IOM DRC

STABILITY INDEX – ITURI

DURABLE SOLUTIONS ASSESSMENT IN AREAS OF POTENTIAL RETURN IN ITURI PROVINCE

DEMOCRATIC REPUBLIC OF THE CONGO

March 2024

DTM
IOM DISPLACEMENT
TRACKING MATRIX

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INITIATIVES PILOTES D'APPUI AU P-DDRCS DANS LA REINSERTION COMMUNAUTAIRE
DES EX-COMBATTANTS A L'EST DE LA RDC

IOM's Displacement Tracking Matrix (DTM) tracks and monitors population movements in order to collate, analyze and share information to support the humanitarian community with the needed demographic baselines to coordinate evidence-based interventions

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Citation: International Organization for Migration (IOM), March 2024. *DTM DRC — Stability Index - Ituri.* IOM, Democratic Republic of the Congo.

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1. INTRODUCTION

1.1. Displacement and return dynamics in the province of Ituri

The Democratic Republic of the Congo (DRC) is estimated to be home to over 6.9 million internally displaced persons (IDPs), the majority (5.6 million) of whom are hosted in the country's four eastern provinces of Ituri, North Kivu, South Kivu, and Tanganyika. The eastern region is also home to a considerable number of IDP returnees (4.3 million individuals), previously displaced IDPs who have returned to their location of origin in the past 36 months.

The province of Ituri is home to the second largest IDP and returnee population of any province in the DRC (1.6 million and 1.2 million individuals respectively) and has been in the focus of recent efforts to strengthen durable solutions programming in the DRC. The province has been plagued by long-term instability and conflict between government forces, armed groups such as ADF, CODECO[1], Zaire and others. United Nations monitoring groups have recorded increased levels of violence, particularly around mining and IDP sites in the province, hindering humanitarian efforts. Recently the focus of the humanitarian community in the province has shifted towards preparation for increased durable solutions programming in light of increased returns of internally displaced persons and the protracted nature of the ongoing crisis. This involves the implementation of strategies that aim to address the long-term needs of the IDPs and promote their self-reliance in the midst of continuing instability. In the context of ongoing conflicts or areas prone to instability, it is essential to adopt a joint program of durable solutions capable of improving the conditions of affected populations. These solutions can be achieved through various initiatives promoting peace, cooperation, and long-term stability.

It is in this context that the International Organization for Migration (IOM), through the Displacement Tracking Matrix (DTM), has chosen to implement the Stability Index (SI) for the first time in the DRC with the aim of identifying "pockets of stability" for targeted durable solutions programming, as well as hotspots of relative instability, with a concentration of poor and unstable living conditions, more suitable to receive humanitarian assistance. In Ituri, DTM implemented the SI in Irumu, Mahagi, and Djugu, and Bunia, which together host 89 per cent of all returnees in the province.

The SI assesses the relative stability of a location by evaluating three key domains: 1) Livelihoods and access to basic services, 2) Safety and Security and 3) Social cohesion, as well as information pertaining to the occurrence and impact of natural disasters, analysed separately. The SI is part of the DTM's global Solutions and Mobility Toolkit and has been deployed successfully in diverse contexts such as Burundi, the countries of the Lake Chad basin, Ghana, and Mali.

1,630,535
IDPs

1,166,597
Returnees

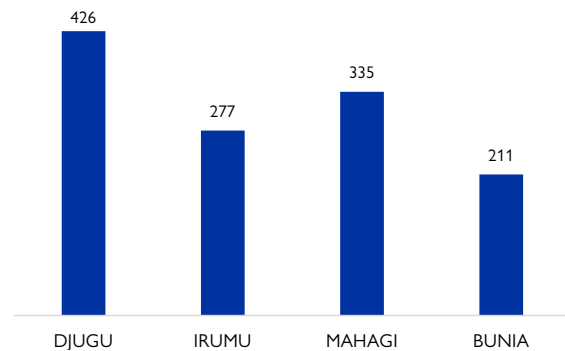Fig 1: Ituri province displacement figures as of October 2023

Fig 2: Number of villages assessed in Ituri by territory

Objectives of the report

Despite the complexity of population movements in the province, improved security conditions in some localities have facilitated the voluntary return of some displaced populations. However, many obstacles remain, preventing the identification of durable solutions to their displacement. To enable this, it is crucial to understand the relative levels of stability in areas hosting returnees or displaced persons, as well as neighbouring areas. It is in this context that the Stability Index is being launched in the province, to assist government and development actors to better plan future interventions in terms of access to services and livelihoods, social cohesion and resilience in affected areas. This report highlights pockets of stability and fragility within the assessed areas of Ituri in order to promote the creation of effective strategies and priority programmatic interventions within the humanitarian-peace-development nexus to build resilience and stability and prevent future forced displacement.

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[1] AFD - Allied Democratic Forces; CODECO - Coopérative pour le développement du Congo

1.2. Methodology and Data collection overview

Data was collected through interviews with 5,226 key informants at a village level by trained enumerators between 28 October and 18 November 2023. Enumerators identified between 3 and 6 individuals in each locality, well placed to answer questions pertaining to the area's stability. Interview questions for key informants were designed to cover the three core domains that influence stability. These core domains, and the indicators that comprise them, were selected in conjunction with durable solutions experts at IOM HQ and IOM's Transition and Recovery Division (See Appendix I - Survey Questions by Theme for a full breakdown of all sub indicators collected in the interviews). See Appendix II for a detailed methodological overview.

A total of 1,249 Villages in the territories of Djugu (426 villages), Irumu (277), Mahagi (335), and the health zone of Bunia (211) were selected for inclusion in the analysis using simple random sampling from the DTM DRC village master list, updated during the bi-annual Mobility Tracking exercise. In the DRC, the health zone is considered the third administrative subdivision (admin-3) below territory (admin-2). As some of the villages were inaccessible due to insecurity and/or weather conditions, while others were previously depopulated, only accessible villages with population present at the time of the data collection were assessed. Due to the sampling design, data are representative at a territory level. Despite analysis and presentation of the data in this report at the health zone level, the results are representative only at the territory level), with 95 per cent confidence and a five per cent margin of error. Data was collected in partnership with a national non-governmental organization *Promotion du Développement Humain et Protection de l'Environnement Social* (PDHPES), the National Refugee Commission of the DRC (*Commission Nationale pour les Réfugiés* - CNR in French) and the Office of the Provincial Governor for Population Movements (*Bureau du gouvernorat provincial chargé des mouvements de population* - in French).

Assumptions and limitations

As in other settings where the SI has been implemented by DTM, two principal assumptions underly the generalizability of the analysis. Firstly, the SI assumes that key informants accurately represent the stability of the community they represent; secondly, villages surveyed are representative of other villages in the area in question. Furthermore, on a conceptual level, the stability index assumes that its component variables are indeed representative of stability in the communities assessed. The logistic regression model used to construct the SI also assumes that the variables included in it are not substantially related to each other (known as collinearity). This was not tested for prior to construction of the model in the current assessment.

2. KEY FINDINGS
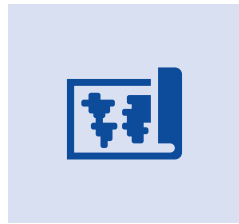
Levels of stability vary widely among assessed locations

Locations of relative stability/instability are often found in close proximity, with pockets of stability found in broadly unstable areas and vice versa. Djugu recorded Stability Index of 63, with sub-indices highlighting challenges in Access to Basic Services (32), Security (65), and Social Cohesion (59). Irumu exhibited a higher overall Stability Index of 72, and average scores in Access to Basic Services (41), Security (65), and Social Cohesion (67).

Key pockets of stability were found in Aungba, Nyakunde, and Mangala health zones.

Particularly concentrated in the East and West of Aungba, South and West of Nyakunde, and Southeast Mangala.

The lowest average levels of stability were found in the health zones of Drodro, Rimba, and Fataki.

Hotspots of relative instability were identified in central/South-eastern Drodro, Southern Rimba, and North-eastern Fataki.
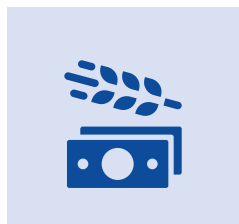
Access to basic services and livelihoods scores were poor throughout the assessed areas.

There was a notable difference found in the scores between Bunia and surrounding localities and non-urban areas.
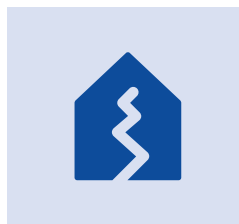
There was a relatively high incidence of natural disasters in Mahagi territory (particularly in the southeast) when compared to Djugu and Irumu.

Notably this concerned lower-impact natural disasters, while the incidence of high-impact natural disasters was similar across the three territories.

Across the three assessed territories, the greatest number of returnees (145,277) were identified in villages classified as "medium stability". Highlighting a need for durable solutions interventions to maintain or increase this level stability and preventing degradation of the stability situation.

Djugu territory recorded the lowest average social cohesion score of all assessed areas (59).

At a heatlh zone level, Rethy, Drodro, and Linga recorder the lowest social cohesion scores (48, 51, and 53).

3. PROGRAMMATIC IMPLICATIONS

The findings in this report are of key importance to actors operating in the stabilisation and durable solutions field in Ituri. They provide information to enable geographical prioritisation of assistance as well thematic targeting, permitting a greater impact of assistance provided.

- Durable solutions interventions can be prioritized in Aungba, Nyakunde, and Mangala health zones with a reasonable expectation that they will be implemented in areas of relative stability.

