



IOM DRC

STABILITY INDEX – SOUTH KIVU

STABILITY ASSESSMENT IN SOUTH KIVU PROVINCE
DEMOCRATIC REPUBLIC OF THE CONGO

March 2024



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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1. INTRODUCTION

1.1. Displacement and return dynamics in the province of South Kivu

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. This 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 South Kivu is home to the third largest IDP and returnee population of any province in the DRC (1.4 million and 690 thousand individuals respectively). While the province continues to experience conflict and armed group activity, particularly in light of the ongoing M23 (*Mouvement du 23 mars*) crisis in North Kivu (for more information on the M23 crisis, please find the latest DTM report [here](#)), it has been the focus of recent efforts to strengthen durable solutions programming. DTM's latest [Mobility Tracking](#) also reflects that 49 per cent of identified returnees in the province reporting security improvement as their principal reason for return (followed by food security improvement, family reunification and economic opportunities). South Kivu is also a target province for integration in the national program for disarmament, reintegration, and stabilization (*Programme de Désarmement, Démobilisation, Rélevement Communautaire et Stabilisation – PDDRCS* in French). Evidence-based guidance on durable solutions and stabilization programming is essential in South Kivu, considering the close proximity of areas experiencing continuing conflict and those in a more post-crisis context.

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 South Kivu, DTM implemented the SI in the territories of Fizi, Kalehe and Uvira, which together host 65 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.



Fig 1: South Kivu province displacement figures as of October

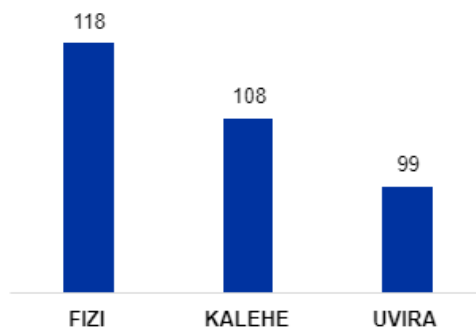


Fig 2: Number of villages assessed in South Kivu by territory

Objectives of the report

Despite the complexity of population movements in South Kivu, improved security conditions in some localities have facilitated the voluntary return of displaced populations. However, considerable hurdles remain, preventing the identification of durable solutions to their displacement and supporting the stabilization of areas currently experiencing active armed conflict. With the progressive withdrawal of the UN Peacekeeping Mission in the DRC (MONUSCO) from the province, along with its stabilization and reintegration functions, planned for 2024, an evidence base to inform actors in the stabilization field in South Kivu is critical. To build this, it is crucial to understand the relative levels of stability in areas hosting returnees or displaced persons, as well as neighbouring areas. With the aim of assisting government and development actors – such as PDDRCS – to plan future interventions concerning livelihoods, social cohesion and resilience in affected areas, the SI is being launched in the province. It will allow relevant actors to promote the creation of effective strategies and priority programmatic interventions within the stabilization field and humanitarian-peace-development nexus to build resilience and stability.

1.2. Methodology and Data collection Overview

Data was collected through interviews with 1,272 key informants (KIs) at a village level by trained enumerators between 22 October and 4 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.

325 Villages in the territories of Fizi (118 villages), Uvira (99), and Kalehe (108) were selected for inclusion in the analysis using simple random sampling from the DTM DRC village master list, updated during the twice-yearly 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. Stability Index exercise was implemented in partnership with national non-governmental organization *Réseau d'Action pour le Développement et le Progrès Intégré (RADPI)* and *Division Provinciale des Affaires Humanitaires (DIVAH)*.

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. On a conceptual level, the stability index also 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



Mean stability varied substantially among assessed territories (Admin 2). It was highest in Uvira and lowest in Kalehe.

Among the three territories assessed, Kalehe was found to be relatively less stable, with an average Stability Index score of 56 (out of 100), compared to Fizi (67) and Uvira (71).



Pockets of relative stability were identified in the Uvira, Ruzizi and Kalonge health zones (Admin 3).

High security, access to services and social cohesion scores were found across Uvira. In Kalonge, on average, stability was driven by a better perceived security situation while in the pocket of stability found in Ruzizi, above-average levels of security and social cohesion were key drivers.



Hotspots of relative instability were identified in Bunyakiri/Kalehe, Hauts-Plateaux, and Fizi health zones.

These were often in close proximity to areas of higher stability. In Kalehe and Bunyakiri health zones, hotspots of relative instability were found in areas where villages reported the presence of non-state armed groups.



Average access to basic services and livelihoods scores were lower across all three territories (mean: 52) when compared to security (75) and social cohesion (66) scores.

Localities with low access to basic services scores reported low levels of housing quality and access to electricity and potable water.



Villages reporting high impact natural disasters were primarily concentrated in southern Uvira (Uvira health zone, a high stability zone with a score of 82) and northeastern Kalehe territories (health zones of Bunyakiri with 69, Minova 44, and Kalehe 36).



Across the three assessed territories, the majority of returnees (52%) were identified in villages classified as “medium stability”, compared to the villages classified as “low stability” with 10 per cent of returnees.



Average social cohesion scores did not vary considerably among the three territories assessed (69 in Uvira, 65 in Fizi, and 63 in Kalehe).

Minova recorded the lowest average social cohesion score among the assessed health zones (58), followed by Nundu (60) and Kalehe (60). The highest mean social cohesion scores were identified in the health zones of Hauts-Plateaux (77), Uvira (75), and Minembwe (73).

