METHODOLOGY
CUSTOMARY CHARACTERS IN UNCUSTOMARY CIRCUMSTANCES

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About the author

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CONTENTS

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Customary Characters in Uncustomary Circumstances

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This document presents the methodology for "Customary Characters in Uncustomary Circumstances: Traditional and religious authorities' resilience to violent extremism in Mali, Niger, and Burkina Faso."

This methodology contains three sections: (a) Research Design, (b) Data Collection, and (c) Data Analysis.

A   Research Design

Our organizing research question is *To what extent do traditional and religious authorities contribute to or weaken community resilience against radicalization toward violent extremism in violent extremist organization (VEO)-affected areas in the Liptako-Gourma, and if so, in what manner?*

This question was broken down into four sub-questions:
1. What general resilience mechanisms operate in the community, including those against violent extremism?

2. What is the relative contribution of the traditional and religious authorities to community resilience against violent extremism?
3. Under what conditions are traditional and religious authorities able to make a positive or negative contribution to community resilience against violent extremism?
4. What policy could be undertaken to strengthen community resilience and how would that impact the role of traditional and religious authorities in the community?

Our research logic is informed by three considerations. First, the project started from a broad consideration of community resilience. Community resilience is a resource that is employed by communities in the face of various crises, setbacks, or problems that communities and individuals encounter.[1] These range from incidents of violence to dealing with disease outbreaks and food insecurity. Hence, community resilience against violent extremism draws from the same "reservoir" of available community mechanisms to deal with

setbacks. Our first sub-question allowed us to contextualize observed community responses to violent extremism in the broader repertoire of community responses.

Second, community resilience against violent extremism is not driven by traditional and religious authorities alone (as our findings also clearly outline). Our second research question therefore compares the relative contribution of traditional and religious authorities as one of various mechanisms to improve community resilience. While our study clearly shows that on average traditional and religious authorities have an important role to play, our research design accounted for and identified other community response mechanisms. This allowed us to conclude that the role of traditional and religious authorities is one of the key mechanisms by which community resilience can be improved.

Third, from the wider literature on the role of traditional and religious authorities, as well as community resilience, it is clear that there is substantial regional and municipal variation in the role that traditional and religious authorities can play. An extensive literature review provided us with seven key factors that may explain the variation in these roles and – by extension, we believe – in the relative contribution that traditional and religious authorities can play in sponsoring a community resilience mechanism. Hence, our research design pre-identified seven key factors from the literature that may explain the observed variation between regions and communities.

A.1 Mixed-method design
The project rests on a mixed-method design using a quantitative survey and qualitative interviews.

We designed each method in a way to ensure complementarity. The quantitative survey allowed us make broad inferences about the regions we worked in based on purposive sampling of groups and community types.

Furthermore, the survey allowed us to use extensive regression analyses to determine the effects of specific variables and control for a host of factors.

Yet there were four drawbacks of quantitative surveying that we sought to ameliorate. First, we expected problems of causality. For example, when we observe low community resilience and non-trusted local authorities, can we then conclude that low resilience is a result of the behavior of traditional and religious authorities or rather that low resilience has undercut trust in traditional and religious authorities? Second, it is clear that quantitative research interactions between enumerator and participant often do not permit for confidence building and the resulting environment in which participants share their deeper thoughts and feelings. This was a particular concern as our research asked sensitive questions around the influence of armed actors on local governance providers and involved (implicit) evaluation of traditional and religious authorities and formal state officials. Third, we inputted questions into the survey. Even though these were based on an extensive literature review, local advice, and a pilot study, we risked falling into the trap of preconceived ideas. Fourth, we could not use the survey to obtain the perceptions of traditional and religious authorities, local state authorities, or armed actors, as local norms prevented us.

For these four reasons, we employed a complementary method of extensive and widespread qualitative interviews among specific sets of respondents (traditional and religious authorities themselves, local community members, and other authorities). The qualitative interviews focused less on the general resilience mechanism of communities and more on understanding the actual roles of traditional and religious authorities, as well as explanations for enablers or constraints on their ability to contribute to community resilience against violent extremism. Through the interviews we were particularly able to better understand

how community members and participants themselves understood causality, as well as to create an environment of confidence in which key informants felt safe to express their views. Our training of respective local enumerators involved specific attention to creating safe environments (e.g., meeting in open spaces but without participants, matching women with women, etc.) and focused on the more sensitive topics around community resilience against violent extremism. Finally, while we used a fixed set of questions tailored to specific respondent groups, we allowed our local enumerators to digress and encouraged them to probe into the participants' answers. While our subsequent monitoring and analyses of the incoming data indicated that probing could have been applied better, we were able to identify a few new avenues along which traditional and religious authorities are either constrained or enables to improve community resilience against violent extremism.

A.2 Explaining the role of traditional and religious authorities[2]

The first two sub-questions that we asked were relatively straightforward to operationalize. We used an existing community resilience survey and an accompanying scale to measure community resilience quantitatively, probed into various known mechanisms by which communities are resilient against violent extremism, and explored the roles of traditional and religious authorities based on methods we developed in the context of previous research (see subsequent questions for details).[3]

Yet, a key part of the research was to clearly identify what explains the positive and negative roles of traditional and religious authorities, as these would subsequently inform policy recommendations. To this end, we tested the following seven hypotheses:

Hypothesis 1: The relative contribution of traditional and religious authorities to community resilience against violent extremism is constrained or empow-ered by competitive institutional multiplicity at the local level.

Hypothesis 2: The relative contribution of traditional and religious authorities to community resilience against violent extremism is constrained or empowered by their relationship with local state officials (such as mayors, prefects, and party agents).

Hypothesis 3: The relative contribution of traditional and religious authorities to community resilience to violent extremism is constrained or empowered by their role in the management of resources relevant to resilience, such as mediation and conflict resolution.

Hypothesis 4: The relative contribution of traditional and religious authorities to community resilience to violent extremism is constrained or empowered by the relative local legitimacy (material and cultural) these authorities enjoy in their communities.

