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## INTRODUCTION

The Lake Chad Basin (LCB) crisis has displaced thousands of internally displaced persons (IDPs) as a direct result of armed conflict and ongoing incursions by Non-State Armed Groups in Northern Cameroon, Lac Province in Chad, Diffa in Niger and North-East Nigeria. The crisis directly impacts the political, social and economic conditions of communities in the LCB region. In Niger, the region of Diffa has experienced significant population displacement since 2013, both within its borders and as well as refugees from the North-East states of Nigeria. These displacements resulted in a complex mixed-displacement context of IDPs, returnees and refugees. In June/July 2021, the region of Diffa has seen some returns of IDPs

In order to 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. Therefore, IOM has launched the Stability Index (SI) to evaluate the stability of areas hosting returnees or displaced populations. The SI seeks to understand which factors influence a location's stability, which can inform priority programmatic interventions along the humanitarian, peace and development nexus in order to strengthen the resilience and stability and prevent future forced displacements.

This report presents the result from the second round of Stability Index conducted in December 2021 in Diffa region, 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. 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).

Principal Component Analysis is used 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).

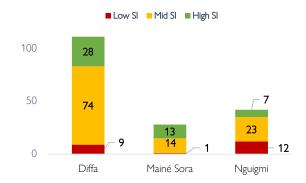
### 1.1 Data collection overview

The Stability Index includes data collected through key informant interviews at the locality level in 184 displacement affected locations in Diffa region of Niger. Key informants, including mayors, community leaders, and aid workers were interviewed in each location by enumerators in December 2021.

The key informant method has the advantage of allowing the coverage of many localities. Multiple key informants were interviewed in each locality, allowing IOM to cross-validate information. However, the main limitation of this data collection methodology lies in the fact that only a few informants report on the views of an entire community.

Locations for data collection were selected through of mapping exercise to identify areas where IDPs and returnees are located. Security was a key factor in the selection of localities, hence only three localities in the department of Bosso were included in this exercise. (See *Appendix* for further information on the locality selection process).

Fig. 1: Number of Localities Surveyed Per Department



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# 2. STABILITY SCORES ANALYSIS

# 2.1 Stability Index Score Analysis (by scale and by department)

The average Stability Index score of 184 locations assessed in the region of Diffa, Niger was 64/100. Out of the four departments assessed, the department of Diffa had localities with both the highest (98/100) and the lowest stability score (25/100). Diffa department had the most localities surveyed, which may explain why findings showed both highest and lowest scores in the same department

Results by the three scales revealed that, out of the four departments, department of Diffa scored the highest (Charé Bagara: 100/100) and lowest (Waragou: 23/100) on **safety and security** scale.

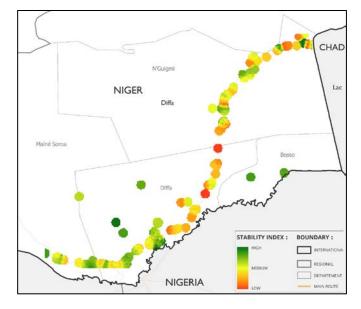
For the **social cohesion** scale, localities with the highest scores in this scale were found in the departments of Diffa, Bosso and Maine Soroa (100/100; Garin Dogo, Bosso ville and Issari birin). The locality with the lowest score was found N'Guigmi department (Bori: 1/100).

Localities in departments of Diffa and N'Guigmi scored the highest (94/100; Ngalwa and Blabrine respectively) on the **livelihood and basic services** scale, while the lowest score (29/100) was found in a locality the department of Diffa (Ngeul Kolo).

Fig. 2: Average Scores and Sub-Scores per Department

	SI Score	Services	Security	Cohesion	
Bosso	81	71	78	84	
Diffa	65	62	69	54	
Maine Soroa	67	64	67	67	
N'Guigmi	57	55	60	55	
Average	64	61	67	57	

Map 1. Stability scores of localities assessed in Diffa region



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.

# 2.2 Stability Scores by Locality and Department

**Bosso** – The overall scores in the department of Bosso varied between 78/100 (lowest score) and 82/100 (highest score). When reviewing the Stability Index score at the level of localities, **Bosso ville** (82/100) has the highest stability scores and **Mamour** (78/100) has the lowest stability scores.