- Interventions focused on improving livelihoods and access to basic services (such as quality housing, local commerce, and healthcare) are in relatively high need throughout the territories assessed and can be prioritised as a key factor that influences stability.

- Areas reporting occurrences of natural disasters, such as south-eastern Mahagi territory can be prioritized for infrastructure, disaster risk reduction, and community resilience interventions.

- Housing access, quality, and damage to the housing stock was strongly associated with perceived stability across the assessed areas. Programs targeting improvement of the housing stock should be prioritised in target areas such as Djugu, where 43 per cent of assessed villages reported that the majority of residents did not have access to housing, and 34 per cent reported that half or more of the local housing stock was destroyed and no construction was underway.

- Interventions targeting improved social cohesion should be focused on areas such as the health zones of Rethy, Drodro, and Linga which recorded the lowest social cohesion scores of all health zones assessed.

- Widespread interventions to improve land tenure governance are required across the assessed areas. While levels of registration of private land holdings with government authorities are higher in the urban area of Bunia, they are very limited and often non-existent in other assessed areas.

High Stability	Medium Stability	Low Stability
30%	**59%**	**11%**
99,712 IDPs 99,360 Returnees	201,047 IDPs 145,277 Returnees	13,780 IDPs 15,278 Returnees

Tab 1: Proportion and number of IDP and returnee individuals by category of Stability Index (in villages assessed by the SI). Villages of high and low stability were defined as those whose SI score was more and less than 1 standard deviation, respectively, away from the mean SI score of all villages

4. STABILITY INDEX IN THE DRC

The SI was estimated at a village-level with each village having a distinct stability index value between 0 and 100. This was performed using logistic regression, in which responses to three key anchor questions were compared to those of the 36 variables selected for inclusion in the analysis. An SI score closer to 0 would indicate a relatively unstable locality, where emergency or humanitarian interventions may be better suited, while an index value closer to 100 indicates an area of relative stability, potentially more suitable for programming to promote durable solutions to internal displacement.

Sub-indices were also calculated corresponding to each of the three domains that make up the overall stability index. They are calculated as simple averages of the questions which comprise each domain and are attributed to each village, like the stability index overall. Unless otherwise mentioned, any mean averages presented in this report when aggregating scores at a higher administrative level (e.g., health zone and territory) are calculated using the harmonic mean. A form of mean average which places greater emphasis on values closer to zero and therefore – in this exercise – "penalizes" zones containing lower scoring villages, when compared to an arithmetic mean.

4.1. Analysis of Anchor Questions

Figures 3, 4 and 5 demonstrate responses to the three key anchor questions used as part of the SI calculation. The three anchor questions directly gauge key informants' perceptions of community stability. Responses are compared statistically to those of the remaining 36 indicators assessed to estimate the stability score for each locality. They are analysed descriptively below to provide an insight into how perceptions of stability vary among the three territories assessed in this evaluation. Across Ituri, a large proportion of villages reported positive feelings of stability (80%) with the highest share in Bunia, followed by Mahagi in which only five and 16 per cent of villages respectively described their general situation as unstable and unsafe. This proportion was highest in Djugu, where key informants in over a quarter of villages (28%) reported unstable and unsafe conditions.

The majority of villages in all four areas assessed reported that residents had no need to leave their community in the next six months due to instability. A total of 17 per cent reported the need to leave in the next six months in Mahagi, followed by 11 per cent in Djugu, four per cent in Irumu and one per cent in Bunia where key informants in nearly all assessed villages reported that that they would not need to leave in the next six months due to instability. The distribution was substantially different when changes in the feeling of stability were considered. Nearly half (49%) of villages reported that community members were less optimistic about the state of their village than they were six months prior to the assessment. This share did not vary drastically between the areas assessed but was higher in Bunia (57%) when compared to Irumu (49%), Mahagi (47%), and Djugu (46%).

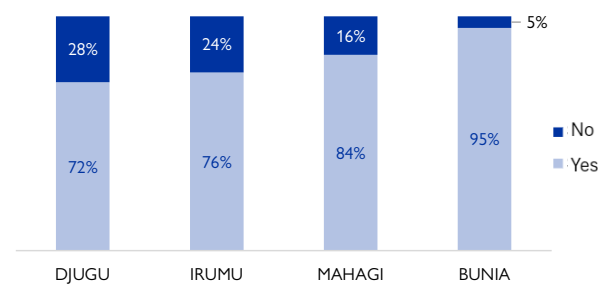| Anchor Questions		
Positive feeling of stability	Desire to leave in the next 6 months	Change in the feeling of stability

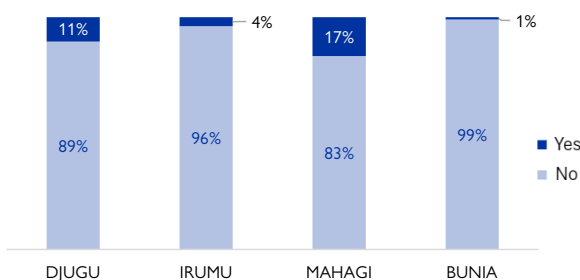Fig 3: Positive feeling of stability by territory

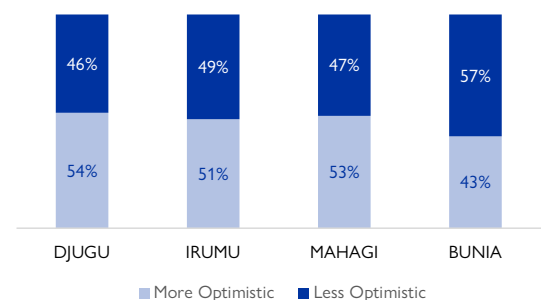Fig 4: Desire to leave in the next 6 months by territory

Fig 5: Change in the feeling of stability by territory

5. STABILITY INDEX SCORES

The Stability Index in Ituri serves as a key measure of relative stability across the three assessed territories and Bunia. The score ranges from 0 (indicating low stability) to 100 (representing high stability). Among the four areas included in this analysis, Djugu recorded an overall Stability Index of 63, with sub-indices highlighting challenges in Access to Basic Services (32), moderate Security (65), and middling Social Cohesion (59) compared to the other areas. In contrast, Irumu exhibits a higher overall Stability Index of 72, and average scores in Access to Basic Services (41), Security (65), and Social Cohesion (67). The highest average scores among all of the assessed areas were found in Bunia, which recorded an average stability index score of 79, a security score of 68 and a social cohesion score of 75. Notably Bunia recorder a substantially higher average livelihoods and access to

basic services score (61) when compared to the three other assessed areas. Meanwhile, Mahagi territory recorded a Stability Index of 65, with varying sub-indices: moderate Access to Basic Services (45), slightly lower Security (56), and moderate Social Cohesion (65).

Territory	Stability Index	Sub-Index: Access to Basic Services	Sub-Index: Security	Sub-Index: Social Cohesion
Djugu	63	32	65	59
Irumu	72	41	65	67
Mahagi	65	45	56	65
Bunia	79	61	68	75
ALL	68	40	63	64

*Tab 2: Average Stability Index and Sub-Index Scores by territory*
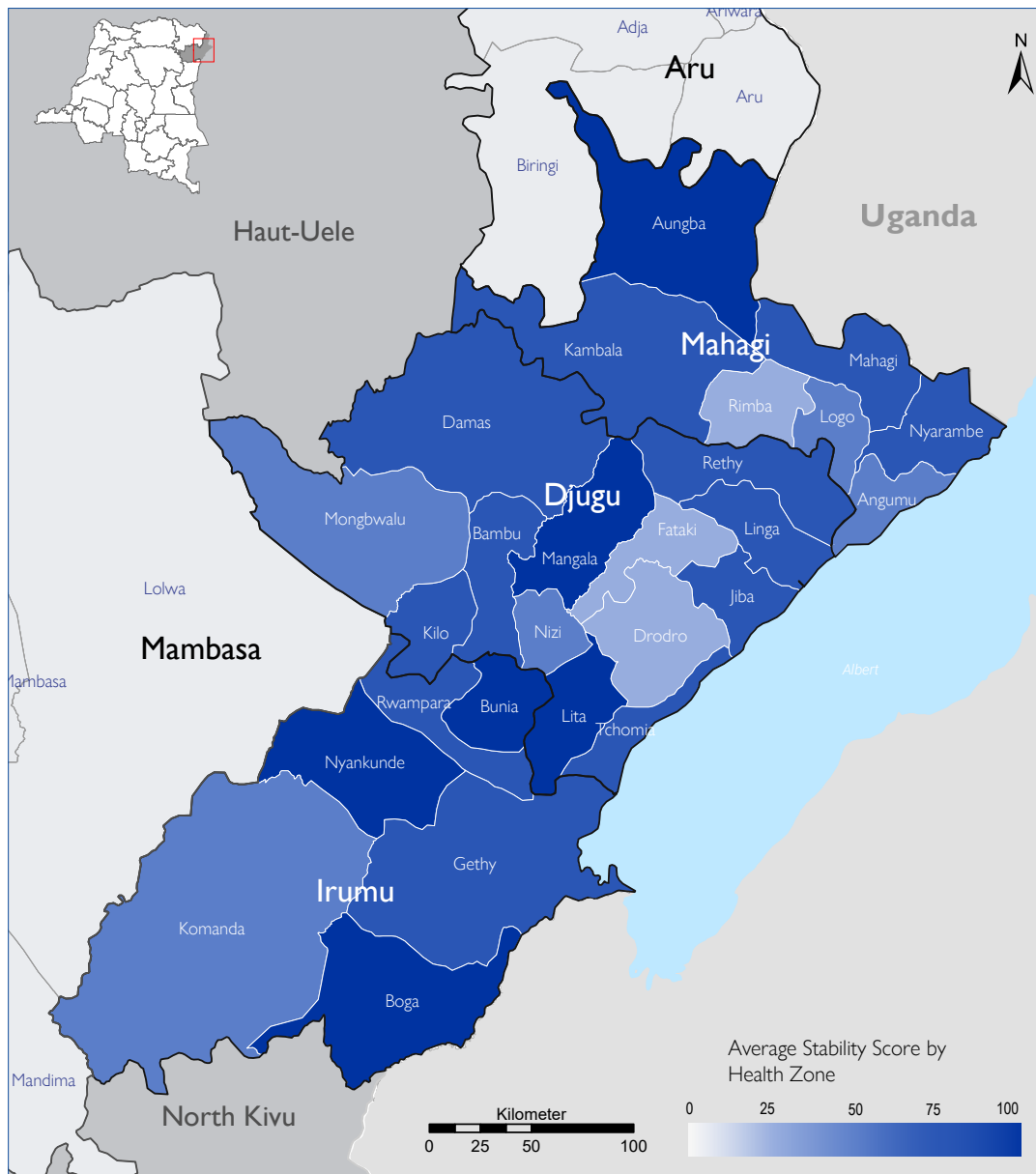
Map 1: Average Stability Index Scores in Ituri province by health zone.

