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WFP/SOULEYMANE AG ANARA

# Climate Change and Armed Groups

## KEY TAKEAWAYS

**Strengthening Disarmament, Demobilization, and Reintegration Practitioner's Analysis of and Response to the Links between Climate Change and Armed Group Recruitment Patterns**

**A SCORE Analysis in the Tillabéri Region in Niger**



STOCKHOLM INTERNATIONAL  
PEACE RESEARCH INSTITUTE



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# INTRODUCTION

## Rationale for DDR practitioners to consider climate change

The Intergovernmental Panel on Climate Change (IPCC) defines climate change as a change in the state of the climate that can be identified by changes in the mean and/or the variability of its properties, and that persists for an extended period, typically decades or longer. This definition encompasses a range of natural and human-induced factors. While climate change is a global phenomenon, its impacts vary from region to region but also within a region and/or a community.<sup>1</sup> To understand and assess the impact of climate change, it is essential to examine it from a three-dimensional perspective: the exposure of individuals (and/or communities), their vulnerability and the coping strategies they employ.

It is important for disarmament, demobilization and reintegration (DDR) practitioners to include the consequences of climate change in their conflict analysis to calibrate DDR programmes, tools and reintegration support for maximum impact. Climate change influences factors that may determine the success and sustainability of DDR processes. Considering pathways between climate change and recruitment into armed groups is not only a strategic imperative, but it aligns with the United Nations' New Agenda for Peace, which holds that "increasing climate-related investment in conflict contexts is critical".<sup>2</sup> This study aims to enhance DDR practitioners' awareness of possible links between climate change and recruitment into armed groups as a step towards the development of interventions to address the interconnected challenges of climate, peace and security.

## Research Framework

Over the past few decades, researchers have diligently sought evidence to establish linkages between climate dynamics and local conflicts or war.<sup>3</sup> However, there remains a lack of consensus on what those linkages are and how they play out.<sup>4</sup> The disparate findings can be attributed to poorly conceived research designs and inconsistent empirical measurements.<sup>5</sup> Although climate variability cannot be considered a strong predictor of conflicts,<sup>6</sup> growing research on climate security illustrates plausible pathways between climate dynamics and conflicts, with climate change acting as a risk multiplier.<sup>7</sup> For instance, when an existing conflict situation is affected by climate change, peacebuilding efforts are inhibited, which tends to extend the length of the conflict and increase the human costs of war.<sup>8</sup> Climate change also can trigger destabilizing impact chains that undermine the adaptive capacity of both natural and social systems.<sup>9</sup>

The literature on the rise of armed groups and recruitment patterns in the Sahel region emphasizes the complex interplay among environmentally induced migrations, intercommunal conflicts,<sup>10</sup> absence of economic opportunities and other material considerations,<sup>11</sup> grievances, a sense of diminished social status<sup>12</sup> and the need for protection.<sup>13</sup>

Thus, this study seeks to provide insight into the links between climate change and recruitment into armed groups, with a focus on the pathways individuals take. The exploration of this critical intersection between climate change and armed group recruitment is essential not only to further academic scholarship but to develop targeted policies and DDR programmes, tools and reintegration support that can address human security concerns and foster resilience in contexts prone to climate-related conflicts.

<sup>1</sup> See the glossary, Figure 15 (annexes).

<sup>2</sup> United Nations, "A new agenda for peace," Our Common Agenda Policy Brief 9, July 2023. Available at <https://www.un.org/sites/un2.un.org/files/our-common-agenda-policy-brief-new-agenda-for-peace-en.pdf>.

<sup>3</sup> Thomas F. Homer-Dixon, "Environmental scarcities and violent conflict: evidence from cases", *International Security*, vol. 19, No. 1 (Summer 1994); Marshall B. Burke and others, "Warming increases the risk of civil war in Africa", *PNAS*, vol. 106, No. 49 (8 December 2009).

<sup>4</sup> Jan Selby and Clemens Hoffmann, "Rethinking climate change, conflict and security", *Geopolitics*, vol. 19, No. 4 (2014).

<sup>5</sup> Idean Salehyan, "Climate change and conflict: making sense of disparate findings", *Political Geography*, vol. 43 (November 2014).

<sup>6</sup> Halvard Buhaug and others, "One effect to rule them all? A comment on climate and conflict", *Climatic Change*, vol. 127 (2014).

<sup>7</sup> Nina Von Uexkull and Halvard Buhaug, "Security implications of climate change: a decade of scientific progress", *Journal of Peace Research*, vol. 58, No. 1 (2021); Intergovernmental Panel on Climate Change, *Climate Change 2023: Synthesis Report*. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (Geneva: IPCC, 2023).

<sup>8</sup> Florian Krampe, "Climate change, peacebuilding and sustaining peace", International Peace Institute Global Observatory, 13 September 2019. Available at: <https://theglobalobservatory.org/2019/09/climate-change-peacebuilding-and-sustaining-peace>.

<sup>9</sup> Jürgen Scheffran, "Climate change and weather extremes as risk multipliers: tipping points, cascading events, and societal instability", in *Climate Change, Security Risks, and Violent Conflicts: Essays from Integrated Climate Research in Hamburg*, Michael Brzoska and Jürgen Scheffran, eds. (Hamburg: Hamburg University Press, 2020).

<sup>10</sup> Laurence-Aida Ammour, "How violent extremist groups exploit intercommunal conflicts in the Sahel", *Africa Center for Strategic Studies*, 26 February 2020.

<sup>11</sup> Anouar Boukhars, "The paradox of modern jihadi insurgencies: the case of the Sahel and Maghreb", *Al Jazeera Centre for Studies*, 15 July 2018.

<sup>12</sup> Pauline Le Roux, "Responding to the rise in violent extremism in the Sahel", *Africa Security Brief*, No. 36, *Africa Center for Strategic Studies*, December 2019.

