GLOBAL INITIATIVE
AGAINST TRANSNATIONAL ORGANIZED CRIME

ORGANIZED CRIME AND INSTABILITY DYNAMICS

Mapping illicit hubs in West Africa

METHODOLOGY

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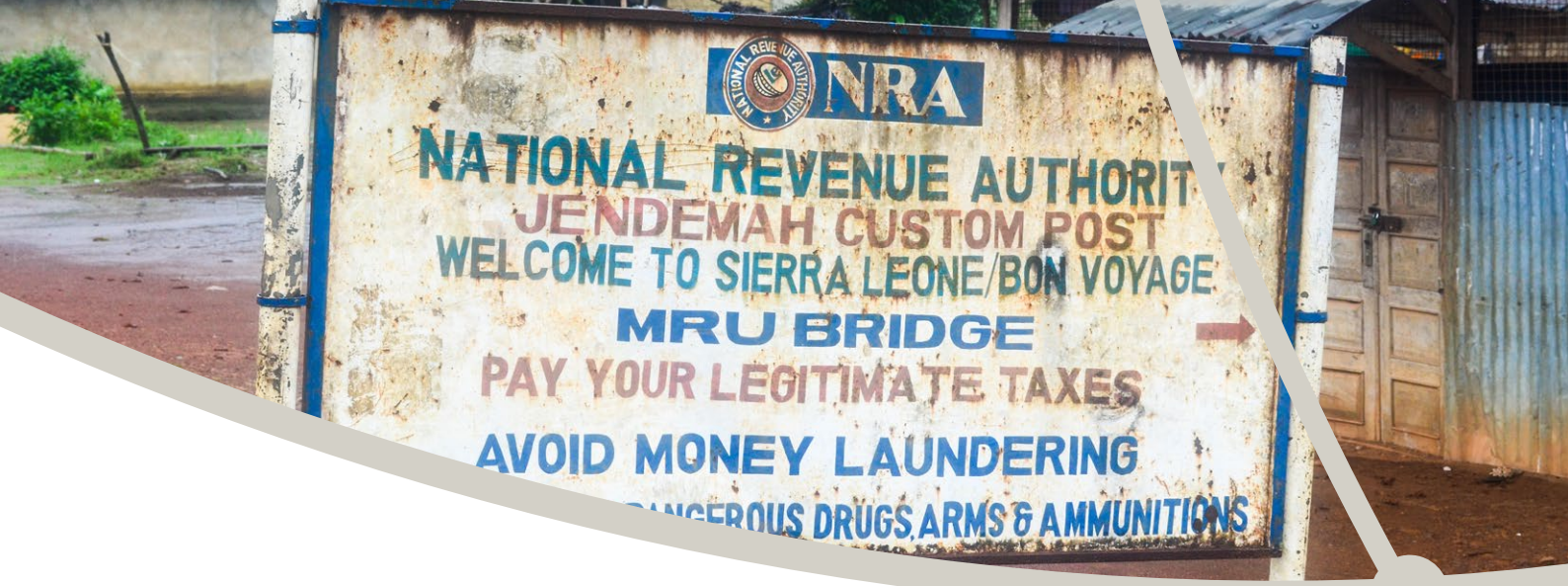
SUMMARY

As part of the project titled 'Promoting Stabilisation Through Crime Sensitive Interventions in West Africa', funded by the German Ministry of Foreign Affairs, the Global Initiative Against Transnational Organized Crime (GI-TOC) has conducted a research initiative that seeks to map the key hubs of illicit economies across West Africa. The aim of the exercise is to identify key hotspots, transit points and zones of criminality in the region, and then explore how these intersect with (in)stability dynamics.

The countries falling within the geographic scope of the research are as follows: Benin, Burkina Faso, Cameroon, Cabo Verde, the Central African Republic, Chad, Côte d'Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone and Togo.

This paper outlines the full methodology behind the research and is structured as follows: the first section explains the methodology behind the mapping of the illicit hubs; the second section presents the Illicit Economies and Instability Monitor (IEIM); the third section explores the challenges and limitations of the research; and the final section presents the approach taken to building the online illicit hub mapping tool.



MAPPING ILLICIT HUBS

Defining illicit hubs

For the purpose of this research, three types of illicit hubs have been identified: hotspots, transit points and crime zones. These are defined as follows:

- **Hotspots**: places where there is a strong presence of criminal actors, which may be involved in various kinds of illicit markets and criminal activities, and which may have the support of people with political power. These should be understood as hubs of illicit activity.
- **Transit points**: border crossings, ports, airports and trafficking corridors used for trafficking illicit commodities.
- **Crime zones**: areas with a high concentration of various types of criminal activities and actors (such as criminal groups). This may be an area of weak and fragmented security and other institutions. Ethnic divisions or tensions may contribute to the situation. Crime zones are broader geographic areas than hotspots, and may encompass a number of hotspots and/or transit points.

Although various geopolitical and socio-economic conditions have been identified to be favourable to the development of illicit hubs, there are broadly speaking four categories of characteristics that influence where hotspots, and the interconnecting transit points and crime zones, emerge.[1]

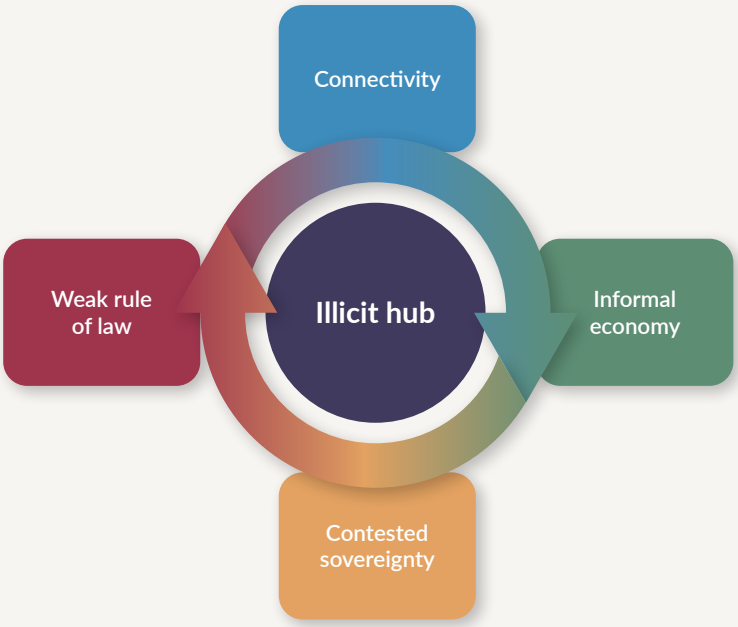


FIGURE 1 Factors in the emergence of illicit hubs.

First, underpinning the connectivity integral to these nodes is the infrastructure of mobility – namely, roads, seaports and airports. Infrastructure connects the local to the regional space, and beyond, to criminal networks of international supply chains and marketplaces. Infrastructure also facilitates connections between criminal actors.

Secondly, an informal economy is crucial to the development of illicit hubs, while access to formal financial systems is desirable. Largely cash-based, the informal economy facilitates laundering of the proceeds from the illicit economy. Where an informal economy exists alongside licit business, it can provide an entry point for 'black money' to be injected into the formal financial system.[2]

Moreover, illicit hubs commonly develop in or near spaces of contested sovereignty (for example, where the government has limited control, and other groups or actors seek to step into the void). Such environments create opportunities for informal regulatory frameworks and criminal governance. This can often be found in border areas, geopolitically liminal spaces typically characterized by lower levels of state control.[3] In addition to patchy governance, borderlands also offer practical advantages for criminal networks, particularly when they are porous. While lowering barriers for criminal actors, border porosity creates jurisdictional challenges in pursuing criminality and hampers law enforcement.[4] Corruption exacerbates these criminal advantages and legal challenges; it facilitates irregular cross-border movement of people and commodities, and often stymies cross-border law enforcement cooperation.[5]

Finally, and related to the issue of corruption as previously mentioned, illicit hubs typically emerge in areas where the rule of law is weak, but not entirely absent.[6] Corruption, which greases the wheels of the illicit economy, is widespread and tends to flourish in areas of weak governance, facilitating protection economies.[7] However, as detailed above, criminal networks need reliable infrastructure to operate successfully. In the case of highly unstable or failed states, infrastructure is compromised. For example, in the context of the drugs trade, the potential loss of a consignment to bandits or armed groups – types of groups commonly found in failed states – presents an unacceptable risk to profits.