**Diffa** – The overall scores in the department of Diffa varied between 25/100 (lowest score) and 98/100 (highest score). When reviewing the Stability Index score at the level of localities, **Ngeul Kora** (98/100) and **Maloumdi** (97/100) have the highest stability scores and **Ngouri Koura** (36/100) and **Ngwala** (25/100) have the lowest stability scores.

Maine Soroa—The overall scores in the department of Maine Soroa varied between 44/100 (lowest score) and 84/100 (highest score). When reviewing the Stability Index score at the level of localities, Issa Bagara (84/100) and Toutourwa (83/100) have the highest stability scores and Kouboule Elhadji Saidou (46/100) and Toumour 1 (44/100) have the lowest stability scores.

**N'Guigmi** – The overall scores in the department of N'Guigmi varied between 30/100 (lowest score) and 91/100 (highest score). When reviewing the Stability Index score at the level of localities, **Blabrine** (91/100) and **Boudjouram** (83/100) have the highest stability scores and **Kassatchia** (31/100) and **Baroua Yala** (30/100) have the lowest stability scores.

# 3. LOCALITY ANALYSIS 1

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## 3.1. Comparative analysis of localities with highest and lowest SI scores

This table shows the Stability Index, three sub-index scores, stability "anchor questions", and top five most influential variables for the localities with the highest and lowest Stability Scores in the Diffa region of Niger. It is interesting to note that some indicators are low (red) across both the localities with the highest and lowest scores: for example, community support, access to housing, and sub-scores such as social cohesion.

This indicates that while programs could support these areas of focus, they would not necessarily affect the overall perception of stability, as the localities with highest stability scores also score poorly (red) on these indicators. Other indicators, however, clearly have a significant impact on the perception of stability. Access to information and communication technology (ICT) is reliable in the localities with high stability scores, whereas it is unreliable or unavailable in the localities with the lowest stability scores.

Fig. 3: Comparison of localities with highest and lowest SI scores in Diffa region