Hypothesis 5: The relative contribution of traditional and religious authorities to community resilience to violent extremism is constrained or empowered by the social divisions that exist within the community and the degree to which the traditional and religious authorities are able to overcome such social divisions through equal treatment or narrative formation.

Hypothesis 6: The relative contribution of traditional and religious authorities to community resilience to violent extremism is constrained or empowered by the presence and activity of armed groups and/or VEOs in the area.

Hypothesis 7: Other/miscellaneous reason.

Literature review

A large number of academic publications point at how the role of traditional and religious authorities can be empowered or constrained by so-called "institutional multiplicity." This means that at the local level there is a patchwork of overlapping and competing authorities – for example, traditional leaders, formal state structures, and armed actors, all of which are often divided into subgroups – competing with and over the same resources. The effects of such multiplicity are diverse. Some literature points out that the presence of a diverse array of governance actors, including traditional and religious authorities, means that there are multiple avenues available that citizens can explore when they are faced with problems, which might contribute to resilience. Other publications point out that as various governance actors may compete with and undermine each other, community members may play various governance actors against each other. In particular, those better connected community members (those who are richer, tied to strong power centers, or members of autochthon populations) will use this to their advantage. This can decrease community resilience.

A second explanation is the relations of traditional and religious authorities with the formal state. Some publications point out how collaborative hybrid arrangements emerge where traditional leaders are co-opted and empowered by the state; for example, by being endowed with the necessary means to govern. However, these close ties can also contribute to the politicization of traditional and religious authorities, which in the longer run risks undercutting their normative standing within their communities and the informal and traditional source of power they enjoy. This may weaken community resilience.

A third explanation in the academic literature for the diverging contribution of traditional and religious authorities (including to community resilience) is their role in the management of resources. Some literature points out that when traditional and religious authorities control access to resources, or are seen as the key authorities when it comes to the adjudication of disputes over these resources, they may be better positioned to contribute to general resilience than when they do not hold such a position. However, in some cases controlling resources too easily leads to decreasing community resilience, as traditional and religious authorities are sometimes responsible for unequal distribution of such resources in the community.

A fourth explanation of the variation between communities is how traditional and religious authorities are perceived. Our own work has shown that authorities who are widely perceived to be legitimate are more likely to contribute more to communities' general resilience than those who are considered illegitimate. While there are various potential ways to measure legitimacy we have opted for two proxies: whether respondents trust their traditional and religious authorities and whether the traditional and religious authorities are perceived to work for the benefit of their communities.

A fifth explanation explores the context in which traditional and religious authorities operate. There is substantial variation in the social makeup of communities in the Sahel, with some having a more or less homogenous (ethnic) population while other communities are mixed. Some literature points out that the ways in which traditional and religious authorities operate in these contexts is important in explaining the variations in community resilience. Traditional and religious authorities who give equal treatment to subgroups in their community are more likely to generate and contribute to general resilience than those who sow or contribute to inter-group discord. To measure this we have explored the different treatment by traditional and religious authorities of men vs. women, youth vs. elders, rich vs. poor, and herders vs. farmers.

Table 1a   Quantitative Questions SQ1 and SQ2

Research Question	Focus	Indicators
Sub-question 1 (community resilience mechanisms)	General Resilience	Basic Service Provision
		External Shocks
		Joint Undertakings within the Community
		Environment around Community
	Role in Resilience against Violent Extremism	Security Situation
		Security Governance
		Social Cohesion
		Conflict Resolution and Justice
Sub-question 2 (role of traditional and religious authorities)	Role in General Resilience	Role in Combating External Shocks
		Role in the Provision of Emergency Aid
	Role in Resilience against Violent Extremism	Role in Security Provision
		Role in Community Disagreements
		Disagreements with Traditional Authorities

Table 1b   Qualitative Questions SQ1 and SQ2

Research Question	Focus	KII questions
Sub-question 1 (community resilience mechanisms)	Community Resilience against Violent Extremism	Existing conflict resolution mechanisms including actors involved
		Mechanisms and initiatives in place to counter the main threats the municipality faces including actors involved
Sub-question 2 (role of traditional and religious authorities)	Role in Resilience against Violent Extremism	Traditional and religious authorities' main responsibilities in terms of resource management (types of resources, types of missions performed, etc.)
		Traditional and religious authorities' specific role within conflict resolution mechanisms
		Traditional and religious authorities' specific role within security provision mechanisms
		Mechanisms and initiatives put in place by authorities to counter spillover effects of surrounding insecurity and conflicts
		Measures taken by traditional and religious authorities to regulate religious practices, especially the arrival of new types of preachers
		Discourses or measures taken by traditional and religious authorities in the face of crises/events that have weakened community resilience (i.e., communal narratives that mitigated the negative impact)
		Discourses or measures taken by traditional and religious authorities in the context of/contribution to positive events that have strengthened community resilience (i.e., communal narratives that reinforced the positive impact)
		Traditional and religious authorities' perceptions of the role they can play in helping their community to face violence and violent actors

Box: One survey, three semi-structured KII protocols

Tailored versions of the semi-structured interview questionnaire were developed for three types of KIIs.

(1) Traditional and religious authorities. This set of questions aimed to explore the main functions the traditional and religious authorities perform within their community, such as roles in resource management, narrative building, social cohesion, and conflict resolution. It also focused on their relations with other actors present in the municipality, including state representatives, nongovernmental organizations (NGOs) and civil society leaders, state and non-state armed actors, women, and youth, as well as, inter alia, their contributions to community resilience against violence and violent armed groups.

(2) Other community stakeholders. This set of questions aimed to understand KIIs' perceptions of the current security situation and to explore existing conflict resolution and security provision mechanisms, as well as traditional and religious authorities' roles in these domains. It also sought to explore the participants' relations with traditional and religious authorities, including the main advantages and challenges they face when collaborating with the latter, the main grievances of the population against these authorities, the authorities' influence over women and youth, as well as their ability to deter young community members from joining armed groups.