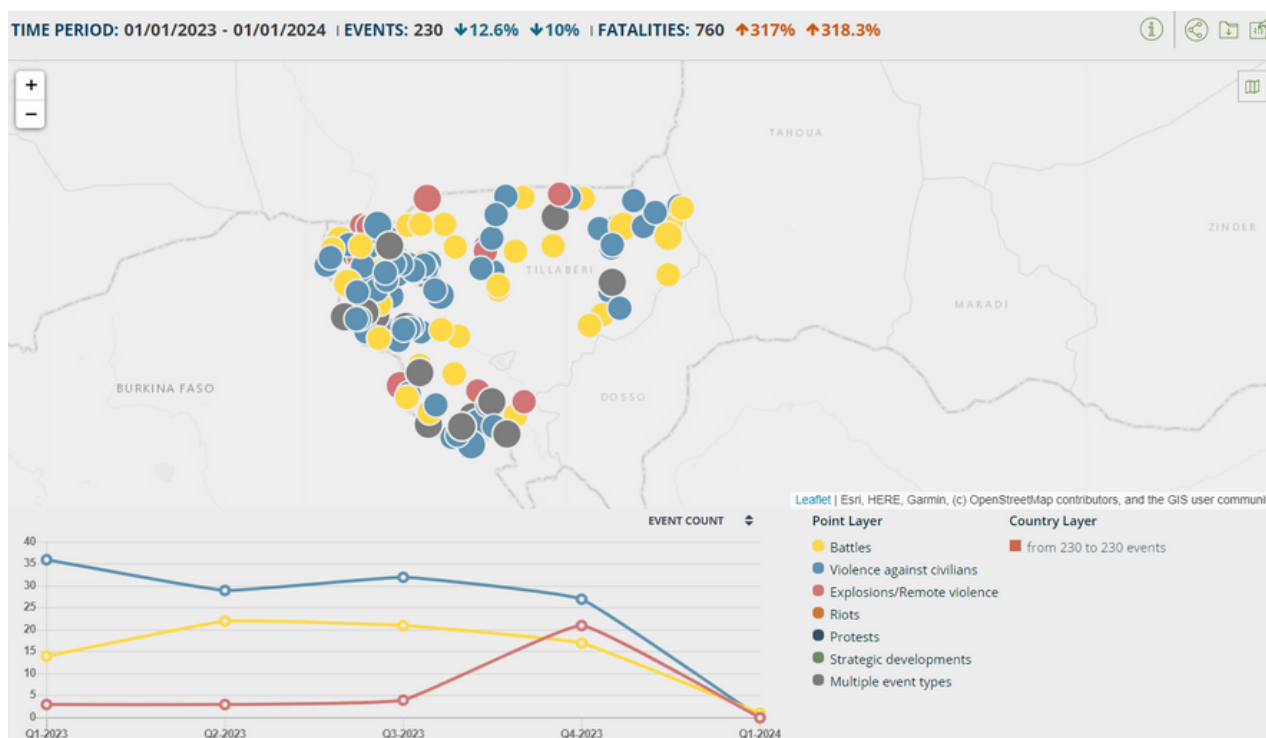
<sup>13</sup> Pauline Le Roux, "Exploiting borders in the Sahel: the Islamic State in the Greater Sahara", *Africa Center for Strategic Studies*, 10 June 2019; and Pauline Le Roux, "Confronting central Mali's extremist threat", *Africa Center for Strategic Studies*, 22 February 2019.



## Research location: the context of Tillabéri

Since the early 2010s, a violent insurgency has unfolded in Mali that has since extended to neighbouring Niger and Burkina Faso. The Tillabéri region in Niger is in the “three borders” area, sharing a common border with both Mali and Burkina Faso. It is significantly affected by various disruptive dynamics that destabilize the region and faces a profound **multidimensional crisis** marked by a lack of State presence, escalating human insecurity, weaponization dynamics, challenges associated with uncontrolled borders, and widespread population displacements.<sup>14</sup> Overlaid on this complex web of challenges is the compounding issue of climate change. The effects of climate change, such as more frequent natural disasters and long-term changes to precipitation and temperature, can combine with other factors to increase the risk, prevalence, duration and/or intensity of violent conflict.

The presence of armed groups in the area is a relatively recent phenomenon compared to their State-centred presence in Mali and Burkina Faso. Due to these groups' evolving strategies, in recent years their influence and territorial control of the region has grown. Simultaneously, local populations are facing less access to natural resources and experiencing climatic shocks that push them to migrate to other areas within the country. Changes in rainfall patterns and an increase in sunlight hours and, consequently, evapotranspiration, the depletion of watercourses and various water points, and the reduction of vegetative cover strongly impact farming and herding activities. Human-induced factors intensify these phenomena, including the exploitation of woody species, the expansion of agricultural areas (occupying watercourses, forests and pastoral enclaves), poor agricultural practices, and noncompliance with environmental management standards in urbanization processes.



**Figure 1:** Violent incidents in the Tillabéri region from September 2022 to September 2023 (ACLED Map).

<sup>14</sup> Wolfram Lacher, “Organized crime and conflict in the Sahel-Sahara region”, Carnegie Endowment for International Peace, 13 September 2012.

## Research methodology: SCORE Index

Our evidence-based peacebuilding methodology combines an extensive participatory research process with advanced data analysis to identify the drivers of conflict dynamics and peaceful social change. It draws inspiration from multiple scientific disciplines, including sociology, psychology, international relations and security studies, and is flexible enough to incorporate new research findings, global policy guidelines, and the realities of each local and regional context. The Social Cohesion and Reconciliation (SCORE) Index was developed through a partnership between the United Nations Development Programme Action for Cooperation and Trust (UNDP-ACT) and the Centre for Sustainable Peace and Democratic Development (SeeD), with funding from the United States Agency for International Development (USAID).

First, a series of qualitative analyses was conducted to understand the contextual situation of the Tillabéri region.<sup>15</sup> The quantitative phase involved the administration of 1,200 face-to-face questionnaires across the region. The SCORE questionnaire is designed to build a series of indicators<sup>16</sup> covering various dimensions such as human security, governance, intergroup relations, intragroup relations, climate change, life skills, ideologies and opinions. For this research, the questionnaire was designed to gain insight into the climate situations in the Tillabéri region from the perspective of its inhabitants. The data collected through the questionnaire represent the subjective perceptions and firsthand experiences of the individuals in the region. Several survey questions and indicators were developed to probe the categories of climate shocks, the types of natural resources disputed, and the range of socioeconomic impacts associated with climate change.

### How did we draw key conclusions?

The objective of the analysis is to uncover the connections between the impacts of climate change and individuals' vulnerability to join armed groups. The outcome "vulnerability to join" (VtJ) was built through the aggregation of several items covering various dimensions indicating if the person interviewed indirectly conveys that

joining an armed group is something they can condone, envision or consider as a possibility. The measurement of the outcome is, therefore, a pre-recruitment indicator. It involves understanding the multidimensional factors that make individuals susceptible to recruitment. As the survey was conducted in random households (and not relying on combatants' or former combatants' interviews), it informs us about individuals at risk: those who are not currently enrolled in armed groups but may potentially consider joining them.

The main analysis (predictive modelling) consisted of identifying the drivers of the vulnerability to join and revealing the different steps of the trajectory that put some individuals at risk. The analysis highlighted several complex pathways. To produce this report, those pathways were broken down, isolated from each entry point of the model and limited to climate-related drivers (see Figures 11, 12, 13 and 14 in Annexes).<sup>17</sup>

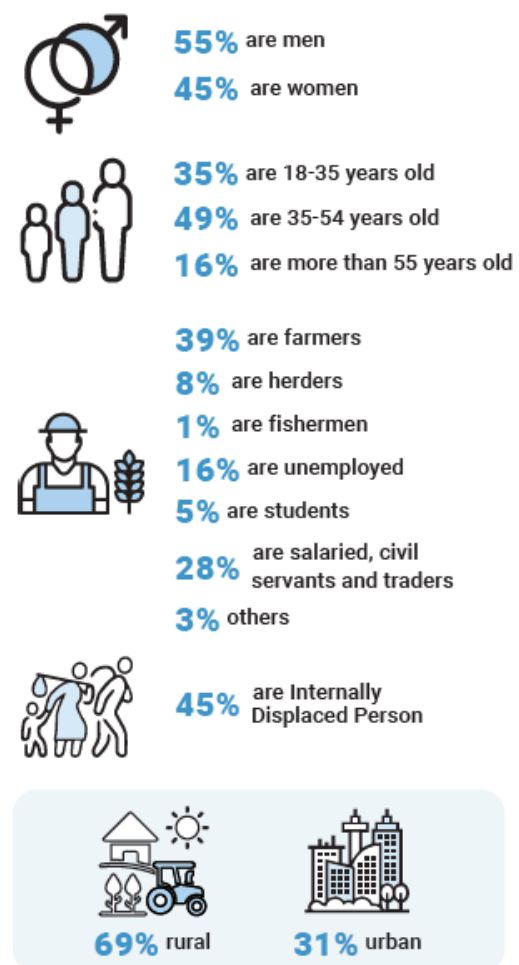


Figure 2: Sample distribution (1,200 respondents)

<sup>15</sup> 28 key informant interviews and 12 focus groups were conducted by the organization Omega Kbk. Representatives from institutions such as La Haute Autorité à la Consolidation de la Paix and Conseil National de l'Environnement pour un Développement Durable, local authorities, religious leaders and former combatants were interviewed. The focus groups in the region mainly involved youth and women's organizations.

