

The conflict currently affecting the Lake Chad Basin (North-East Nigeria, Far North Cameroon, Lac Province Chad and Diffa Region Niger) has displaced 5,503,092 people as of May 2022. The crisis is one of the world's worst recorded humanitarian situations, generating widespread displacement and engendering deep social, political, economic and health crises. While new displacements continue to take place, some areas have become more stable and have seen the return of displaced persons. As of May 2022, **over 3 million individuals are internally displaced** in the Lake Chad Basin (LCB) region and **2.17 million individuals have returned to their location of origin**.

In order to help find durable solutions for internal displacement — whether through return to communities of origin, local integration, or relocation — and to prevent new displacements in the region, it is critical to understand the relative levels of stability in locations hosting returnees or displaced populations. IOM launched the Stability Index (SI) in 2019 to evaluate the stability of areas hosting returnees or displaced populations in the LCB. The SI seeks to understand which factors influence a location's stability in order to identify priority interventions for transition and recovery, with the goal of strengthening the resilience and stability in this conflict and displacement-affected region. In practical terms, the Stability Index measures perceptions of stability and analyzes which factors have relatively larger impact on the decisions of populations to remain in place or to move. The tool can serve as a measure of stability in targeted areas in the LCB to enable governmental authorities and partners to develop better strategies, and to prioritize and plan resources in fragile, unstable areas for coherent and comprehensive interventions that link humanitarian, recovery, and stabilization approaches. This report presents results from November 2021 - February 2022 Stability Index Round 2 of data collection conducted in Cameroon, Chad, Nigeria and Niger.

1. METHODOLOGY

The **Stability Index** combines 35 key indicators of stability to calculate a single Stability Score for each surveyed locality. These indicators relate to three key themes crucial to stability: **safety and security, livelihoods and basic services, and social cohesion**. Indicators for each of these themes are grouped to create sub-indexes to facilitate the comparison of localities by theme. (See *Appendix* for further information on the indicators included in this analysis.)

These indicators, taken in aggregate, highlight areas that are conducive to durable solutions for internal displacement, as well as unstable areas that may require humanitarian intervention. Three “anchor questions” about the perception of stability in the community (feeling of stability, future intentions of the community, trends of the situation) are used to validate the relationship between the Stability Score and community sentiment. (See *Appendix* for further information about how anchor questions are used for index validation.)

The Stability Index uses Principal Component Analysis to assess the impact of each indicator on the variability in the data. (See *Appendix* for further information on Stability Index calculations). The Stability Index and sub-indexes index range from 0 (poor conditions for stability) to 100 (good conditions for stability).

Table 1. Lake Chad Basin displacement figures as of May 2022

	3,012,282 IDPs
	319,542 Refugees
	1,939,661 Returnees (former IDPs)
	231,607 Returnees (from abroad)

1.1 Data collection overview

The Stability Index includes data collected through key informant interviews at the locality level in **2,241 displacement affected locations** in North-East Nigeria, Far North Cameroon, Lac Province Chad, and Diffa Region Niger. Locations for data collection were selected through a mapping exercise to identify areas where IDPs and returnees are located. (See *Appendix* for further information.)

Multiple key informants were interviewed in each locality, allowing IOM to cross-validate information. Key informants include mayors, community leaders, aid workers, and other community representatives. The key informant method has the advantage of rapidly collecting information about many localities, however it is limited in that it is an estimate representation of the views of an entire community. Moreover, the results of the SI represent a snapshot of the conditions at one point in time and thus may vary between rounds or change suddenly.

Figure 1. Number of localities surveyed per round

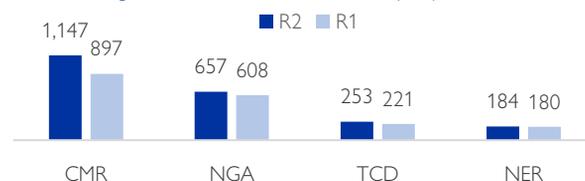


Table 2. Number of locations assessed by country

CAMEROON	6 DÉPARTEMENTS	1,147 LOCATIONS
NIGER	4 DÉPARTEMENTS	184 LOCATIONS
NIGERIA	36 LOCAL GOVERNMENT AREAS	657 LOCATIONS
CHAD	3 DÉPARTEMENTS	253 LOCATIONS

2. KEY FINDINGS

The main purpose of the Stability Index is to inform programmatic interventions that can improve the perceptions of stability at the locality or cluster level in order to facilitate durable reintegration of displaced populations in their communities of origin and to prevent future forced displacements. To take advantage of this index, the governments (at national and sub-national levels) of the Lake Chad Basin Region and their partners should work closely together to identify localities/clusters and develop tailored programmatic interventions to increase the perception of stability based on the results of the different stability indicators, and particularly with the most influential variables.



Access to services varies greatly across the region

Levels of access to services varied greatly among the four countries in the region. In general, the localities assessed in Cameroon and Chad reported lower levels of access to services compared to those assessed in Nigeria and Niger, including access to markets, availability of primary education, basic health services, and drinking water. Due to this variation, services variables are weighted heavily in the regional stability index calculations, combining data for all four Lake Chad Basin countries.



Strong association between security, feelings of stability, and the intention to leave

The indicators most closely associated with feelings of stability and the intention to leave the community were remarkably similar throughout the region, and primarily belong to the security pillar. These indicators include whether residents are able to carry out daily activities as usual, whether residents are worried about security, the freedom of movement, and whether there have been recent security incidents. The main outlier to this trend is in Niger, where damage to homes is the single indicator most closely associated with feelings of stability.



Improvements in Nigeria, deteriorations in Chad

On average, conditions improved for localities assessed on Nigeria while deteriorating in the localities assessed in Chad. The decrease in stability scores in the localities assessed in Chad was primarily driven by market closures and increasing restrictions on movement and security incidents. In Nigeria, improvements were driven by resident's perception of improved daily life, fewer restrictions on the freedom of movement, and increased access to identify documents.



Higher impact using cluster analysis

Government authorities and their partners can programme more effectively and on a larger geographic scale than the locality level using a cluster approach. Grouping similar localities into clusters based on their characteristics can help to uncover the distinctive profiles of geographic regions in order to facilitate targeted stabilisation and transition related programming, as demonstrated in the case study in section 6 of this report.



Opportunities for programming along the Humanitarian Development Peace Nexus

Analysing the differences between the localities with the highest and lowest scores on the Stability Index can provide useful insights into programme priorities. Different programmes are needed in localities on opposite sides of the stability spectrum. For example, in localities with very low stability scores, immediate humanitarian projects might be needed to improve access to water or information and communication technologies, while in localities with higher stability scores development programming may be more relevant.

Table 3. Proportion of IDPs by category of stability (in administrative 3 locations assessed by the SI)

High Stability	Upper-Middle Stability	Lower-Middle Stability	Low Stability
11%	33%	40%	16%
183,502 IDPs	543,704 IDPs	643,137 IDPs	257,046 IDPs

3. OVERVIEW OF ROUND 2 REGIONAL STABILITY SCORES

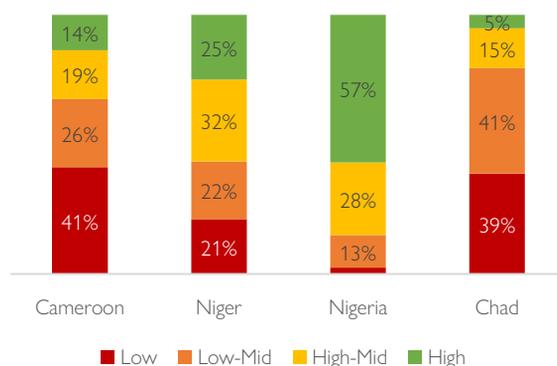
Interpreting the Stability Index: The Stability Index is a comparative measure, and scores can therefore only be interpreted in relation to other stability scores. This means that it is critical to look at the distribution of stability scores in an assessment to understand the relative position of a single score. For instance, in the calculations below for the Lake Chad Basin, the median stability score is 58. The cut-off for the first quartile (lowest scoring 25% of localities) is 43, and the cut-off for the third quartile (highest scoring 25% of localities) is 73. Based on this distribution, localities with scores above 73 are classified as high stability, or more stable than 75 per cent of localities assessed in the region.

3.1 Stability Scores by Country

Across the region, Cameroon and Chad had the largest percentage of localities with stability scores in the bottom quartile (least stable 25%) of localities assessed in the region. In fact, 41 per cent of localities assessed in Cameroon and 39 per cent of localities assessed in Chad fell into the lowest quartile of stability scores throughout the region.

Notably, Nigeria had the lowest percentage of localities in the bottom quartile (2%), with over half of localities scoring in the top 25 per cent of localities in terms of stability score. However, when comparing aggregate stability scores, it is important to keep in mind that these scores only reflect the localities that were surveyed. In insecure environments, IOM is often unable to send enumerators to conduct surveys due to safety concerns. For instance, in Borno State Nigeria, enumerators were unable to assess many localities (likely the least stable) due to insecurity.

Figure 2. Region-wide distribution of stability scores (calculated by quartile)



Categories were determined based on quartile. For instance, localities scoring in the “low” category were among lowest-scoring 25% of localities surveyed in the region. “High” localities scored among the top 25% of localities.

3.2 Sub-Index Scores by Country

Comparing the regional stability scores across countries between November 2021 and February 2022, localities assessed in Chad and Cameroon received lower average stability scores compared to Niger and Nigeria, indicating that on average conditions were worse in these two countries across the indicators assessed. In **Chad**, this was driven primarily by a lack of access to services, with the lowest services sub-index in the region (46). However, Chad’s security score was relatively high compared to the other countries in the region.