Tab 3: Average Stability Index and Sub-Index Scores in Ituri province by health zone

Health Zone	Stability Index	Sub-index: Access to Basic Services	Sub-index: Security	Sub-index: Social Cohesion
Boga	81	47	65	76
Bunia	79	61	68	75
Gethy	67	36	67	55
Komanda	64	37	49	60
Nyakunde	84	42	72	81
Rwampara	68	48	76	77
Bambu	70	39	70	72
Damas	66	36	57	65
Drodro	45	27	59	51
Fataki	54	41	65	58
Jiba	72	41	54	74
Kilo	75	39	63	67
Linga	75	29	61	53
Lita	81	42	76	57
Mangala	83	34	75	71
Mongbalu	63	29	67	59
Nizi	60	17	63	70
Rethy	72	33	69	48
Tchomia	67	43	64	67
Angumu	56	43	44	58
Aungba	85	55	73	75
Kambala	68	30	75	77
Logo	60	51	55	58
Mahagi	73	49	52	71
Nyarambe	75	53	48	65
Rimba	54	39	66	61
ALL	68	40	63	64

At a health zone level, Drodro demonstrated the lowest average Stability Index score (45) across the evaluated territories. This relatively low SI score was driven primarily by lower (less than 20) village-level scores in the Health Areas of Dhedja and Retso. Aungba health area was found to have the highest average SI score (85) among assessed areas, indicating strong relative stability.

At a more granular level (ref to heatmap), pockets of relative stability - corresponding to a high stability index score – were found throughout the assessed territories. Notable areas include the majority of Aungba, Lita, and Boga health zones. Pockets of greatest instability were identified in several distinct locations including the shore of Lake Albert on the border between Mahagi and Djugu, throughout the health zones of Drodro, Fataki, and Gethy, and in the central region of Komanda health zone. Health zones with a relatively mixed distribution of stability index scores included Mongbalu, where small pockets of instability and stability are visibly interspersed, along with Nyarambe, Bunia, Kilo and northern Komanda.
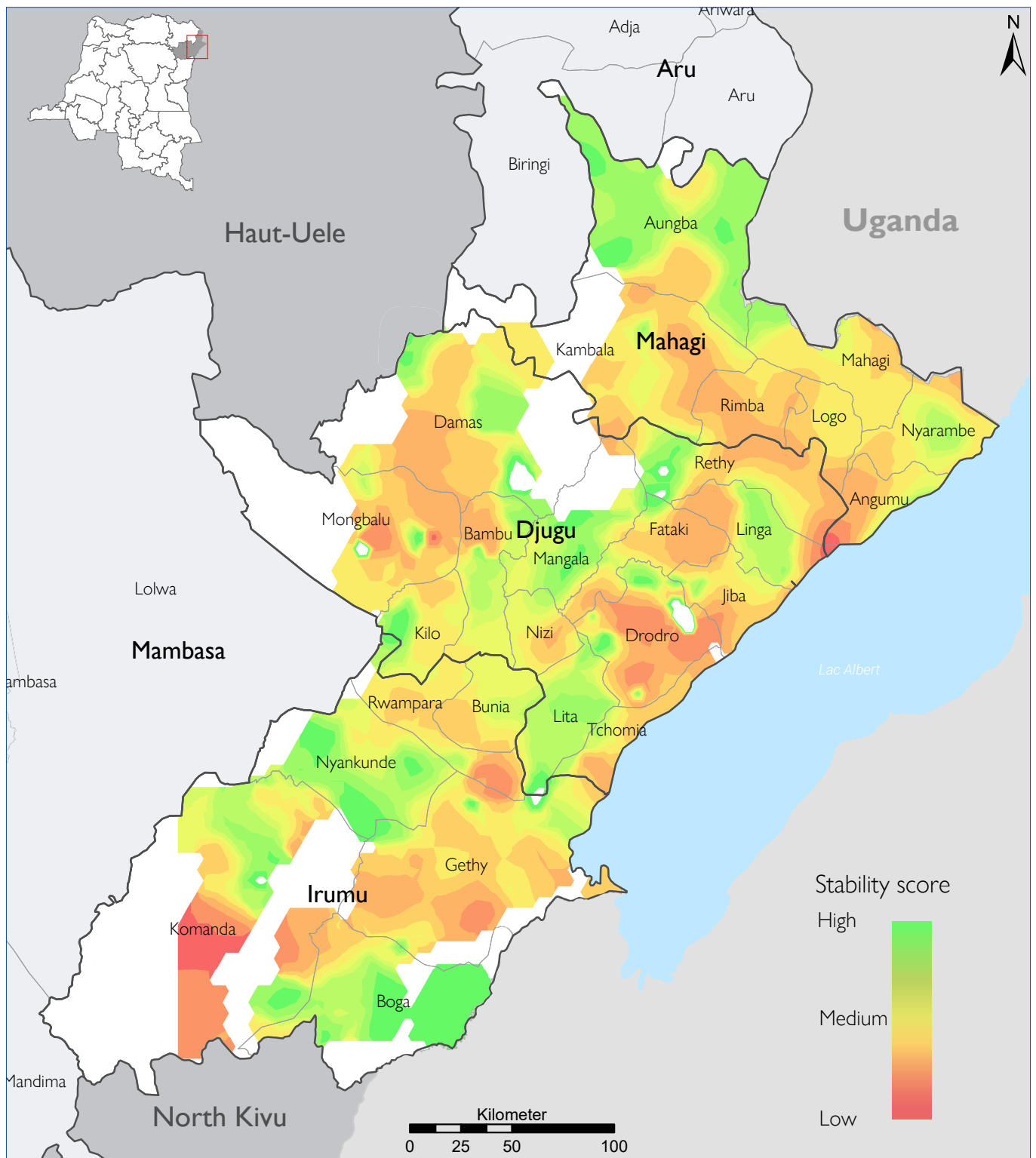
Map 2: Heat-map of Stability Index Scores in assessed villages in the province of Ituri.

5.1. Stability Index Sub-scores

The three components of the stability index – livelihoods and access to basic services, security, and social cohesion – were also analysed independently from the overall SI to give an impression of the situation of each theme in different localities throughout the assessed area. The resulting sub-index scores can be compared, allowing us to descriptively determine their geographical variation throughout the area of assessment.