Identifying illicit hubs

Each country's research was led by one or more individuals, either a member of the GI-TOC team, where possible, or an external expert. Each researcher involved in the illicit hub mapping research was provided with guidance pertaining to the classification of illicit hubs and the key characteristics of illicit hubs (as outlined in the 'defining illicit hubs' section above). All researchers attended virtual briefing sessions on the approach and concepts prior to beginning the identification process.

Identifying illicit hubs across the 18 countries in West and Central Africa that fall within the scope of this research was a multi-stage process. Based on an extensive review of the literature and institutional expertise, the GI-TOC research team drafted a preliminary mapping of illicit hubs across each of the focus countries. The initial mapping was supplemented with the findings from remote interviews with regional and national stakeholders, together with fieldwork and in-person interviews across the region.

Country-specific roundtables, both virtual and in-person, were then convened, at which experts were presented with the preliminary mapping and asked to share their views and insights on the identified locations, challenging any they disagree with, or suggesting additions that they feel may have been wrongly excluded. Hotspot findings were also validated through bilateral interviews and engagements. It is to be noted, however, that the illicit hub mapping is not exhaustive.

Across all stages of the research, the GI-TOC research team engaged with 655 different stakeholders, including 103 individuals from international organizations; 170 national government stakeholders; and 382 civil society and community members. The team sought to ensure that the stakeholders

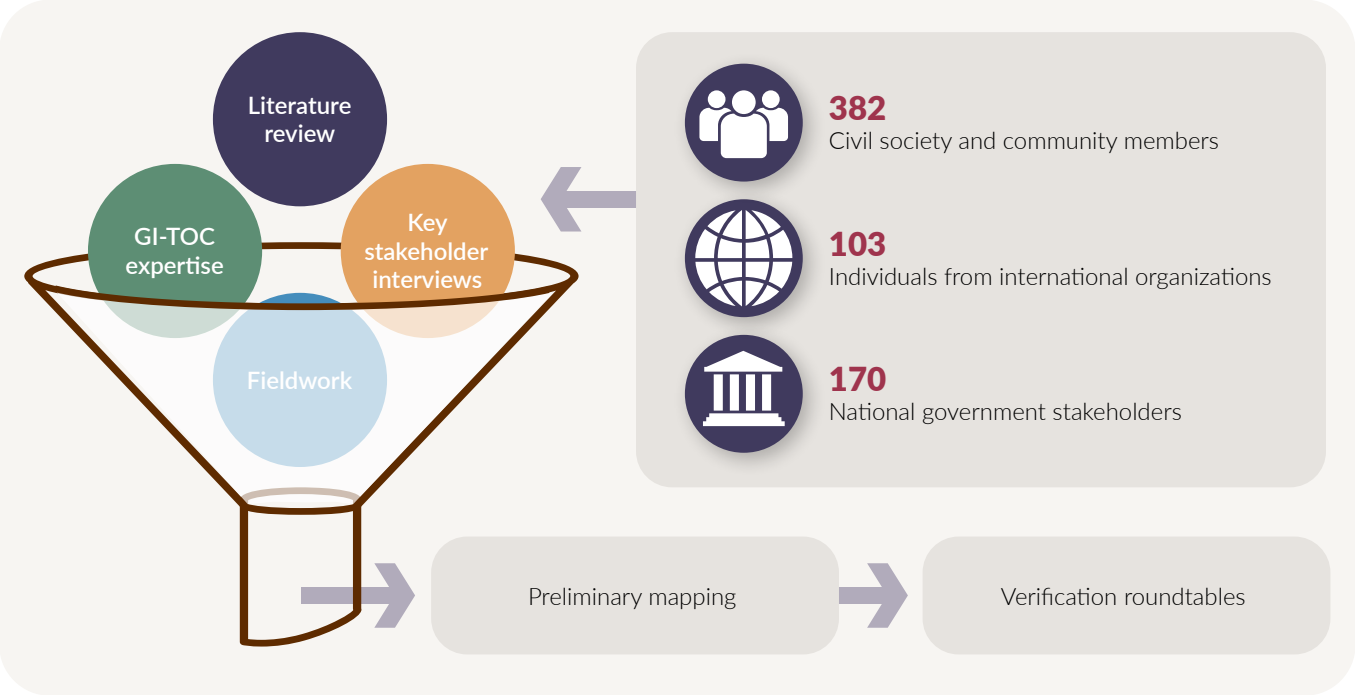


FIGURE 2 Methodological approach to identifying illicit hubs.

consulted represented a wide range of demographic backgrounds, ethnicities and genders (seeking consultations not only with women, but with women's rights groups, in particular) to ensure inclusivity in the research process.

In addition to identifying and classifying the illicit hubs, researchers also collected information on a whole host of different indicators. First, researchers were tasked with identifying the three most prominent criminal markets in each illicit hub. Similarly, researchers also identified which criminal-actor types are most influential in the hubs' illicit economies. Appendix 1 outlines the full list of illicit economies and criminal-actor types included in the analysis.

Fostering a better understanding of the relationship between illicit economies and instability is a key objective of this research, and the GI-TOC has consequently developed a monitor designed to assess this strength of the crime–conflict nexus in each illicit hub. The following section introduces the Illicit Economies and Instability Monitor (IEIM).

ILLICIT ECONOMIES AND INSTABILITY MONITOR

The results of the 2021 Organized Crime Index demonstrate the strong link between illicit economies and conflict dynamics, both feeding each other in a vicious circle.[8]

Profit-making criminal activities often intertwine with war economies, not least in the sphere of the trafficking of small arms and light weapons, facilitating the continuation of conflict. Not only do criminal networks fuel violent conflict and finance terrorist groups and militias, but their role in hindering conflict resolution and post-conflict reconstruction can be devastating.[9]

Conversely, illicit markets can provide a livelihood for marginalized populations, including in fragile, conflict and post-conflict settings. The relationship between organized crime and conflict is not always straightforward, with different illicit economies showing differing relationships with conflict and instability.[10] Furthermore, various relationship typologies have been identified across the region, from situations in which illicit markets sustain a political and governance order with a degree of stability, to circumstances in which instability may reduce crime, as the instability is so acute that criminal actors lack the reliability of infrastructure and protection required to operate.

'Instability' is understood in the context of this approach to refer to dynamics relating to armed actors that participate in armed conflict or socio-political tensions that facilitate, trigger or prolong armed conflict. Additionally, instability can also relate to armed actors and socio-political tensions threatening peace ('spoilers'), including in recent post-conflict environments (such as immediately after a peace agreement). In some contexts, instability may be interpreted more widely, to include drivers of significant violence.

What is the IEIM?

While 280 different illicit hubs have been identified across West Africa, not all hubs have the same relationship with regional stability. In order to identify which illicit hubs are most important in terms of their knock-on effect on conflict and stability across West Africa, the GI-TOC has developed a quantitative metric. There exist several composite indicators centred around the issue of conflict and instability, such as the Global Peace Index and the Fragile States Index, for example. The OECD's Spatial Conflict Dynamics indicator provides a valuable analysis of the 'intensity and spatial concentration of political violence at the subnational level'.[11] The GI-TOC's own Organized Crime Index is a groundbreaking index providing a rich dataset on the scope and scale of criminal markets and criminal actors in 193 countries around the world, as well as each country's various resilience measures to organized crime.[12] The IEIM, however, is the first indicator of its kind to focus specifically on the links between illicit economies and instability, which highlights the value added by the monitor.

The IEIM is a tool designed to assess the relative importance of the role played by illicit markets in any specific hub in fuelling conflict and instability in the wider region. As a metric, it assesses the degree to which specific hubs of illicit economies drive instability in the region, analyzing illicit economies as vectors of instability. This monitor therefore helps to identify areas where illicit markets play the most significant contributing role to instability and conflict in the region. The tool is designed to enable policymakers to prioritize specific areas for targeted action.