In **Cameroon**, the low average stability score was driven primarily by low-levels of social cohesion, as evidenced by the lowest average social cohesion sub-index score in the region. Like in Chad, localities in Cameroon generally exhibited higher levels of security than those in Niger and Nigeria.

Nigeria had the highest average stability scores in the region (based on the localities assessed). This was driven primarily by the relatively higher access to services in Nigeria. However, there were large variations between states, with much higher stability scores in Adamawa and Yobe as compared with Borno State, which had notably lower levels of access to services than the other regions assessed in the country.

Table 4. Average stability and sub-scale scores for the Lake Chad Basin region

	Stability Score	Security	Services	Cohesion
Cameroon	48	66	51	46
Extreme-Nord	48	66	51	46
Niger	59	60	55	63
Diffa	59	60	55	63
Nigeria	72	66	68	70
Adamawa	74	66	72	70
Borno	66	67	60	71
Yobe	75	69	74	69
Chad	48	75	46	53
Lac	48	75	46	53
LCB Average	56	66	56	56

NOTE: To facilitate the comparison of scores across countries, a set of weights was calculated based on the data for the entire region, which differs from the weights calculated separately based on the data for each country. The stability scores presented in the regional report will not match exactly with the scores presented in individual country reports due to this difference in weights.

4. CHANGES BETWEEN APRIL 2021 (R1) AND FEBRUARY 2022 (R2)

Figure 3. Average changes in stability score by administrative level 2 unit

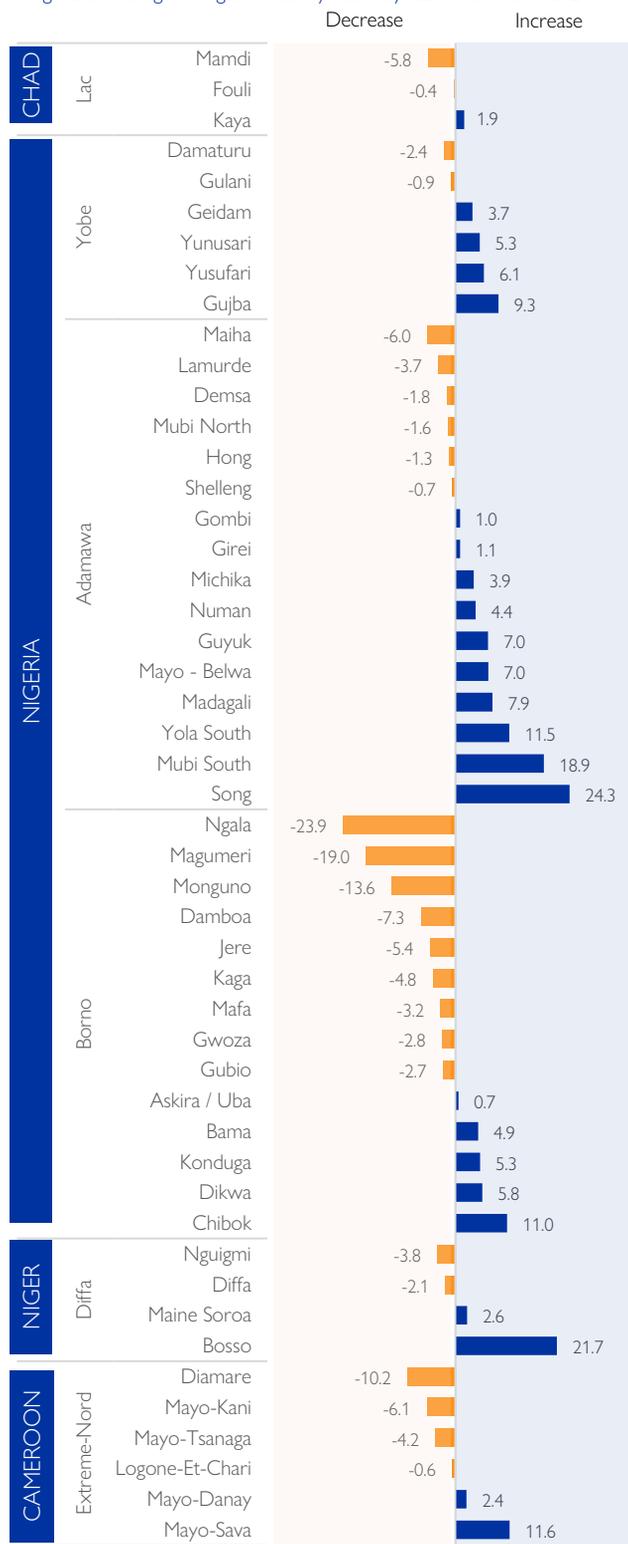


Table 5. Changes in stability and sub-index scores by country and region

Positive values indicate scores increased between rounds and negative values indicate scores decreased. Zero indicates there was no change.

	Stability Score	Security Score	Services Score	Cohesion Score
Cameroon	-0.4	-1.2	1.1	-0.4
Extreme-Nord	-0.4	-1.2	1.1	-0.4
Niger	-1.3	4.2	-2.1	-7.7
Diffa	-1.3	4.2	-2.1	-7.7
Nigeria	2.1	10.8	1.2	1.2
Adamawa	3.0	9.6	1.6	3.8
Borno	0.3	14.0	-1.1	0.2
Yobe	3.2	7.3	5.6	-6.1
Chad	-1.0	-4.1	-2.4	-0.5
Lac	-1.0	-4.1	-2.4	-0.5
Grand Total	0.3	2.8	0.5	-0.6

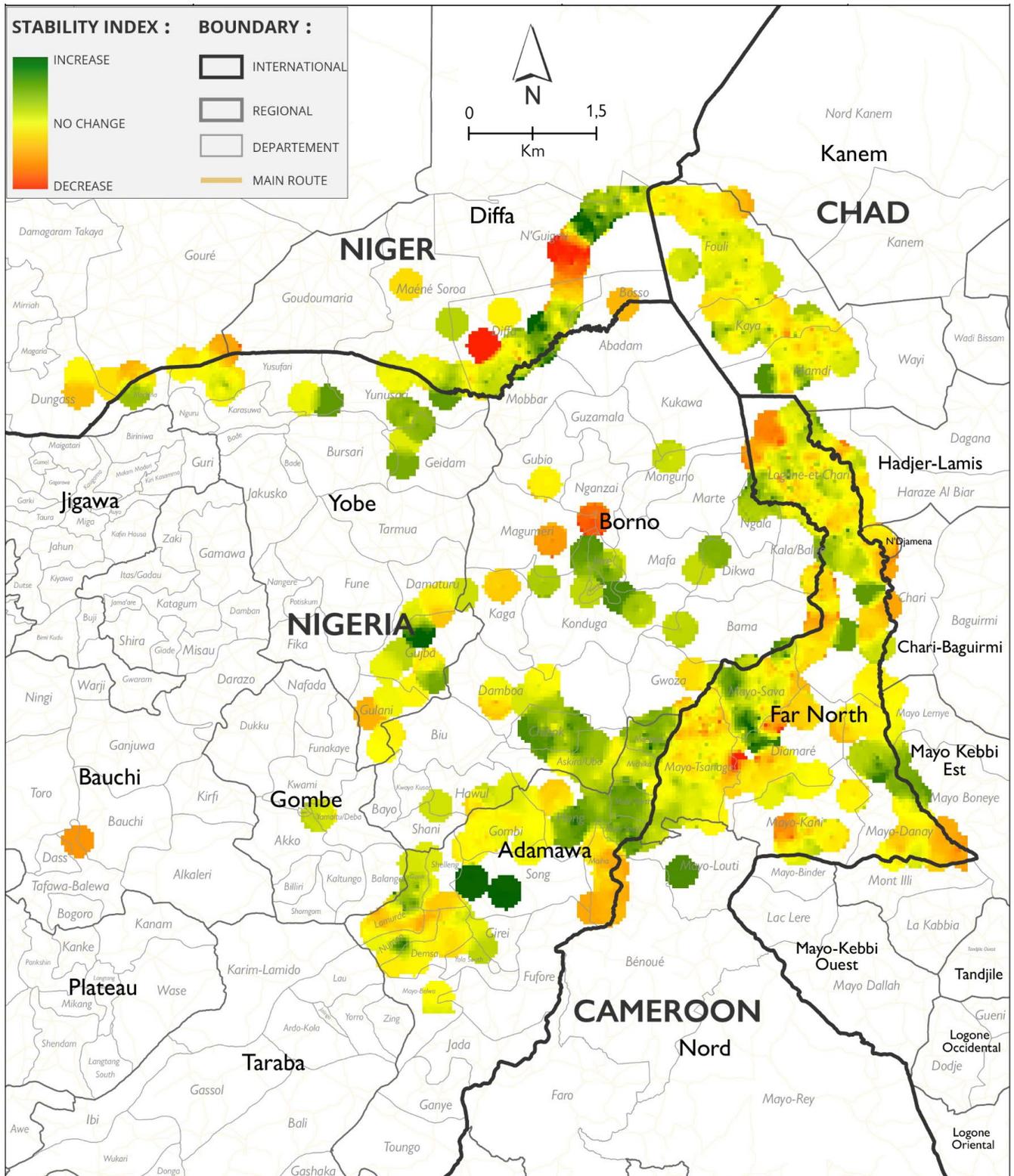
The table above presents the average change in stability scores and sub-index scores between the current and previous rounds of assessments (February 2022 and April 2021). **This analysis is limited only to those localities that were assessed during both rounds of Stability Index exercises.**

At the country level, average stability scores remained largely unchanged between rounds, however changes were apparent within sub-scales (security, social cohesion, and services). Localities assessed during both rounds in Nigeria experienced a slight increase in average stability score, driven primarily by improving security-related indicators. In Niger, the decrease in stability score was driven primarily by a notable decline in social cohesion.