<sup>16</sup> Each of those indicators is constructed using a reliability statistical technique such as Cronbach's alpha or factor analysis.

<sup>17</sup> A more detailed description of the analysis and its results can be found in the full report.



# KEY TAKEAWAYS

The complex linkages through which climate change impacts affect human security and recruitment into armed groups can be clustered into nine key findings: (1) a climate security nexus exists in the Tillabéri region, (2) climate change indirectly but actively contributes to making people more vulnerable to joining armed groups, (3) climate change is an aggravating factor, (4) low levels of human security can exacerbate the vulnerability to join armed groups, (5) recruitment patterns are highly contextual and vary according to the socioecological situation of the community, (6) tensions between farmers and herders surface in the wake of poor natural resource governance, (7) natural resource management and social fabric are linked and crucial to preventing recruitment by non-state armed groups, (8) weaponization dynamics manifest in specific local configurations, and (9) the violence activation system is a “missing link”. These key findings lay the groundwork for formulating the appropriate responses to protect against off these risks.



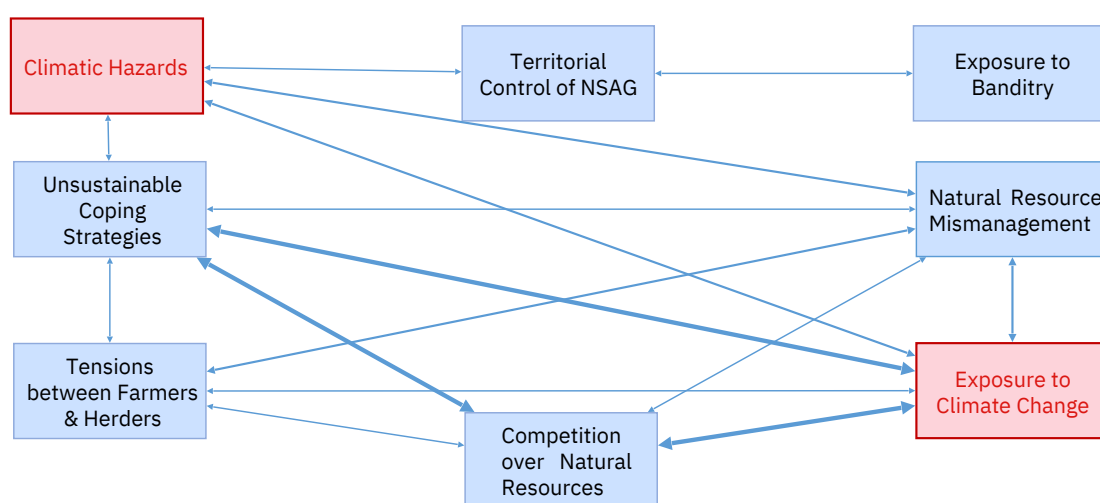
## Finding 1. A climate security nexus exists in the Tillaberi region

Conflicts over natural resources are a result of a combination of diverse factors, including severe climatic stressors, situations involving resource scarcity, mismanagement of natural resources and inadequate justice mechanisms.<sup>18</sup> The data gathered for this study enable the identification of correlations between these various phenomena, thereby highlighting the existence of a coherent set of interconnected indicators.<sup>19</sup> The data illustrates a climate security nexus, showing the associations between climate-related dynamics and security matters.

Figure 3 illustrates that climate-related phenomena create a complex network of dynamics, giving rise to feedback loops and chain reactions. The two boxes in red represent the components of climate change risk (climatic hazard x exposure to climate change).<sup>20</sup> In this context, DDR programmes, tools and reintegration support should be informed by a comprehensive understanding of these interconnected dynamics. DDR processes aimed at reducing conflicts and interpersonal violence



should not focus exclusively on one phenomenon while disregarding the other dynamics that influence it. For example, when tensions between farmers and herders are identified as a critical challenge to social cohesion in a community, it becomes necessary to develop action plans that consider the state of natural resource governance in the area, the varying levels of exposure to climate change of the population, the intensity of competition over natural resources and the normalization of unsustainable coping strategies in the region.



**Figure 3:** Correlations between indicators illustrating a climate security nexus in the Tillaberi region. The thickness of the arrow reflects the strength of the correlation between two indicators.

<sup>18</sup> Homer-Dixon, "Environmental scarcities and violent conflict".

<sup>19</sup> Statistically, a correlation measures the degree to which two variables change together. In other words, it helps us understand whether and how one variable relates to another. Figure 3 shows exclusively positive correlations, meaning that when one variable increases, the other tends to increase as well. It's important to note that correlation doesn't imply causation; just because two variables are correlated doesn't mean that one causes the other to change.

<sup>20</sup> See the glossary, Figure 15 (in Annexes).



## Finding 2. Climate change indirectly but actively contributes to making people more vulnerable to joining armed groups

The predictive modelling shows that **climate change is not a direct cause of recruitment**, as there is not a direct connection between experiencing climatic hazards or seeing one's livelihood undermined by climate change and vulnerability to join. In simpler terms, individuals are not more tempted to join non-state armed groups (NSAGs) because they face more frequent and/or stronger disruptive weather events. In the same way, it is not because individuals perceive climate change as affecting the productivity of their land that they are more likely to join NSAGs.



**Figure 4:** Illustration of climate-related security risks. Source: UN CC: e-Learn – Climate Change, Peace and Security: Understanding Climate-Related Security Risks through an Integrated Lens.

However, as illustrated in Figure 3, climate change risk is correlated with other climate-related stressors such as unsustainable coping strategies, tensions between farmers and herders, competition over natural resources, and natural resource mismanagement. The predictive modelling shows that those dynamics fuel maladaptive violent tendencies and encourage people to own weapons either to access natural resources or to defend themselves.<sup>21</sup> By doing so, those climate-related stressors amplify interpersonal violence and make individuals more vulnerable to join armed groups.