3. PROGRAMMATIC IMPLICATIONS

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

- The visible association between the presence of armed groups and hotspots of relative instability – in Kalehe territory in particular – highlights the importance of future disarmament, demobilisation, and reintegration efforts in the promotion of local stability.
- Durable solutions interventions can realistically be prioritized in Uvira, Ruzizi, and Kalonge 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 across the territories assessed.
- Areas at greater risk of high-impact natural disasters, such as southern Uvira and northeastern Kalehe territories require for infrastructure, disaster risk reduction, or emergency preparedness interventions. Particularly given that Kalehe and Minova health zones have the two lowest stability index scores of all the health zones evaluated.

High Stability	Medium Stability	Low Stability
45%	46%	9%
48,690 IDPs 21,666 Returnees	59,059 IDPs 29,977 Returnees	11,862 IDPs 5,707 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

The three anchor questions analysed in this section directly gauge key informants’ perceptions of community stability. Responses to these are compared statistically (using logistic regression) to those of the remaining 36 indicators assessed to estimate the stability score for each village. They are also to be analysed independently.

Throughout South Kivu, a large proportion of villages (82%) reported positive feelings of stability, with the largest share in Kalehe and Uvira territories (84% in each). A marginally smaller proportion (79%) reported positive feelings of stability in Fizi territory, where 21 per cent described their general situation as unstable and unsafe. The considerable majority (87%) of villages in all three territories reported that residents felt no need to leave the village the next six months due to instability. The proportion who indicated that they felt a need to leave their village in the next six months was highest in the territory of Fizi (16%), followed by Uvira (13%) and Kalehe (10%).

Outcomes of the third anchor question related to the change in perception of stability in the past six months were significantly different. KIs in 44 per cent reported that they were less optimistic about the stability of their community at the time of the assessment than they were six months prior. This proportion was highest in Kalehe, where half reported being less optimistic, followed by Fizi (42%), and Uvira (39%).