While Nigeria saw an overall increase in its average stability score, the situation deteriorated markedly in a number of LGAs, notably in Ngala, Magumeri, and Monguno in Borno State. In Cameroon, although average scores across the country remained largely similar between rounds, declines were observed in several départements, including Diamare, with an average decrease of 10 points, and Mayo-Kani, with an average decrease of 6 points.

NOTE: To facilitate the comparison of scores across countries, a set of weights was calculated based on the dataset for the entire region, which differ from the weights calculated separately based on the data for each country. All comparisons of scores and indicators between rounds compares only those localities that were assessed in both rounds.

Map 2. Changes in regional stability scores of localities assessed current and prior rounds of assessment



This map is for illustration purposes only. The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by IOM.

4.2 Case Study: Largest Changes in SI Score Between Rounds

Ngala LGA, Borno State, Nigeria

Largest average decrease in stability score (admin 2)

Ten localities were surveyed in Ngala ward during both Round 1 (April 2021) and Round 2 (February 2022) of Stability Index assessments. On average, stability scores in this ward declined by almost 24 points between rounds, the largest decline in any administrative level 2 subdivision in the Lake Chad Basin. This was primarily driven by a decline in the presence of both police and security forces, deteriorating opportunities to participate in public and political life, and damage to homes which limited access to housing. In Round 1, all 10 localities in Ngala LGA reported that both police and security forces were present, but in Round 2, all 10 localities reported that these groups were no longer present in their localities.

Song LGA, Adamawa State, Nigeria

Largest average increase in stability score (admin 2)

Five localities were surveyed across both rounds of data collection in Song LGA, located in Adamawa State, Nigeria, which had the largest average increase in stability score of all administrative level 2 subdivisions in the Lake Chad Basin. This increase was driven primarily by the expansion in access to services and opportunities for residents to participate in public affairs, in tandem with the departure of NSAGs, lower levels of crime, and fewer restrictions on the freedom of movement. Whereas all localities in Song LGA reported that NSAGs were present and that their movements were restricted in Round 1, in Round 2 none of these localities reported NSAG presence or limitations on the freedom of movement.

Figure 4. Percent of localities in Ngala reporting positive responses to given indicators, by round

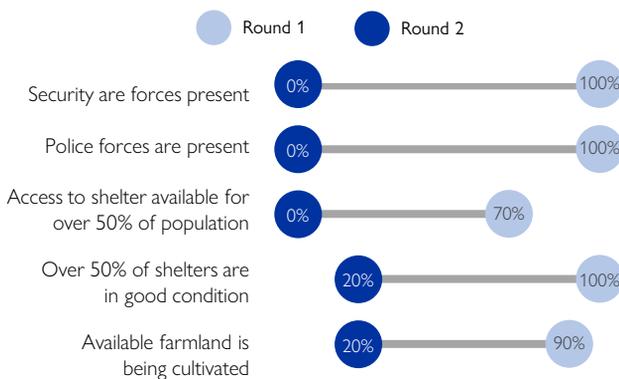
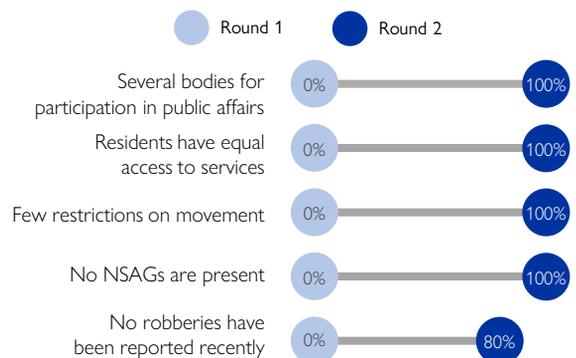
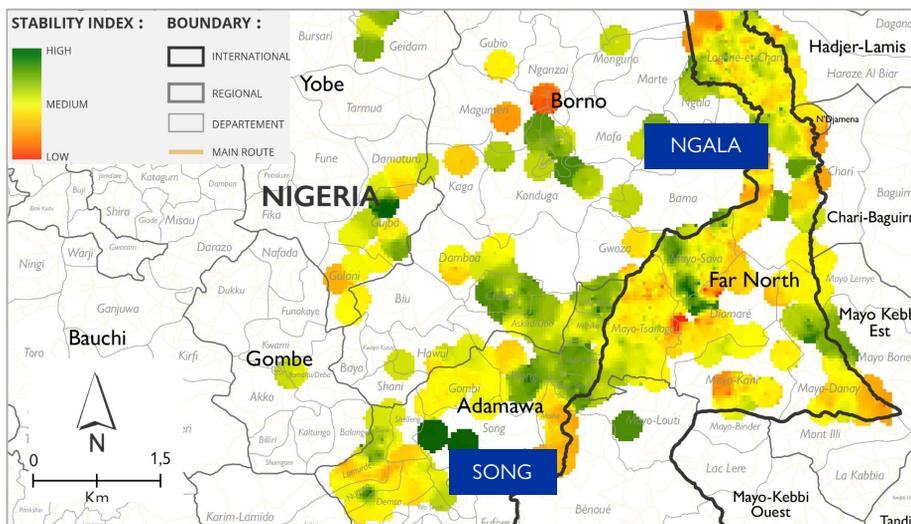


Figure 5. Percent of localities in Song reporting positive responses to given indicators, by round



Map 3. Changes in regional stability scores of localities assessed current and prior rounds of assessment



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5. ANALYSIS OF INDICATORS

5.1 Indicators with large variation in the region (key indicators)

The Stability Index uses Principal Component Analysis to understand the impact of each indicator on the variability in the dataset. The indicators with the largest weight have the most influence in determining the stability score. The exploration of these key indicators allows for the identification of important factors that vary the most among the different localities in the region and thus may impact the perception of stability. (For a more detailed overview of what each indicator measures, see *Appendix*.) The table below shows both the key variables when looking at the region as a whole, as well as the key variables for each country individually. Looking at the region-wide calculations, indicators relating to access to services (including markets, health care, schools, and water) varied the most between localities, and thus play an important role in regional index calculations.

Table 6. Most influential indicators in the Stability Index (by country)

	SERVICES	SOCIAL COHESION	SECURITY		
	Region-wide	Cameroon	Nigeria	Niger	Chad
1	Market Situation	Daily Public Life	Freedom of Movement	Daily Public Life	Daily Public Life
2	Basic Health Services	Market Situation	Farmland Situation	Cooperation with Neighbors	Residents Worried About Security
3	Primary School Situation	Public Sector Situation	Daily Public Life	Equal Access to Services	Freedom of Movement
4	Public Sector Situation	Freedom of Movement	Fishing Situation	Damage to Homes	Primary School Situation
5	Identity Documents Situation	Damage to Homes	Formal Curfew	Access to Housing	Market Situation

5.2 Indicators highly correlated with feelings of stability and intentions to move

While the Stability Index calculations aggregate all the indicators based on their relationship with one another, it does not directly assess the correlation between each indicator and the validation questions, including the feeling of stability and whether residents intend to leave in the near future. The bivariate correlation between each indicator and these questions helps to explain the relationship between individual indicators and residents' feelings about their situation. (For additional details and explanation, see *Appendix*.) The tables below present the three most highly correlated variables with the validation questions in each country in the region.

Although these relationships differ by country, in general the indicators most highly correlated with the validation questions belong to the safety and security pillar of the Stability Index. This means that the key informants that reported positive responses to the questions about security were more likely to also report that their locality feels safe and stable and that residents do not need to leave in the near future. It is noteworthy that in Niger damage to homes is the most highly correlated indicator with the feeling of stability, indicating that individuals living in localities in Niger where homes are damaged or destroyed may feel particularly unsafe.

 Table 7. Feeling of safety and stability
(highest correlated indicators by country)

	SERVICES	SOCIAL COHESION	SECURITY	
	Cameroon	Nigeria	Niger	Chad
1	Daily Public Life	Recent Security Incidents	Damage to Homes	Residents Worried Security
2	Residents Worried Security	Freedom of Movement	Recent Security Incidents	Freedom of Movement
3	Freedom of Movement	Residents Worried Security	Freedom of Movement	Daily Public Life

 Table 8. Residents feel they may need to leave soon
(highest correlated indicators by country)

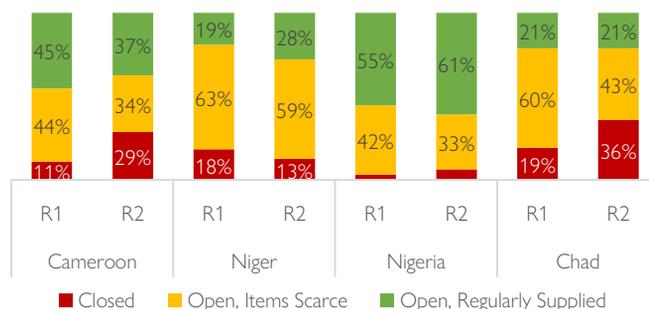
	SERVICES	SOCIAL COHESION	SECURITY	
	Cameroon	Nigeria	Niger	Chad
1	Residents Worried Security	Recent Security Incidents	Freedom of Movement	Freedom of Movement
2	Freedom of Movement	Freedom of Movement	Residents Worried Security	Residents Worried Security
3	Daily Public Life	Residents Worried Security	Recent Security Incidents	Daily Public Life

5.3 Livelihoods and Basic Services: Analysis of Key Indicators

1. Market Situation

Between Rounds 1 and 2, both Cameroon and Chad reported large increases in the proportion of markets that were closed – an 18 point increase in Cameroon and a 17 point increase in Chad. Nigeria experienced a small 3 point increase in market closures, but also saw an increase in the per cent of markets that were open and regularly supplied. The market situation generally improved in Niger, with a 5 point decrease in the per cent of markets that were closed and a 9 point increase in the per cent of markets that were open and regularly supplied.