(3) Community members. This version contained questions similar to those for community stakeholders, but also explored which traditional and religious authorities are considered the most accessible, as well as the extent to which local inhabitants have asked for and/or received help from these authorities following shocks and crises.

A variation of the same theme is that a separate body of literature on violent extremism points to the role of narrative formation in building social cohesion (and by extension community resilience). This literature finds that traditional and religious authorities can contribute to general resilience by actively producing narratives that improve or build social cohesion during crises. If, however, their narratives are negative ones, such as those that propagate exclusion, this may be detrimental to general resilience. In our research design, we included specific questions that focused on narrative formation (and its effectiveness).

A sixth explanation, finally, points at a different context: armed conflict and its impact on the role of traditional and religious authorities. Building on an extensive literature of armed governance and our own work on the position of traditional and religious authorities in the Sahel, an effect might be expected of relations with armed actors. One line of reasoning is that ties with armed actors, such

as police and security forces, non-state armed actors, or self-defense groups may provide traditional and religious authorities with the safety and enforcement power needed to do their work. In some cases, the distinction may even collapse altogether.[4] At the same time, such ties – particular in zones where territorial control is alternating – it might make traditional and religious authorities very cautious and numb or worse, reinforce existing violent tit-for-tat dynamics. In these instances, relations with armed actors might undermine community's resilience as a whole.

A.3 Operationalization of variables

Our qualitative semi-structured interview questions and quantitative survey were specifically developed to speak to our research questions. The detailed key informant interview (KII) questionnaires and survey questionnaires are available upon request.

Table 1 provides specific insights into quantitative (table 1a) and qualitative (table 1b)

Table 2a   Survey Questions SQ3: Qualitative

Qualitative Survey Questions	
H1: (Competitive) Institutional Multiplicity	Nature of the relationships between different traditional and religious authorities within the community
	Nature of the relationships between traditional/religious authorities and other stakeholders who are not armed groups or government actors
H2: Relations with Local Government Authorities	Nature of the relationships between traditional/religious authorities and state representatives
H3: Role in Resource Management	Traditional and religious authorities' main roles and functions in normal and crisis times
	Any issues traditional and religious authorities face in the management of resources (e.g., lack of resources, source of discontent among community members, etc.)
H4: Relative Local Legitimacy	Ways people usually react to traditional and religious authorities' decisions in the context of conflict management, and how traditional and religious authorities respond to the reaction of people
	Traditional and religious authorities people turn to when they face a problem, and what kind of help they receive (i.e., effectiveness and positive impact on people's resilience)
	Negative aspects/issues of working with traditional and religious authorities
	Positive aspects/advantages of working with traditional and religious authorities
	Sources of grievances against traditional authorities among community members
	Sources of grievances against religious authorities among community members
	Community members' perceptions on the most accessible traditional authority in the municipality
	Community members' perceptions on the most accessible religious authority in the municipality
	Procedures/prerequisites to be able to talk with traditional and religious authorities (accessibility, inclusivity, transparence, and impact on legitimacy)
	Influence traditional and religious authorities exert on community youth as compared to elders, and their ability to deter them from engaging with violent armed groups
	Influence traditional and religious authorities exert on/accessibility to women as compared to men (how inclusive is their governance)
H5: Social Divisions	Main types of conflicts/disputes between municipality inhabitants
	References to the presence of internally displaced persons (IDPs), traditional and religious authorities' role in helping IDPs, and community members' perceptions
H6: Armed Groups/ VEOs	Characteristics of the security situation in a given municipality and opinions on its potential evolution (e.g., further deterioration, improvement, no change)
	Nature of the relationships between traditional/religious authorities and armed groups

questions that were used for community resilience and the role of Traditional and Religious Authorities.

Probing into explanations of the observed variation in community resilience against violent extremism and the roles that traditional and religious authorities played in them required us to construct a set of specific key informant questions as well as an extensive set of survey questions. Table 2 provides an overview of the specific proxies for each hypothesis that might explain under what conditions traditional authorities might be able to make a positive/negative contribution to community resilience.

Table 2b   Survey Questions SQ3: Quantitative

Quantitative Interview Questions	
H1: (Competitive) Institutional Multiplicity	Conflict Resolution and Justice
	Security Provision
H2: Relations with Local Government Authorities	Influence of Governmental Actors on Traditional and Religious Authorities
H3: Role in Resource Management	Access to Resources
	Conflicts over Access to Resources
	Basic Service Provision
H4: Relative Local Legitimacy	Trust of Community Actors
	Accessibility of Governance Actors
H5: Social Divisions	Social Divisions in the Community
H6: Armed Groups/VEOs	Dialogue with VEOs

Table 3   Data collection across regions

Country	Region	Number of surveys	Number of interviews
Burkina Faso	Centre-Nord	256	123
	Est	246	137
	Sahel	238	79
Mali	Gao	264	112
	Ménaka	193	82
Niger	Tillabéri	240	123

A.4   Case selection

Research was conducted in six different regions in Mali, Niger, and Burkina Faso: Ménaka and Gao in Mali; Centre-Nord, Sahel, and Est in Burkina Faso; and Tillabéri in Niger. In each we surveyed five municipalities (except for Menaka), leading to a total of 29 municipalities.

We specifically took cases that experience varying degrees of presence of VEOs, for security reasons – for both our local researchers and our research participants – and research reasons.

Hence, we selected municipalities that were under VEO threat but that have not been completely taken over by VEOs. Within those municipalities we maximized variation in resilience against VEOs. Hence, we aimed to select at least two municipalities per region located in an area that is known for its VEO presence and at least two municipalities located somewhat further away.[5]

Moreover, as various analyses point to the local nature of violent conflict in the Sahel that is often expressed in ethnic terms, we also varied in the homogeneity of municipalities. Hence, we selected homogenous municipalities (where the vast majority of people were of one ethnicity) and municipalities with a more mixed ethnic makeup. To this end, during our pilot phases we surveyed a number of municipalities for ethnic makeup and made adaptations accordingly (see below).