As a factor influencing stability, security was found to be important in all three territories assessed in Ituri. This is reflected in DTM's mobility tracking data for Ituri in which 62 per cent of identified returnees cited security improvement as their principal reason for return. Security sub-index score varied by territory and health zone. Similar security sub-index scores were found in both Irumu (66) and Djugu (65), while the territory of Mahagi reported a considerably lower average score of 56. Average security sub-index scores were highest in the health zones of Lita (76), Rwampara (76), Mangala (75) and Kambala (75) while Angumu, Nyarambe and Komanda all recorded security scores of less than 50 (44, 48 and 49 respectively).
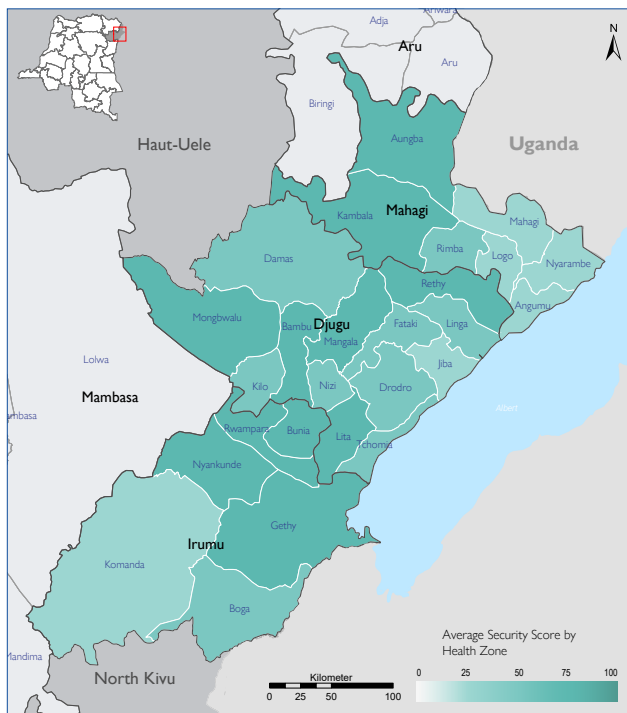
Map 3: Security Sub-Index scores
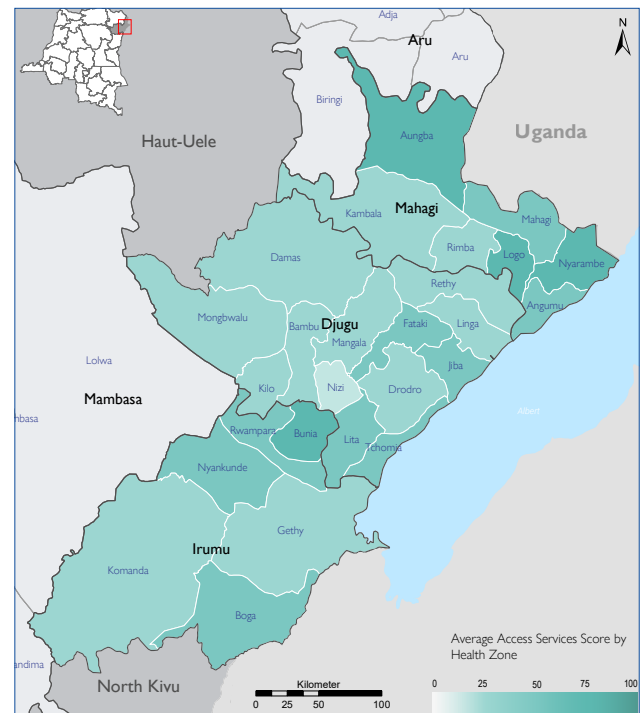
Map 4: Access to services Sub-Index scores
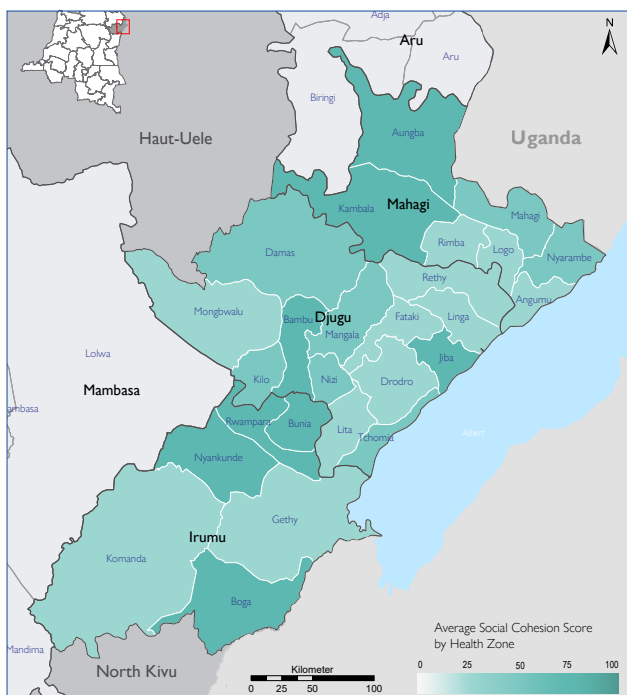
Map 5: Social Cohesion Sub-Index scores

Relative to other components, livelihoods and access to basic services scores were lower in nearly all health zones. An average sub-index score of 40 was found for the three territories evaluated as a whole. The lowest score (17) was found in Nizi health zone while the highest (61) was found in the health zone of Bunia. Drodro (27), Linga (29), Mongbalu (29), and Kambala (30) all demonstrated higher but still relatively low access to services scores when compared to other health zones. On average, the social cohesion sub-index was generally higher when compared to other sub-indices (overall mean of 64). It was found to be lowest in Djugu territory (59) and highest in Irumu (70). At a health zone level, high average social cohesion scores were identified in the health zones of Nyakunde (81), Kambala (77), Rwampara (77) and Boga (76). Aungba, the health zone with the highest mean Stability Index score, along with the health zone containing the provincial capital, Bunia, also recorded relatively high social cohesion scores (75). The lowest average social cohesion scores were found in Rethy (48), Drodro (51), and Linga (53).

6. ANALYSIS OF KEY INDICATORS RELATED TO STABILITY

To assist in understanding the factors that influence stability in Ituri, and how key variables were selected based on their statistically significant correlation with all the three anchor questions mentioned previously in this report (see page 7). They are analysed descriptively below to investigate their geographical variation throughout the area of assessment.

Tab 4: Key Indicators associated with perceived stability

LIVELIHOODS AND ACCESS TO SERVICES	SAFETY AND SECURITY	SOCIAL COHESION

1) Housing Access	10) Petty Crime
2) Housing Quality	11) Formal Curfew
3) Housing Damage	12) Land Occupation
4) Access to essential Items through local vendors	13) Property Theft
5) Access to Water	14) Public Life
6) Land Registration	15) Community Services
7) Freedom of Movement	16) Land use by community
8) Incidents over the resources	17) Confidence
9) Security Incidents	18) Health Facilities

6.1. Security Key Indicators

1. Freedom of Movement

Among components of the security sub-index, freedom of movement was associated with all three anchor questions. While the majority of villages in all three assessed territories reporting no limitations on freedom of movement, the degree to which restrictions were reported varied. Sixteen per cent of villages in Djugu and 12 per cent in Mahagi reported significant movement restrictions and a large resultant impact on daily village life. This figure was 4 per cent in Irumu territory and less than 1 per cent in Bunia where a much more substantial share of villages (34%) reported some limitations on freedom of movement but no real impact on residents' daily lives.

2. Petty Crime

The highest proportion of villages who had reported an increase in the frequency of petty crime incidents was recorded in Mahagi (41%), followed by Irumu (22%), while this figure was lower in Djugu (8%) and Bunia (7%). The majority of villages in all three territories reported either no change or a reduction in the frequency of petty crime incidents. The greatest proportion of villages recording a decrease in petty crime incident frequency was found in Djugu (45%), followed by Irumu (35%), Mahagi (34%), and Bunia (29%).

Fig. 6: Freedom of movement

	DJUGU	IRUMU	MAHAGI	BUNIA
Movements are not restricted	52%	77%	69%	64%
Movements limited with no impact	25%	15%	11%	34%
Movements restricted with little impact	7%	4%	8%	2%
Movements limited with significant impact	16%	4%	12%	0%

■ Movements are not restricted   ■ Movements limited with no impact
■ Movements restricted with little impact   ■ Movements limited with significant impact
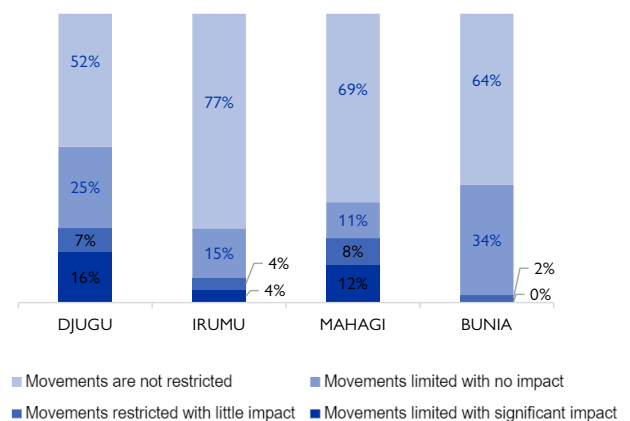
Fig. 7: Petty Crime situation in the past three months

	DJUGU	IRUMU	MAHAGI	BUNIA
Incidents decrease	45%	35%	34%	29%
No change	47%	43%	25%	64%
Incidents increase	8%	22%	41%	7%

■ Incidents increase   ■ No change   ■ Incidents decrease
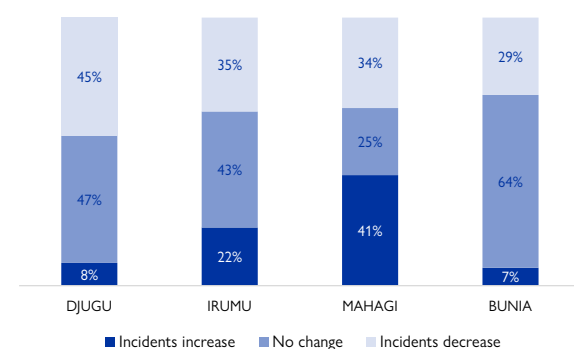
3. Security Incidents & 4. Incidents surrounding Resources (cattle killing/theft, land conflict etc.)

The majority of villages in all assessed territories reported no change in the frequency of security incidents in the last 3 months (68% in Mahagi, 64% in Irumu, and 56% in Djugu). Less than eight per cent of all villages in each territory reported an increase. The largest proportion of villages reporting a reduction in the frequency of security incidents was recorded in Djugu (37%).

Resource-related incidents were reported as having reduced in frequency in the three months preceding the assessment in over 30 per cent of villages in each of the territories. The majority of villages in both Djugu (54%) and Irumu (56%) territories reported that there had been no change in the frequency of resource-related incidents in the preceding three months, while this figure was 36 per cent in Mahagi. The highest proportion of villages where an increase in resource-related incidents had been reported was found in Mahagi (25%).

5. Illegal Land Occupation & 6. Property Theft

The considerable majority of villages in all three areas reported a complete absence of illegal occupation of land/homes, with the largest proportion recorded in Bunia (95%), followed by Irumu and Djugu (75% in both) and Mahagi (73%). Among villages where illegal occupation of land was reported, it was most frequently reported as a minor issue. It was recorded as a major problem for six per cent of villages in Mahagi, five per cent in Irumu, four per cent in Djugu, and just one per cent in Bunia.