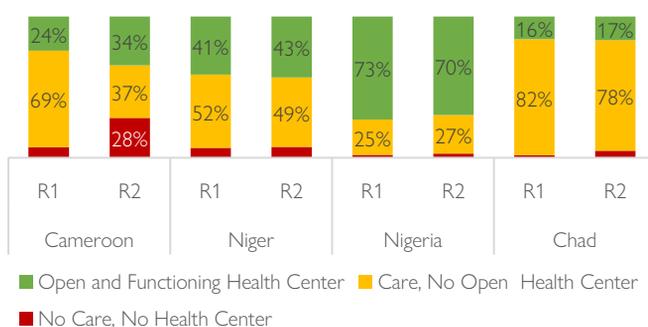
Figure 6. Market status and supply



2. Basic Health Services

In Cameroon, the percentage of localities with no health care available rose dramatically, by 21 percentage points. This was by far the largest proportion of localities with no health care available in the region. The majority of this decline was in Mayo-Danay, which experienced a 65 per cent decrease in the number of open and functioning health centers. The localities assessed in Nigeria exhibited the highest levels of access to health care in the countries assessed for the Stability Index, with close to 70 per cent of localities having open and functioning health centres in both rounds.

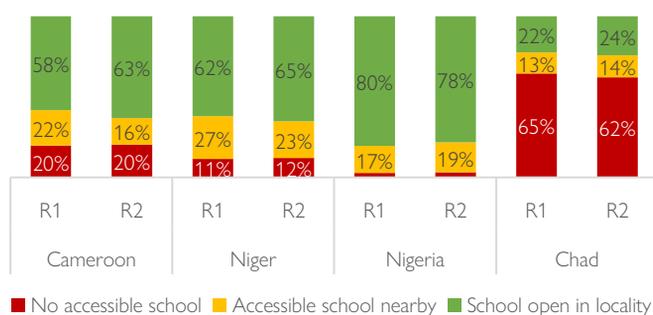
Figure 7. Health care center status and care access



3. Primary School Situation

Primary school status remained relatively stable across both rounds, with a slight (5 percentage point) increase in localities with open schools in Cameroon. As in previous rounds, the localities assessed in Chad continued to have much lower levels of access to primary school education than the other countries in the region, with over 60 per cent of localities lacking access to primary schools. As in the previous round, the localities assessed in Nigeria had the highest per cent of localities with primary schools,

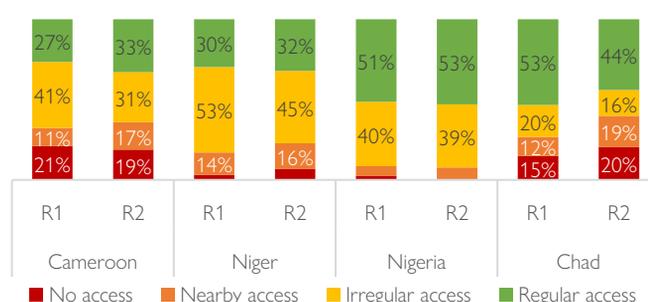
Figure 8. Primary school status and proximity



4. Drinking Water Access

Cameroon and Chad have the highest proportion of localities assessed with no access to drinking water. In the second round, 20 per cent of localities in Chad and 19 per cent of localities in Cameroon reported that residents had no access to drinking water. In Chad, this reflected a five point increase in localities with no access to drinking water.

Figure 9. Drinking water access

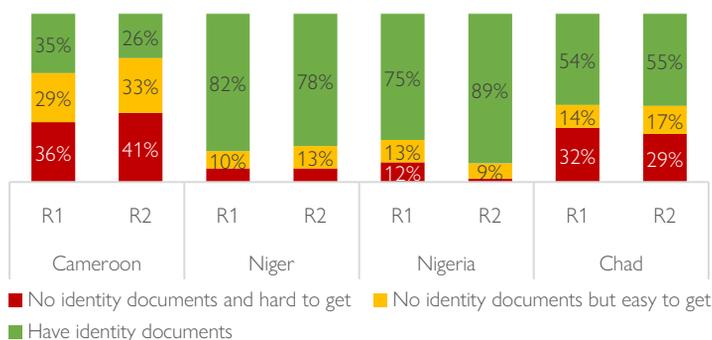


5.4 Social Cohesion: Analysis of Key Indicators

1. Access to Identity Documents

The percentage of localities assessed with access to identity documents decreased by 9 points in Cameroon between rounds, marking a sharp deterioration in a country that already had the lowest levels of identity document access in the region. Conversely, access to identity documents increased in the localities assessed in Nigeria by 14 percentage points, where 89 per cent of localities reported that a majority of residents with identity documents during the second round of assessments.

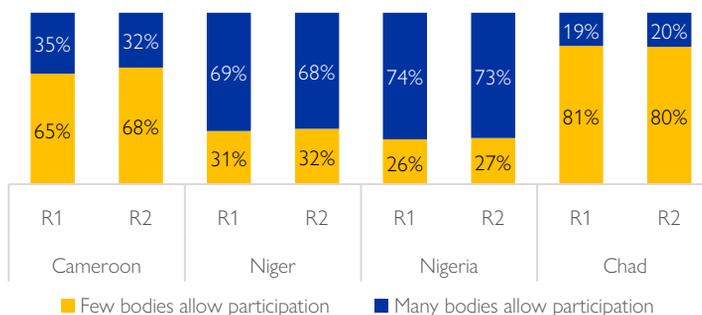
Figure 10. Access to identity documents



2. Participation in Public Life

Residents' opportunities to participate in public life, through fora like civil society, unions, and committees, remained stable between rounds, although there is still a great deal of variation between countries. Localities in Chad (20%) and Cameroon (32%) reported the lowest levels of opportunity to participate in public life while Nigeria (73%) and Niger (68%) reporting the highest levels of opportunity to participate in public life

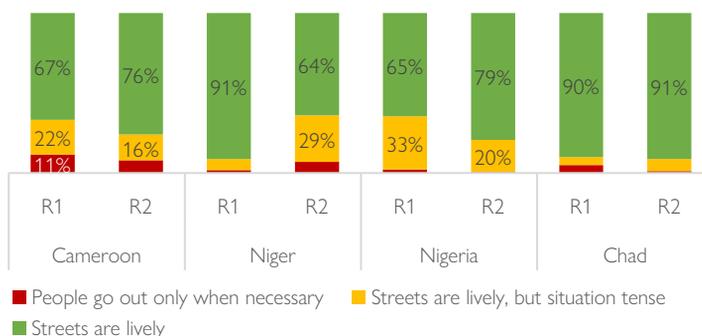
Figure 11. Participation in public life



3. Daily Life and Activities

Localities assessed in Cameroon and Nigeria reported positive trends in daily activities such as the ability to go to the market, allow children to play outside, or sell goods on the streets. In Nigeria, the percentage of localities that reported that streets are lively and the situation is not tense increased by 14 points, while in Cameroon this figure increased by 9 points. In Niger, the situation appears to have deteriorated substantially, with a 5 point increase in the percentage of localities where people only go out when necessary, and a 22 point increase in localities where the situation is tense.

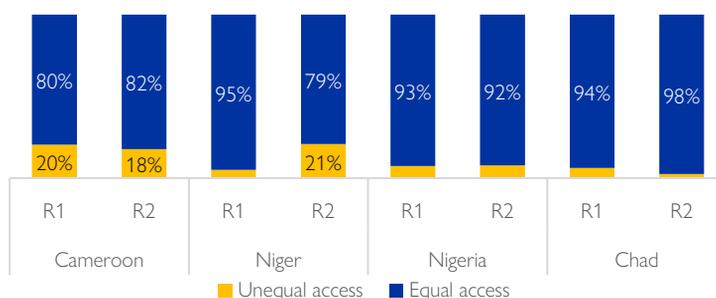
Figure 12. Daily life and street activity



4. Equal Access to Services

Niger experienced a notable (16 point) increase in the number of localities where residents had unequal access to services (based on age, sex, ethnicity, clan, displacement status, etc). While localities assessed in Cameroon reported the highest levels of unequal access to services in Round 1, localities in Niger reported the highest levels of unequal access to services in Round 2. Nonetheless, levels of unequal access to services remained high in Cameroon when compared with Nigeria and Chad.

Figure 13. Equal access to services for all groups

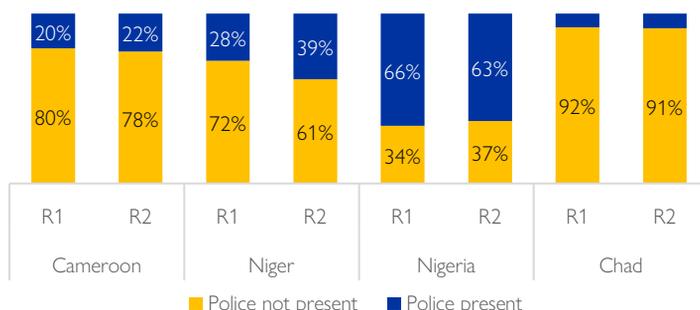


5.5 Safety and Security: Analysis of Key Indicators

1. Police and Gendarmerie Presence

In the Lake Chad Basin region, localities assessed in Nigeria were much more likely to report the presence of police in their locality – with over 60 per cent of localities reporting police presence in both rounds of assessments. Chad reported the lowest level of police presence, with less than 10 per cent of localities reporting police presence. Localities in Niger reported the largest increase in police presence between rounds, with an 11 point increase in the per cent of localities with police presence.