	Location			SI Sub-Scores Key Question					ons Key Variables						
	Best		Worst		9	- e	o.c	₹	unity	io u	E	tion	mes	sing	
	Department	Commune	Locality	SiScore	Service Score	Security Score	Cohesion score	Felling Stability	Feeling Community	Felling Situation	Daily Public Life	Access Population	Damage to Homes	Access to Housing	Community
	Diffa	Gueskerou	Ngalwa	24.69	29.1	32.09	52.67								
	N'Guigmi	Kabalewa	Baroua.yala	30.1	35.73	52.19	36.75								
	N'Guigmi	Kabalewa	Kassatchia	31.42	41.28	47.86	71.69								
	N'Guigmi	N'Guigmi	Oudi.balié	33.78	32.98	52.87	58.5								
S	N'Guigmi	N'Guigmi	Djakime.2	34.09	35.82	52	42.5								
Localities with the Lowest SI Scores	N'Guigmi	N'Guigmi	Kangouri	34.61	37.25	38.58	26.58								
Š	N'Guigmi	Kabalewa	Tchotchono	35.84	40.66	44.95	96.9								
st :	Diffa	Gueskerou	Ngoui.koura	36.01	36.57	34.32	27.54								
) we	N'Guigmi	N'Guigmi	Faya	37.64	38.63	57.14	74.94								
9	Diffa	Gueskerou	Kindjandi.arabe	39.2	51.82	62.21	39.85								
흎	N'Guigmi	N'Guigmi	Tchingouwa.et.meleram	39.53	36.26	40.87	64.1								
ig l	Diffa	Gueskerou	Ngayami	39.56	37.4	41.12	27.02								
N Se	N'Guigmi	N'Guigmi	Audou.garam	39.93	42.97	67.84	27.1								
薑	Diffa	Gueskerou	Garin.wanzam.foulatari	40.07	61.32	43.84	55.55								
oca	N'Guigmi	Kabalewa	Mambio	40.91	46.12	37.84	77.07								
	Diffa	Gueskerou	Waragou	41.05	59.51	23	49.58								
	Diffa	Gueskerou	Alla.dewa	43.02	53.57	70.5	46.92								
	Diffa	Gueskerou	Alladalamaram	43.09	35.79	58.44	27.02								
	Diffa	Gueskerou	Kindjandi.ngueldjangouro	44.47	49.42	56.89	31.44								
	N'Guigmi	Kabalewa	Bori	44.48	47.96	65.55	1								
	Bosso	Toumour	Toumour	81.64	69.07	79.9	98.08								
	Diffa	Diffa	Awaridiariguirguidi.	81.66	82.26	75.57	20.02								
	Maine soroa	Mainé soroa	Ambaram.ali	81.92	78.17	65.61	93.22								
	Diffa	Diffa	Lamana	82.03	80.97	81.94	64.76								
ဟူ	Bosso	Bosso	Bosso.ville	82.32	76.14	79.9	100								
or or	Diffa	Diffa	Boudouri	82.39	83.7	75.76	56.36								
Se	N'Guigmi	N'Guigmi	Boudjouram	83	70.72	90.48	56.8								
Localities with the Highest SI Scores	Maine soroa	Mainé soroa	Toutourwa	83.18	66.09	76.99	54.89								
gh	Diffa	Diffa	Site.de.awaridi	83.6	74.33	78.41	41.17								
프	Diffa	Chetimari	Kawiya	83.8	73.56	81.82	56.8								
÷ :	Maine soroa	Mainé soroa	Issari.bagara	84.12	82.26	71.05	75.38								
, W	Diffa	Diffa	Bassa	84.61	77.53	74.52	41.17								
ţies	Diffa	Diffa	Diffa.koura	85.94	84.07	74.7	51.2								
<del>ji</del>	Diffa	Diffa	Djougoulou	87.87	76.94	86.64	34.39								
o l	Diffa	Diffa	Bagara	88.6	86.26	85.53	32.18								
	N'Guigmi	N'Guigmi	Blabrine	91.11	94.31	55.96	49.14								
	Diffa	Diffa	Daro	91.38	73.68	45.08	84.3								
	Diffa	Diffa	Chateau	93.95	90.62	82.56	56.43								
	Diffa	Diffa	Maloumdi	96.87	91.27	92.95	53.85								
	Diffa	Chetimari	Ngeul.kolo	98.4	94.19	71.92	76.26								

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# 4. Analysis of Main Indicators Influencing Variability Between Localities

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.

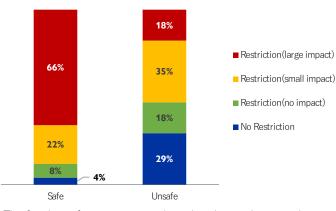
# 4.1 Top indicators in the Diffa region

Fig. 4: Most influential indicators in Diffa

SERVICES SOCIAL COHESION SECURITY 1 Daily Public Life 2 Community Support 3 Equal Access to Services Damage to Homes 4 5 Access to Housing 6 Presence of Public Sector Employees 7 Access to Farmland 8 Freedom of Movement 9 Basic Health Services

Freedom of Movement and Stability

Fig. 5: Freedom of Movement and Perception of Stability



The freedom of movement was the only indicator that scored as one of the top five influential indicators for all four Lake Chad Basin countries. In Niger, 4 per cent of localities that said they had no restrictions on the freedom of movement also reported feeling safe and stable, while 29 per cent of these localities reported feeling unstable. Moreover, 18 per cent of localities that reported freedom of movement restrictions with a large impact on their daily lives also reported feeling unsafe or unstable.

The exploration of these key indicators allows for the identification of important factors that may impact the perception of stability in a locality. (For a more detailed overview of what each indicator measures, see *Appendix.*)

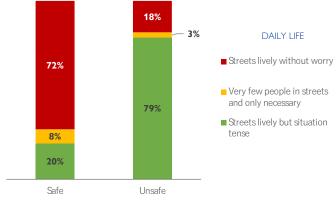
This analysis provides insight into the possible programmatic and policy responses that need to be implemented in the target communities. **Social cohesion** indicators appear to be the most influential in the dataset for Diffa. Notably, the three top influential indicators are: daily public life, community support among neighbors, and equal access to basic services.