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

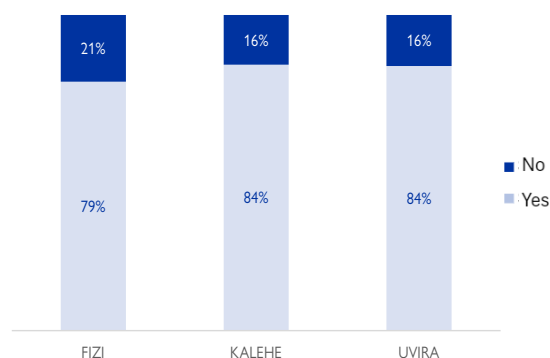


Fig 3: Positive feeling of stability by territory

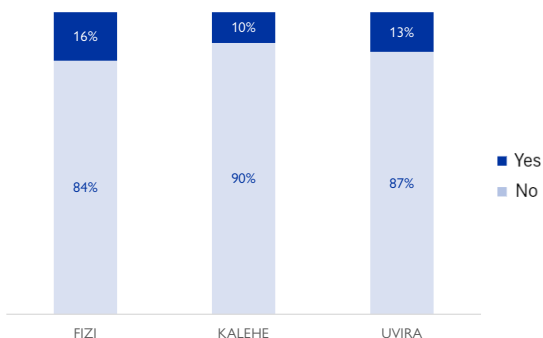


Fig 4: Desire to leave in the next 6 months by territory

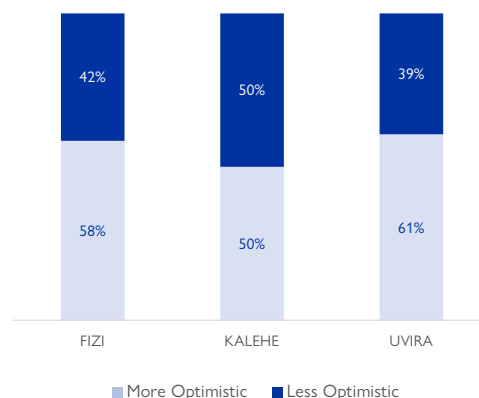


Fig 5: Change in the feeling of stability by territory

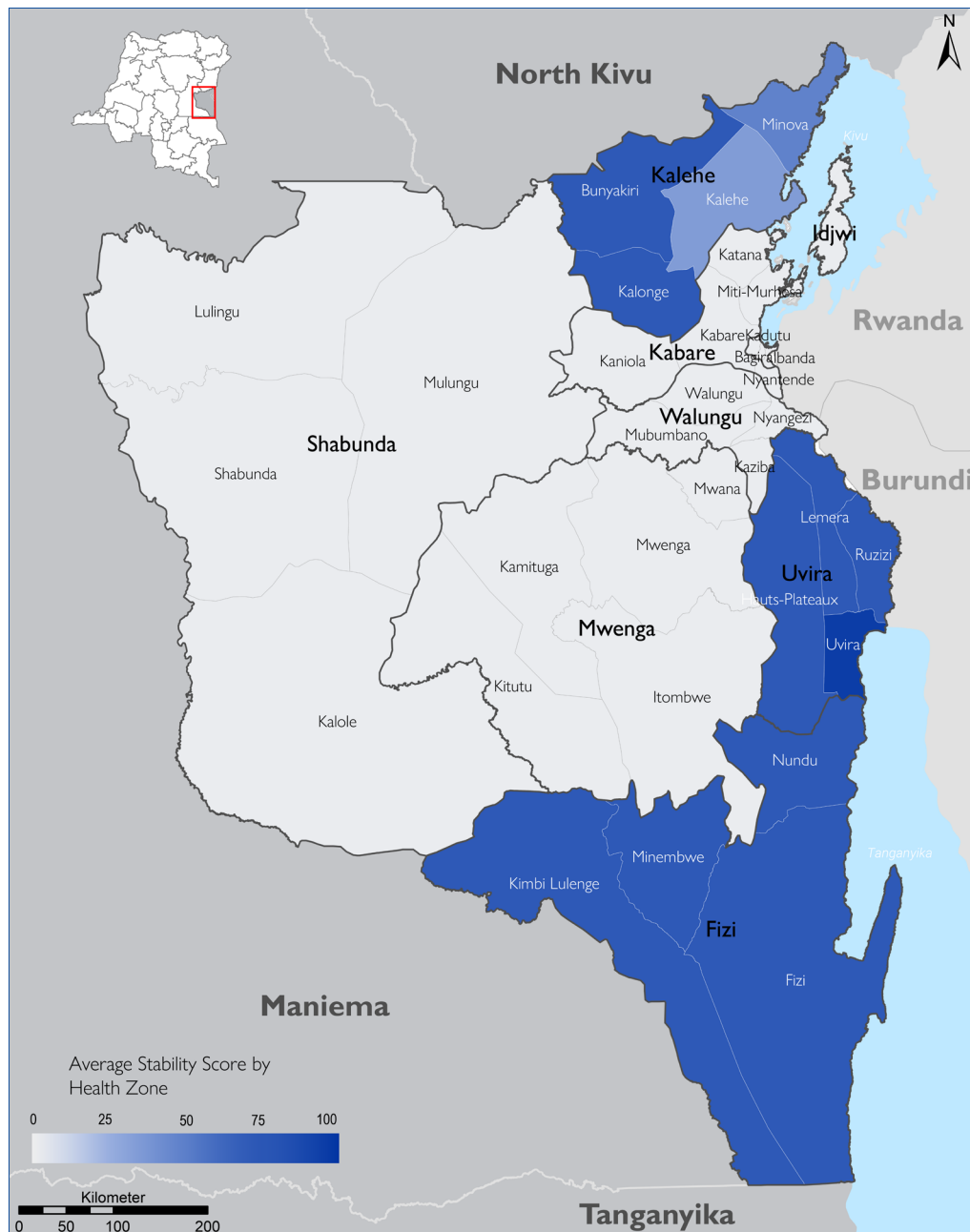
5. STABILITY INDEX SCORES

Stability Index in South Kivu serves as a crucial measure ranging from 0 (indicating low stability) to 100 (representing high stability). Among the three territories assessed, Kalehe was found to be relatively less stable, with an average Stability Index score of 56, compared to Fizi (67) and Uvira (71). At a health zone level, the lowest average SI scores were found in Kalehe (36) and Minova (44), both of which were considerably below the average SI score of 64 for the three assessed territories. Hotspots of relative instability were identified in central/northern Kalehe territory – between Kalehe and Bunyakiri health zones – alongside central and eastern Fizi health zone. These areas are notable for their reported concentration of armed group activity, corroborated by data collected on the presence of armed groups during this assessment.

The highest mean stability scores were found in Uvira (82), Hauts-Plateaux (75), and Kalonge (74) health zones. Notable pockets of relative stability were identified in Ruzizi and Uvira health zones, as well as in Eastern Fizi and central Kalonge, where these stable localities were in close proximity to relatively unstable ones.

Territory	Stability Index	Sub-Index: Access to Basic Services	Sub-Index: Security	Sub-Index: Social Cohesion
Uvira	71	56	77	69
Fizi	67	50	76	65
Kalehe	56	51	72	63
ALL	64	52	75	66

Tab 2: Average Stability Index and Sub-Index Scores by territory



Map 1: Average Stability Index Scores in South Kivu province by health zone.