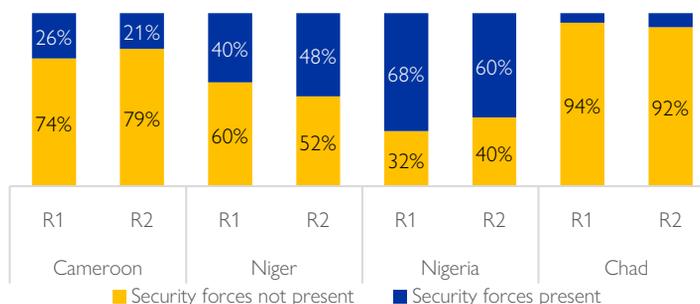
Figure 14. Presence of police and gendarmerie



2. Security Force Presence

Similar to the distribution of police presence, localities assessed in Nigeria had the highest reported presence of security forces in the region, although this figure decreased by eight percentage points between rounds. The vast majority of localities in Chad have no security forces present, with only eight per cent of localities in Round 2 reporting their presence. Localities in Cameroon reported a five point decrease in the presence of security forces, while localities in Niger reported an eight point increase.

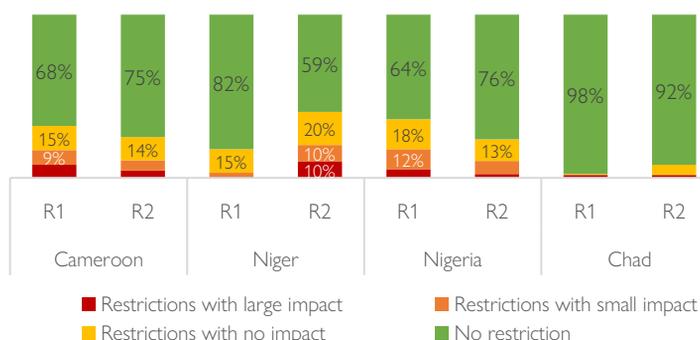
Figure 15. Presence of security forces



3. Freedom of Movement

Niger experienced a notable increase in restrictions of the freedom of movement between rounds, with a 23 percentage point increase in the total number of localities with restrictions on movements, including a 9 point increase in the per cent of localities with restrictions on movement with a large impact on the lives of residents. Localities assessed in Nigeria reported a 12 point decrease in the per cent of localities with mobility restrictions.

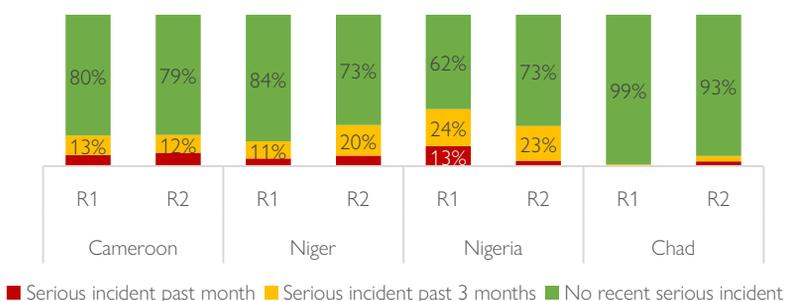
Figure 16. Limitations on the freedom of movement



4. Recent Security Incidents

As in the previous round, Chad had the lowest per cent of localities assessed with recent security incidents, although the per cent of localities that had experienced a recent security incident increased by 6 points between rounds. In Niger, the security situation deteriorated, with the proportion of localities that experienced a recent security incident increasing by 11 percentage points between rounds. Conversely, the per cent of localities that experienced a recent security incident in Nigeria decreased by 11 points.

Figure 17. Recent Security Incidents



5.6 Analysis of Anchor Questions

The first section of the questionnaire focused on the key informants' perception of stability in the assessed localities. These "anchor questions" are not used in Stability Index calculations, but are used instead to validate Stability Index findings against self-reported perceptions in the community. Key informants were asked three main questions to assess the sentiments in their communities. The following graphs compare responses among localities that were surveyed in both Round 1 and Round 2 of assessments.

Feeling of stability

Does the locality feel safe or unsafe?

The proportion of localities that reported feeling safe and stable fluctuated slightly in each country between Rounds 1 and 2. In Cameroon and Nigeria, the proportion of localities that reported feeling safe increased slightly – by seven percentage points in Cameroon and five percentage points in Nigeria. In Niger and Chad, the proportion of localities reporting feeling safe decreased, by two percentage points in Chad and five percentage points in Niger. Across both rounds, a much larger proportion of localities in Chad reported feeling safe compared to the rest of the region.

Figure 18. Feeling of stability by country and round

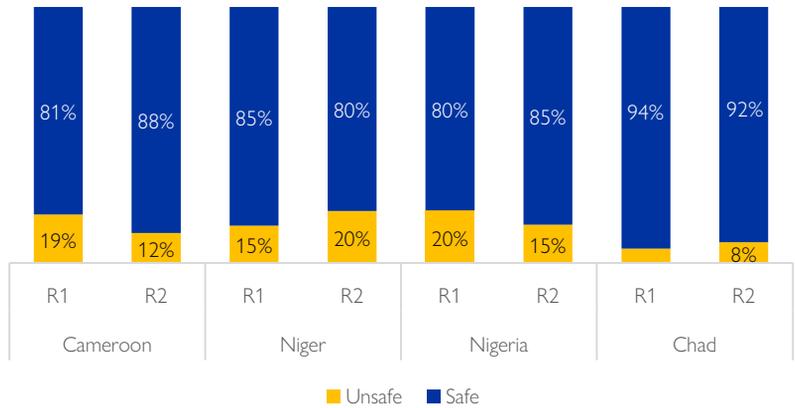


Figure 19. Future intentions of the population

Future intentions

Do people in the locality feel that they need to leave soon due to safety concerns?

In general, responses to the question whether residents intended to leave soon revealed improvements in Cameroon and Nigeria, and declines in Niger and Chad. In Nigeria, there was a seven-point decrease in the percentage of localities that reported that they needed to leave soon, and a six-point decrease was noted in Cameroon. Conversely, Chad witnessed a six-point increase, while Niger saw a three-point increase.

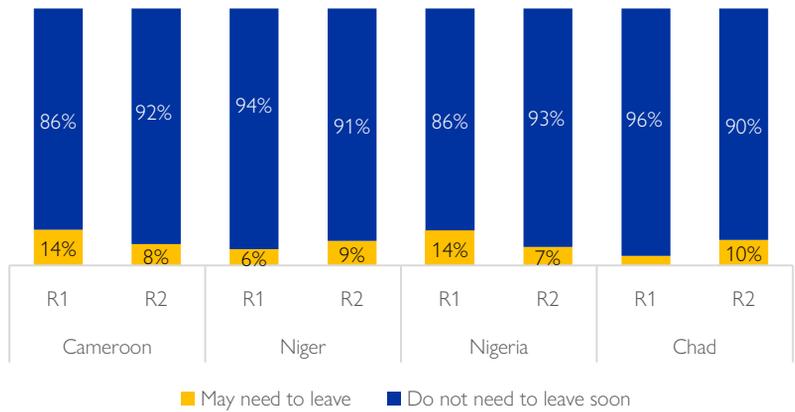
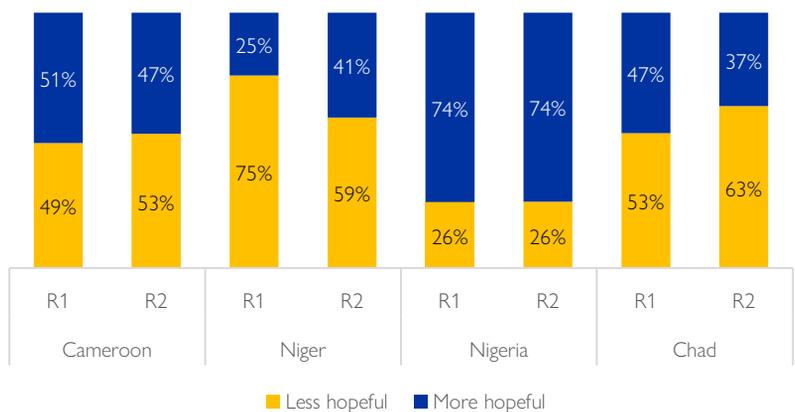


Figure 20. Changes in perception over past six months

Changes in perception

Do people feel more or less hopeful about the state of community compared to six months ago?

As seen in Round 1, the proportion of localities in Niger that reported feeling more hopeful than the previous six months was significantly higher than the other Lake Chad Basin Countries. In Round 2, localities in Niger reported a 16-point increase in the percent of localities that reported feeling more hopeful than before, while localities in Chad experienced a 10-point decline.