Theft of property was also a widespread concern in all four of the assessed areas, with the majority of villages reporting such theft in the preceding six months (83% in Mahagi, 74% in Bunia, 69% in Djugu, and 68% in Irumu).
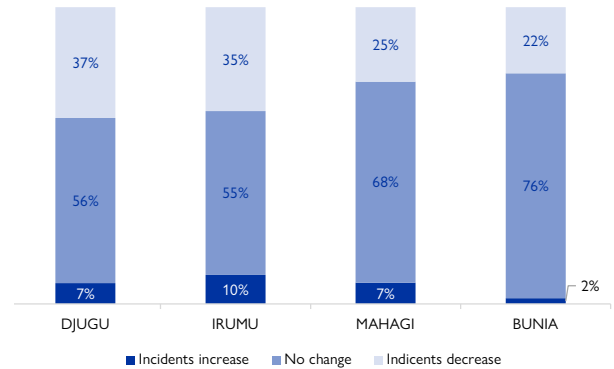
Fig. 8: Present of security incidents
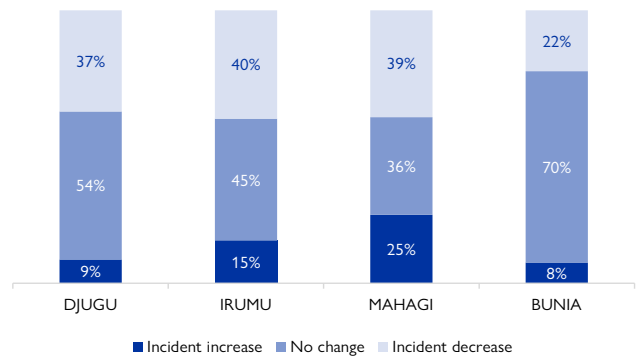

Fig. 9: Present of resources incidents
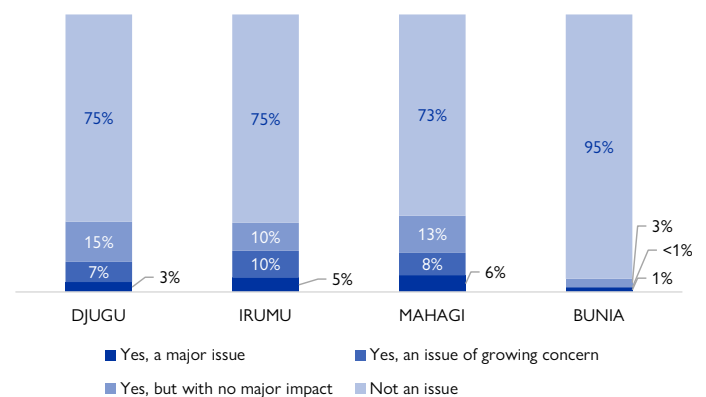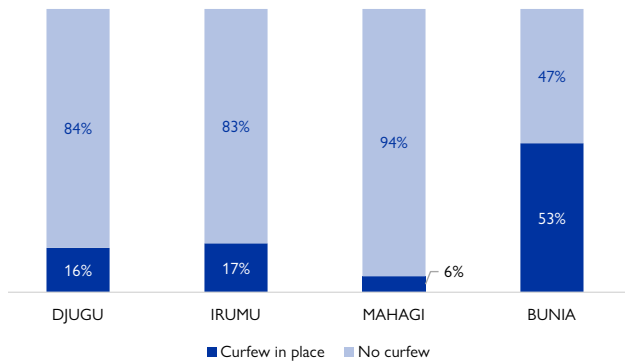

Fig. 10: Illegal Land Occupation

Fig. 11: Formal Curfew

6.2. Livelihoods and Access to Services Key Indicators

8. Housing Access, 9. Quality & 10. Damage

Access to suitable living accommodation is a key correlate of stability in Ituri, in terms of access to housing as well as quality and existence of housing damage. Bunia and the territory of Mahagi were found to contain the greatest proportion of villages (100% and 84% respectively) in which the majority of residents had access to housing while Djugu territory contained the lowest proportion (57%). Djugu also contained the largest proportion of villages where key informants indicated that less than a quarter of residents had access to housing (23%).

The overall picture was slightly different in terms of housing quality. Over half (53%) of villages in Bunia indicated that more than three quarters of residents had access to good quality housing, while this proportion was lower in Djugu (14%) and lower still in Irumu (7%) and Mahagi (6%). The proportion of villages surveyed where less than a quarter of the population had access to quality housing was highest in Irumu (41%) followed by Djugu (33%) and of relatively similar size in Mahagi (25%). Some form of damage to the housing stock was reported in 89 per cent per cent of assessed villages in Irumu, followed by 73 per cent Djugu, 46 per cent of villages in Mahagi and just 13 per cent in Bunia.

Fig. 14: Level of house damage

7. Formal Curfew

The presence of a formal curfew (one mandated by government authorities, both civil and military) was an important correlate of perceived stability in the assessed territories. The vast majority of villages in each of Djugu, Irumu, and Mahagi, reported the absence of a formal curfew, while 53 per cent of villages assessed in Bunia reported the presence of a curfew. Outside of Bunia, Irumu recorded the highest proportion of villages reporting being subject to a formal curfew (17%). This proportion was similar in Djugu (16%) and lower in Mahagi (6%) where fewer assessed villages reported being subject to a formal curfew.

Fig. 12: Proportion of community having access to housing
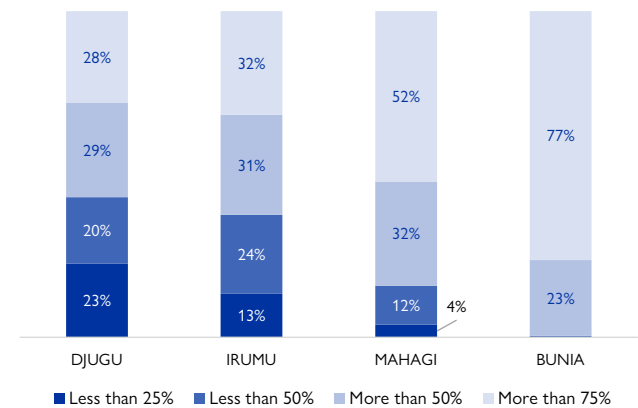
Fig. 13: Proportion of housing in a good condition
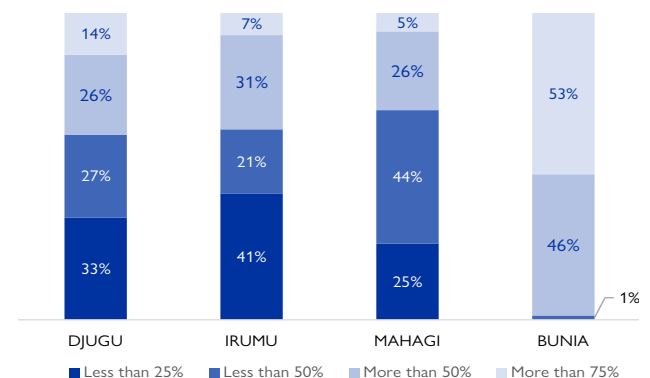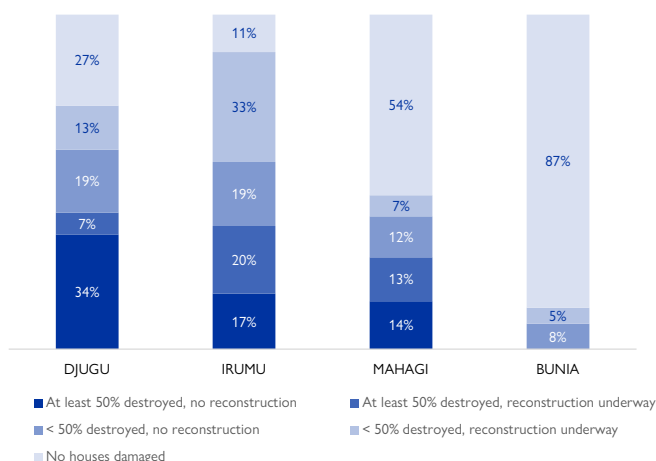

Djugu reported the largest share (34%) of villages where half or more of the housing stock was damaged and no reconstruction was taking place. These villages were primarily concentrated in the health zones of Drodro and Rethy, in which the majority of assessed communities reported widespread housing damage and no reconstruction.

11. Land Registration

The proportion of a community's population who had registered their own land with relevant authorities was a key correlate of perceived community stability. It also varied substantially by territory. In Mahagi, the vast majority of villages (91%) reported that no residents had registered their land with local authorities, while the same was true for 69 per cent of villages in Djugu and 45 per cent in Irumu. The reality was considerably more mixed in Bunia where 17 per cent of assessed villages reported that all residents had registered their land (compared to 1% in Djugu, 0% in Mahagi, and 4% in Irumu). Nearly a fifth (18%) of villages in Bunia reported that no residents had registered their land, indicating a continued lack of governance when it comes to property registration, even in urban areas.