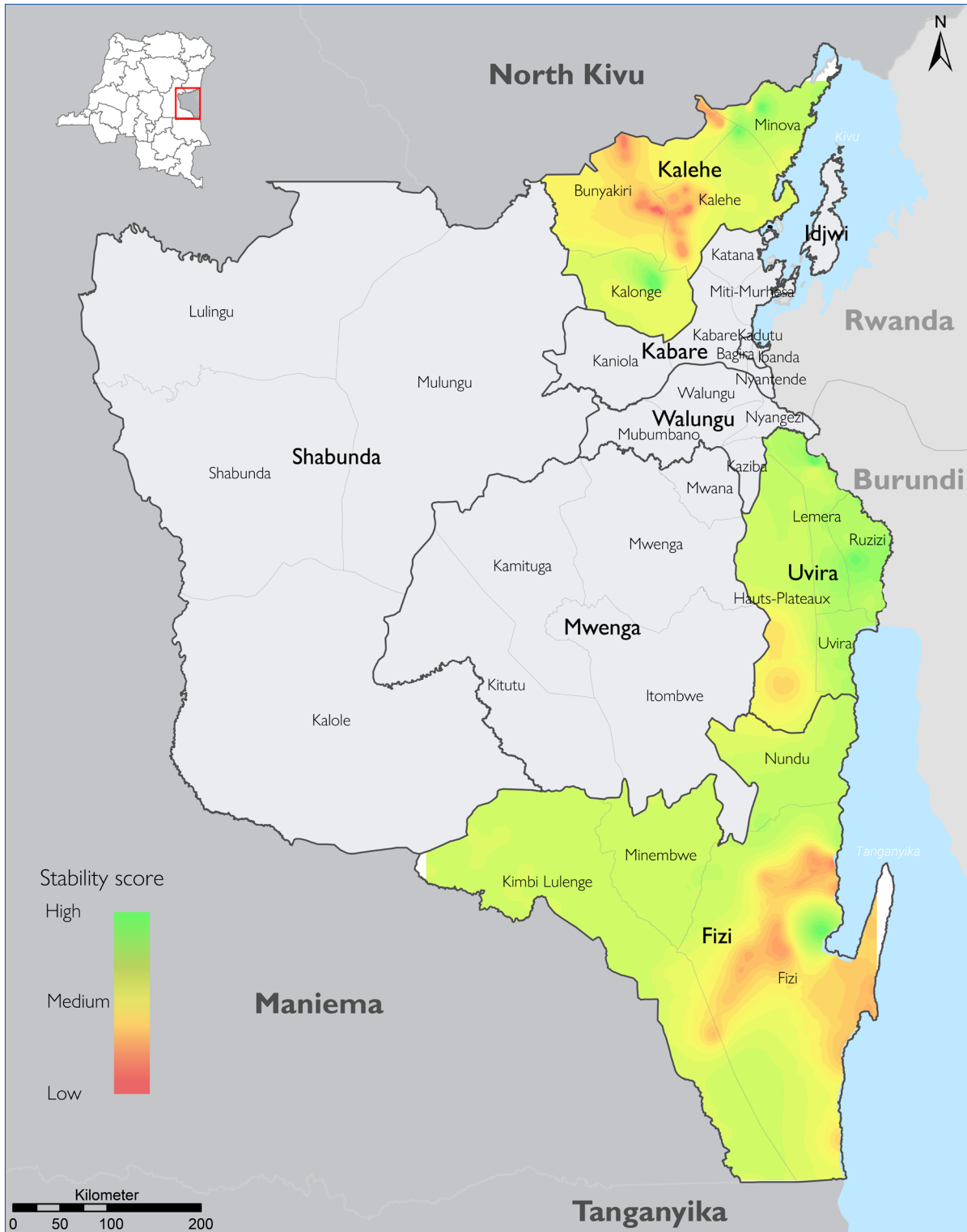
5. STABILITY INDEX SCORES

Tab 3: Average Stability Index and Sub-index Scores in South Kivu province by health zone*

Health Zone	Stability Index	Sub-Index: Access Bsic Services	Sub-Index: Security	Sub-Index: Social Cohesion
Bunyakiri	69	48	71	63
Kalehe	36	57	69	60
Kalonge	74	48	82	70
Minova	44	57	63	58
Hauts-Plateaux	75	47	80	77
Lemera	62	60	76	65
Ruzizi	64	55	71	62
Uvira	82	61	82	75
Fizi	72	53	79	69
Kimbi Lulenge	64	42	80	62
Minembwe	70	50	68	73
Nundu	61	54	76	60
ALL	64	52	75	66

*Due to the sampling design, data are representative at a territory level.

Uvira territory scored highest among all assessed territories in terms of livelihoods and access to basic services (56), security (77), and social cohesion (69) sub-index scores. Fizi and Kalehe territories scored similarly in terms of livelihoods and access to basic services (50 and 51 respectively). Uvira and Fizi had higher, and similar average security scores (77 and 76 respectively) when compared to Kalehe territory. All three territories had similar social cohesion scores, the highest being found in Uvira (69), followed by Fizi (65), and Kalehe (63).



Map 2: Heat-map of Stability Index Scores in assessed villages in the province of South Kivu.

* Disclaimer : The maps in this report are for illustration purposes only. The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the International Organization for Migration. GPS coordinates may have not been cross-checked in the field. Some geographical boundaries do not coincide with the data collected.

5.1. Stability Index Sub-scores

The three domains of the stability index – livelihoods and access to basic services, security, and social cohesion – were also analysed to give an impression of the situation of each in different localities throughout the assessed areas. The resulting sub-index scores can be compared. Analysis was conducted at a health zone level, despite the fact that sampling was designed to be representative at a territory level. Any health-zone level analysis in this section should therefore be considered as illustrative only of the villages assessed and not representative of the health zone as a whole.

Relative to other sub-indices, livelihoods and access to basic services scores were lower in all territories when compared to the security and social cohesion sub-indices. An average access to basic services score of 52 was found for the three territories considered as a whole. The highest average access to services score was found in the territory of Uvira (56), followed by Kalehe (51) and Fizi (50). The lowest average access to services scores were found in the health zones of Kimbi Lulenge (42), and Hauts-Plateaux (47), while the highest were found in Uvira (61), Lemera (60), and Minova (57).



Map 3: Security Sub-Index scores



Map 4: Access to services Sub-Index scores



Map 5: Social Cohesion Sub-Index scores

Security was found to be an important factor influencing stability in all three territories. The security sub-index was the highest scoring of the three sub-indices in this assessment with an average score of 75 across the three assessed territories. Similar security sub-index scores were found in both Uvira (77) and Fizi (76), while the territory of Kalehe reported a marginally lower average score of 72. Average security scores were highest in the health zones of Uvira (82), Kalonge (82), and Hauts-Plateaux (80). The health zones of Minova, Minembwe, and Bunyakiri all recorded the lowest average security scores among assessed localities (63, 68, and 69 respectively).

The social cohesion sub-index score was found to be lowest in Kalehe territory (63) and highest in Uvira (69). At a health zone level, Minova recorded the lowest average social cohesion score among the assessed health zones (58), followed by Nundu (60) and Kalehe (60). The highest mean social cohesion scores were identified in the health zones of Hauts-Plateaux (77), Uvira (75), and Minembwe (73).