**Livelihood and basic services** indicators make up the second group of most influential indicators: destruction and access to habitat, the presence of public sector employees, and access to functioning health center and medical services.

Freedom of movement within the locality to markets, homes, workplaces, and farms is the main **safety and security** indicator present among the most influential variables. This indicates that programming focused on the relevant indicators related to social cohesion and livelihoods and basic services may be more impactful.

#### Daily Life and Stability

Fig. 6: Daily Life and Perception of Stability



Daily Public Life scored as one of the top five influential indicators for Niger and three out of the four Lake Chad Basin countries. In localities in Niger that reported feeling safe, 72 per cent of localities also reported that daily life was conducted as normal. Conversely, in localities that reported feeling unsafe, 79 per cent reported that there was some tension while 3 per cent reported that they only left the house if necessary.

### 4.2 Analysis of Key Stability Index Indicators

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# 1. Community Support & Cooperation with Neighbor Social Cohesion

Community support (likelihood of cooperation between neighbours in case of problems) is the second most top indicator influencing stability in Diffa. Results indicate low community support across all departments. Less than 50% of localities in the other departments reported unlikely community support.

### 2. Equal Access to Services

Social Cohesion

Equal access to services regardless of displacement status, ethnicity, clan, age or gender is the third most influential indicator for the perception of stability in the localities assessed in Diffa region. Nearly 50 percent of the localities in Diffa, Maine Soroa and N'Guigmi report not having equal access.

### 3. Damage to Homes

Livelihood and Services

Damage to homes was reported as the highest weighted indicator within the livelihood and services scale. Localities with homes that have 50% or more damage needing reconstruction are located in the departments of Diffa (31%), N'Guigmi (6%), and Maine Soroa (4%).

#### 4. Access to Housing Livelihood and Services

Access and quality of shelter played a key role in influencing the perception of stability among key informants in assessed localities. Roughly half the localities in N'Guigmi, Diffa, and Maine Sorao report that *more than* 50% of the population have access to shelter. However, over one third of localities in Diffa and Maine Soroa, and half of localities in N'Guigmi report having *less* access to shelter or quality housing.

# 5. Presence of Public Sector Employees Livelihood and Services

The presence public sector employees and their reaction to the conflict played a key role in influencing the perception of stability of among localities assessed. One quarter of localities in N'Guigmi, over one third in Maine Soroa and nearly half of localities in Diffa department reported the reinstatement of public sector employees that are not paid regularly.

Fig. 7: Likelihood of cooperation with neighbours

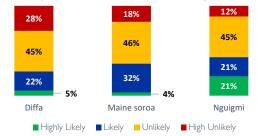


Fig. 8: Whether residents have equal access to services

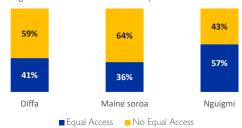
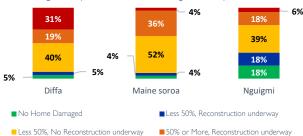


Fig. 9: Proportion of homes damaged and repair status



■50% or More, No Reconstruction underway

Fig. 10: Proportion of community with access to shelter

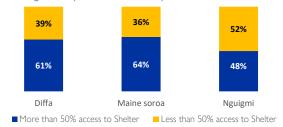
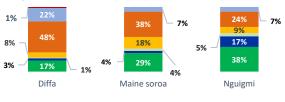


Fig. 11: Public sector employee presence and compensation



- People never lost employmentSome reinstated are not paid regularly
- Reinstated are not paid regularly
- None have been reinstated
- No people working in public sector
   Some reinstated are paid regularly
- Reinstated are paid regularly
- TNOTE Have been rei

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# 4.3 Analysis of Anchor Questions

The first section of the questionnaire is focused on the key informants' perception of stability in the assessed localities. These "anchor questions" were used to validate Stability Index findings against self-reported perceptions in the community. Key informants were asked three main questions to measure the perception of stability in their communities.