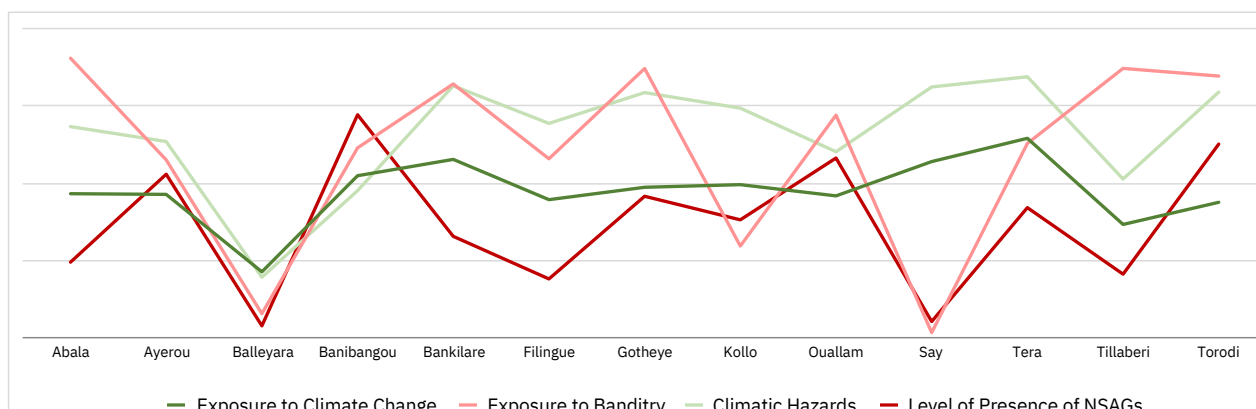
Climate change, rather than being a direct driver of recruitment for NSAGs, operates as a catalyst, exacerbating conditions that heighten the susceptibility of individuals to join such groups. **It's crucial to shift the perspective from viewing climate change as a distant spectre to recognizing it as an active agent shaping pathways to vulnerability.** By acknowledging the intricate interplay between environmental shifts and social dynamics, policymakers can develop more effective strategies to mitigate the impact on communities and address the root causes that make certain populations more prone to recruitment by NSAGs. This nuanced understanding is essential for crafting targeted DDR programmes, tools and reintegration support that tackle the multifaceted challenges arising from the convergence of climate change and security issues.

## Finding 3. Climate change is an aggravating factor

Climate change can exacerbate existing vulnerabilities and create new challenges, often hitting the most marginalized communities the hardest. The results show that individuals who bear the severe consequences of climate change in their daily lives are more likely to face higher levels of threats from NSAGs and bandits. Policymakers and communities need to address the interconnectedness of climate change, security and social issues.

More precisely, the results show that the extent of perceived territorial control by NSAGs rises with the severity of climate shocks experienced by populations. Climate change becomes an opportunity for NSAGs to position themselves as

<sup>21</sup> See pathways in Annexes



**Figure 5:** Variation of scores across the region.

alternative service and relief providers in areas where Governments are weak or unresponsive. The vacuum created by weak governance allows nonstate armed groups to capitalize on climate vulnerabilities to gain influence. Addressing this dynamic would likely require a multifaceted approach, bolstering both climate resilience and governance structures.

Figure 5 illustrates the variation of four key structural threats in the region: exposure to climate change, climatic hazards, exposure to banditry and level of presence of NSAGs. The evolution of each curve shows the variation of a specific phenomenon (for instance, “Level of Presence of NSAGs” in dark red) across the region.

However, beyond the scores for each department, the overall pattern of the curves indicates a consistent variation across the region. When the curve representing exposure to banditry, for instance, decreases from one department to another, generally, the curves for climatic hazards or level of presence of NSAGs also decrease. These phenomena vary together, suggesting that individuals experiencing one type of threat are generally facing the others as well.

To summarize, **climate change repercussions do not occur randomly; they are more pronounced in areas where people already contend with structural hardships.** In other words, climate change is an aggravating factor, as it intensifies the vulnerability of individuals who are already fragile and besieged by disruptive dynamics.

In regions burdened by structural hardships, the repercussions of climate change act as an amplifier, magnifying the vulnerability of individuals. Notably, the severity of climate shocks in these areas not only compounds existing struggles but also presents an alarming opportunity for non-state armed groups to exploit

the void left by weakened governance. To effectively address this intricate web of issues, a comprehensive approach is imperative — one that not only targets climate resilience but also rectifies the structural inequalities that leave certain populations disproportionately exposed to multiple threats.

#### **Finding 4. Low levels of human security can exacerbate the vulnerability to join armed groups**

The vulnerability to join armed groups should be understood within a framework of institutional deficits and human security. The lack of State presence heightens multidimensional human insecurity, amplifying the vulnerability of populations to various local and structural stressors, including climate change risks, the presence of non-state armed groups, banditry, and tensions between farmers and herders. Individuals experiencing the strain of these disruptive dynamics are more inclined to resort to violence and seek assistance from non-state armed groups.

The absence of service provision by the State can exacerbate the human insecurity of populations already grappling with the presence of NSAGs, banditry and climate shocks. A focus on indicators strongly correlated with access to services aids in comprehending this trend. It shows that several human security dimensions are positively correlated (physical security, food security, economic security). When individuals have reliable access to these essential services, their overall well-being is enhanced, and their resilience against various threats, both internal and external, is fortified. This hypothesis can be reinforced by looking at the negative correlations, which tend to show that when access to services increases, exposure to various climate change consequences decreases. By the same token, when access to services increases, vulnerability to join decreases.



Correlations with Access to Services			
Physical security	0.41	Exposure to climate change (water and food shortages)	-0.41
Livelihood security	0.37	Exposure to climate change (pollution and illnesses)	-0.40
Food security	0.35	PTSD	-0.40
Economic security	0.30	Exposure to climate change (pollution and illnesses)	-0.36
Purchasing power	0.29	Weaponization tendency for social reasons	-0.30
		Vulnerability to join	-0.28

**Table 1:** Levels of correlations with Access to Services

Ensuring access to fundamental services such as health care, education, clean water and reliable infrastructure creates a robust foundation for human security. **The vulnerability to join armed groups should be understood within a framework where the absence of State presence intensifies multidimensional human insecurity, exacerbating the vulnerability of populations to various local and structural stressors (such as climate change risk, the presence of non-state armed groups, banditry, and tensions between farmers and herders).** Violent reactions and possessing weapons emerge as last resort measures aimed at ensuring physical security and sustaining livelihoods.

### Finding 5. Recruitment patterns are highly contextual and vary according to the socioecological situation of the community

Candidates for NSAGs follow specific trajectories. These trajectories are deeply individualized but

are also influenced by external constraints and opportunities. As this research primarily focuses on dynamics related to climate change, the results help us understand that **an individual living in a flourishing area who decides to join an armed group might do so for different reasons than an individual deciding to join an armed group in arid land.**

Research shows that the scarcity of natural resources could lead to conflict, but it also indicates that the availability of natural resources could be a trigger for disputes and/or NSAG enrolment. How can both scarcity and availability of natural resources lead to conflict?

The results can provide insightful explanations for this “paradoxical” situation by offering ecological and contextual perspectives. The hypothesis suggests that recruitment patterns are strongly associated with the environmental endowment of the area. To illustrate this hypothesis, the following graphic describes the configuration of two departments in Tillabéri.



Say is located in the area of the Niger's W National Park that is part of a large area in Niger, Burkina Faso and Benin bordering the Niger River, consisting of wetlands and elevated plains of wooded savanna. It contains a wide range of plants characteristic of West African woodland savanna and wetlands lying under a major flyway.



Banibangou is a town in southwestern Niger, in rural northern Ouallam Department, Tillabéri Region. A poor area on the edge of the Sahara Desert, Banibangou was hard hit by rural famine during the 2005–06 Niger food crisis. It is often described as a dry land, and it regularly experiences drought episodes.