Fig. 15: Proportion of population with land registered
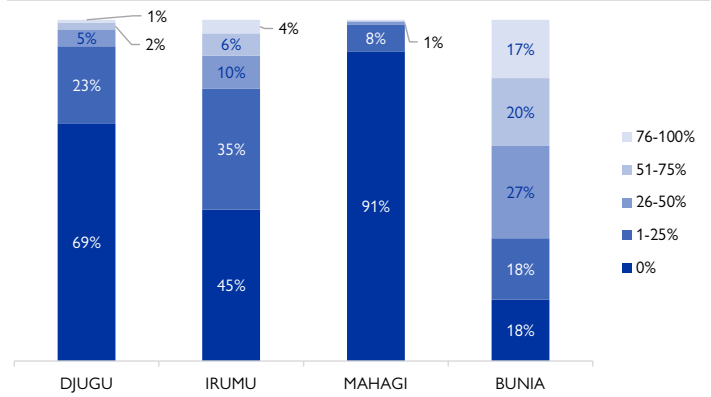
12. Health Facilities

Availability of healthcare facilities was also found to be closely associated with a community's stability in the areas assessed. Notably, the majority of villages in each territory (63% in Djugu, 62% in Mahagi, 55% in Bunia, and 52% in Irumu) reported that local health facilities were non-functional or closed but that residents were able to receive care in neighbouring locations. Ten per cent or fewer villages in all three territories indicated that there had never been healthcare facilities in their localities, indicating a high level of existing or historical health service provision on average.

Fig. 16: Access to health facilities
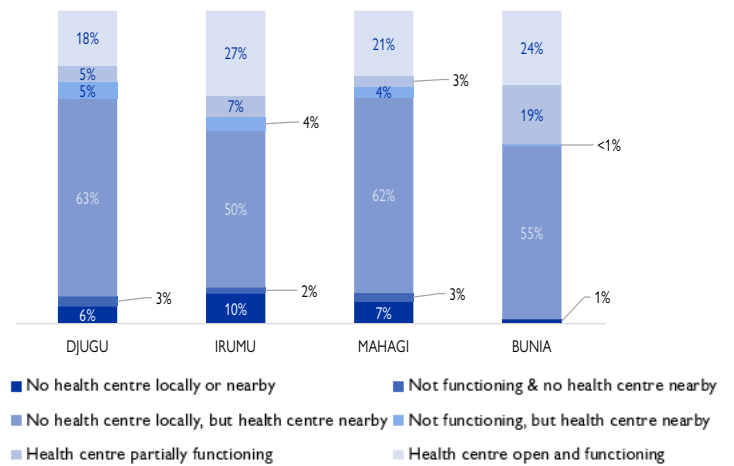
Fig. 17: Market situation
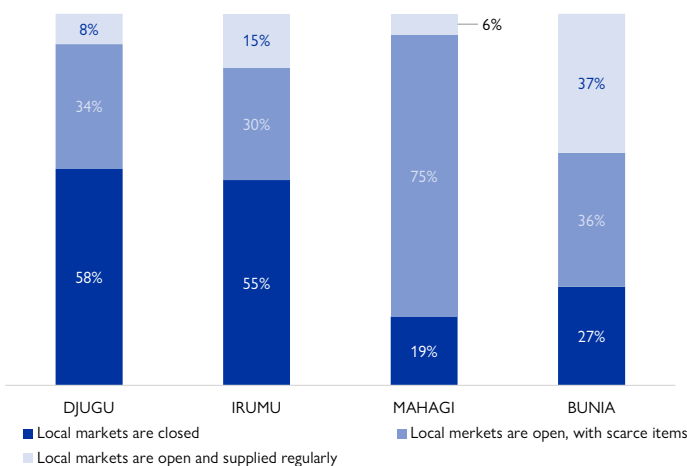
13. Market Access & Access to Essential Items

Access to essential items through local vendors (either markets or shops) varied substantially by territory in Ituri. In Djugu, only eight per cent of villages reported that local vendors were open and reliably stocked with essentials, while 58 per cent indicated that all local vendors were completely closed. While marginally better, the situation was similar in Irumu where 15 per cent of villages reported reliable access to local vendors and 55 per cent reported that all markets were closed. The situation was found to be different in Mahagi where three quarters (75%) of villages reported that local vendors were open for business but that essential items were rarely available. Reliable and accessible provision of essential items was more common in Bunia (37%); however, 63 per cent of all villages still reported no or limited access to essential items through commercial vendors.

14. Access to Drinking Water

In all assessed territories, access to potable water was found to be lacking. In both Djugu and Mahagi, the majority of assessed villages reported no access to drinking water within their locality (72% in Djugu and 60% in Mahagi) alongside half of assessed villages in Irumu. While the situation was better in Bunia (38%), only 24 per cent of villages in the territory reported regular access to safe drinking water in their own community. However, this figure is substantially higher than the figures reported in Djugu and Mahagi, where only 8 and 3 per cent of assessed territories respectively reported regular, local access to drinking water.
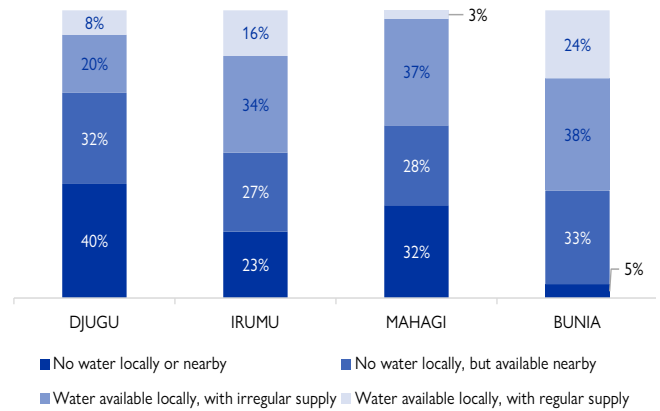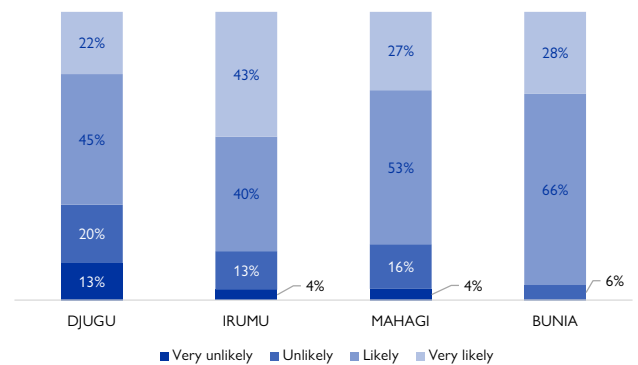
6.3. Social Cohesion Key Indicators

15. Community Cooperation in case of services issue & 16. Land Use

Community cooperation was found to be closely related to perceived stability in assessed villages. The majority of villages in Bunia (94%), Irumu (83%), Mahagi (80%), and Djugu (67%) reported that it was likely or very likely that residents would come together to solve problems related to basic service access. The percentage of villages reporting that this was very unlikely was low in both Mahagi (4%) and Irumu (2%) and was highest in Djugu where 13 per cent of villages reported that it was very unlikely that residents would come together to solve a common service access problem.

The picture was slightly different for when it came to problems regarding use of land in the community. The majority of villages in Bunia (92%), Irumu (82%), and Djugu (67%) reported that it was likely or very likely that the community would work together to solve land-use problems while the opposite was true in Mahagi, where 52 per cent stated that it was unlikely or very unlikely to be the case.

Fig. 18: Access to drinking water

No water locally or nearby
No water locally, but available nearby
Water available locally, with irregular supply
Water available locally, with regular supply

Fig. 19: Community support in case of services issue

Very unlikely   Unlikely   Likely   Very likely

Fig. 20: Community support in case of land use issue

Very unlikely   Unlikely   Likely   Very likely

Fig. 21: Level of social trust

Strong feeling of mistrust   General feeling of mistrust
Limited sense of trust   General feeling of confidence
Strong sense of confidence
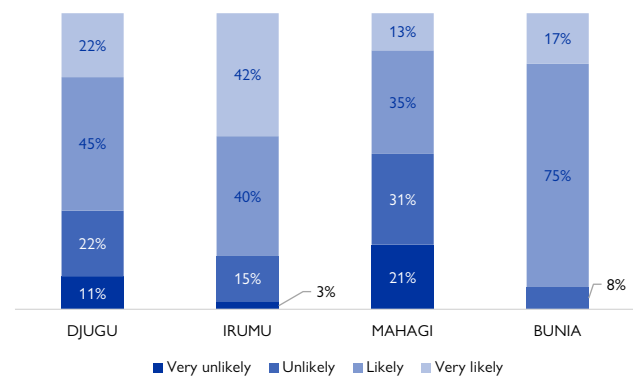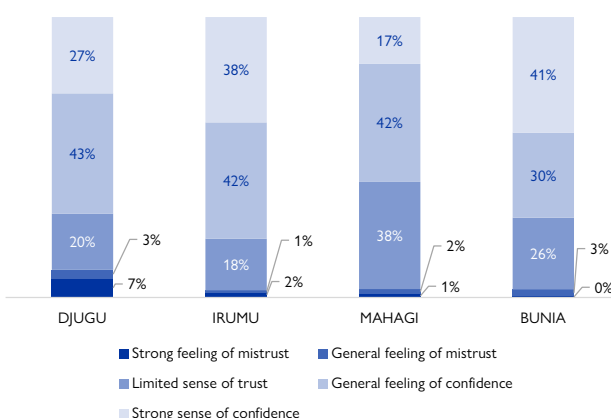
17. Social Trust

Across the assessed territories, a strong sense of social trust was recorded. On average, the majority of villages in all three territories reported a general or strong sense of social trust among community members. The proportion of villages reporting a strong feeling of social trust was highest in Bunia (41%) followed by Irumu (38%), Djugu (27%) and Mahagi (17%). The highest proportion of villages reporting a strong sense of mistrust was found in Djugu, where 7 per cent reported as such. This was compared to just 1 per cent in both Irumu and Mahagi and Bunia, where no villages reported a strong feeling of mistrust.