#### Feeling of stability

#### Does the locality feel safe or unsafe?

Most of the key informants (82%) in the assessed communities reported that their locations feel safe, while 18 per cent reported their locations were unsafe. Nearly all of key informants interviewed reported that communities in the department of Maine Soroa feeling safe in their localities.

#### Future intentions of the population

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

On the need to soon move from the current location due to safety and stability concerns, only five per cent of key informants reported that residents in the department of Diffa expect to move, whereas key informants in Maine Soroa and N'Guimi reported that approximately 15 per cent of residents may need to move (14% and 17% respectively). The key informants in all three assessed localities

#### Changes in perception over the last 6 months

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

In response to the question on how feelings of the situation in their locality changed over the past 6 months, over half of localities across Diffa region reported being more hopeful about the future state of their communities than 6 months prior to data collection. This indicator correlates with the question on feeling safe in the localities.

Out of the four Lake Chad Basin countries, Niger had the largest proportion of localities reporting that they are less hopeful about the future.

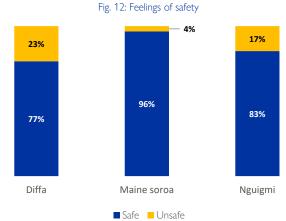


Fig. 13: Intention to leave the locality

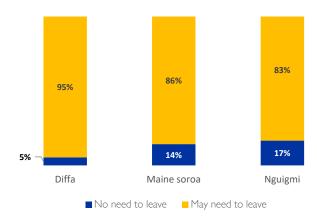
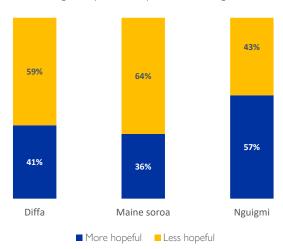


Fig. 14: Hopefulness compared to 6 months ago



# Stability Index – Lake Chad Basin, Round 2

Diffa, Niger | December 2021

July 2022

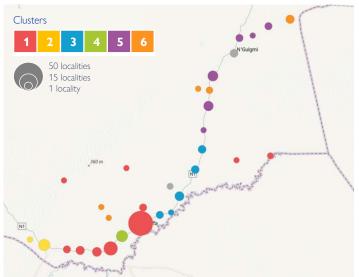
### 5. CLUSTER ANALYSIS

#### 5.1 Cluster Generation

Grouping similar localities into clusters can help to uncover the distinctive profiles of geographic regions in order to facilitate targeted programming. (See Appendix for details on cluster generation.) The map to the right visualizes the assessed localities in Diffa divided into six clusters. Each color represents a grouping of localities with similar sets of answers to the Stability Index survey. The table below provides a breakdown of the average Stability Index and sub-index scores for each of these clusters. It is noteworthy that clusters with similar average SI scores have markedly different scores on sub-indexes.

The two sets of high SI clusters, Cluster 1 and Cluster 6, center around Diffa Town and N'Guigmi. Despite similar SI scores, Cluster 6 localities have much lower average Security Scores compared with Cluster 1 indicating a more unstable security profile. Cluster 3, a distinctive set of localities between Diffa Town and Kabelawa, reported little police presence, low freedom of movement, and low level of cooperation between localities as compared with other clusters. The cluster with the lowest average Stability Index, Cluster 5 (near the border with Lac), reported little state presence: nearly no police or security forces, few public sector employees, and essentially no opportunities to participate in public

Map 3: 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.

Fig. 15 Average SI score and sub-index scores by cluster

attairs.	Stability index	Security Score	Services Score	Conesion
Cluster 1: High SI Diffa Town and West	76	74	69	57
Cluster 2: Mid SI, High Cohesion	70	61	65	69
Cluster 3: Low SI East of Diffa Town	52	58	54	53
Cluster 4: Mid SI Low Cohesion	57	75	56	55
Cluster 5: Low SI N'Guigmi/ Lac Border	70	64	64	54
Cluster 6: High SI N'Guigmi	45	54	47	56

### 5.2 CASE STUDY: Comparison of Lowest and Highest Average SI Clusters

Comparing the clusters with the highest and lowest average stability scores, it is worth noting that they diverge sharply on a few important characteristics. Cluster 6, composed primarily of low SI localities along the border with Chad, reported that residents had almost no opportunity to participate in public affairs.