Step	A potential recruitment trajectory in Say based on the ecological endowment of the area.	A potential recruitment trajectory in Banibangou based on the ecological endowment of the area.
1	The availability of natural resources creates a perception of abundance, encouraging the adoption of self-serving behaviours and unsustainable strategies.	The area is significantly affected by drought and challenging climatic conditions. The absence of State intervention exacerbates the situation, leading to a lack of access to essential services and safety nets for the residents.
2	The availability of natural resources attracts herders and transhumance dynamics but also internal migrations (especially in conflict-affected areas), resulting in tensions over resources (particularly between farmers and herders).	Populations in Banibangou are left in a vulnerable state. The high presence of NSAGs and banditry and the limited economic opportunities compound the issue. Lack of basic services, climate change impact and presence of NSAGs are exacerbating human insecurity.
3	In a situation of natural resources abundance, the perception of unfair distribution of resources can trigger grievances. Mismanagement of natural resources can fuel tensions and violent reactions.	NSAGs seize the opportunity presented by the absence of administrative control to assert their influence by purportedly helping individuals.
4	In a situation marked by self-interest and ecologically harmful behaviours, tensions between farmers and herders, coupled with natural resource mismanagement, tempt people to acquire weapons to defend their access to natural resources.	An area with limited raw materials can spark rivalries among individuals striving for access to these scarce resources.
5	The weaponization of the area prompts certain individuals to seek protection with NSAGs.	The configuration of human insecurity, climate stressors and lack of State institutions encourages people to seek protection and/or access resources through NSAGs.
	The availability of natural resources facilitates the adoption of unsustainable behaviours, drives migration, and fosters tensions between farmers and herders, especially in situations of natural resource mismanagement. This configuration encourages weaponization tendencies and potentially leads to recruitment.	The unavailability of natural resources leaves people in a vulnerable situation, dealing with climate degradation, the presence of NSAGs and banditry. This configuration fuels violent tendencies among the population and makes them more receptive to the security and financial incentives promoted by the NSAGs.

**Table 2:** Recruitment trajectories in Say and Banibangou based on the ecological endowment of the area.





VINCENT VAN ZEIJST



FAO/GIULIO NAPOLITANO



## Finding 6. Tensions between farmers and herders surface in the wake of poor natural resource governance.

Tensions between herders and farmers create a volatile environment, fostering individual inclinations towards violence and weaponization. The struggle for resources, particularly land and water, often escalates into conflicts that push individuals towards justifying the use of violence and seeking arms ownership as a means of protection or assertion. In this context, the very fabric of community relationships becomes strained, amplifying the potential for individuals to resort to aggressive measures in response to perceived threats.

These tensions grow in a specific environment and are associated with other dynamics (see Figure 3). Addressing the interconnected phenomena is crucial to breaking the cycle and promoting a more peaceful coexistence. Interventions aiming to tackle tensions between farmers and herders should consider what “goes with” those tensions. The findings reveal that as farmer-herder disputes escalate, so do

unsustainable coping mechanisms, competition for natural resources, vulnerability to climate change and mismanagement of these resources. Therefore, DDR processes aiming to target peace consolidation between herders and farmers should integrate those interconnected issues.

Tensions between herders and farmers occur in areas where regulations and local mechanisms may be lacking or ineffective. Individuals rationalize the use of weapons as a means of defence or asserting their rights in these contentious situations. The absence of effective regulations and/or socially accepted local mechanisms in areas of herder-farmer tensions creates a vacuum that individuals may feel compelled to fill through self-defence or asserting perceived rights, often resorting to weaponization.

Strengthening governance structures, improving access to justice, and implementing inclusive conflict resolution mechanisms become pivotal in addressing these issues. By establishing frameworks that address the underlying causes of conflicts and provide avenues for dispute resolution, communities can work towards defusing tensions and promoting a more stable coexistence between herders and farmers.

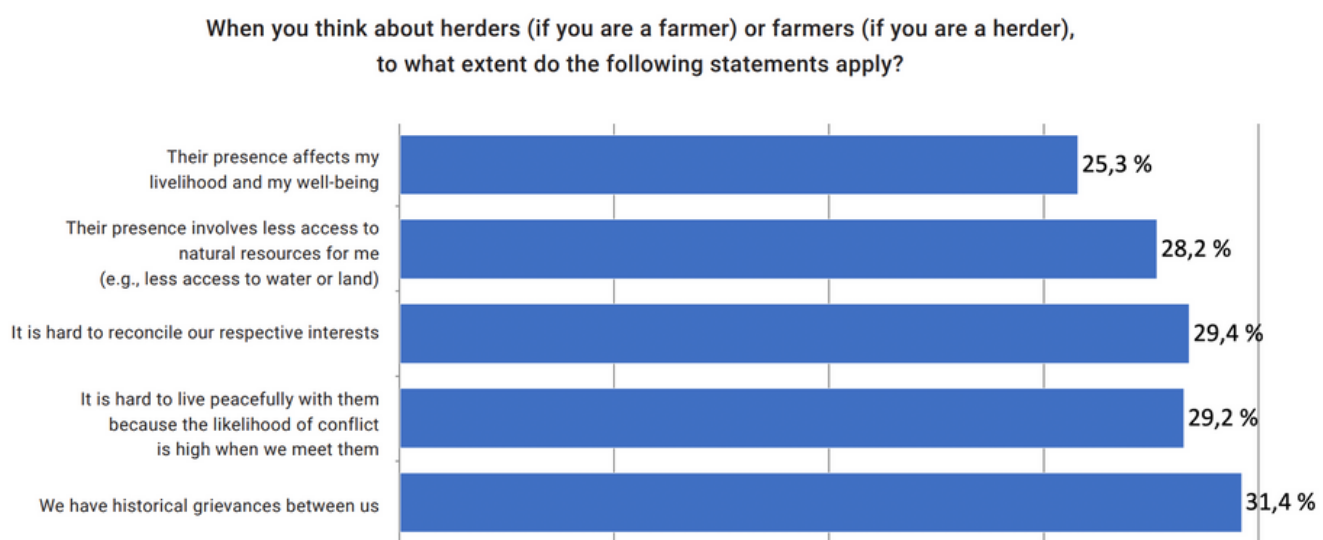


Figure 6: Questionnaire items measuring the tensions between farmers and herders.

## Finding 7. Natural resource management and social fabric are linked and crucial to preventing recruitment by non-state armed groups.

When individuals perceive a lack of regulation or encounter deficits in the distribution of resources, they become more vulnerable to climatic stressors. When there is a sense of inadequacy in natural resource management, the impacts of environmental challenges are felt more acutely by the population. This situation creates a feedback loop, wherein climatic stressors and ineffective distribution of natural resources reinforce each other, exacerbating the vulnerability of individuals and encouraging them to delegitimize the regulatory mechanisms. It underscores the importance of not only addressing the immediate impacts of climate change but also strengthening regulatory frameworks and ensuring fair access to resources.

Additionally, deficiencies in natural resource management amplify the justification for weapons ownership. Natural resource management not only impacts the environment but also has ripple effects on social dynamics. When regulatory mechanisms are lacking or not socially accepted, individuals may be tempted to hold weapons as a means of asserting control or protecting their perceived interests.

Thus, strengthening natural resource management not only contributes to environmental sustainability but also plays a role in reducing the potential for conflict and violence. It's a reminder of the need for holistic approaches that address both the ecological and social dimensions of resource management.