18. Public Life

The normality of daily life in the areas assessed was a key variable associated with the perceived stability of a village. The majority of villages in all assessed areas apart from Irumu reported that public spaces were animated, and that residents could go about their daily activities undisturbed. In Irumu, 49 per cent of villages reported that the situation was tense in the community, substantially more than in other areas. Over a fifth of villages (21%) in Djugu reported that residents only leave their homes when necessary. This figure was 10 per cent for Mahagi and five per cent for Irumu, and one per cent in Bunia.

Fig. 22: Daily Public Life

Legend: ■ Leaving homes only when necessary ■ Situation is tense ■ Situation is calm

DJUGU: 21%, 20%, 59%
IRUMU: 5%, 49%, 46%
MAHAGI: 10%, 38%, 52%
BUNIA: 1%, 9%, 90%
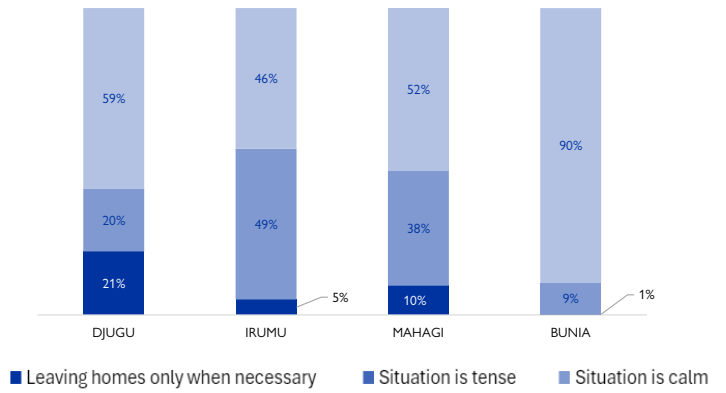
7. CLUSTER ANALYSIS

A cluster analysis was conducted to geographically profile localities based on Stability Index findings, with the aim of allowing targeted durable solutions interventions. Villages were grouped into five clusters based on their characteristics across all 36 variables used in construction of the index (See Appendix II for a full explanation of clustering methodology). This analysis allows identification of villages with similar characteristics in distinct geographical areas, therefore permitting more targeted programming.

Table 5: Average Stability Index and Sub-Index Scores by cluster

|	Number of villages	Average SI	Average Access Services Score	Average Security Score	Average Social Cohesion Score
0	219	78	55	69	86
1	206	81	59	66	72
2	278	74	50	63	71
3	242	56	23	64	62
4	304	60	40	56	50

For this analysis, 5 clusters (numbered 0 to 4) were defined. Cluster 0 contained 219 villages and had a relatively high mean stability index score of 78. Its constituent villages had the highest average security (69) and social cohesion (86) sub-index scores of any cluster. The majority of cluster 0 villages were found in Irumu territory, in and around the health zone of Bunia. Smaller groups of villages were also identified in the Nyankunde health zone, as well as in around Mongbalu and Bambu health zones (territory of Djugu) and Nyarambe health zone (territory of Mahagi).

Cluster 1 can be considered representative of villages with the highest average stability, presenting a mean stability score of 81. Villages in this cluster had the highest mean level of basic service access (with sub-index score of 59) when compared to other clusters, with medium-high security scores (mean: 66) and average social cohesion score (72). Villages in this cluster were overwhelmingly identified in Irumu territory (83%), principally in and around the Bunia health zone. Smaller groups of cluster 1 villages were identified in Mahagi (Logo health zone) as well as in Irumu in both Boga and Komanda health zones. Villages in this cluster can be prioritised for durable solutions interventions given their relative stability.

Cluster 2 comprised 278 villages and had a mean SI of 74, a middling score relative to other clusters. It also contains villages with relatively average access to services (50), security (63), and social cohesion (71) sub-index scores when compared with other clusters. Villages in cluster 2 were broadly concentrated in Mahagi territory, where over half were located, principally in the surrounding areas of Angumu, Nyarmbe, Logo, Rimba, and Mahagi Health Zones.

Cluster 3 contained 242 villages and represented a slightly more mixed picture. It had the lowest average stability index score of all clusters (56). with the lowest average access to basic services sub-index score of all 5 clusters (23) and relatively middling security (64) and social cohesion (62) scores. Villages in this cluster were primarily concentrated in the territory of Djugu, including the areas surrounding Drodro, Fataki and Nizi health zones. Smaller notable groups of cluster 3 villages were present in the health zones of Mongbalu/Damas as well as Gethy (Irumu territory) and Kambala (Mahagi territory). Prioritization of interventions that improve access to basic services (notably housing and local markets) is recommended for villages in this cluster.

Cluster 4 contained 304 of the 1,249 villages analysed in Ituri and had a mean SI score of 60, average-to-low compared to the other clusters. While the access to services sub-index score was better than for cluster 3, cluster 4 recorded the lowest average security (56) and social cohesion (50) scores of any cluster. The largest share of villages in this cluster were located in Djugu territory, in groups around Drodro and Lita health zones, with relatively smaller groups found along the shores of Lake Albert in Mahagi territory and in Gethy health zone of Irumu.
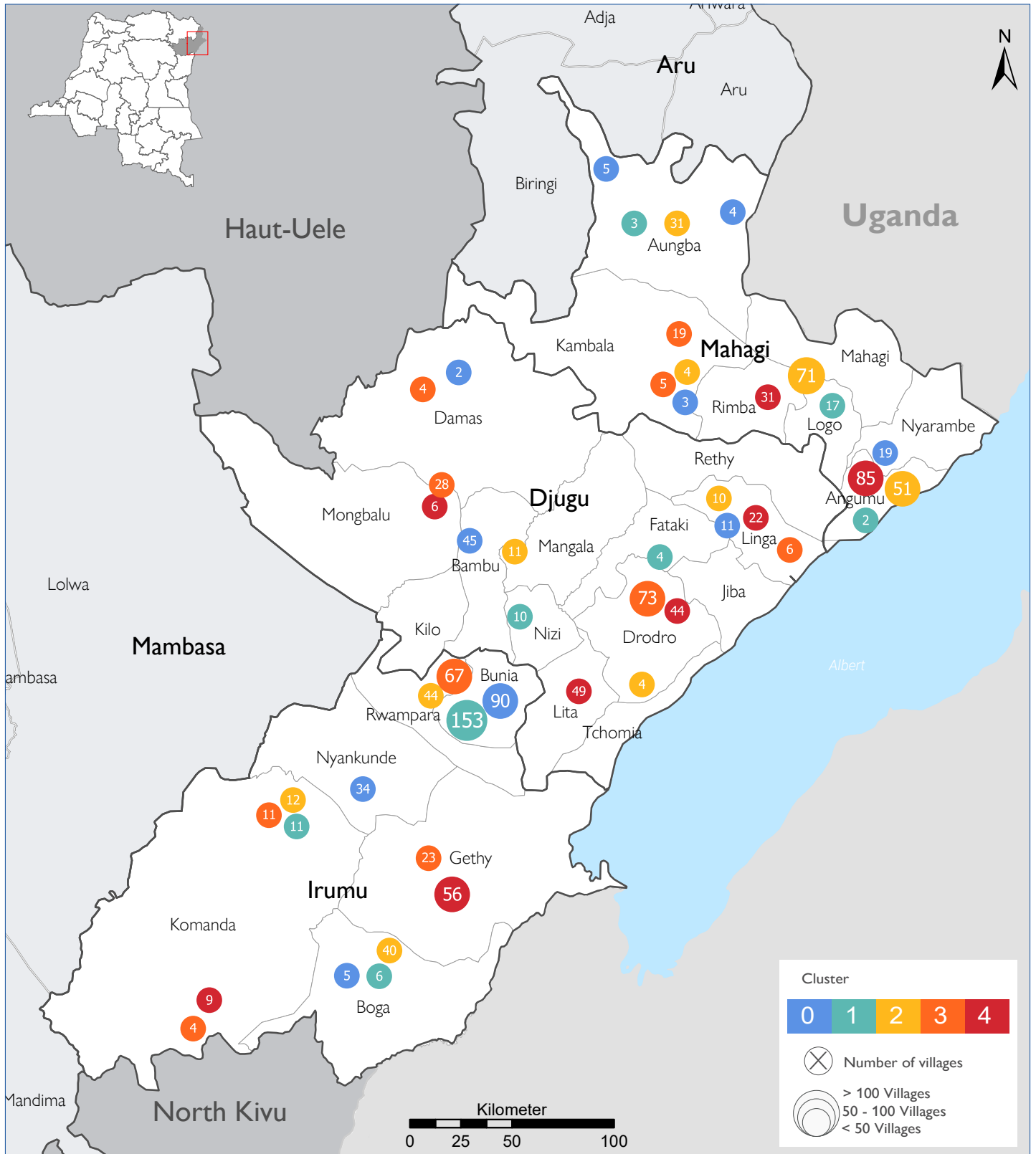
Map 6: Clusters of villages with similar stability characteristics, grouped using K-means clustering

STABILITY INDEX - ITURI Province
Democratic Republic of the Congo
March 2024

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TRACKING MATRIX

8. NATURAL DISASTERS MAPPING

Natural disaster information was collected alongside variables used to construct the stability index and was categorized into three levels. Presence/absence of natural disasters was quantified, alongside the impact that any natural disaster had had on a village (markets, access to resources/services, daily life). Villages reporting no natural disaster in the preceding 12 months were assigned category 0, while villages experiencing a natural disaster, resulting in low impact were assigned category 1 and villages experiencing a high impact from natural disasters were assigned category 2. While there was no statistical correlation identified between stability and natural disaster presence/severity, it is useful to analyse natural disaster data in its own right.