A.5   Sampling strategies

In total, we collected 1,437 surveys and 656 semi-structured KIIs across the six regions between October 2020 and April 2021 (see Table 3 for an overview).

Survey sampling

For the survey, we applied a stratified sampling strategy to ensure the participation of three relevant groups of respondents: (1) youth, (2) women, (3) minority groups.

Figure 1   Survey Respondent Demographic Information

Gender

Centre-Nord, Est, Sahel, Gao, Ménaka, Tillabéri

0% 20% 40% 60% 80% 100%

■ Male ■ Female

Age

Centre-Nord, Est, Sahel, Gao, Ménaka, Tillabéri

0% 20% 40% 60% 80% 100%

■ 18-35 ■ 35-45 ■ 45-65+

Min/Maj Status

Centre-Nord, Est, Sahel, Gao, Ménaka, Tillabéri

0% 20% 40% 60% 80% 100%
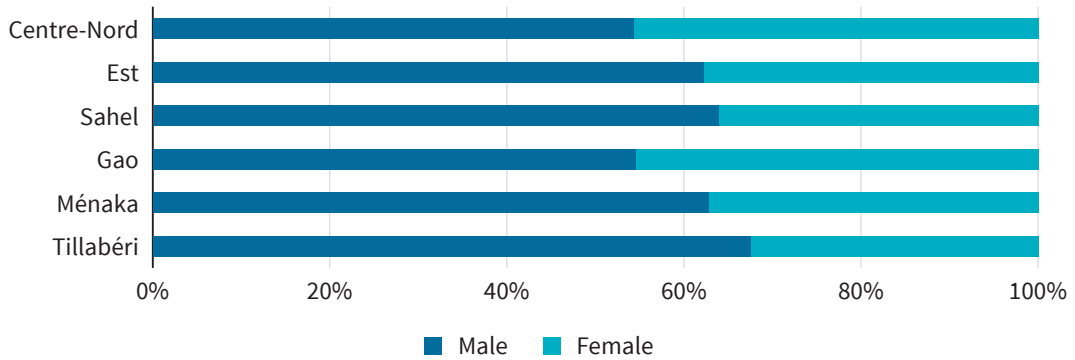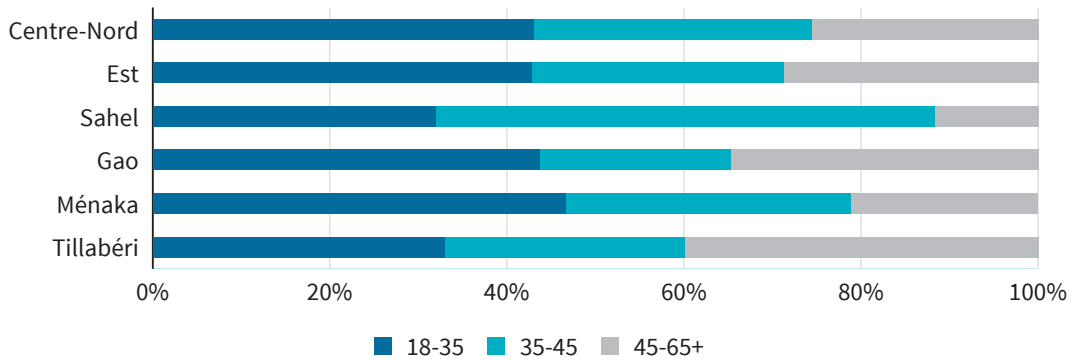
■ Minority ■ Majority

Relevant minority groups were determined beforehand for every municipality on the basis of ethnicity, caste, and religion.[6] We created a customized survey for each municipality, meaning that we could ask about the relevant minorities in every locality. Our stratified sampling strategy allowed for the inclusion of women, different age groups, and different minority groups in the survey population. Figure 1 presents the distribution of respondents across our different respondent categories. Overall, we successfully ensured that at least one third of respondents were females and one third of respondents belonged to a minority group. We also sought to include different age groups in our pool of respondents.

Key informant interview sampling

KIIs were conducted with three relevant categories of actors: (1) traditional authorities (n = 144) and religious authorities (n = 116); (2) ther important stakeholders present in the municipality (n = 267), including state representatives (n = 123), members of state security and defense forces 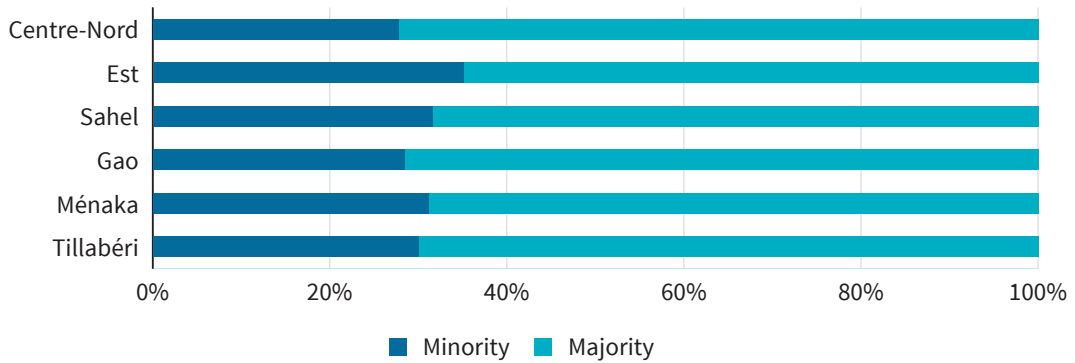(n = 25), members of non-state armed groups (n = 17), and members of NGOs and civil society organizations, including women and youth leaders (n = 102); and (3) community members of different ages, genders, and ethnicities (n = 129).