The link between deficiencies in natural resource governance and the strength of intragroup and intergroup bonds underscores the interconnectedness of environmental sustainability and social cohesion. Effective management of natural resources not only ensures ecological balance but also plays a pivotal role in fostering cooperation and solidarity within and between communities. The correlation between natural resource governance and social cohesion should be understood as follows: **socially accepted natural resource management cannot be sustained in the absence of strong social bonds, just as social cohesion cannot remain stable when natural resource regulatory mechanisms are regarded as unfair by some parts of the population.**

In this context, strengthening intragroup and intergroup bonds becomes not just a social goal but an integral part of ensuring sustainable and equitable use of natural resources. By promoting collaborative approaches within natural resource management mechanisms and encouraging dialogue between different social groups, DDR processes can address environmental and social challenges simultaneously.

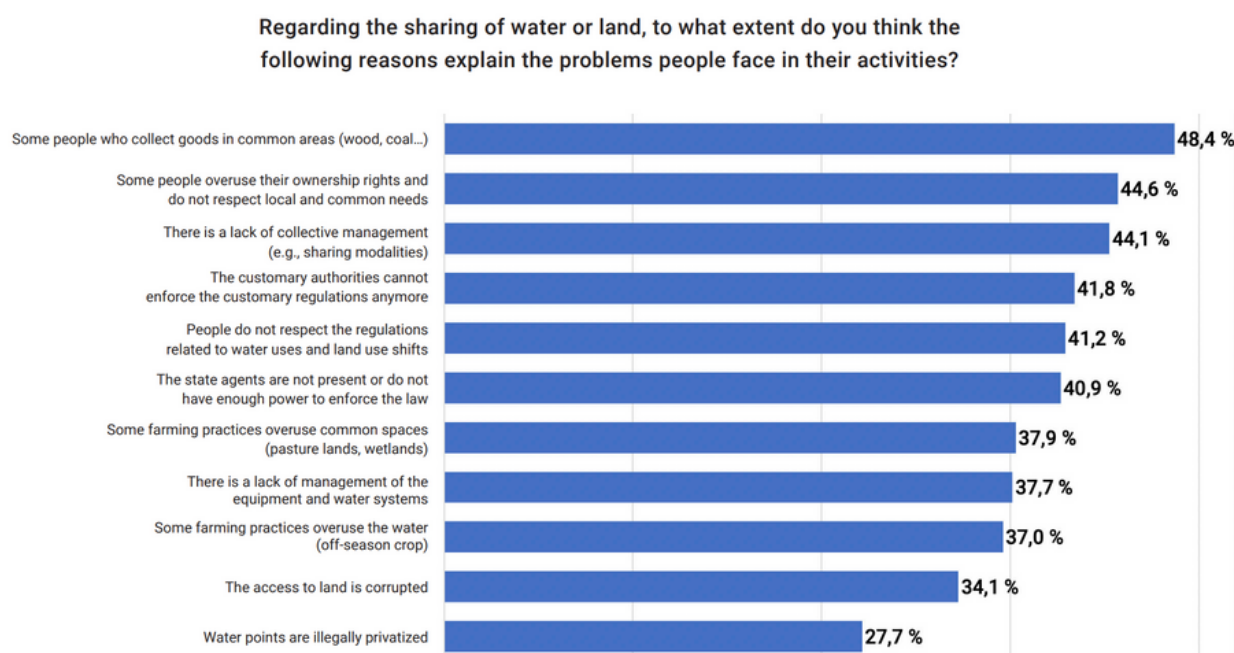


Figure 7: Questionnaire items measuring the tensions between farmers and herders.



## Finding 8. Weaponization dynamics manifest in specific local configurations.

People who justify weapons ownership are more vulnerable to joining armed groups. The social acceptance of weapons is therefore a crucial challenge to preventing the growth of NSAGs. The normalization of weapons within a society creates a conducive environment for the recruitment efforts of these groups. When weapons become a common feature of daily life, the barrier to their use in pursuit of ideologies or objectives is significantly lowered. As promoted by the weapons and ammunition management approach (WAM), countering this normalization involves not only addressing the physical presence of weapons but also challenging the underlying cultural and social attitudes that validate their use.

Indeed, the tendency to justify the use of weapons is more likely to appear in communities with a high level of social threat suspicions between social groups, where the State is not present, and where people are suffering from economic insecurity. This result underscores the critical role of social dynamics in the proliferation of weapons. Addressing this challenge requires a multifaceted approach that goes beyond traditional security measures. Dysfunctional communities foster the normalization of weapons as a means of protection or assertion.

To effectively prevent the expansion of NSAGs, DDR processes need to address the socioeconomic causes. This involves not only strengthening security measures, but also fostering social cohesion and economic stability, and ensuring the presence of a responsive State. By investing in these foundational elements, policymakers can create a more resilient and stable environment that actively prevents individuals from resorting to weapons ownership.

## Finding 9. The violence activation system is a “missing link”.

Climate-related phenomena such as tensions between farmers and herders, competition over natural resources, and exposure to climate change, as well as non-climate-related dynamics such as physical insecurity, marginalization and economic instability, should be seen as **stressors that potentially facilitate decision-making rather than triggers of the decision itself**.

While most individuals in the Tillaberi region are exposed to these dynamics, only a few exhibit a critical level of vulnerability to join. The distinguishing characteristic between them and the majority of the population appears to be the inability to cope peacefully with these stressors rather than resorting to violence. The distinguishing characteristic between them and the majority of the population appears to be the inability to cope peacefully with these stressors

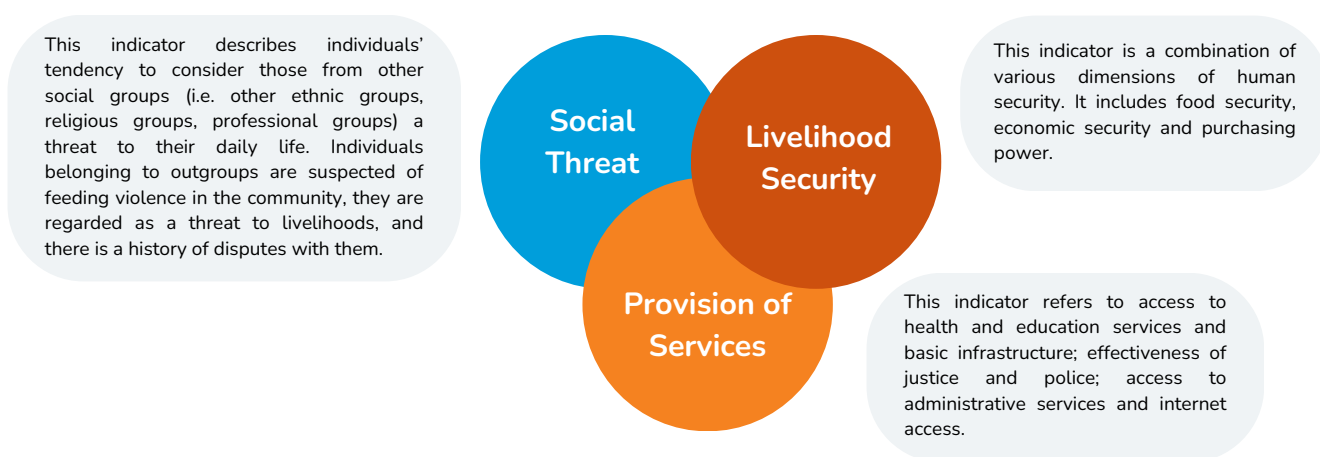


Figure 8: Nexus of dynamics facilitating the social acceptance of weapons.



rather than resorting to violence. A specific combination of maladaptive life skills (aggression, revenge tendency and justification of violence<sup>22</sup>) and an inclination to possess weapons constitute the two predictors that differentiate the minority of the population showing a certain vulnerability to join.