The considerable majority (70%) of assessed villages recorded no natural disasters in the preceding 12 months (not represented in Map 7). At a territory level the figure was 81 per cent in Djugu, 77 per cent in Irumu, and 78 per cent in Bunia. It was considerably lower (46%) in Mahagi where over half (54%) of villages were categorised as category 2 or 3. Two to five per cent of villages in each territory were categorised as category 2 (high impact natural disaster occurrence). The most notable difference between territories was in the proportion of villages reporting the occurrence of low-impact natural disasters, which while being fairly similar in both Bunia (20%), Irumu (18%) and Djugu (14%), was considerably higher in Mahagi (50%), as visible in Map 7. Category 2 villages were primarily concentrated in the south-east of Mahagi, with the majority of the remainder dispersed around Djugu and found in the health zone of Bunia and in Gethy health zone in Irumu territory.
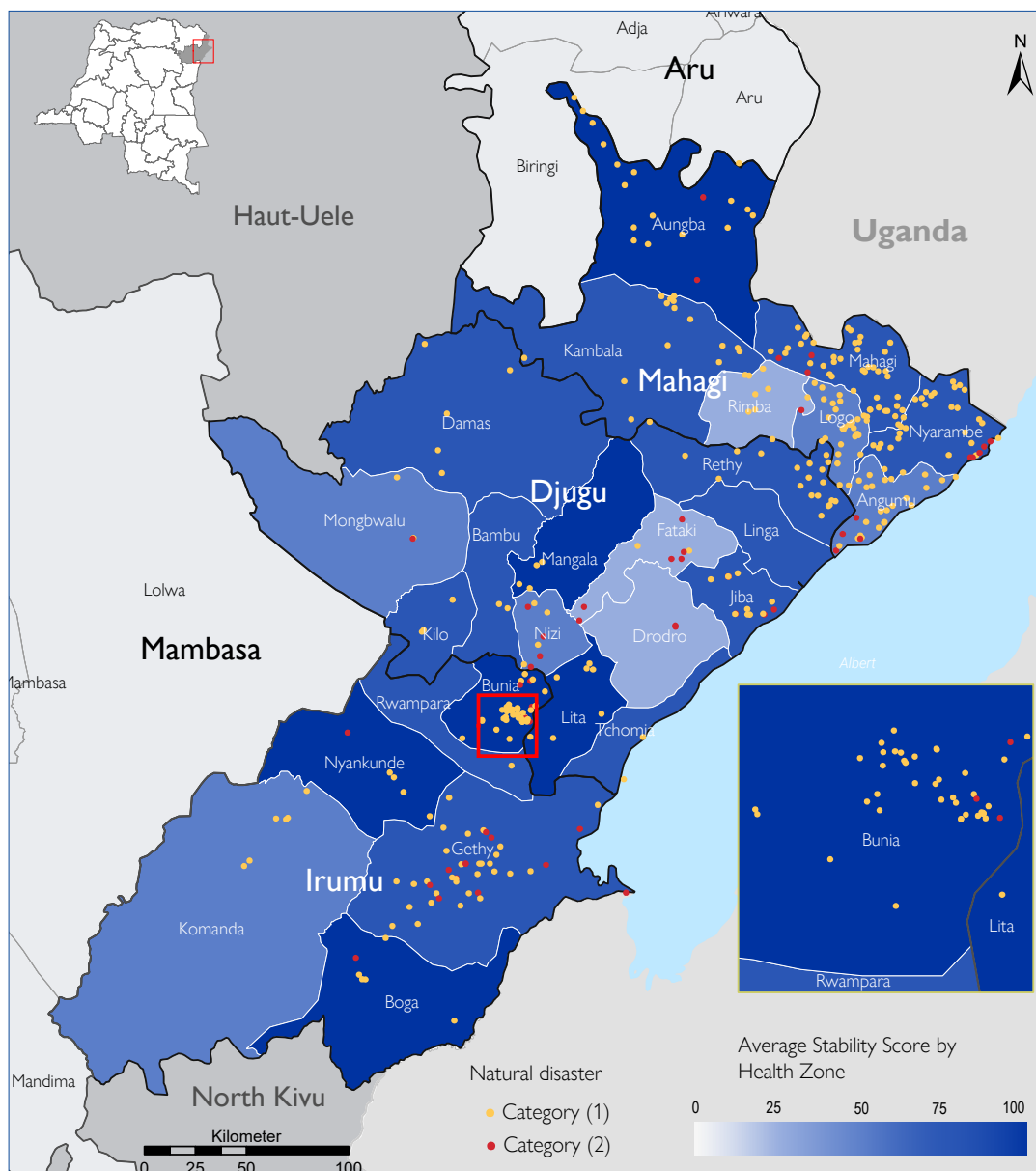
Map 7: Presence and impact of natural disasters in the province of Ituri.

ANNEX I: 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?

THEME 1: LIVELIHOODS & ACCESS TO SERVICES
Housing 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.

ANNEX I: Indicators

THEME 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 Property/Extortion
Robbery of personal belongings reported in locality in the last 6 months
Illegal Taxation
Illegal taxation or ransom payment 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)
Social Confidence
Level of social trust in locality (lending money, trust in their neighbours etc.)

THEME 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-StateArmed 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

ANNEX II: Methodology

A. Selection of Assessment Location

The four areas included in this assessment, Bunia, Djugu, Irumu and Mahagi, were selected a priori for inclusion in this analysis given their potential future durable solutions programming by the DRC humanitarian community. 1,249 villages were selected across the three territories using simple random sampling to provide representativity at the territory (administrative level 2) level. Villages were sampled from DTM DRC's village master list, itself based on and updated during twice-yearly mobility tracking exercises. The quantity of villages sampled was decided to provide a solid foundation for subsequent statistical analysis.

B. Stability Index Questionnaire Development

The SI tool was developed, building on questionnaires used in similar exercises in the Lake Chad Basin, and Burundi. Questionnaire was developed in close collaboration with DTM's global Solutions and Mobility team, durable solutions and community stabilization experts, IOM's Transition and Recovery Division, and IOM technical officers from Country/Regional Offices where the SI had previously been implemented. Questions were included across the three domains of security, social cohesion and livelihoods and access to basic services, as well as three anchor questions designed to assess community perception of stability. They were designed to assess conditions in a village that were determined to be 1) potential indicators of stability and 2) possible to rank in terms of their stability implications.

C. Stability Index Calculation

Before index calculation, questions were attributed a numerical score such that they could be ranked ordinally from best to worst. For the calculation of the index, logistic regression was employed to model the probability (between 0 and 1) of obtaining a positive response to each of the three binary anchor questions (as dependent variable) and the 36 stability indicators assessed (as independent variables). A simple mean of the probabilities for each of the three anchor questions is taken to obtain the stability index score for each locality (between 0 and 1, presented as an integer between 0 and 100).

D. Cluster Generation

K-means clustering is a machine learning algorithm used to group data points in k clusters and has been used to inform cluster analyses of SI data. The algorithm is provided with variables that it uses to allocate data points (in this case villages) to clusters. The value of k – i.e., the number of clusters desired – is specified before the algorithm is run. The aim of K-means is to create clusters in such a way that data points within each cluster are closer to that cluster's centre than to the centre of any other cluster. In other words, villages that are more similar to each other than they are to other villages. The main use case for K-means clustering is to uncover structure and find patterns in the data, i.e., discover commonalities and differences among data points.

E. Sub-Index Calculation

In addition to the stability score, three distinct sub-indices were calculated for each village using the variables from each of the three domains: Security, Social Cohesion, and Livelihoods/Access to Basic Services. The sub-indices were calculated separately by taking the average of questions related to each theme and then scaling them between 0 and 100. The overall stability index is not an average of these three sub-indices. The sub-indices facilitate the identification of localities that may require specific attention in any of these sectors.

F. Logistic regression

Logistic regression is a statistical analysis technique commonly used to explore the relationships between a dependent binary variable (Y) and a set of independent or explanatory variables. It allows modeling the probability that the dependent variable 'Y' takes a certain value based on the values of the explanatory variables. Logistic regression can be used to analyze the impact of each explanatory variable on the dependent variable and to predict the values of the dependent variable based on the values of the explanatory variables. In the context of the SI, logistic regression analyzed the relationships between the explanatory variables (e.g., security indicators, social cohesion indicators, and basic services indicators) and the dependent variable (each of the three specific perception questions).

G. Limitations

Some localities that were not accessible during the data collection period were not assessed due to security/logistical/administrative reasons. This may have introduced a form of selection bias as data points from the least secure areas were excluded from the analysis. This limits the generalizability of the Stability Index findings in extremely insecure locations, which are widespread in Ituri. It is also important to consider that the Stability Index is based on key informant level data and therefore measures human perceptions of village conditions, rather than an objective measure. It therefore does not claim to provide an impartial account of this complex topic. Key informants are not randomly sampled and their perceptions may therefore not be representative of those of their wider may have different opinions/perceptions of stability than the wider community they represent.

IOM's Displacement Tracking Matrix (DTM) tracks and monitors population movements in order to collate, analyze and share information to support the humanitarian community with the needed demographic baselines to coordinate evidence-based interventions.

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To consult all DTM DRC reports, datasets, static and interactive maps and dashboards, please visit

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