Figure 2 presents the distribution of KII respondents across different types of actors in the six researched regions. While we could not succeed in all regions, on average we sought per municipality to obtain ten interviews with traditional and religious authorities, ten interviews with other stakeholders, and five interviews with community members[7]

Traditional authorities mainly included *chefs de quartier* (neighborhood chiefs), *chefs de village*, and their representatives, as well as some high-level authorities, such as village *chefs de groupement* (group chiefs)*, chefs de canton* (canton chiefs), *dimas* (kings), and emirs. Given the demographic characteristics of the researched regions, religious authorities

mainly comprised imams and *marabouts* in Gao, Ménaka, and Tillabéri, while other religious figures such as priests and pastors were also interviewed in the Burkina Faso regions.

B   Data collection

Data collection was executed by our national partners in Mali, Burkina Faso, and Niger.

In Mali we worked with Think Peace (Mali), its national coordinator, Abdoul Kassim Fomba, and its researchers, including the Cabinet d'Appui en Renforcement de Capacités et Suivi-Evaluation des Projets et Programmes (Mali), its director, Boncana Traoré, and its researchers and our consultant Mahamadou Zibo (Mali). In Niger, we relied on the work of Economie Politique & Gouvernance Autonome (EPGA) (Niger), its director, Rahmane Idrissa, and its researchers, Oumarou Abdouramane (interviews), Boukari Ali Abdoulaye (interviews), and Boubacar Oumarou (survey). Data collection in Burkina Faso was done with Institut de Stratégie et de Relations Internationales (ISRI) (Burkina Faso), its director, Paul Koalaga Oumarou, and its researchers. A local research coordinator, Abdoul Aziz Azeibou, helped organize field research while Rida Lyamouri oversaw national partner research.

To support the research by our national partners, we engaged in three separate activities: two training sessions, a pilot study, and a data monitoring process. The last activity was especially important, as our research took place during the COVID-19 pandemic, which constrained our ability to visit national partners.

B.1   Pilot

Both our quantitative and qualitative research methods were extensively piloted. Before the pilot, all national partners reviewed the tools. We made adaptations to our methods on the basis of this feedback. Subsequently, we conducted online training for each national partner (early November 2020).

Figure 2   Distribution of KIIs across main categories of actors

Legend: Traditional authorities, Religious authorities, Other stakeholders, Community members
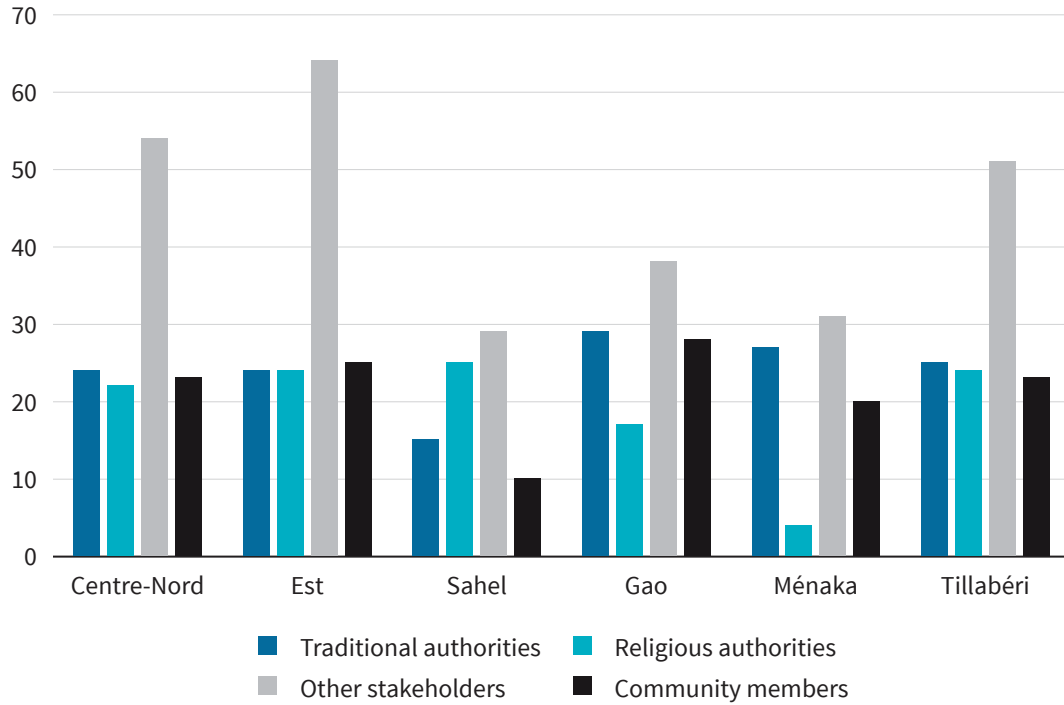
Figure 3   Distribution of KIIs across subcategories of other stakeholders

Legend: State representatives, Security and defense forces, Non-state armed groups, NGO / civil society
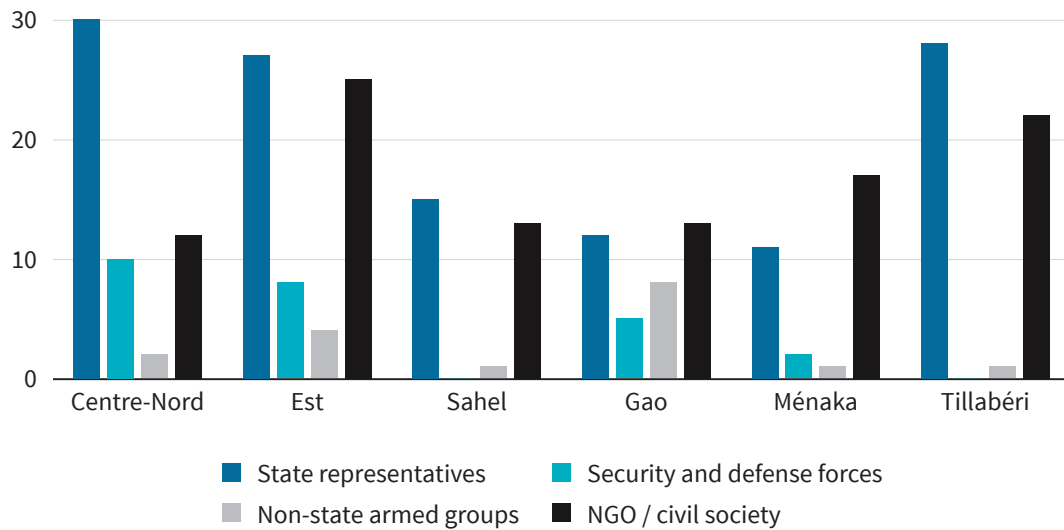
Based on a literature review and existing tools to measure community resilience, a quantitative survey was created and set up in SurveyCTO, a secure data collection platform. The initial survey consisted of a total of 1,400 potential items (various items related to follow-up questions that would be asked in the case of positive responses). Data collection commenced in November 2020 and took about one month. In each country, the teams surveyed one municipality in full (50 surveys).