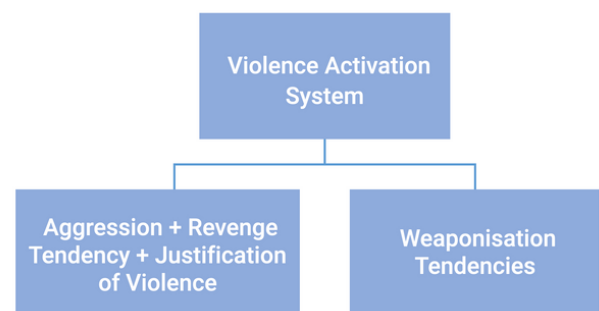
This “violence capital” is exacerbated by external stressors that hinder individuals from peacefully dealing with their disruptive environment. We consider here that even though climate change may not directly cause conflict, extreme weather events and climatic stressors could amplify interpersonal violence.<sup>23</sup>

In other words, the other dynamics identified in the model (such as the presence of NSAGs, tensions between herders and farmers, PTSD, etc.) play a role in the decision-making process, but they are mediated by the ability of individuals to control their violent tendencies. People who can regulate their violent tendencies will be less prone to joining armed groups despite external stressors.<sup>24</sup>

This hypothesis is supported by economic insecurity levels in the region. Only 14 per cent of the respondents believe they can meet their basic needs, and over one-third of the respondents report being unable to provide enough food for all household members. These statistics indicate that

the levels of human security in the region are significantly low. If economic insecurity were a direct driver of VtJ, we would anticipate a much higher number of candidates for armed groups. In our sample, 76 per cent are in a situation of food insecurity and “only” 3 per cent show a VtJ. Thus, despite the prevalent economic insecurity in the region, the number of candidates for armed groups remains comparatively low. Given these findings, it is unlikely that economic insecurity is a direct driver of recruitment for armed groups. Instead, economic insecurity, along with other factors like physical insecurity and marginalization, functions as a precondition that facilitates the decision-making process.

Many citizens in the region experience similar levels of insecurity, yet most choose not to join armed groups. The crucial differentiator seems to be the ability to cope peacefully with these stressors. Individuals who lack alternative solutions and are unable to manage the stressors peacefully may be more prone to resorting to violence, leading them to join armed groups. This tipping point in their decision-making process occurs later among those who find themselves with no other options but to handle the sources of stress through violent means. **In summary, violent predispositions and the inclination to arm oneself constitute the two predictors that distinguish the minority of the population (3 per cent) showing a certain vulnerability to join.**



**Figure 9:** Violence Capital

<sup>22</sup> “Aggression” measures the inability to restrain violent behaviours in daily life. “Revenge tendency” measures the inability to forgive when experiencing personal shocks such as losing assets or a family member, or facing humiliation. “Justification of violence” entails supporting the use of violence to achieve goals.

<sup>23</sup> Se Min Suh, Daniel A. Chapman and Brian Lickel, “The role of psychological research in understanding and responding to links between climate change and conflict”, *Current Opinion in Psychology*, vol. 42 (December 2021).

<sup>24</sup> See the results from the resilience analysis in section 4 of the in-depth version of this report.

## Finding 10. NSAGs' narratives are performative in specific contexts exacerbated by climate change.

Based on the indicators that emerge from the predictive analysis, a range of hypotheses explain the reasons for the social performativity of NSAGs' narratives among some communities.

1. NSAGs thrive in an environment where violent tendencies persist (revenge tendency, aggression, justification of violence, willingness to hold weapons), generated by current and old disputes (tensions between farmers and herders) related to the competition for natural resources (unsustainable coping strategies), in a context of growing degradation and scarcity caused by climate change (risk of climate change).
2. The lack of human security (willingness to hold weapons), current and past violent experiences (PTSD), and the frustrations generated as a result operate as indicators of the incapacity of the State and local authorities to ensure the fulfilment of basic needs (conservative rejection of the State).
3. As a result, NSAGs can present themselves as an alternative governing body dedicated to repairing old injustices and restoring human security for those who fear or seek revenge.

Two recruitment trajectories could be identified based on the predictive model.

1. An emotion-driven trajectory illustrating an individual's pathway towards recruitment

triggered by emotional reactions to external stressors. This profile characterizes individuals who struggle to manage stress in a calm manner, instead responding with aggression to environmental challenges.

2. A reasoning-driven trajectory illustrating an individual's pathway towards recruitment triggered by rationalizations for why people could join armed groups. This profile characterizes individuals who normalize disruptive behaviours and justify those attitudes (e.g. rejection of the State, justification of violence, unsustainable coping strategies, willingness to hold weapons).

Based on those two potential recruitment paths, the ANOVA analyses identified two types of profiles: one impulsive, the other more deliberate and thought out.

Age and gender characteristics play a role in the first trajectory: males between 24 and 35 years old are more prone to react and follow an emotion-driven pathway. While professional activity is also a key characteristic (i.e. herders are more at risk than other categories), geographic location facilitates this trajectory: living in a rural area at the border of Mali or Burkina Faso is a specific fragility factor. Finally, internally displaced persons are particularly vulnerable and prone to react violently to external stressors.

Gender characteristics also play a significant role in the second trajectory (i.e. males are more prone to adopt this pathway). Contrary to the first trajectory, both herders and farmers are particularly prone to follow this pattern.

### Profile 1. Emotion-driven trajectory

Individuals who show violent and emotional reactions in the face of stresses



- Internally Displaced Persons
- Living at the border of Mali or Burkina Faso
- Male
- Rural
- Herder
- 24-35 years old

### Profile 2. Reasoning-driven trajectory

Individuals who normalize the use of violence in the face of stresses



- Male
- Rural
- Living at the border of Mali or Burkina Faso
- Farmer or Herder

Figure 10: Profiles of recruitment trajectories.



## FRAMEWORK FOR DDR INTERVENTIONS

The results suggest the need for a transversal and multidisciplinary approach to DDR that considers climatic stressors, societal dynamics and individual psychological tendencies together. DDR programmes, tools and reintegration support that integrate mental health and psychosocial support (MHPSS), peacebuilding and livelihood development offer the best chance for people living in adversely affected areas to thrive.<sup>25</sup> The MHPSS approach focuses on addressing the mental health and psychosocial needs of individuals and communities affected by various forms of adversity, including conflict, disasters, epidemics and other traumatic events. MHPSS programmes aim to promote and protect the psychological well-being of individuals and communities, helping them cope with the emotional and social impact of these challenging situations. Therefore, psychological challenges, such as the inability to control anger and the desire to seek revenge, must be understood and treated in the context of environmental stressors, such as the presence of NSAGs, exposure to banditry and climatic adversities, as well as shocks such as resource scarcity, decreased livelihoods and physical insecurity.