6. CLUSTER ANALYSIS

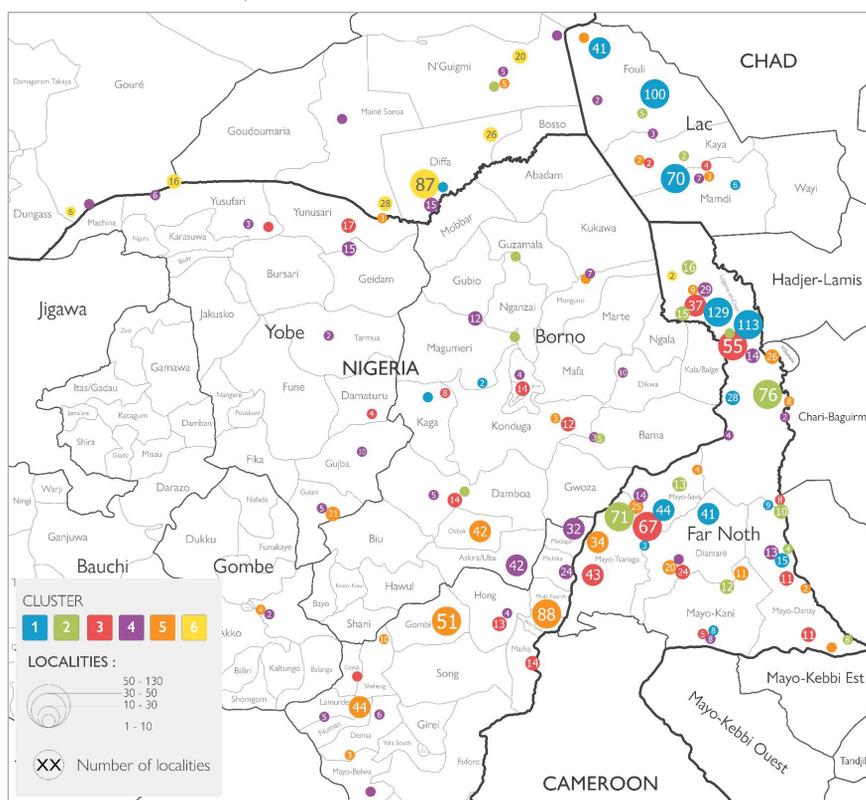
6.1 Cluster Generation

Grouping similar localities into clusters can help to uncover the distinctive profiles of geographic regions in order to facilitate targeted programming. This analysis uses machine learning to group similar localities into clusters in order to draw out underlying patterns about the conditions in those areas. (See *Appendix* for details on cluster generation.) High stability clusters can help to pinpoint “pockets of stability” at a level slightly less granular than the individual locality to facilitate feasible programmatic interventions. The map below visualizes assessed localities located in the Lake Chad Basin as divided into six clusters. Each colour represents a cluster of localities with similar sets of responses to the Stability Index survey. The accompanying table provides a breakdown of the average Stability Index and sub-index scores for each of these clusters.

Clustering helps to see beyond stability scores to gain a better understanding of different groups of localities. For instance, cluster 1 and cluster 2 have similar average stability scores and are in close geographic proximity, in primarily Chad and Niger. However, while both sets of localities have similarly low levels of access to services, localities in cluster 1 have higher levels of security and social cohesion as compared with cluster 2. Humanitarian or development actors that wish to improve conditions in relatively more secure environments may benefit from targeting localities in cluster 1.

Similarly, clustering reveals geographic distinctions that may be obscured by administrative boundaries. For instance, while most localities in Adamawa State, Nigeria, fall into high-security cluster 5, localities in Madagali and Michika LGAs fall into cluster 4, with conditions more similar to localities in Borno State, particularly in Askira/Uba LGA, with much lower levels of access to services and worse security conditions. Therefore, these localities may benefit from programmatic interventions more similar to those conducted in Askira/Uba LGA in Borno State rather than those conducted in Adamawa State.

Map 4. Clusters of localities with similar characteristics



This map is for illustration purposes only. The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by IOM.

Table 9. Average SI and sub-index scores by cluster

	Stability Index	Services Sub-Index	Security Sub-Index	Cohesion Sub-Index	Number of Localities
Cluster 1: Low SI in Cameroon and Chad	45	45	65	56	611
Cluster 2: Low Security in Cameroon and Chad	40	42	54	45	242
Cluster 3: Mid SI in Cameroon and Nigeria	67	61	81	75	365
Cluster 4: Low SI in Cameroon and Nigeria	56	56	55	69	318
Cluster 5: High SI in Cameroon and Nigeria	73	70	71	73	422
Cluster 6: Localities in Niger	65	49	72	51	186

6.2 CASE STUDY

Overview of Nearby High and Low SI Clusters Across the Nigeria – Cameroon Border

Cluster 4 - Low SI Localities Cameroon and Nigeria

Cluster 4 includes 206 localities in Nigeria and 89 localities in Cameroon, in addition to 23 localities in Chad and Niger. This cluster is typified by a combination of high state presence (both police and security forces) paired with NSAG presence, and low levels of access to electricity.

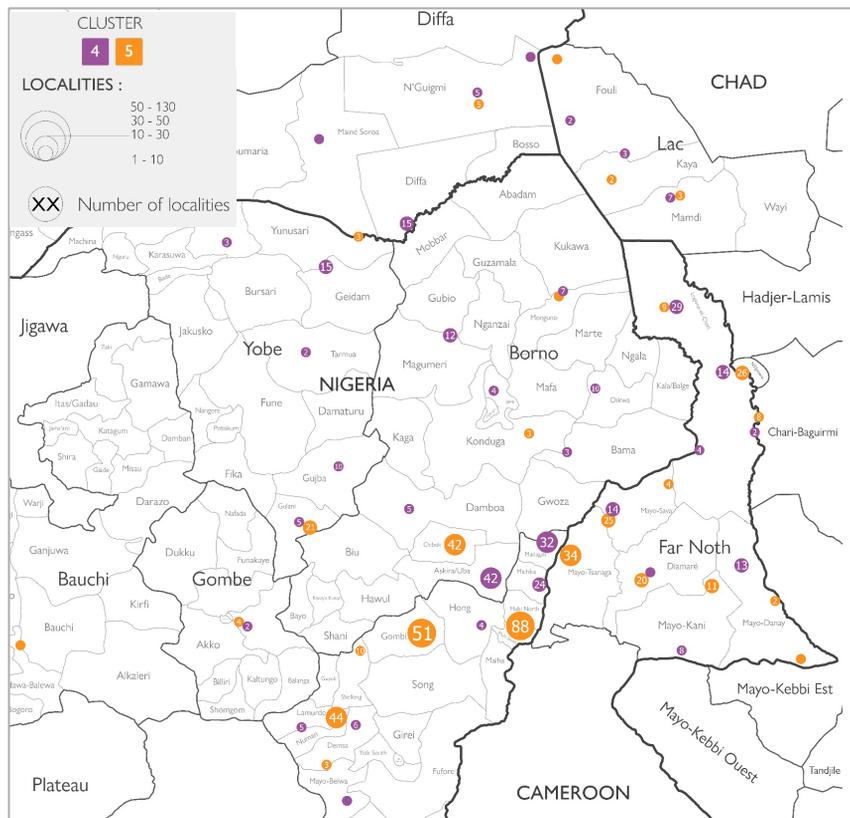
Cluster 5 - High SI Localities Cameroon and Nigeria

Cluster 5 is comprised of 274 localities in Nigeria, 134 localities in Cameroon, and a total of 13 localities in Chad and Niger. Cluster 5 is typified by lack of curfews, either formal or informal, low levels of NSAG presence, and higher levels of electricity and ICT access compared with localities in Cluster 4. Notably, localities in Cluster 5 have lower levels of police and security force presence than Cluster 4, paired with higher levels of property crimes including robberies and cattle theft.

Table 10. Indicators with largest variation between clusters 4 and 5

Average scores per cluster	Category	Cluster 4	Cluster 5
SI Score	Index Score	56	73
Security Score	Index Score	55	71
Services Score	Index Score	56	70
Cohesion Score	Index Score	69	73
Feeling of Stability	Anchor Question	8	10
NSAG Presence	Security	5	9
Formal Curfew	Security	5	9
Informal Curfew	Security	7	10
Access to Electricity	Services	2	5
ICT Connectivity	Services	4	7
State of Emergency	Security	8	10
Police Presence	Security	9	7
Cattle Theft Reported	Security	7	5
Robbery Reported	Security	6	4
Security Force Presence	Security	9	6

Map 5. Locations of localities in Cluster 4 and Cluster 5



This map is for illustration purposes only. The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by IOM.

APPENDIX I

A. Selection of Localities

The selection of localities was as broad as possible in areas affected by displacement and/or returns in regions in the Lake Chad Basin. **2,241 displacement affected locations** were surveyed in North-East Nigeria, Far North Cameroon, Lac Province Chad, and Diffa Region Niger. A list of localities to be surveyed was created based on data collected by IOM on displacement/returns and other existing data systems (census, administrative lists, etc.). The objective was to have a large enough number of localities at both the country and regional level to ensure a solid foundation for statistical analysis. A locality is the administrative level 4 (lowest possible level). The level has a representation, whether formal (State) or informal (Chef de village).

B. Stability Index Calculation

The Stability Index calculation begins with survey design: this tool was developed with substantive input from community stabilization and HDPN experts. It includes a set of questions assessing the conditions in a locality that were determined to be 1) potential indicators of stability and 2) possible to rank in terms of their stability implications. Questions were divided into four categories: anchor questions (perceptions about stability), safety and security, social cohesion, and access to basic services.

Before index calculation, responses were ranked ordinally from best to worst case scenario. Then, Principle Component Analysis (PCA) was run using all indicators *except for the “anchor questions”*, which are used instead to validate index results. The **weight** for each variable, determined via PCA, was combined with the ranked survey-responses for each locality to generate its overall **Stability Score**.

C. Sub-Index Calculation

In addition to the Stability Score, three separate **sub-indexes** were generated using the variables from each of the three themes in the survey: Security, Social Cohesion, Services. The sub-indexes were calculated by separately running PCA using the variables for each theme, and then rescaled between 0-100. **The overall Stability Index is not an average of these three sub-indexes.** The sub-indexes facilitate the identification of localities that may need specific attention in one of these sectors.

D. Stability Index Validation

The Stability Index and the sub-indexes are **validated against the key questions on the perception of stability.** This ensures that there is a statistically significant relationship between the Stability Scores and the perception of stability. The relationship was validated via logistic regressions which indicate that a locality's Stability Index score has a statistically significant, positive correlation with both the community's feeling of stability and their feelings of whether they will need to leave soon. However, there is no discernable relationship between Stability Score and the perception about whether the situation is improving or getting worse.

E. Principal Component Analysis

The Stability Index is calculated using a dimensionality reduction technique called Principal Component Analysis (PCA), which **essentially condenses the information from over 30 variables into a single, easily comparable Stability Score.** PCA gives more weight to the factors that have a greater impact on the variability in the data, meaning that those factors make up a larger proportion of the Stability Score.