Conversely, it is interesting to note that the cluster of highest-scoring localities, primarily located around Diffa Town and to its west along RN 1, has high levels of participation in public affairs. However, this cluster also reported relatively high levels of criminal activities including cattle theft and the robbery of personal effects.

Fig. 16 Indicators with the largest differences between clusters

Average Scores per Cluster	Cluster 1	Cluster 6
Participation in Public Affairs	8	1
Public Section Situation	7	1
Equal Access to Services	10	4
Cattle Theft Reported	2	7
Housing Access	9	3
Robbery of Personal Effects Reported	2	7
Security Trends - NSAGs	10	10
Presence of Security Forces	5	1



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## 6. CONCLUSION

The results of the second round of the Stability Index data collection presented in this report reveal that a number of key indicators have a direct impact on the perception of stability in locations hosting displaced and returned populations in the region of Diffa. While in the last round in March 2021, indicators in the safety and security scale had a significant impact on the perception of stability, findings for this second round show that the perception of stability in Diffa region is highly dependent on indicators on the social cohesion scale, followed by livelihood and basic services scale.

The most influential indicators on the perception of stability by order of impact, were: community support and cooperation with neighbours, the equal population access to basic services, destruction and access to habitat or home, access to basic functioning health centre and medical services, and residents' freedom of movement in the locality to markets, their homes, workplaces, farms, etc. Four of the most influential indicators are within the livelihoods & basic services scale, followed by three in the social cohesion scale, and only influential indicator is within the safety and security scale.

The analysis presented in this report provides a better understanding of the main influential indicators and the various dynamics in the Diffa region and insight into possible programmatic and policy responses needed in the targeted communities.

#### 6.1 Recommendations

Programming along the Humanitarian-Development Nexus:

Analysing the differences between the localities with the highest and lowest scores on the Stability Index (section 3) can provide useful insights into programme priorities. Localities with <u>very low stability</u> scores may require more immediate assistance, while in localities with <u>higher stability</u> scores, development programming may be more relevant to further strengthen resilience that may expand to surrounding communities.

Focus programming on Livelihoods & Basic Services and Social Cohesion indicators:

Programmatic interventions in Diffa should target localities with the lowest stability index scores focusing on **social cohesion** and **livelihood & basic services** indicators. Three out of the 10 most influential indicators are found in the social cohesion scale, while four out of the 10 indicators are found in the livelihoods & basic services scale. Responses should be developed that positively impact the specific indicators on these scales, in addition to recovery programmes that promote livelihoods and access to basic public services.

Some possible programmatic interventions include:

- > Access to shelter/habitat, including improving the condition of existing habitats in Ngwala, Ngoui Koura, Kindjandi, Ngayam and Daro (Diffa department); and Audou Garma, Oudi Balie (N'Guigmi department).
- Social cohesion within the localities to help strengthen cooperation within communities in case of problems in Sédinari 2 (matardé), Gaïdam Tchougou Barewass (Diffa department); and Bori and Gadodo 1 (N'Guigmi department)..
- Assist in the equal access to basic services and resources to displaced and host communities in Baroua Yala, Kassatchia, and Tchotchono (Kabalewa, N'Guigmi department), Oudi Balie, Djakime 2, and Kandgouri (N'Guigmi , N'Guigmi department).





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### 7. APPENDIX

#### 7.1 Selection of Localities

The selection of localities was as broad as possible in areas affected by displacement and/or returns in the 184 region of Diffa. 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).

### 7.2 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 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**.

#### 7.3 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 combining the **weights** from the Stability Index calculation with the variables for each theme, and then rescaled between 1-100. **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.

#### 7.4 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.

### 7.5 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.

#### 7.6 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.

#### 7.7 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.

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### 7.5 - Survey Indicators

#### **ANCHOR QUESTIONS: PERCEPTION OF STABILITY**

These key indicators were used to measure the perception of stability in each locality. The key indicators where 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.

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### 7.5 – Survey 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

#### Informal Militias/ Vigilante Group Presence

Presence of informal self-defense militias and vigilante 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