The survey pilot led to the following main conclusion: (a) the average duration of a survey was close to 1.5 hours but some responses were too short; (b) most interviews took place at night and in the same streets/places; (c) sampling could also be improved; (d) there were serious differences between respondents. Key feedback came back regarding the content of the survey, as some questions were too sensitive (especially on security issues) or were too direct in asking respondents to evaluate their traditional and religious leaders. As a result, the survey was substantially shortened (cut to about 750 items or 195 questions[8]), and most security questions were taken out. To circumvent the "evaluation of leaders" we asked respondents to evaluate not individuals but "the traditional authority and religious authority closest to them". At the end of the survey, we asked respondent what position "the traditional authority closest to them" was actually holding. In this way were able to control results for the type of Traditional Authority. We did not inquire for specific names.

We took a similar approach with the qualitative sampling. In total, we conducted and transcribed 75 interviews during October/November 2020 (25 per country). Most findings pertained to the need to provide more clarity about data collection and recording practices, but two substantial changes were made: social status and security assessments. Before the pilot phase, we had defined "majority/minority status" (a sampling criteria) on the basis of ethnicity, caste, and religion. In the pilot, religion proved to be irrelevant in all contexts, whereas social status was exclusively defined in ethnic terms. Only in Burkina Faso did castes prove relevant, and we proceeded to probe into minority/majority status by overlapping ethnicity with caste (hence creating two options per ethnicity). A second observation was that it proved very hard to ask questions about the security situations and particularly about specific armed groups, such as violent extremists. In focus group discussions with our national partners we tried various options – such as using euphemisms or vague terms, finding secluded spaces to talk in – to build a specific confidential atmosphere, but in the end all options were deemed too risky and we decided to avoid talking about violent extremists in the qualitative survey. With this in mind, we changed and reworded about one third of the KII questions.

An overall observation was that training enumerators and researchers at a distance and in times of COVID-19 proved difficult, and that as a consequence we observed research challenges that we had not encountered previously. The core of these involved concern for data quality across all team members; there was much variation in the duration of survey, depth of responses, and various other quality indicators. Hence, our main conclusion after the pilot was that we needed to develop an extensive data monitoring protocol and continuous feedback mechanism for our national partners.

B.2   Training
After the pilot phase and the adaptations to the KII questionnaires, we engaged in a full-day distance training of our national partners. All enumerators and respondents gathered in a meeting place in the presence of our regional research coordinator. Clingendael and the International Centre for Counter-Terrorism (ICCT) provided detailed

Table 4   Quality monitoring criteria

Criteria	Indicator	Explanation
Procedural	Congruence	Match between researchers' reports and data.
	Researcher bias	Number of surveys conducted per researcher.
Individual Data Quality	Time of survey	Time at which survey was conducted. Surveys should not be conducted late at night.
	Duration of survey	Exact timing of each survey. Surveys had to exceed a minimum duration.
	Location	GPS data: location of surveys and geographic distribution across the selected municipality.
	Female respondent/researcher ratio	Ratio of female respondents who were interviewed by female researchers.
	Completeness	Completeness of individual surveys.
	Logic of responses	Logic of responses in individual surveys.
General Data Quality	Time of survey	Time at which survey was conducted. Surveys should not be conducted late at night.
	Sampling	Adherence to sampling criteria.
	Female respondent/researcher ratio	Ratio of female respondents who were interviewed by female researchers.

trainings on surveying, interviewing, ensuring correct and inclusive sampling, behavior in communities, research ethics, a detailed discussion of nearly every question to ensure enumerators understood their meaning, practice using SurveyCTO, and a discussion on the translation of key concepts into local languages. We also spent a specific session on our data monitoring protocols to assess the quality of incoming data and when we would reject surveys and interviews.

The training also was a final moment where formulations of questions were slightly tweaked to adapt to local practices. These recommendations by the national partners pertained to the length of the survey and the sensitivity of the questions. On this basis we removed a customization of the survey to the local context of each municipality.

B.3   Data monitoring
Based on our pilot experience, we further developed existing data monitoring protocols to ensure a continuous monitoring of incoming data.

Our quantitative systems involved ten indicators checks to monitor the quality and consistency of each incoming survey on a daily basis. These indicators were separated into (1) procedural criteria, (2) individual data quality indicators, (3) general data quality indicators (at the level of municipalities).

Qualitative data quality involved monitoring a different number of criteria. These checks were carried out on the basis of two elements. First, they involved a number of more procedural checks for each (set of) interview (e.g., date, time, place, language, interviewer name) and respondent (e.g., type of KII, function or activity, gender, age, ethnicity),[9] the use of the relevant version of the questionnaire, and the length of the interview.

Second, three interviews per municipality and at least one interview by each enumerator were monitored in detail. This involved specific consideration of consistency of the responses but also whether the questions appeared to have been well understood, the comprehensiveness of all responses, the

clarity of responses, and the extent to which the researcher engaged in follow-up questions. All of these were monitored in Microsoft Office Excel to have a live dashboard of municipalities and research performance.