The conceptual framework of the IEIM was developed not only through a thorough review of relevant literature, but also through fieldwork and interviews with practitioners, law enforcement officials, members of civil society and other experts, consultative workshops with GI-TOC experts, as well as the GI-TOC's own research. Furthermore, a Technical Reference Group, comprising experts on criminality, conflict, instability and quantitative metrics and composite indicators, was convened to provide expert advice on the structure and methodology of the IEIM. Feedback from the Technical Reference Group was incorporated into the design and presentation of the IEIM.

An IEIM score for each illicit hub is calculated as a score out of 30, where the higher the score, the greater the nexus between the illicit economies in the illicit hub and instability. The IEIM scores are subsequently used to categorize illicit hubs into one of four different score bands:

- Low (scores below 10)
- Medium (scores between 10 and 15)
- High (scores between 15 and 20)
- Very high (scores above 20)

The IEIM comprises three components: violence and instability; crime–conflict links; and accelerators (which, in turn, is composed of two subcomponents: infrastructure and stress factors).

The first component of the IEIM, **violence and instability,** assesses the degree to which underlying conditions identified through the literature and GI-TOC research to be drivers of instability, and factors enabling the emergence of illicit hubs, are present in each hub. This includes assessments of governance capabilities, such as the presence of contested sovereignty[13] and any recent history of political coups.[14] Conflict fatalities – as defined in the Armed Conflict Location and Event Data Project (ACLED) database[15] – are also assessed in this component as a metric of conflict and violence, as is the threat posed by armed and/or jihadist groups, which are known to fuel illicit arms trafficking and threaten security across the region.[16]

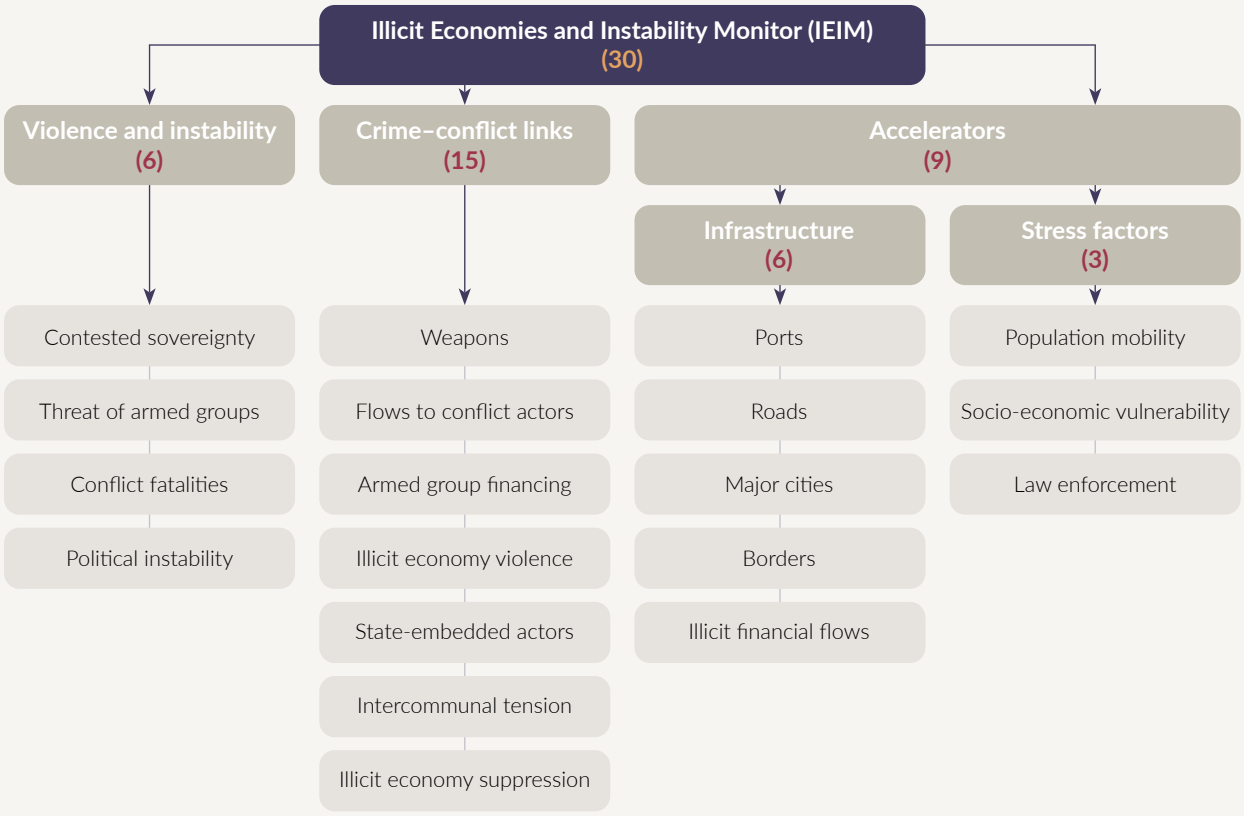


FIGURE 3 Structure of the Illicit Economies and Instability Monitor.

The second component, **crime–conflict links**, captures the relationship between illicit economies and conflict and instability. Assessed under this component are the levels of violence featuring in illicit markets in the location identified;[17] whether illicit markets are supplying conflict actors in the subregion;[18] and the degree to which armed actors are earning revenue from the illicit economies present in the hub.[19] The illicit flow of weapons epitomizes the link between illicit economies and conflict, with the proliferation of weapons a major factor in the escalation of conflict in West Africa and the Sahel region in recent years.[20] Because of this, three indicators pertaining to weapons are included under this component. The influence of state-embedded actors – often the primary vectors of organized crime, with significant ramifications for a society's resilience to criminality[21] – is also assessed. Also related to the actions of state authorities is the degree to which illicit economy suppression measures can push the activity into another area, destabilizing wider regions in the process. Counternarcotics policies, for example, are widely recognized as generating such spillover effects, also known as the 'balloon effect'.[22]

Finally, certain illicit economies – such as cattle rustling, for example – are deeply intertwined with, and can exacerbate, community tensions.[23] Community tensions can not only escalate into full blown conflicts and lead to the establishment of self-defence and other forms of vigilante groups, but they can be exploited by jihadists to gain community legitimacy.[24] As such, the degree to which the illicit economies operating across ethnic lines feed into community tensions is also a measure under the crime–conflict links component of the IEIM. Crime–conflict links are at the centre of the characteristics the IEIM seeks to assess, and as a result, this component has the highest weighting of the three IEIM components.

The third component, **accelerators,** captures the various structural factors and socio-economic dynamics that may act as an accelerator of the degree to which illicit hubs drive instability. This component comprises two subcomponents: ***infrastructure*** and ***stress factors.***

The first subcomponent, *infrastructure*, encapsulates a location's propensity to play a significant role in transnational flows – both licit and illicit – as a function of their geography and trade infrastructure. Major nodes of global trade – for example, ports and airports – are vulnerable to becoming hubs of the illicit economy and can operate as conduits for flows, with destabilizing effects on the wider subregion.[25] Without transport infrastructure, the destabilizing impacts of a particular illicit market in a specific location are less likely to spread to neighbouring areas. As such, this subcomponent assesses, among other things, proximity to (or status as) seaports and airports. Access to transportation is also critically important, and roads play a crucial role in a location's ability to operate as a hub for criminality.[26]

Also included in the *infrastructure* subcomponent are assessments of an illicit hub's proximity to both major consumption markets and coordination hubs (in the shape of cities),[27] as well as country borders.[28] Access to formal financial institutions is crucial for the laundering of illicit proceeds and terrorist financing, so the prevalence of such institutions is also assessed.[29] Finally, given the increased risk of money laundering within free trade zones (FTZs), whether a location is an FTZ (also known as foreign-trade zones, freeports or special economic zones) is captured in the *infrastructure* subcomponent.[30]

Stress factors are those conditions that may exacerbate tension within communities, potentially driving instability in the context of illicit hubs. Demographic factors, such as levels of mobility (both forced and voluntary), are captured in this subcomponent.[31] Socio-economic vulnerabilities are often capitalized on by armed and extremist groups to facilitate recruitment and strengthen their hold on communities,[32] hence the inclusion of measures of human development, poverty and the gender inequality of development in the *stress factors* subcomponent. Finally, the reach of law enforcement (or lack thereof due to resource scarcity among other factors) in certain parts of a country can also make such areas highly susceptible to penetration by the drugs trade and other dangerous criminal flows from unstable areas.[33] Therefore, law enforcement reach is the final indicator of the IEIM.

