often become emboldened by the assistance or said assistance can get in the wrong hands. Additionally, security assistance sends a message that conflict is the core issue and that it can only be resolved by a more militarized and coordinated response. Redirecting foreign attention, aid, and other resources toward food, housing, employment training, and resilience measures to mitigate damage from floods (in the form of water infrastructure such as stormwater collection and storage) would pay larger dividends as they seek to tackle root causes of displacement and conflict rather than the conflict itself. Direct food assistance, met with coordinated use of water, land, and agricultural resources would be an ideal first step. Where security *would* be of most value would be in establishing and maintaining safe migration corridors to assist migrants in search of new opportunity, as it would provide safe passage, the proper resources to make the journey, and incentivize coordination among groups and between governments.

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<sup>107</sup> R. W. Abrams et al., "Integrating Top-down with Bottom-up Conservation Policy in Africa," *Conservation Biology* 23, no. 4 (August 2009): 799–804.

## 8. FURTHER RESEARCH NEEDS

- Reconsider the naming typology of and definitions around migration, and the impacts (positive and negative) of labelling migrants as belonging to distinct groups. Research the impacts (positive and negative) of labeling individuals into distinct groups whose reasons for movements are often not clearly distinguished and a continuum or overlapping circumstances may exist between their movement events. Labels implemented by organizations working in these communities, the host community, and others may influence how individuals see themselves, how their identity is perceived and most importantly, which benefits and limitations these labels hold. Research focusing on the experience of labelling and the use of labels in migration/displacement context, specifically in protracted situations where findings might change over time and labels and their importance may potentially shift over the years. IOM, in conjunction with other partners, could consider leading a comprehensive review of how developing countries address population movement (forced and unforced) according to the labeled groups, share evaluations, lessons learned and best practices that address, in particular forced displacement.
- Evaluate in greater depth through qualitative and quantitative instruments, the understanding of various segments of the population regarding ‘climate change’ and its related impacts. Careful construction of instruments and changes in language and framing are recommended as well as new approaches to analysing data to enhance the credibility of the findings. Identify strategies to promote collaboration between government and development programs to strengthen gender equality and resilience to shocks and stresses for Chadian populations. Less is known about the consequences of everyday household and community violence, and the ability of the vulnerable, particularly women and youth, to protect themselves from further stressors or risks.
- Research religion, ethnicity, way of life, and gender-based practices that may lead to different care and education practices between boys and girls resulting in different health and resilience outcomes (e.g., boys being more vulnerable to malnutrition than girls).<sup>108</sup>
- Increase investments in research and development, particularly including natural climate solutions which are often more technologically simple and have widespread affordability.
- Investigate case studies of linkages between ecological disruption and security, through the development of an Ecological and Natural Security Research Agenda.

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<sup>108</sup> Anastasia Marshak et al., “Seasonality, sex, and acute malnutrition in Chad’s Sila Province,” Tufts University, Feinstein International Center, 24 Nov 2020, <https://fic.tufts.edu/publication-item/seasonality-sex-and-acute-malnutrition-in-chads-sila-province/>

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