6. ANALYSIS OF KEY INDICATORS RELATED TO STABILITY

To assist in understanding of the factors that influence stability in South Kivu, and how, analysis of individual variables, which were strongly associated with the three anchor questions used in SI calculation was performed to descriptively determine their geographical variation throughout the area of assessment.

Tab 4: Key Indicators associated with perceived stability

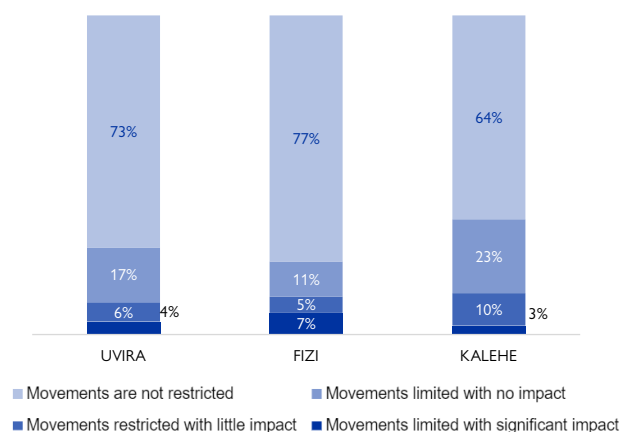
LIVELIHOODS AND ACCESS TO SERVICES	SAFETY AND SECURITY	SOCIAL COHESION
1) Housing Access	5) Public Life	
2) Freedom of Movement	6) Community Services	
3) Security Concern	7) Confidence	
4) Property Theft		

6.1. Security Key Indicators

1. Freedom of Movement

Unrestricted freedom of movement was reported in the majority of assessed villages (71%) across the three territories. The highest proportion of such villages were found in Fizi (77%), followed by Uvira (73%) and Kalehe (64%). Where freedom of movement was reported to be subject to restrictions, these were mostly deemed to have no or low impact on the daily lives of community members. Seven per cent of villages in Fizi territory reported facing restrictions on freedom of movement, with a high impact on daily life, followed by 4 per cent in Uvira and 3 per cent in Kalehe.

Fig. 6: Freedom of movement



2. Security Situation - Public Concern

Public concern on security situation is a key correlate of perceived stability. the majority of villages (70%) reported their residents were somewhat or very concerned about the security situation in their community. This varied substantially by territory with the highest proportion in Kalehe (83%), followed by Uvira (69%) and Fizi (58%). The proportion of villages where the public was “very concerned” was found in Kalehe territory (35%), followed by Fizi (21%) and Uvira (20%).

Fig. 7: Public concern of security situation

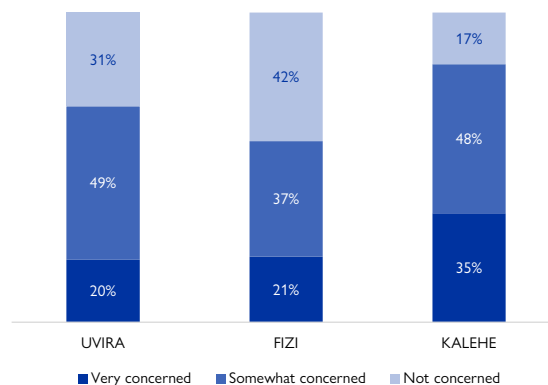
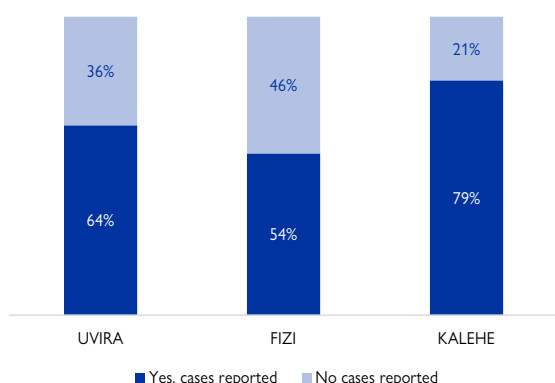


Fig. 8: Property Theft classified as a widespread concern



3. Property Theft

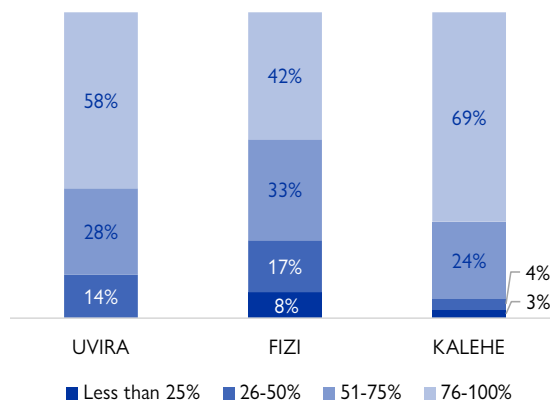
Theft of personal property was found to be both a key correlate of perceived stability and a frequently reported event across the assessed territories in South Kivu. Over three quarters (79%) of villages in Kalehe territory reported cases of property theft over the preceding six months. This figure was lower in Uvira (64%) and lowest in Fizi, with 54 per cent of villages reported occurrences of property theft.