Methodology

The IEIM is calculated as the sum of the three components – **violence and instability**, **crime–conflict links and accelerators** – which are in turn calculated as the sum of the underlying indicators (see below):

- **Violence and instability**: 6 points (4 indicators)
- **Crime–conflict links**: 15 points (7 indicators)
- **Accelerators**: 9 points (8 indicators) → ***infrastructure:*** 6 points (5 indicators) and ***stress factors***: 3 points (3 indicators)

The score range for each variable is based on its relative importance as a contributing factor to the spillover of instability. While the vast majority of variables are scored between 0 and 1, certain variables are scored on a range of 0 to up to 3 (for example, 'flows to conflict actors' and 'armed group financing'). Furthermore, a number of indicators are clustered, meaning that they are composed of several underlying variables. For example, the 'weapons' indicator is made up of three variables: 'gun manufacturing', 'gun smuggling' and 'civilian firearms'. Of the five clustered indicators, three are

calculated as the simple average of the underlying variables (which, as a result, have a lower implicit weighting), while two are calculated as the *sum* of the underlying variables. In total, there are 26 variables that together make up the IEIM.

Scores for just over half of the 26 variables (14) are value judgements determined by experts based on their expertise, existing literature and fieldwork – that is, **expert assessment**. The scores for those variables (of which there are six) pertaining to simple facts (for example, whether the illicit hub is an FTZ) or based on simple calculations (for example, distance to a seaport or airport) are also input by the experts – in other words, **expert input**. Finally, six variables making up the IEIM are based on **existing quantitative data**. Where possible, sub-national data is used. Of the six quantitative indicators, four are available at the sub-national level. See Appendix 2 for the full indicator table, which provides information for each variable on the underlying question posed to researchers, the measurement scale, the justification for inclusion in the IEIM, the type of indicator and the source of the data.

The application of the IEIM methodology is a multi-step process. The GI-TOC team generated a template for the IEIM scores for the illicit hubs in each country, which was provided to country researchers pre-filled with the data for the relevant variables based on quantitative data. Each country researcher (or country researchers, in instances in which more than one researcher worked on the same country) provided expert assessments and data input for each of the remaining variables making up the IEIM. Once IEIM scores had been calculated for all 280 illicit hubs, the hubs scoring equal to or greater than 15 (described as a 'high' or 'very high' IEIM hubs) underwent a round of verification by a second expert. Any changes to the underlying scores were required to be justified by the experts carrying out the verification. A final round of verification was carried out by the GI-TOC team, after which the IEIM scores of all 280 illicit hubs were finalized.

CHALLENGES AND LIMITATIONS

A great deal of research, expertise and methodological rigour has gone into the development of the illicit hub mapping tool and the IEIM, resulting in an extremely rich database of almost 300 illicit hubs across West Africa. Moreover, the IEIM is an innovative metric that fills a major gap in the literature, assessing the links between crime and conflict within a single framework. Nevertheless, there are challenges involved in an endeavour of such scope and scale, and certain limitations of the research are worth outlining, both with regards to the illicit hub mapping – the first phase of the research – and the development of the IEIM.

Mapping illicit hubs

Turning first to the illicit hub mapping phase, notwithstanding the extensive data-collection phase and rigorous verification process in place (as evidenced by the upwards of 650 individuals involved in the research) to ensure as comprehensive a database as possible, the 280 illicit hubs identified in the inaugural mapping exercise are by no means exhaustive. While all efforts have been undertaken to ensure that the key illicit hubs in each country have been identified, a number of locations that arguably merit inclusion will inevitably have been overlooked. In part, this is also due to the fact that the identification of an illicit hub is somewhat subjective, and the merits of its inclusion or exclusion may vary depending on the lens through which its role is viewed, whether that be local, national, regional or continental. Nevertheless, the GI-TOC is confident that the overwhelming majority of the most important illicit hubs in each country have been identified.

Furthermore, one of the key challenges for researchers was identifying which type of illicit hub a particular location is, given that many hubs of illicit activity share several characteristics of both hotspots and transit points, for example. Determining whether a location is best categorized as a hotspot or a broader crime zone is similarly challenging. This challenge is further compounded by the inevitable differences in approach taken towards different countries, given the multitude of researchers carrying out the research at the same time. In the Sahel, for example, huge swathes of territory are

subsumed under vast crime zones, which is, in part, a function of the region's interconnected nature. This means that a direct comparison of hub classifications between different countries, in different parts of the region and with very different criminality dynamics, is often of limited value and may in fact prove misleading.

On the issue of illicit hub identification, more broadly, while the objective of the illicit hub mapping is to identify hubs for illicit activity, and subsequently analyze the links to violence and instability, researchers sometime first identified hotspots of violence, but subsequently struggled to identify illicit economies present. These areas were excluded from the final selection.

The idea of mapping illicit hubs presents other types of challenges, not least those pertaining to communicating the findings of the research in a nuanced manner. The topic of organized crime is undoubtedly a sensitive one and while villages, towns, cities, regions and trade and transport hubs across West Africa are identified as 'illicit hubs', the objective of the mapping is not to label these locations as inherently 'criminal'. Instead, the locations identified in the report and the online tool are simply places in which illicit economies have, to varying degrees, taken hold. Furthermore, while this research project focused on West Africa, the Sahel, Cameroon and the Central African Republic, it is clear that similar exercises in other regions would also identify a high number of illicit hubs.

The issue of labelling a place as an illicit hub is also related in part to the final limitation of the illicit hub mapping, which is the issue of the time sensitivity of the research. The data-collection phase of the research took place between July 2021 and December 2021, and while events and evidence from previous years have been cited throughout the research, the selection of the illicit hubs, as well as their individual narratives, reflect the organized criminal landscape as of December 2021. Nevertheless, illicit economies and their interaction with conflict and instability are not static, and the changing nature of the dynamics studied in the context of this research are such that elements of the mapped data may become inaccurate with time. Although there will be a second phase to the hotspot mapping initiative, resource limitations mean that it may not be possible to keep the data across the hotspots accurate over time.

Illicit Economies and Instability Monitor

Several challenges also surround the development of the IEIM. First, data on many of the key themes pertaining to illicit economies, conflict, violence and instability is extremely scarce, not just in West Africa but globally. The consequent reliance on expert assessment, rather than quantitative data, introduces a degree of subjectivity into the methodology. The GI-TOC does, however, have considerable experience in designing metrics based on expert-led assessments, not least the Organized Crime Index.[34]

The issue of subjectivity notwithstanding, the involvement of experts provides an invaluable benefit to the research process, as it not only allows for the ability to gather evidence on indicators that are not otherwise easily measurable, but it also enables the interpretation of existing data.

A key challenge to the design of the IEIM from the outset was ensuring that certain hypothesized conclusions were not baked into the methodology, for example, by including indicators pertaining to specific illicit economies as a measure of an illicit hub's propensity to act as a vector of instability.

Complicated chains of causality

One key challenge pertinent to the development of the IEIM is accurately analyzing the complex issue of causality with regards to illicit economies and instability. In other words, is criminality attracted to areas of instability or does criminality generate instability? Although illicit economies do not, by nature, lead to armed conflict, there is usually geographical overlap in areas where traffickers and criminal groups operate for a long period and where instability and conflict occur. On the other hand, unstable and conflict areas often have a range of characteristics that permit illicit economies to thrive. Low levels of state control can enable illicit actors to operate with impunity, while conflicts often swell demand for a range of illicit commodities, including weapons and illicit drugs.

The IEIM has been designed to provide insights into the extent to which the illicit economies in the relevant hub contribute to instability and conflict in the region. However, the IEIM does not provide insights into whether illicit economies or instability in a given hub developed first, and consequently does not provide a definitive conclusion to the question of whether crime attracted conflict or conflict attracted crime in a given location. Neither does the IEIM seek to analyze all the potential roots of the conflict in any given location. Instead, the IEIM is squarely focused on the role of illicit economies in contributing to instability in the region.

The IEIM identifies spaces where illicit economies and instability overlap, by applying component one (violence and instability) to hubs of illicit economies identified through the first stage of the hotspot mapping. The identification of key illicit hubs across West Africa, and an analysis of where these hubs overlay spatially with conflict, provides considerable opportunities for future research examining the development over time of conflict and instability and illicit economies.