While each of the indicators assessed is clearly important for informing programming along the humanitarian-development-peace nexus, **PCA is particularly useful for demonstrating the impact of different indicators on one another, and the proportional influence of a given indicator on a given dataset.** For example, while the availability of electricity and access to health care are both individually important factors, they also heavily influence one another (this is called collinearity). PCA helps to see beyond the collinearity and drives at influence in a more coherent way, which is critical to understanding complex phenomena like the nature and conditions of return.

F. Cluster Generation

To facilitate the analysis of groups of localities, **clusters** were created using the K-Means machine learning algorithm, weighted by geographic distance. K-Means allows for the identification of groups of localities that are the most similar across all of the provided inputs. The inputs included the first five dimensions from the Principle Component Analysis results generated during the Stability Index calculation, as well as the geographic distance between the latitude-longitude points of each locality.

G. Limitations

Some localities that were not accessible during the data collection period were not assessed due to security or logistical reasons. This may have introduced bias as data points from some of the least secure locations were excluded from the analysis. This limits the generalizability of the Stability Index findings in extremely insecure localities.

It is important to note that the Stability Index is based on informants' perceptions of stability and reports of the conditions in their locality and does not claim to provide an objective measure of this complex topic. Key informants are not randomly selected and may have different opinions about the stability in their locality than some of their neighbors.

APPENDIX II : Indicators highly correlated with key validation questions

The tables below present the top three variables per country with the largest correlations to the key questions about whether the location feels safe and stable (left) and whether residents in the locality feel that they need to leave within the next six months (right). Correlation measures of the relationship between a pair of variables, assessing if they tend to improve together (positive correlation), if one improves while the other deteriorates (negative correlation), or if there is no relationship (and thus no correlation). Correlation coefficients (denoted with *r*) range from -1 to 1, where -1 represents perfect negative correlation, 1 represents perfect positive correlation, and 0 represents no correlation.

These relationships differ by country, although most variables highly correlated with feelings of stability and the intention to move fall under the “safety and security” pillar of the Stability Index. In general, daily public life, whether residents are worried about security, the freedom of movement, and whether there have been recent security incidents are the factors with the largest correlation to feelings of stability and intentions to move. It is noteworthy that in Niger, damage to homes is the most highly correlated indicator with the feeling of stability, indicating that this is a key issue of concern.

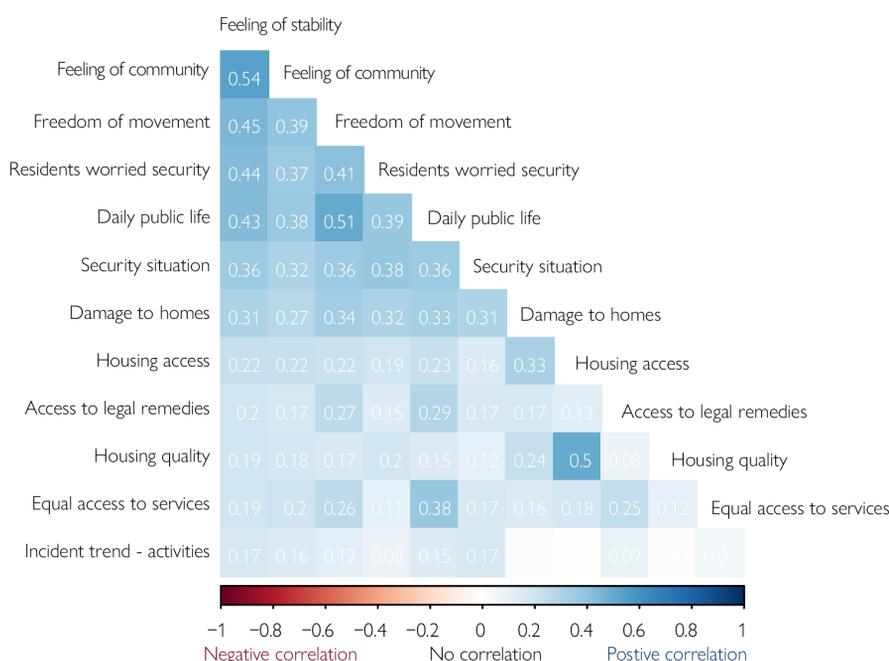
Table 11. Most highly correlated indicators with the feeling of safety and stability in a locality, by country

	Cameroon	Nigeria	Niger	Chad
1	Daily Public Life (<i>r</i> = .53)	Recent Security Incidents (<i>r</i> = .37)	Damage to Homes (<i>r</i> = .48)	Residents Worried Security (<i>r</i> = .58)
2	Residents Worried Security (<i>r</i> = .52)	Freedom of Movement (<i>r</i> = .36)	Recent Security Incidents (<i>r</i> = .38)	Freedom of Movement (<i>r</i> = .53)
3	Freedom of Movement (<i>r</i> = .50)	Residents Worried Security (<i>r</i> = .35)	Freedom of Movement (<i>r</i> = .38)	Daily Public Life (<i>r</i> = .43)

Table 12. Most highly correlated indicators with the feeling that residents may need to move in the next six months, by country

	Cameroon	Nigeria	Niger	Chad
1	Residents Worried Security (<i>r</i> = .48)	Recent Security Incidents (<i>r</i> = .26)	Freedom of Movement (<i>r</i> = .24)	Freedom of Movement (<i>r</i> = .41)
2	Freedom of Movement (<i>r</i> = .47)	Freedom of Movement (<i>r</i> = .25)	Residents Worried Security (<i>r</i> = .22)	Residents Worried Security (<i>r</i> = .37)
3	Daily Public Life (<i>r</i> = .46)	Residents Worried Security (<i>r</i> = .25)	Recent Security Incidents (<i>r</i> = .21)	Daily Public Life (<i>r</i> = .29)

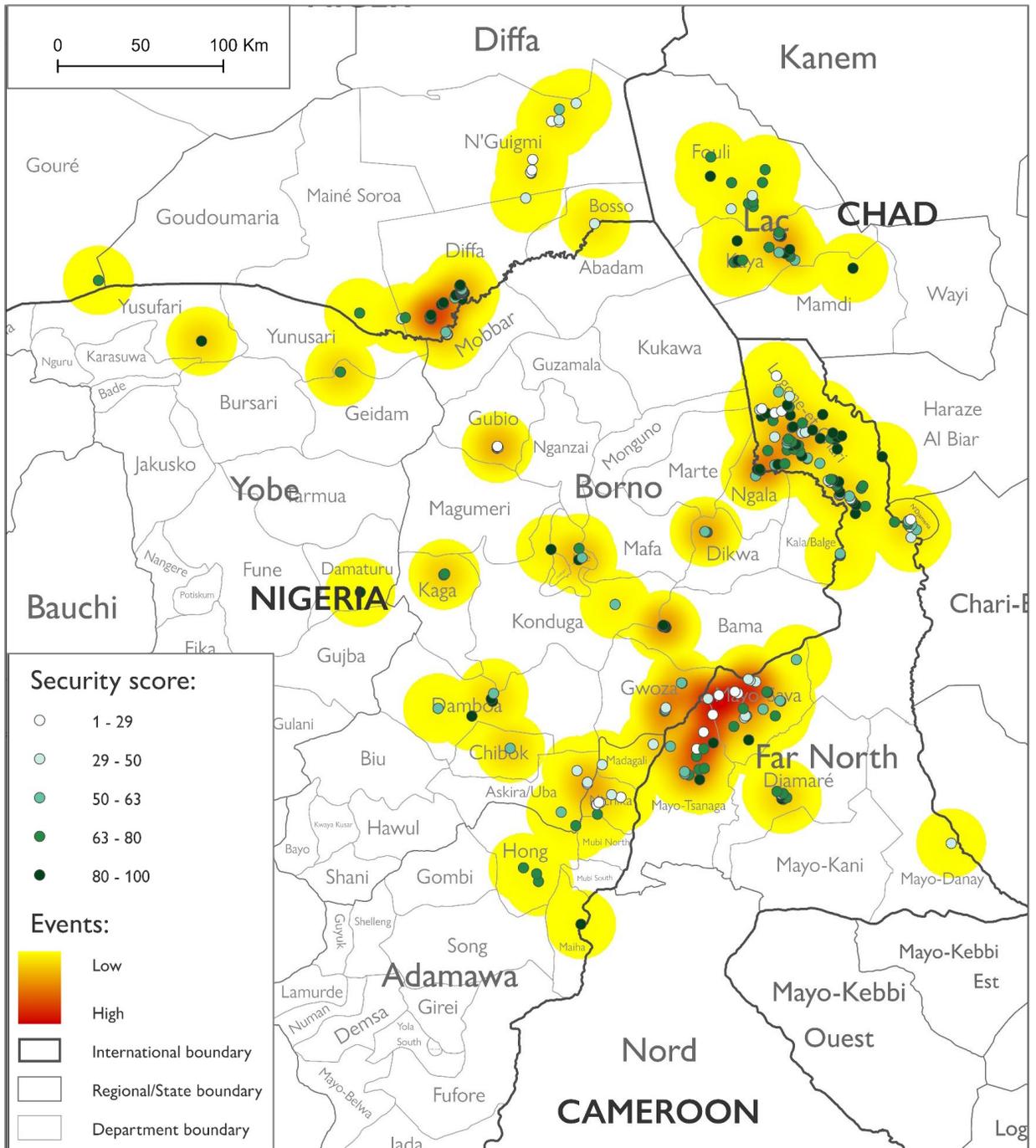
Figure 21. Correlation matrix of ten indicators most correlated with the feeling of stability in the Lake Chad Basin region