Feedback

The project team designed data collection in waves. For example, the Burkina Faso team would conduct data collection in one region, then stop for two weeks. We designed the data collection in this way to ensure time for feedback. Hence, throughout the data collection phase, interviews were regularly transcribed in French by local teams (typically following the completion of an entire municipality) and sent through to ICCT-Clingendael in order for a quality control to be conducted.

The project team sought to engage with the local research teams on a frequent basis, to communicate feedback that resulted from the daily quality monitoring activity and address observed issues early in the process.

Effects of data monitoring

Extensive data monitoring proved relevant in times of COVID-19, as the distance between the national researcher and project leads based outside of the Sahel was large and did not allow for in-person feedback. Data monitoring results were shared with our national partner coordinators in Niger, Mali, and Burkina Faso, who took necessary action in their teams when needed.

A number of quantitative surveys were rejected because they were too short. In one instance a researcher was removed from the project and replaced, as various indicators (location, timing, length, and answer distribution) did not match with one another. On this basis, the national partners decided to send local research teams back to respective municipalities and recollected surveys and interviews to correct for unbalanced samples

or short surveys. In some instances, more severe shortcomings in terms of data quality and researcher bias could be observed. In agreement with the local research coordinators, these surveys were recollected with a newly composed research team.

A continuous observation of the qualitative interviews was needed to improve on asking follow-up questions. Over time the ability of the research team to engage in them improved. At the same time, various interviews were rejected for a number of different reasons. One specific problem that came up was that during the transcript phase, there were various interviews that involved the exact same answers to one or more questions. While a degree of overlap cannot be avoided (as people do tend to give similar answers, particularly when they give short answers), we removed all interviews where more than two sentences were similarly transcribed. To this end we inputted all 750 interviews using software that flagged potential overlap. A subsequent manual assessment of each of these identified cases led to the removal of various interviews. An analysis of the removed interviews showed that there were no significant differences between the answers.

As some of these issues were detected during the pilot phases, the research team had decided before data collection to increase the required numbers of surveys and questionnaires. This allowed for a surplus of data and the ability to adapt without jeopardizing the research methodology.

B.4   Data collection

Data collection finally took place from December 2020 to April 2021.

A particular concern was the continued safety of the field researchers due to ongoing violence and insecurity in the research areas, as well as challenges posed by the COVID-19

pandemic. The local research coordinator was responsible for security assessments based on evaluations by the local researchers themselves, weekly security reports based on ACLED data, and self-collected information on armed group movement. In the process, some of the initially selected research sites were replaced with safer municipalities. *Post hoc* probing among field researchers did not involve feelings of unsafety in the research teams.

C   Data analysis

Data analysis involved three separate processes: (a) quantitative descriptive analysis, (b) qualitative descriptive analysis, and (c) a series of regressions.

C.1   Quantitative descriptive analysis
In preparation for the analysis, the survey data was cleaned. This involved eliminating data that did not adhere to the quality standards of the project. Additionally, certain variables were grouped, and free-text responses were recoded into numeric values.

For all variables we produced distributions and various descriptive statistics showing that some questions did not produce (relevant) data after all (see the table 5 and annexes to the synthesis report for descriptives).

On that basis we made a selection of variables that we explored further, and all were visualized per region and municipality. For all variables where ethnic or gender dimension could be relevant we also included specific descriptives for each category.

To allow for descriptive comparison, analysis of variance (ANOVA) and Bonferroni-corrected *post hoc* tests (pairwise comparison) explored whether statistically significant differences exist across the municipalities of each region,

but the results indicated that differences are more relevant at the regional level.

Hence, descriptive statistics were computed for all indicators at the country and regional levels to explore variation at the respective levels of analysis and relate these observations to previous findings in the literature. Additionally, a more granular analysis of differences between subgroups at the regional level was conducted, exploring differences between respondents of the majority and minority groups and respondents of various age groups and genders.

C.2   Qualitative descriptive analysis
Interview transcripts were coded via NVivo, a qualitative data analysis software.

Coding was done by five separate researchers, and both to enable similar coding and to ensure reproducibility of findings, a detailed codebook comprising several indicators was developed based on key concepts of community resilience. The codebook followed the operationalization of variables as set out in section A.

NVivo outputs were subsequently produced at the national and regional levels, with specific analyses highlighting whether there appeared to be differences between municipalities. These outputs were subsequently analyzed by one researcher responsible for a region and controlled by a qualitative analysis project lead. This resulted in an analysis document with main findings per item and region.

C.3   Regression analyses
More advanced statistical analyses were produced to allow for (causal) inferences, determining the relative importance of variables, and testing the hypotheses that informed the research. Two main types of analysis were produced: regression analysis and decision tree learning.

To measure the key concept of "community resilience" we relied on a scale produced in the context of the Communities Advancing Resilience Toolkit (CART) Assessment Survey (see annex 1 to the synthesis report). The original scale consisted of 20 items, but in our pilot some items did not receive responses or were considered too sensitive. We subsequently used 11 indicators to create the scale. The resulting scale was internally consistent (Cronbach's alpha of .874) and unidimensional through factor analysis (we observed declining eigenvalues) and principal-component analysis (same result, e.g., first component explaining 47% of variance). As original alphas are not reported for CART we cannot compare results, but data analysis permits us to use the 11 items in the scale. The resulting General Community Resilience Scale was created by summing all items (0-5), creating a *de facto* continuous variable (from 3-55) that was used as dependent variable.

An overview of regression results is in the annex to the synthesis report. We produced four models with different dependent and explanatory variables (see table 5). For reasons of space we did not report all controls in the overall report, but each model was controlled for some key explanatory variables involving the characteristics of respondents (gender, age, ethnicity, and level of education) and for specific characteristics of their communities (region, perceived security situation, presence of herder-farmer conflicts, presence of land conflicts, general accessibility of traditional and religious authorities).