However, the IEIM also specifically considers the role that illicit economies play in fuelling conflict and instability through several indicators in component two: crime–conflict links. These indicators include whether illicit economies present in the illicit hub finance armed groups, and whether illicit commodities flowing through the hub supply conflict actors (see Appendix 2 for a full list of IEIM indicators). These indicators lie at the heart of the causality analysis.

A simple correlation analysis was conducted in order to assess the relationship between the overall IEIM score and its underlying components and sub-components. All three components (violence and instability, crime–conflict links and accelerators) were positively correlated to the overall IEIM score (see Figure 4). However, the crime–conflict component, the component comprising the indicators aimed at evaluating the direct impact of illicit economies on conflict and instability, has the strongest correlation with the IEIM (0.96). Furthermore, a simple linear regression shows that the crime–conflict links component accounts for around 90% of the variation in the overall IEIM score.

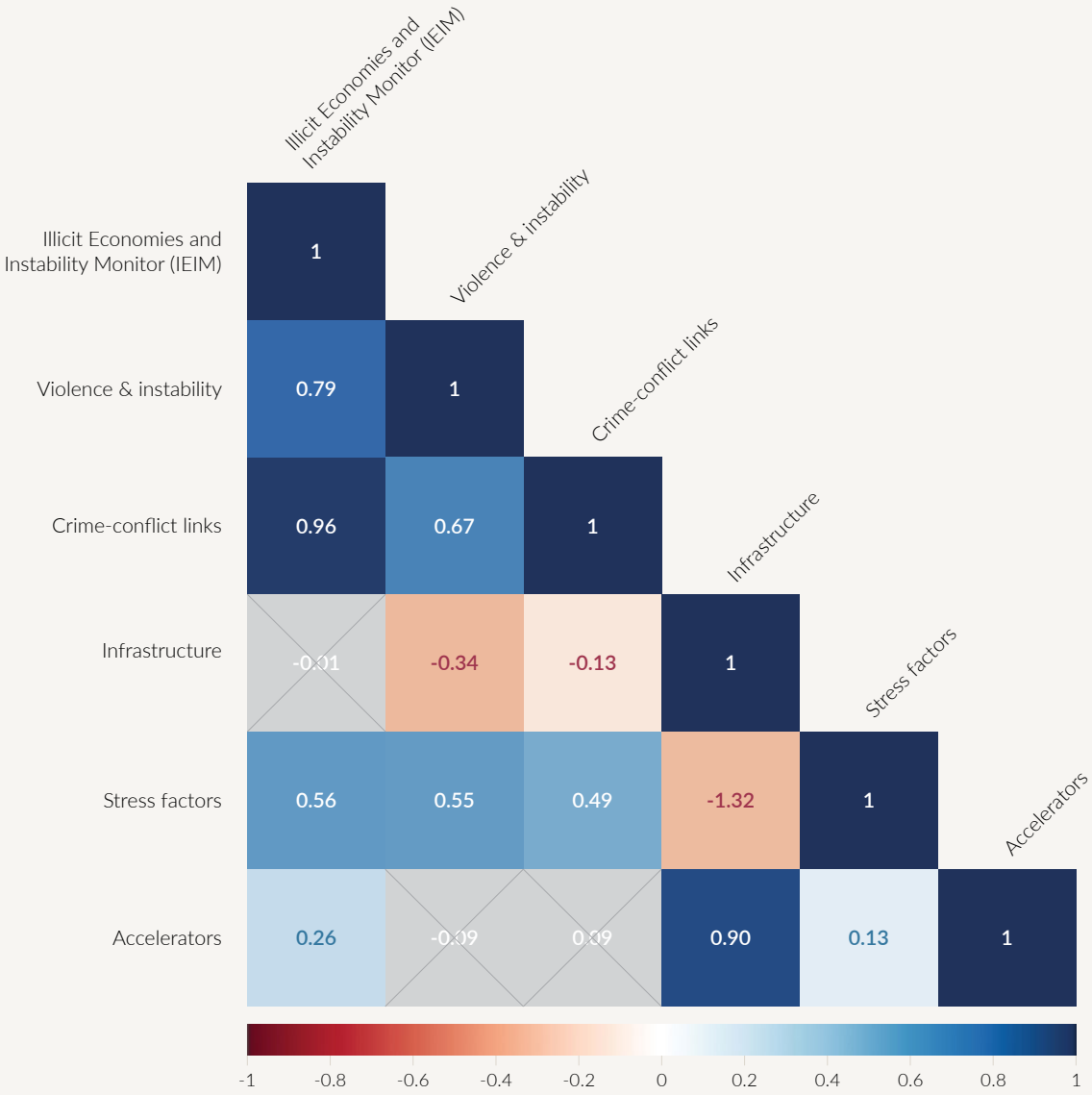


FIGURE 4 IEIM components correlation matrix.

In order to ensure the finding – that the overall IEIM is a reliable assessment of the causal relationship between illicit economies and instability – is even more robust, analysis was carried out on just those underlying indicators explicitly evaluating the causality under examination. An additional variable, called 'causal indicators' for simplicity, was created by adding the scores for the following variables: weapons, flows to conflict actors, armed group financing, illicit economy violence and intercommunal tension. The correlation between 'causal indicators' and the overall IEIM was extremely strong (0.92), as can be seen in Figure 5.[35] This finding means that illicit hubs with high scores on the 'causal indicators' are extremely likely to also have high IEIM scores overall. Looking at it from the opposite perspective, if an illicit hub scores high on the IEIM, in the near totality of cases, they will also score high on the causal indicators.

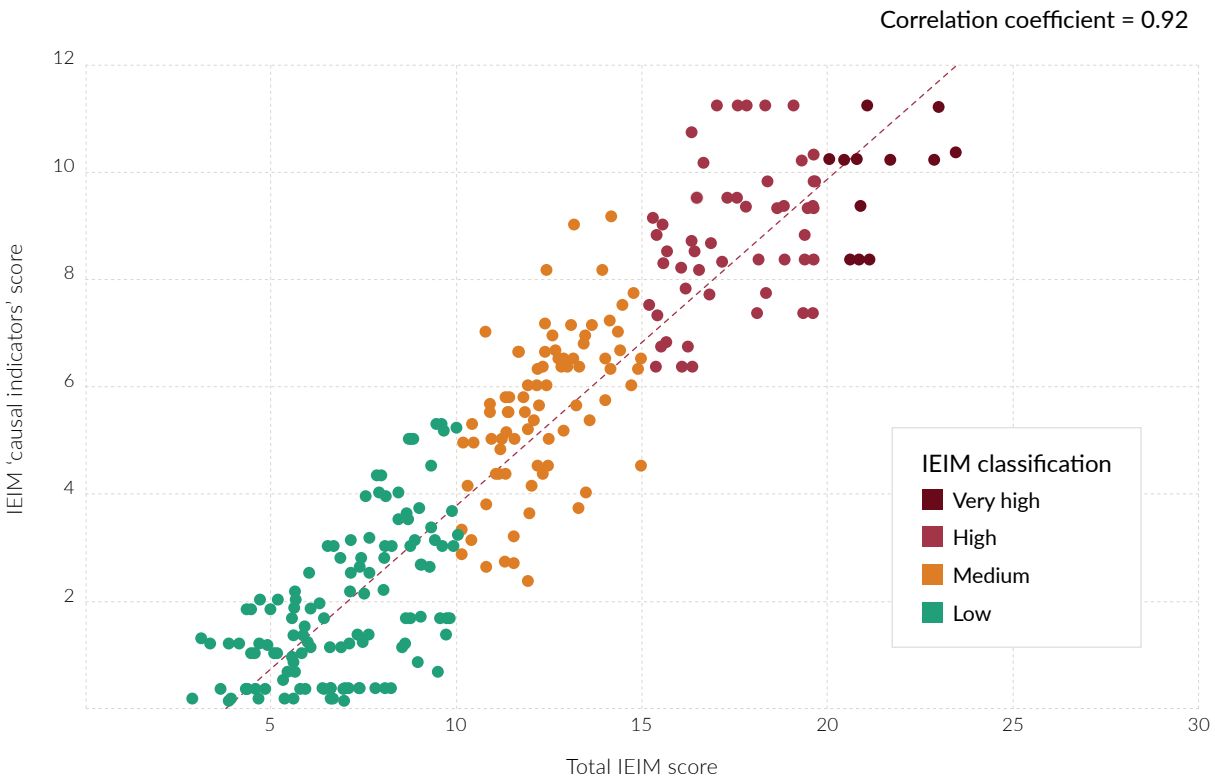


FIGURE 5 Impact of illicit economies on conflict and instability.