6.2. Livelihoods and Access to Services Key Indicators

4. Housing Access

Access to quality housing was a key correlate of stability among villages included in this assessment. Among the three assessed territories, Kalehe recorded the greatest proportion (69%) where more than three quarters of the population had access to housing, followed by Uvira (58%) and Fizi (42%). Fizi recorded the largest share of villages where less than half of residents had access to housing (25%). While Uvira and Kalehe reported substantially lower numbers (14% and 7% respectively). Villages where less than a quarter of residents had access to housing were the considerable minority in both Fizi (8%) and Kalehe (3%), while Uvira recorded no such villages.

Fig. 9: Proportion of community having access to housing

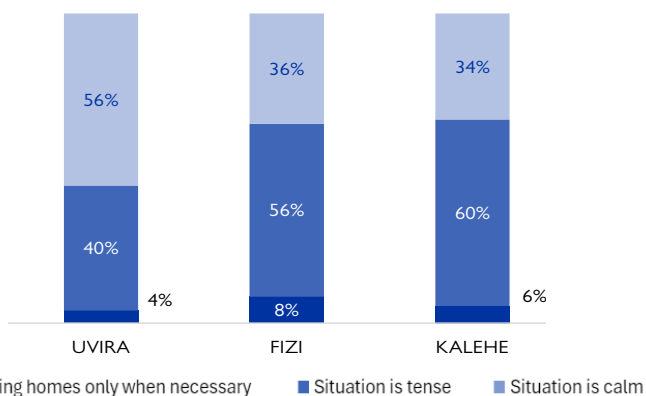


6.3. Social Cohesion Key Indicators

5. Public Life

This assessment found a mixed picture when it came to the perceived state of daily life in the areas assessed. In Uvira, key informants in the majority of villages (56%) reported that their streets were animated, and life continued as normal. In Fizi and Kalehe territories, however, the majority of villages – 56 and 60 per cent respectively – recorded that life continued in relative normality but that the situation was tense. The proportion of villages in which residents were reported to only leave their houses if absolutely necessary was highest in Fizi (8%) followed by Kalehe (6%), and Uvira (4%).

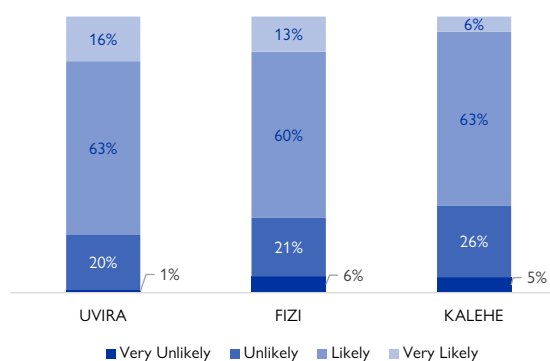
Fig. 10: Daily Public Life



6. Community Cooperation in case of services issue

In all three of the assessed territories, the majority of villages reported that it was either likely or very likely that the local community would come together to resolve any issues surrounding access to basic services. This proportion was highest in Uvira (79%), followed by Fizi (73%), and Kalehe (69%). The proportion of villages reporting that such cooperation would be unlikely or very unlikely was greatest in Kalehe (34%), followed by Fizi (27%), and Uvira (21%).

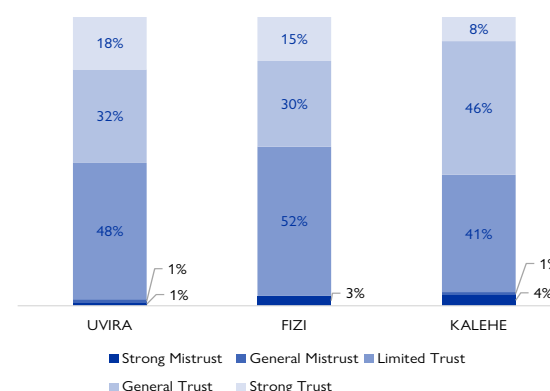
Fig. 11: Community support in case of services issue



7. Social Trust

A strong or general sense of trust among the community was reported in a considerable number of localities throughout the three assessed territories. Key informants in a combined 54 per cent of assessed villages in Kalehe reported a general or strong sense of social trust among community members while this proportion was 50 per cent in Uvira and 45 per cent in Fizi territories. The proportion of villages reporting limited levels of trust or worse was greatest in Fizi territory (55%) followed by Uvira (49%) and Kalehe (46%) which reported the greatest share of villages in which there was a strong sense of community mistrust (4%).

Fig. 12: Level of Social Trust



7. CLUSTER ANALYSIS

A cluster analysis was conducted to geographically profile localities based off Stability Index findings, with the aim of allowing targeted durable solutions interventions. Villages were grouped into four 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 vilages in similar situations in distinct geographical areas, therefore permitting more targeted interventions.