Across all models, the highest variance inflation factor observed was 2.05, whereas the lowest tolerance value was 0.48, indicating that there were no to small collinearity issues. Likewise, all Durbin-Watson statistics observed were between 1.27 and 1.74, indicating no to small autocorrelation issues. Finally, across all models, residuals were approximately normally distributed as assessed with Q-Q plots.

In addition to regression analysis, we used decision tree learning. Decision tree learning is a machine learning method that infers causal relation from unstructured data. Rather than random forest models (which bootstrap data), decision tree takes one (full) sample to assess relations.

Specifically, decision tree uses if-then-else rules to classify observations into categories (here, levels of perceived resilience) and make predictions using impurity measures such as cross-entropy or Gini impurity. Decision trees also allow researchers to identify and "rank" the more powerful predictors and are easy to interpret, as illustrated in annex 6 of the synthesis report. They are especially useful when no specific research hypothesis can be used to guide the selection of predictors, or when too many variables are available. In our case, we used all 61 variables from our regression models (annexes 3, 4, 5 to the synthesis report) to classify participants into three categories of resilience: Low Resilience, Average Resilience, and High Resilience.[10] We then fit a series of decision trees of various depths (2 to 8) using the DecisionTreeClassifier object from the scikit-learn module of Python (impurity measure: Gini). This allowed us to identify the three more important predictors of perceived community resilience. Results are reported in annex 6 to the synthesis report.

Table 5   Regression analyses

	Model 1	Model 2	Model 3	Model 4a	Model 4b	Model 4c	Model 4d
Dependent variable	General community resilience (scale)	General community resilience (scale)	General community resilience (scale)	General community resilience (scale)	Effectiveness conflict resolution TAs* (item)	Effectiveness conflict resolution RAs* (item)	Effect security provision TAs/RAs (item)
Regression type	Linear	Linear	Linear	Linear	Linear	Linear	Logistic (binomial)
IVs (various indicators related to…)	Function TAs/RAs	Governance TAs	Governance RAs	Security and conflict governance TAs/RAs	Governance TAs	Governance RAs	Governance TAs and RAs
Controls	Gender	Gender	Gender	Gender	Gender	Gender	Gender
	Age	Age	Age	Age	Age	Age	Age
	Ethnicity	Ethnicity	Ethnicity	Ethnicity	Ethnicity	Ethnicity	Ethnicity
	Education	Education	Education	Education	Education	Education	Education
	Region	Region	Region	Region	Region	Region	Region
	Security	Security	Security	Security	Security	Security	Security
	Farmer-herder conflict	Farmer-herder conflict	Farmer-herder conflict	Farmer-herder conflict	Farmer-herder conflict	Farmer-herder conflict	Farmer-herder conflict
	Land conflict	Land conflict	Land conflict	Land conflict	Land conflict	Land conflict	Land conflict
	Accessibility TAs/RAs	Accessibility TAs/RAs	Accessibility TAs/RAs	Accessibility TAs/RAs	Accessibility TAs/RAs	Accessibility TAs/RAs	Accessibility TAs/RAs
Number of observations	1,042	1,437	1,437	1,066	1,361	1,340	984
R2	0.363	.517	.452	.292	.287	.255	.410 (R2 McF)
RMSE/ accuracy	7.84 (3-55 range)	6.84 (3-55 range)	7.30 (3-55 range)	8.26 (3-55 range)	0.846 (0-4 range)	0.840 (0-4 range)	Accuracy: 0.819 AUC: 0.897

*   TAs refers to traditional authorities, while RAs refers to religious authorities.

NOTES

1   Organization for Security and Co-operation in Europe (2014) *Preventing Terrorism and Countering Violent Extremism and Radicalization that Lead to terrorism: A Community- Policing Approach.* Available at: https://www.osce.org/files/f/documents/1/d/111438.pdf

2   Schmauder, A. and Demuynck, M. (2021) "A literature review of community resilience and (customary) resilience mechanisms", unpublished research paper, *Clingendael Institute*.

3   Molenaar, F., Tossell, J., Schmauder, A., Idrissa, R. and Lyammouri, R. (2019) "The Status Quo Defied. The legitimacy of traditional authorities in areas of limited statehood in Mali, Niger and Libya". CRU Report

4   This is the case, for example, for Alghabass ag Intalla, the Tuareg Amenokal in Kidal. See: Molenaar, F., Tossell, J., Schmauder, A., Idrissa, R. and Lyammouri, R. (2019) "The Status Quo Defied. The legitimacy of traditional authorities in areas of limited statehood in Mali, Niger and Libya". CRU Report

5   This strategy proved successful except for the case of Centre-Nord, where due to security concerns during the data collection stage all five municipalities covered are located in the relatively secure south of the region. The relative homogeneity of Centre-Nord's municipalities is taken into account in the discussion of our results.

6   Additional sampling criteria were applied within the majority/minority group, in order to ensure a balanced sample that is comparable across all municipalities. Besides these terms of reference, the local researchers were encouraged to seek a diverse sample within each municipality, for example by trying to reach neighborhoods and communities that are located outside of the center of the village.

7   While the initial research design foresaw the conduction of 15 interviews with traditional and religious authorities in each municipality, sampling criteria were adjusted based on the observations made during the pilot phase, which underlined the limited number of such authorities in some areas. It was subsequently decided to reduce the number of KIIs to be conducted with traditional and religious authorities to 10, and to include 5 community inhabitants in the qualitative data sampling.

8   Respondents answered 195 questions if all follow-up questions were selected, which was not the case for all respondents. The minimum number of questions (excluding all follow-up questions) was 139.

9   Anonymity and confidentiality were guaranteed to all interviewees.

10 Total samples: 992, composed of 263 in Low Resilience, 503 in Average Resilience, and 226 in High Resilience. Low Resilience is a Resilience score smaller or equal to 24. Average Resilience is a Resilience score higher than 24 and smaller or equal to 40, and High Resilience is a Resilience score higher than 40. We did not split data into train and test sets since our aim was to classify existing data, not new or unseen data, as a complement to regression analyses.