Other challenges

One issue that was raised by experts during the consultation phase is the omission of indicators that capture an illicit hub's resilience to acting as a driver of conflict and instability. In other words, mitigation factors are not considered in the IEIM. A potential issue of circularity and overlap between the two phases of the research – the illicit hub mapping phase and the development of the IEIM – has also been raised, insofar as some of the indicators included in the IEIM are actually better characterized as indicators of the first phase. For example, proximity to national borders is not just a reason why a hub may be a vector of conflict and instability, it is also likely to be a reason why it is an illicit hub in the first place.[36] However, the fact that a characteristic or dynamic is a factor in the emergence of illicit economies does not preclude it from also being a factor exacerbating conflict and instability.

Finally, as with all composite indicators, determining the weighting of the components, subcomponents and underlying indicators is not straightforward, nor is there only one correct approach. The weighting approach taken in the development of the IEIM is based on the conceptual importance of the various dimensions that make up the monitor, as identified through a thorough review of relevant literature, as well as through fieldwork and interviews with practitioners, law enforcement officials, members of civil society and other experts, consultative workshops with GI-TOC experts, and the GI-TOC's own research.

This section has outlined the challenges and limitations that have presented themselves throughout the illicit hub mapping research and in the development of the IEIM. The GI-TOC has endeavoured to address as many of the issues as possible and minimize methodological weaknesses to the greatest extent possible. While the research inevitably maintains some imperfections, these are outweighed by the value added to our existing understanding of the illicit economies across West Africa and their relationship to conflict and instability. Feedback and critique on the methodology and results are welcomed, and shall be considered as part of ongoing work to deepen the current evidence base on illicit economies and instability in West and Central Africa.

See Appendices for the full list of illicit economies and criminal-actor types included in the analysis, as well as the full IEIM indicator table.

BUILDING THE ONLINE ILLICIT HUB MAPPING TOOL

The research presented in the report 'Organized crime and instability dynamics: Mapping illicit hubs in West Africa'[37] is also visualized using an online mapping tool, which can be accessed at wea.globalinitiative.net/illicit-hub-mapping.

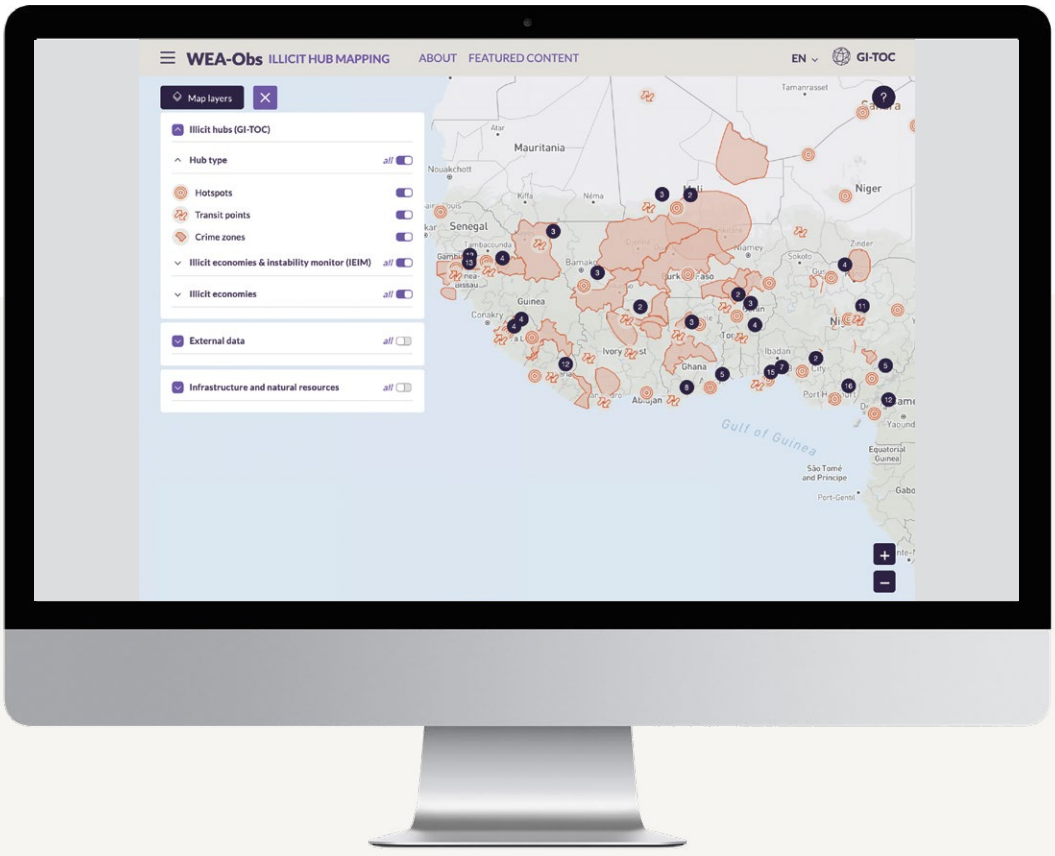


FIGURE 6 Screenshot of illicit hub mapping online tool.
SOURCE: wea.globalinitiative.net/illicit-hub-mapping

The primary objective of the online tool is to visually represent the 280 illicit hubs identified on a map of West Africa. In addition to the illicit hub classification, the interactive nature of the tool allows users to hover over any illicit hub to see which illicit economies feature, as well as the hub's IEIM classification. There is also a narrative for each illicit hub, which outlines the key illicit economy dynamics and their relationship to conflict and instability.

However, as has been emphasized in the main report, illicit economies should not be assessed in isolation, and understanding the relationship between illicit hubs and wider issues of conflict and instability is crucial to stabilization efforts. As such, several external datasets are also included in the online tool. For example, data on armed violence, and protests and riots is included, given the strong links between illicit economies and conflict and instability.[38] This data is sourced from the ACLED database, which provides geo-located data on political violence and politically motivated (non)violent events. This data on armed violence and protest/riot activity can be used to map the intensity and spatial nature of political instability over time.

Certain illicit economies are particularly dangerous from a human security perspective – in particular, those exploited by traffickers or those requiring the services of smugglers or migration facilitators.[39] Also included on the map, therefore, is data on migrant deaths. The geo-located data on incidents relating to deaths or disappearance of migrants transiting from a country of origin to country of destination, sourced from the Missing Migrants Project, allows users to explore the intersection between migrant deaths and areas where crime syndicates (particularly human trafficking and smuggling networks) operate, notably along coastal West Africa and migration routes through the Sahel towards North Africa.

Given the close relationship between natural resources, criminal actors and illicit flows, mineral deposits (as well as oil fields) are shown on the map. Finally, key road infrastructure, airports and seaports are also included in the virtual mapping tool, highlighting the importance of trade infrastructure as key nodes in regional and global illicit economies, and enabling further analysis of the relationship between transport infrastructure and illicit economies.

Overall, the reason behind the inclusion of supplementary datasets in addition to the original GI-TOC research on illicit hubs is to enable further research exploring the intersection between illicit economies and other related phenomena, including conflict and instability.

In conclusion, as outlined in this methodology paper, this research was designed with two distinct phases. The first maps illicit hubs across the region, identifying key hotspots of illicit economies, transit points and crime zones. The second introduces the innovative metric, the Illicit Economies and Instability Monitor, a tool that assesses the degree to which specific hubs of illicit economies drive instability in the region, analyzing illicit economies as vectors of instability.

The online tool together with the main report of this study, Organized crime and instability dynamics: Mapping illicit hubs in West Africa, are the culmination of over a year's work researching, designing and implementing the project. The illicit hub mapping initiative, in particular the IEIM, have been carefully designed to ensure methodological rigour. There have been several challenges and obstacles, and the GI-TOC recognizes some of the limitations of the research. However, this project makes a crucial contribution to the evidence base surrounding the relationship between illicit economies and instability in West Africa, one that it is hoped will only continue to grow in value.