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

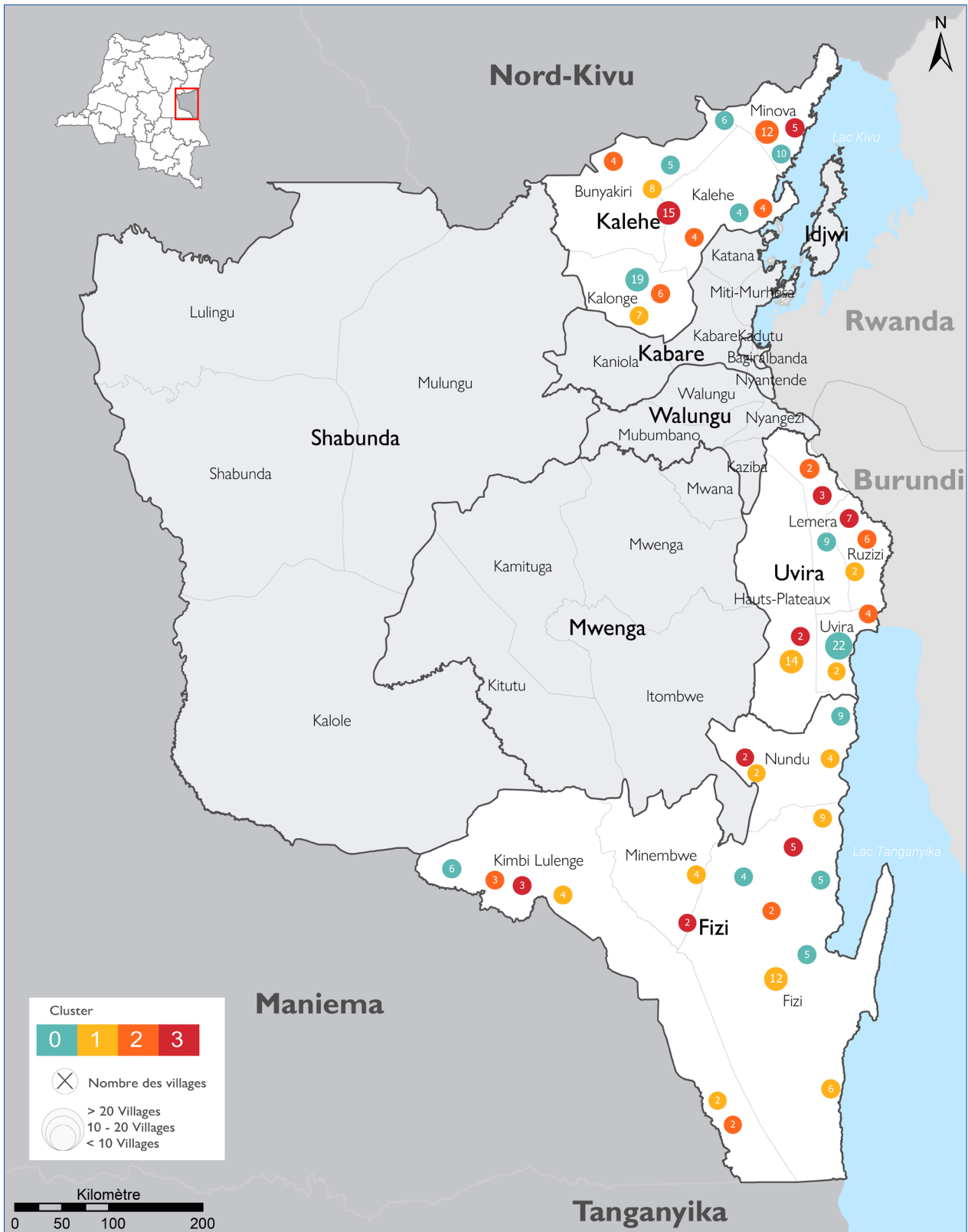
Cluster	Number of villages	Average SI	Average Access Services Score	Average Security Score	Average Social Cohesion Score
0	120	82	58	86	68
1	91	77	53	83	83
2	57	57	49	61	63
3	57	39	44	63	49

In the analysis, 4 clusters (numbered 0 to 3) were defined. There were 120 villages identified in Cluster 0, which is notable for its high average stability score (82), access to basic services score (58), and security score (86). Villages in this cluster had the second highest (68) average social cohesion score of all clusters. Cluster 0 villages were relatively evenly dispersed throughout the assessed areas with larger groups of villages identified in Uvira and Kalonge health zones. Smaller groups (comprising between five and eight villages) were identified throughout the assessed territories. Villages in Cluster 0 hosted 28 per cent of all returnees present in the three assessed territories.

Cluster 1 contains 91 villages and is characterized by its relatively high average stability index score (77), security score (83), and social cohesion score (83). Its villages also reported a relatively high access to services score (55) when compared to other clusters. Concentrations of Cluster 1 villages were found in the Hauts-Plateaux and Fizi health zones of Fizi territory, with smaller groups in southern Kalehe and western Fizi territories. Villages in Cluster 1 hosted 41 per cent of all returnees across the three assessed territories. Clusters 0 and 1 are therefore well suited to durable solutions interventions promoting sustained returns.

Cluster 2 comprised 57 villages and recorded the second lowest stability score (57) of all the four clusters. Villages in this cluster were further characterised by relatively low average access to services (49) and social cohesion scores (63). Notably, it also reported the lowest average security score of all clusters. Villages were mainly located in Kalehe territory, with large groups identified in Minova and Kalehe health zones. Smaller groups of Cluster 2 villages (numbering between 2 and 6) were identified in the two other assessed territories.

Cluster 3 is composed of 57 villages and recorded the lowest mean Stability Index score (39) of all the clusters. Villages in this cluster were also found to have the lowest average access to services score (44) of all four clusters, as well as the second lowest average security score (63) and the lowest social cohesion score (49). Concentrations of villages belonging to Cluster 3 were found in Bunyakiri health zone (Kalehe territory), with smaller groups identified in Lemera health zone (Uvira) and Fizi health zone (Fizi).