APPENDIX III : Security Sub-Index and ACLED Incidents With Fatalities

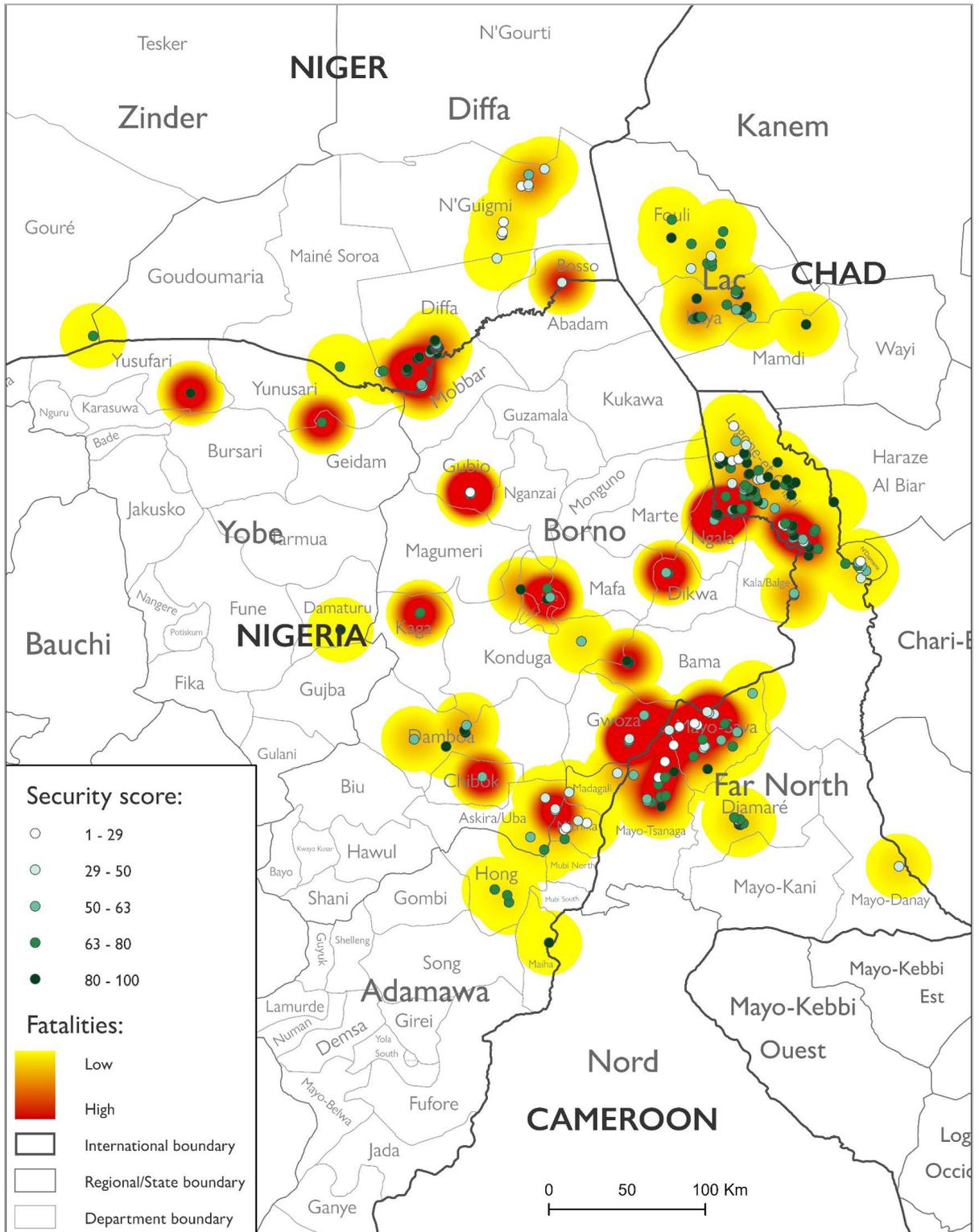
The map below illustrates the relationship between the regional Security Sub-Index and the number of events with fatalities recorded by the Armed Conflict Location & Event Data Project (ACLED) during Stability Index data collection and the three months before data collection. During this period, there were three main hotspots for fatal incidents in the region: 1) along the Cameroon/Nigeria border in Mayo-Sava and Mayo-Tsanaga in Cameroon, and Gwoza in Nigeria; 2) in Diffa, Niger; and 3) in Logone-Birni, Cameroon.

Map 5. Regional Security Score and Number of Events with Fatalities Recorded by ACLED (August 2021 – February 2022)



APPENDIX IV: Security Sub-Index and Fatalities Recorded by ACLED

Map 5. Regional Security Score and Number of Fatalities Recorded by ACLED (August 2021 – February 2022)



APPENDIX V: Indicators

ANCHOR QUESTIONS: PERCEPTION OF STABILITY

These key indicators were used to measure the perception of stability in each locality. The key indicators were then tested against each of the thematic indicators below to identify the most influential thematic indicators on the perception of stability.

Feeling of Stability in the Locality

Does the locality feel safe and stable or unsafe and unstable?

Ability to Continue Living in Locality

Do people in the locality feel that they need to leave within the next six months?

Changes in Perception in the Last 6 Months

Do people feel more or less hopeful about the state of the community than they did six months ago?

SCALE 1: LIVELIHOOD & SERVICES

Shelter Access and Quality

Proportion of the community that has access to shelter and conditions of shelter.

Damage to Homes

Level of damage to homes due to conflict, and whether reconstruction is underway.

Primary Education

Access to primary education and availability of schools in the locality or in neighbouring towns

Health Center and Medical Care

Access to functioning health center in the locality or in neighboring town

Local Market

Whether markets are open regularly and supplied

Electricity

Electricity access and reliability in the locality

Drinking Water

Drinking water access and availability in the locality.

Farmland & Fishing Grounds

Extent of fishing grounds and farmland being used in the locality

Presence of Public Sector Employees

Whether public sector employees are present and how they reacted to the conflict.

Internet and Communications Technology

Access and reliability of internet or phone services.

APPENDIX V: Indicators

SCALE 2: SOCIAL COHESION

Illegal Occupation of House, Land and Property

Land, habitat or property occupied illegally (without authorization from family, neighbors, local authorities)

Robbery Personal Effects

Robbery of personal belongings reported in locality in the last 6 months

Cattle Theft Reported

Cattle theft reported in the locality in the last 6 months

Daily Public Life

Whether residents are able to carry out basic activities without worry (going to the market, letting children play outside, street vendors, etc.)

Community Support

Likelihood of cooperation between neighbors in case of problems (such as with the supply of water or food) in the locality

Community Tension

Incidents or clashes involving two groups (religious, ethnic, herders/farmers, displaced/returnee/host communities) in the locality

Equal Access to Services

Populations in the locality have equal access basic services and resources no matter their age, sex or group (ethnicity, clan, displacement status)

Identity Documents

Level of identity document possession or access in the locality

Participation in Public Affairs

Level of participation in local public and political life (civil society organizations, unions, committees, social gatherings, religious groups)

SCALE 3: SAFETY AND SECURITY

Recent Security Incidents

Whether there have been serious security incidents in recent months

Security Incidents – Resources

Trends in the number of security incidents linked to resource tensions (cattle raiding, land conflict, etc.) over past three months.

Security Incidents – Non-State Armed Groups

Trends in the number of security incidents linked to NSAG activities (kidnapping, terrorist attacks, raids, etc.) over past three months.

Petty Crime

Trends in the number of petty crimes (theft, pickpocketing, vandalism, public intoxication, etc.) over past three months.

Community Concerns About Security

How concerned residents feel about their security (kidnapping, crime, fighting between armed groups, etc.).

Police Presence

Presence of police/gendarmerie in the locality

Security Forces Presence

Presence of security forces in the locality

Non-State Armed Groups Presence

Presence of Non-State Armed Groups in the locality

Freedom of Movement

Residents' freedom of movement (to markets, to their homes, to workplaces, to farms, etc.) in the locality

Formal Curfew

Formal curfew for security reasons enforced by State

Informal Curfew

Informal curfew enforced by Non-State Armed Groups

State of Emergency

Whether the locality is under a state of emergency

Legal Remedies

Whether residents have access to legal remedies to resolve disputes

STABILITY INDEX – LAKE CHAD BASIN

REGIONAL OVERVIEW ROUND 2

NOVEMBER 2021 – FEBRUARY 2022



International Organization for Migration (IOM)
The UN Migration Agency

Fragility, Solution and Mobility working group, IOM

The Stability Index is part of a larger body of work developed by IOM country teams in Iraq, Somalia, the Lake Chad Basin, and elsewhere—that improve strategic planning and implementation of transition and recovery programs. The Fragility, Solutions, and Mobility working group is working to provide a series of technical and strategic guidance and tools, including drafting a methodological framework to allow for a malleable, context specific but standardized approach to measuring fragility in new and emerging operations. The goal is an IOM-led global minimum standard for data collection and responsible data management for measuring and understanding indicators of fragility and stability through the deployment of analytical models in displacement and conflict contexts.

IOM's Transition and Recovery Division (TRD) and the IOM Displacement Tracking Matrix (DTM)'s work in this space allows for new and unique approaches aimed at consolidating and packaging existing methods, to achieve stronger outcomes and to better scale programming in fragile contexts. This approach provides a foundation from which to adapt and contextualize data-based evidence for the support of strategic planning and implementation of transition and recovery programs. Grounded in the principles of responsible data management, appropriate evidence can identify core factors of fragility, solutions, and mobility at the community level, and help identify how these factors impact the overall condition of the physical location and local community, and how these evolve over time.

IOM Regional Office for West and Central Africa

Zone 3, Route des Almadies
Dakar BP16 838
Sénégal: Tel: +221 33 689 62 00
Fax: +221 33 869 62 33

Equipe RO Dakar – Regional Data Hub: rodakar-dataresearch@iom.int

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