APPENDIX 1:

ILLICIT ECONOMIES AND CRIMINAL-ACTOR TYPES

	Illicit economies	Criminal-actor type
1	Human trafficking	Mafia-style group (criminal)
2	Human smuggling	Mafia-style group (insurgent)
3	Arms trafficking	Mafia-style group (terrorist)
4	Flora crimes	Criminal networks
5	Cattle rustling	State-embedded actors
6	Fauna crimes (other)	Foreign actors
7	Illicit gold trade	
8	Illicit oil trade	
9	Illicit gemstone trade	
10	Heroin trade	
11	Cocaine trade	
12	Cannabis trade	
13	Synthetic drug trade	
14	Counterfeit medicines	
15	Money laundering	
16	Kidnap for ransom	
17	Illicit trade and counterfeit goods	

APPENDIX 2:

ILLICIT ECONOMIES AND INSTABILITY MONITOR (IEIM) INDICATOR TABLE

IILLICIT ECONOMIES AND INSTABILITY MONITOR (30 points)					
Indicator	**Variable**	**Measurement**	**Maximum score**	**Justification**	**Source**
VIOLENCE AND INSTABILITY (6 points)					
Contested sovereignty	Is the sovereignty of the relevant area contested? (For example, do rebel secessionist groups operate in the area? Are there areas where law enforcement or other security forces cannot enter/govern?)	0 = no 1 = yes	1	In addition to exploiting the tensions between sovereignty and globalization by setting up operations in borderlands, those engaged in transnational criminal activities also appear to select safe havens within states with weak institutions, those that have difficulty providing goods and services as well as policing and protection to citizens in all parts of their 'sovereign territory'.[40] One of the key necessities of organized crime, particularly the drugs trade, is the need for protection from law enforcement authorities, which often means exerting control over territory. This control of territory is an inherently political act and one that degrades the power of the state. Indeed, the loss of control over pieces of territory is one of the hallmarks of state failure.[41]	Expert assessment
Threat of armed groups	To what degree do jihadist and/or armed groups pose a threat?	0 = no 0.5 = limited 1 = limited but growing 1.5 = moderate 2 = high	2	Terrorist and armed groups, fuel illicit arms trafficking and threaten security across the region.[42]	Expert assessment
Conflict fatalities	Conflict fatalities per 100 000 (since 2020)* *Includes any fatalities arising from battles, explosions/remote violence, protests, riots, and violence against civilians	0 = 0 0.5 = <2 1 = 2-10 1.5 = 10-50 2 = >50	2	Some 86% of illicit hubs identified by recent research are located near where there has been a recent conflict, be it a war, civil war, or violence between opposition groups.[43] Conflict fatalities can give an indication of the severity of conflict in an area.	ACLED
Political instability	Has there been a recent (successful) coup?[44]	0 = more than 5 years ago 0.5 = 1–5 years ago 1 = within last 12 months	1	Coups often generate conditions that make legitimate business nearly impossible, such as economic collapse, deteriorating rule of law and spreading chaos, which creates fertile ground for organized criminals.[45]	Powell & Thyne (2011)[46]

Indicator	Variable	Measurement	Maximum score	Justification	Source
CRIME–CONFLICT LINKS (15 points)					
Weapons	Does gun manufacturing take place?	0 = no 1 = yes	1	Indigenous craft production is an important source of illicit weapons in a number of countries in West Africa, with armed actors of diverse backgrounds using locally made weapons in armed conflicts across a number of the region's conflicts, including in Nigeria.[47]	Expert assessment
	Does gun smuggling take place?	0 = no 0.5 = limited 1 = significant	1	Conflict in West Africa and the Sahel region has escalated in recent years, due to an alarming rise of violent extremist organizations and the proliferation of weapons – some having been pilfered from the Libyan conflict in 2011. In this current conflict zone, legal sales and illegal trafficking of small arms and light weapons become jumbled together in black and gray markets where violent actors are poised to take advantage.[48]	Expert assessment
	Estimate of civilian firearms per 100 population	Normalized on a scale of 0-1	1	The concentration of most of Africa's estimated 100 million uncontrolled small arms and light weapons in crisis zones and other security-challenged environments often exacerbates and elongates conflicts.[49]	Small Arms Survey[50]
Flows to conflict actors	Are commodities, other than guns, moving through the area known to be trafficked or smuggled to conflict actors in the subregion, or to illicit markets that finance conflict actors?	0 = no 1 = limited 2 = moderate 3 = significant	3	Illicit hubs may play an indirect role in fuelling conflict and instability by supplying various materials and products, such as fertiliser or electrical cords using in the production of explosives, to conflict actors in the region.[51] Another common example is the trafficking of mercury and cyanide to artisanal and small-scale gold-mining sites controlled by conflict actors in the Sahel.[52]	Expert assessment
Armed group financing	Are armed groups earning revenue from illicit activities present, or flowing through the area?	0 = no 1 = limited 2 = moderate 3 = significant	3	In Mali, Burkina Faso and Niger, a gold boom is attracting the attention of diverse armed groups. Artisanal gold mining provides armed groups, including jihadists in some cases, with a new source of funding and potentially even recruits. If left unregulated, it risks fuelling violence in the region.[53]	Expert assessment
Illicit economy violence	Is violence associated with the illicit economies present?	0 = no 1 = limited 2 = significant	2	Where violence is a common feature of an illicit economy, this can act as catalyst in the establishment of militias and other forms of self-protection groups.[54]	Expert assessment
State-embedded actors	Are state-embedded actors involved in the illicit economy?	0 = no 1 = limited 2 = significant	2	State-embedded actors are often the primary vectors of organized crime domestically, which has implications for countries' resilience to illicit economies.[55] When corruption becomes entrenched, it undermines the development of state authority and its institutions, leaving a weak state with potentially more space for insurgents to operate.[56] Corruption can also be a key grievance fuelling conflict, for example, ethnic war.[57]	Expert assessment

Indicator	Variable	Measurement	Maximum score	Justification	Source
Intercommunal tensions	Do illicit markets operate across ethnic lines, and do they feed into inter-community tensions?	0 = no 0.5 = somewhat 1 = yes	1	Cattle rustling, for example, is deeply intertwined with, and exacerbates, community tensions in Nigeria[58] and Mali.[59] Community tensions can escalate into full blown conflicts, spawn the creation of self-defence groups, and create tensions which jihadists are able to exploit to gain community legitimacy.[60]	Expert assessment
Illicit economy suppression measures	Are illicit economy suppression measures in place that have precipitated a displacement effect, or a surge in violence?	0 = no 0.5 = somewhat 1 = yes	1	All too often, suppressing illicit economies or the crime-conflict nexus in one area merely pushes it into another, destabilizing wider regions in the process. Counternarcotics policies are notorious for generating such spillover effects, referred to in the drug field as "balloon effects."[61]	Expert assessment
ACCELERATORS (9 points)					
INFRASTRUCTURE (6 points)					
Port infrastructure	Is the location nearby an international airport or seaport, either in the country or in neighbouring countries?	0 = > 200 kilometres 0.25 = 100–199 kilometres 0.5 = 50–99 kilometres 0.75 = 0–49 kilometres 1 = 0 kilometres	1	Access to transportation is also critically important in determining illicit hubs, given the need for multiple ways to exit the space and redundancies so that there is no dependence on only one way of ensuring commodities get to market. Access to rivers, airports and sea ports are key factors.[62] Ports and airports across Africa continue to be targeted by organized crime groups to traffic illicit goods.[63]	Expert input
	Magnitude of container port traffic (nearest seaport)?[64] OR Total number of passengers per year (nearest international airport)	0 = < 0.25 million TEUs 0.25 = 0.25–0.5 million TEUs 0.5 = 0.5–1 million TEUs 0.75 = > 1 million TEUs 1 = > 1 million TEUs and plays a role in transhipment overland to neighbouring states OR 0 = < 1 million 0.5 = 1–5 million 1 = > 5 million	1	Major nodes of global trade – for example, ports or airports – are vulnerable to becoming hubs of the illicit economy. In turn, investments in improving Africa's trade infrastructure could increase the continent's risk of falling prey to organized crime in the absence of proper oversight and control mechanisms.[65] Across Africa, air transport has played a role in allowing for illicit arms flows and highly prized natural resources to be transported in and out of conflict zones.[66] While almost all coastal countries in West Africa border at least one landlocked country, not all coastal states play an important role in supplying goods – both licit and illicit – to neighbouring landlocked countries in the hinterland.[67]	UN Conference on Trade and Development (UNCTAD) / open source (expert input)
Road infrastructure	Is the location situated on/near an operational major road?	0 = no 0.5 = secondary roads 1 = primary roads	1	Access to transportation is also critically important in the selection of a place. There need to be multiple ways to exit the space and redundancies so that there is no dependence on only one way of ensuring commodities get to market. Roads, almost regardless of condition, are important – 95% of the black spots under study are linked to the outside world by roads.[68]	Expert assessment