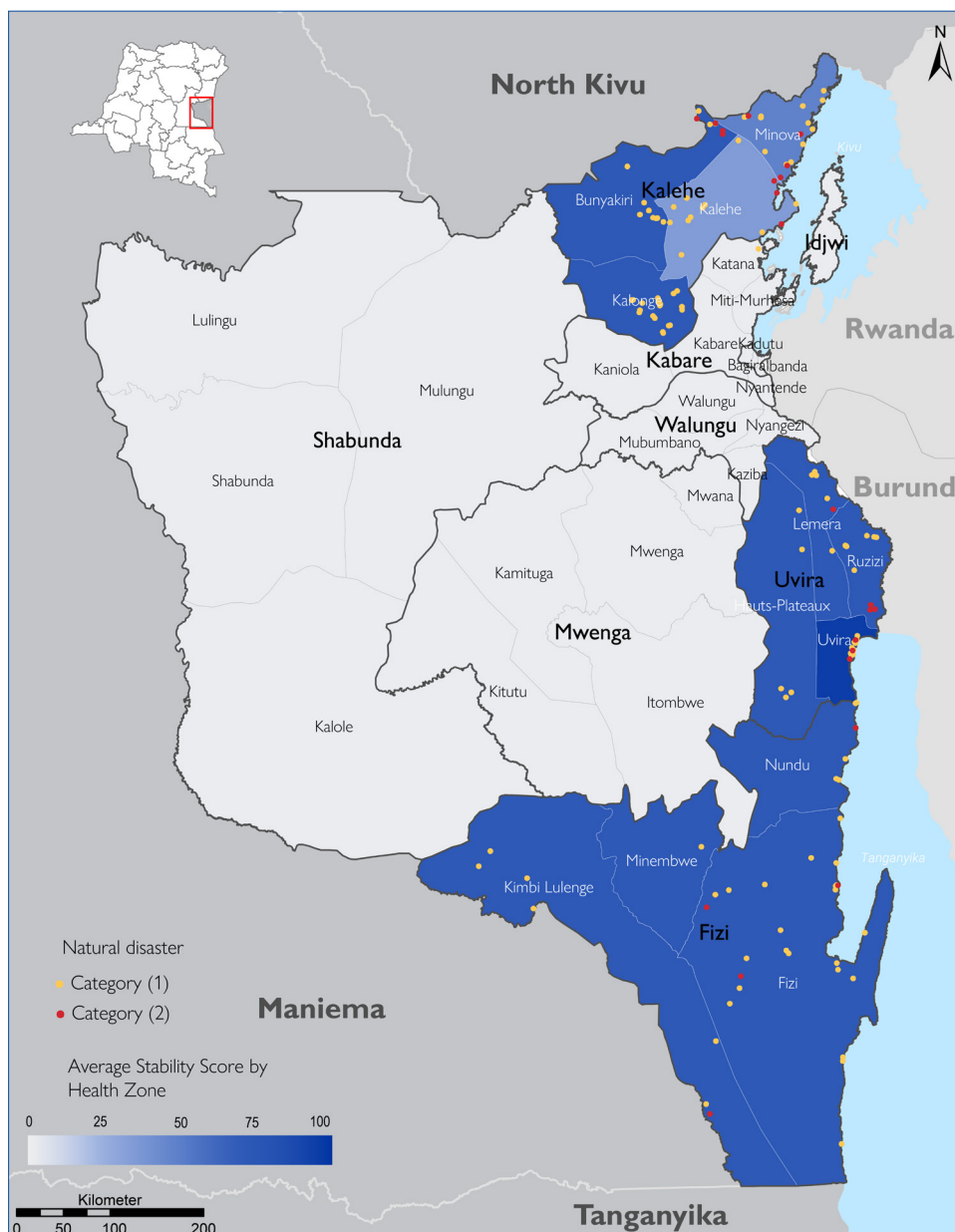


Map 6: Clusters of villages with similar stability characteristics, grouped using K-means clustering

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 overall, it is useful to analyse natural disaster data in its own right.

The majority (58%) of assessed villages reported experiencing a natural disaster in the 12 months preceding the assessment, with 42 per cent assigned to category 0 and recording no natural disasters. 48 per cent of villages reported experiencing a low impact natural disaster, with 10 per cent reporting experiencing a high impact natural disaster. Villages categorised as category 2, were relatively evenly distributed among the three assessed territories. In Kalehe, 56 per cent of all assessed villages reported experiencing a low impact natural disaster, compared to 47 per cent in Uvira and 42 per cent in Fizi. In both Uvira and Kalehe territories, 12 per cent of villages reported high impact natural disaster occurrence. These villages were primarily concentrated in southern Uvira territory (Uvira health zone) and northeastern Kalehe (Bunyakiri, Minova and Kalehe health zones).



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 were then tested against each of the thematic indicators below to identify the most influential thematic indicators on the perception of stability.

Feeling of Stability in the Locality

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

Ability to Continue Living in Locality

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

Changes in Perception in the Last 6 Months

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

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)

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)

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-State Armed Groups Presence

Presence of Non-State Armed Groups in the locality

Freedom of Movement

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

Formal Curfew

Formal curfew for security reasons enforced by State

Informal Curfew

Informal curfew enforced by Non-State Armed Groups

State of Emergency

Whether the locality is under a state of emergency

Legal Remedies

Whether residents have access to legal remedies to resolve disputes

ANNEX II: Methodology

A. Selection of Assessment Location

The three territories included in this assessment, Fizi, Kalehe, and Uvira were selected a priori for inclusion in this analysis given their potential future durable solutions programming by the DRC humanitarian community. 325 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 development was conducted 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 stability index, logistic regression is used to analyze 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



DISPLACEMENT
TRACKING MATRIX (DTM)

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

Email: iomdrcdtm@iom.int

Web: <https://dtm.iom.int/democratic-republic-congo>



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