Indicator	Variable	Measurement	Maximum score	Justification	Source
Proximity to major cities	Is the location close to a large city?[69]	0 = > 200 kilometres 0.5 = 50–199 kilometres 1 = 0–49 kilometres	1	Cities, thanks to their larger populations, provide bigger consumer markets for illicit economies, as well as more opportunities for extortion and vote-selling, for example. Furthermore, other characteristics often associated with major urban agglomerations, such as greater connectivity and more developed banking services, can also facilitate illicit activity.[70] Finally, rapid urbanization can result in a situation in which the state is unable to provide adequate protection and social services. This, in turn, can create a power vacuum that is seized by those profiting from illegal economies.[71]	Expert calculation based on World Population Review data[72]
Proximity to national borders	Is the location in close proximity to a national land border?	0 = > 200 kilometres 0.25 = 150–199 kilometres 0.5 = 100–149 kilometres 0.75 = 50–99 kilometres 1 = 0–49 kilometres	1	In situations in which a conflict has broken out, border zones have frequently been overtaken by flows of refugees, arms, and other contraband. Cross-border attacks have occurred as militants have attempted to use the territory of a neighbouring state as a source of food and supplies or to recruit or kidnap potential fighters and workers.[73] Organizations engaged in transnational criminal activities exploit this increased porousness of borders by locating places where they can easily move back and forth between states and link with others involved in similar enterprises. Having places along borders provides such organizations with a certain degree of invisibility, as they fit in with all the other movement occurring around them.[74] Most violence occurs near borders and tends to decrease over distance from borders. This aligns with our expectation that borderlands in the region are typically less politically controlled spaces and that armed groups have fewer impediments to movement or other activities within them.[75]	Expert calculation
Illicit financial flows	Are there formal financial institutions used to launder illicit proceeds?[76]	0 = no 0.5 = somewhat 1 = yes	0.5	Financial services institutions such as banks, non-banking financing companies, insurers, and capital market firms are generally the most favoured channels through which illicit money is laundered across the globe.[77] In addition to the drugs trade and arms trafficking, among others, the extraction of funds from money laundering on the part of terrorist groups is commonplace.[78]	Expert assessment
	Is the location (situated in) a free trade zone?	0 = no 1 = yes	0.5	Many characteristics of a free trade zone (FTZ), such as exemptions from duty and taxes; simplified administrative procedures; and the duty-free importation of raw materials, machinery, parts and equipment, in addition to boosting economic opportunity, can result in a reduction in finance and trade controls and enforcement, creating opportunities for money laundering and the financing of terrorism. Because the same characteristics that make FTZs attractive to legitimate business also attract abuse by illicit actors, FTZs are a concern that the Financial Action Task Force (FATF) should address.[79]	Expert input

Indicator	Variable	Measurement	Maximum score	Justification	Source
STRESS FACTORS (3 points)					
Population mobility	Have local populations been forcibly displaced people in the last 12 months?	0 = no 0.5 = minor 1 = yes	0.5	A second significant factor that contributes to conflict spillover is the exodus of civilians from a country in turmoil. Such movements directly and detrimentally affect the receiving nation. Refugee encampments can be detrimental economically to first-destination nation states. Not only do these types of population movements cause neighbouring states to divert resources away from state capacity building and core infrastructure planning, but opposition forces may find solace within such encampments that also serve as fertile recruiting grounds for insurgencies and for establishing a viable weapons supply route.[80]	Expert assessment
	Are there high levels of mobility into, through or out of the location?	0 = no 0.5 = minor 1 = yes	0.5	Nomadic groups, for example, have experience in trans-Saharan trade with a range of goods dating back to pre-colonial times. Therefore, they are very familiar with the terrain and know the practical requirements and pitfalls of trade, both licit and illicit. Given their economic hardships, due to repeated droughts and economic marginalization, many of them feel that they have no other choice than to look for new sources of income.[81]	Expert assessment
Socio-economic vulnerability	Is the location characterized by low levels of development?	Normalized (and inverted) on a scale of 0-1	0.33	Jihadists are strategic in their approach of exploiting societal and structural vulnerabilities that occur in the periphery, particularly when the social contract between the national government and the civilian population is weakest. Jihadists capitalize on poverty and unemployment, the absence of basic services, and local populations' perception of social and political marginalization. They fill the void with minimal but tangible services, thus building 'quasi-governance' to replace the state.[82]	Human Development Index (HDI)[83]
	Is the location characterized by high levels of poverty?	Normalized on a scale of 0-1	0.33	Jihadists are strategic in their approach of exploiting societal and structural vulnerabilities that occur in the periphery, particularly when the social contract between the national government and the civilian population is weakest. Jihadists capitalize on poverty and unemployment, the absence of basic services, and local populations' perception of social and political marginalization. They fill the void with minimal but tangible services, thus building 'quasi-governance' to replace the state.[84]	Global Multi-dimensional Poverty Index (MPI)[85]
	Is the location characterized by high levels of gender inequality?	0 = <2.5 % 0.25 = 2.5 – 5% 0.5 = 5 – 7.5% 0.75 = 7.5 – 10% 1 = > 10%	0.33	Jihadists are strategic in their approach of exploiting societal and structural vulnerabilities that occur in the periphery, particularly when the social contract between the national government and the civilian population is weakest. Jihadists capitalize on poverty and unemployment, the absence of basic services, and local populations' perception of social and political marginalization. They fill the void with minimal but tangible services, thus building 'quasi-governance' to replace the state.[86]	Gender Development Index (GDI)[87]

Indicator	Variable	Measurement	Maximum score	Justification	Source
Law enforcement presence	Is the location considered to be one with limited law enforcement reach?	0 = no 0.5 = somewhat 1 = yes	1	In West Africa, fear of internal coups led political leaders to systematically allow their militaries and law enforcement to deteriorate, which left 'political systems and "rule-of-law" arrangements highly susceptible to penetration by the drug trade and other dangerous criminal flows from unstable areas.'[88] Conversely, 'in the United States, Western Europe, and East Asia, law enforcement retains a far greater deterrence capacity toward criminal groups'.[89]	Expert assessment

NOTES

1 These categories draw on the literature of illicit geography, including Michael Miklaucic and Jacqueline Brewer (eds), *Convergence: Illicit Networks and National Security in the Age of Globalization*, Washington, DC: National Defense University Press, 2013; and Stuart S. Brown and Margaret G. Hermann, *Transnational Crime and Black Spots: Rethinking Sovereignty and the Global Economy*, London: Palgrave Macmillan, 2020.

2 Cities built along trading corridors, and which constitute the centres of global finance and trade, often offer these first two characteristics.

3 In Brown and Hermann's mapping of global illicit hubs, 80% of those identified lie within borderlands. See Stuart S. Brown and Margaret G. Hermann, *Transnational Crime and Black Spots: Rethinking Sovereignty and the Global Economy*. London: Palgrave Macmillan, 2020.

4 While a hub is situated on land, the liminal space of border areas also applies to sea borders. The boundaries of a country's territorial waters are often poorly mapped out, and international waters usually offer safe havens from interdiction in part due to the dizzying complexity of jurisdiction. Ian Urbina, *The Outlaw Ocean: Crime and Survival in the Last Untamed Frontier*. Random House, 2019.

5 Border areas also favourable for smuggling economies that take advantage of taxation differences and other cross-border differences.

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