To summarize, the results of the research encourage the **development of interconnected and cross-cutting DDR processes to strengthen and self-sustain constructive citizenship, social connectedness and resilient livelihoods.**

**Individual Level:** The pursuit of individual well-being and civic empowerment is necessary for the welfare of the population. However, well-being and civic agency are inextricably linked to the strength of social bonds and the resilience of livelihoods. Sustainable well-being and civic empowerment can only be achieved when communities foster robust social connections and develop livelihoods that can withstand challenges. In this symbiotic relationship, social cohesion and resilient livelihoods form the foundation for enduring well-being and effective civic engagement.

**Community Level:** The sustainability of both horizontal and vertical social cohesion hinges on the provision of well-being and civic skills at the personal level. For social bonds to thrive horizontally within communities and vertically across different societal levels, individuals must be equipped with the necessary skills for personal well-being and civic engagement. Empowering individuals with these skills creates a ripple effect, contributing to the enduring strength of social cohesion in both horizontal and vertical dimensions.

**Livelihood:** The development of specific skills to support people's livelihoods is necessary. However, strength and resilience of livelihoods can only be sustained through a combination of social connectedness and efficient collective natural resource management. Building robust livelihoods requires not only individual efforts but also a cohesive social fabric that fosters collaboration and mutual support. In this interdependent relationship, the synergy between social connectedness and effective natural resource management becomes crucial for the enduring strength and resilience of livelihoods.

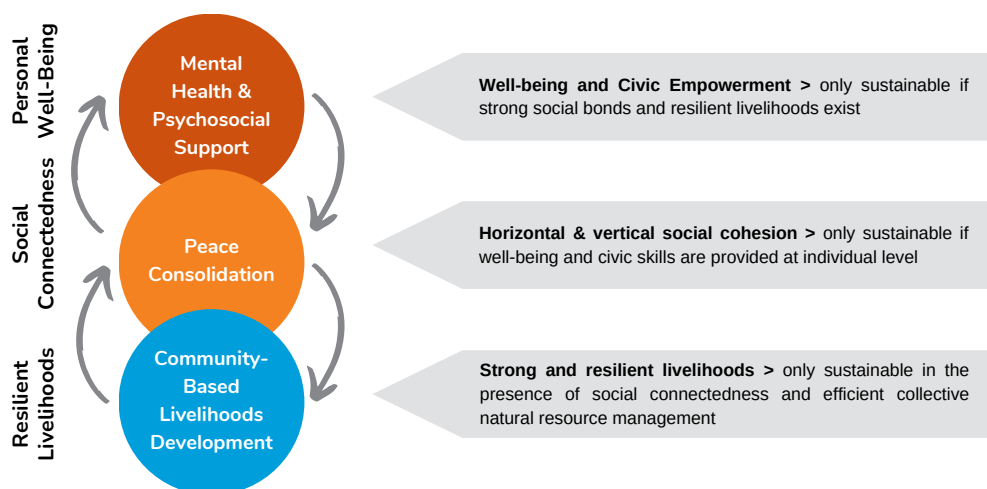


Figure 11: Framework for CVR interventions

<sup>25</sup> Abiosseh Davis and others, *Mind the Peace: Integrating MHPSS, Peacebuilding and Livelihood Programming – A Guidance Framework for Practitioners* (Geneva/Nairobi: Interpeace, 2022).

## Theory of change

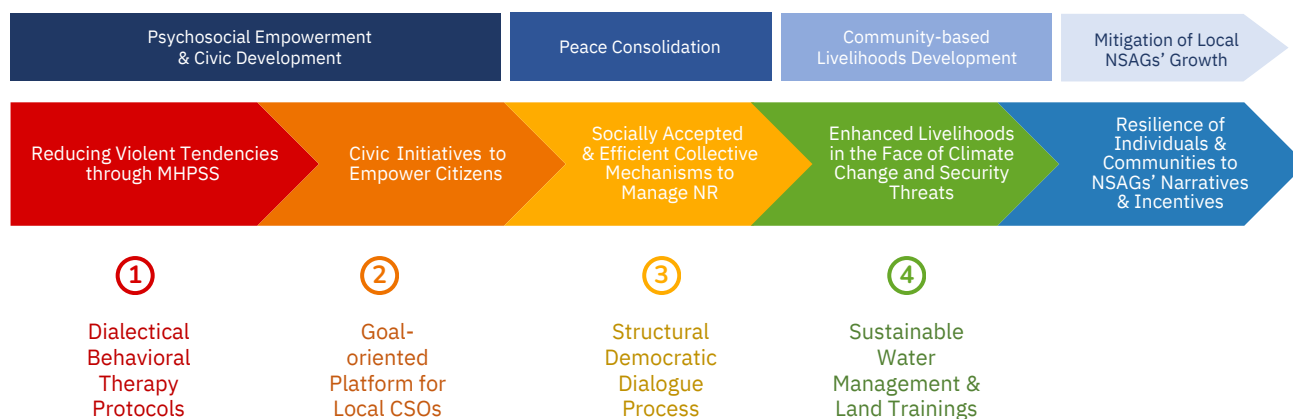


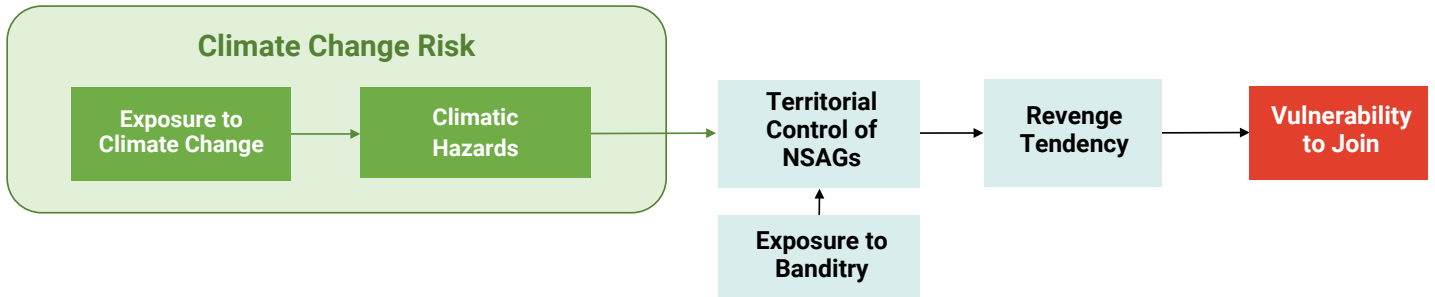
Figure 12: Theory of change

Area	Level of interventions	Aim	Indicators identified
Psychosocial Empowerment & Civic Development Media	Psychosocial level	Mitigating drivers of vulnerability to join	Aggression, revenge tendency, justification of violence, post-traumatic stress disorder
		Strengthening resilience drivers	Forgiveness, respect towards human rights...
	Civic level	Mitigating drivers of vulnerability to join	Rejection of the State, unsustainable coping strategies
		Strengthening resilience drivers	Agency, critical mindset against NSAGs' narratives, gender equality
Peace Consolidation	Positive peace	Mitigating drivers of vulnerability to join	Farmer-herder tensions, unsustainable coping strategies, rejection of the State
		Strengthening resilience drivers	Community connectedness, intercommunity dispute resolution, community-State liaison, institutional connectedness
Community-based Livelihoods Development	Resilient livelihoods in the face of security and climate threats	Mitigating drivers of vulnerability to join	Willingness to hold weapons, exposure to banditry, exposure to NSAGs, unsustainable coping strategies, exposure to climate change

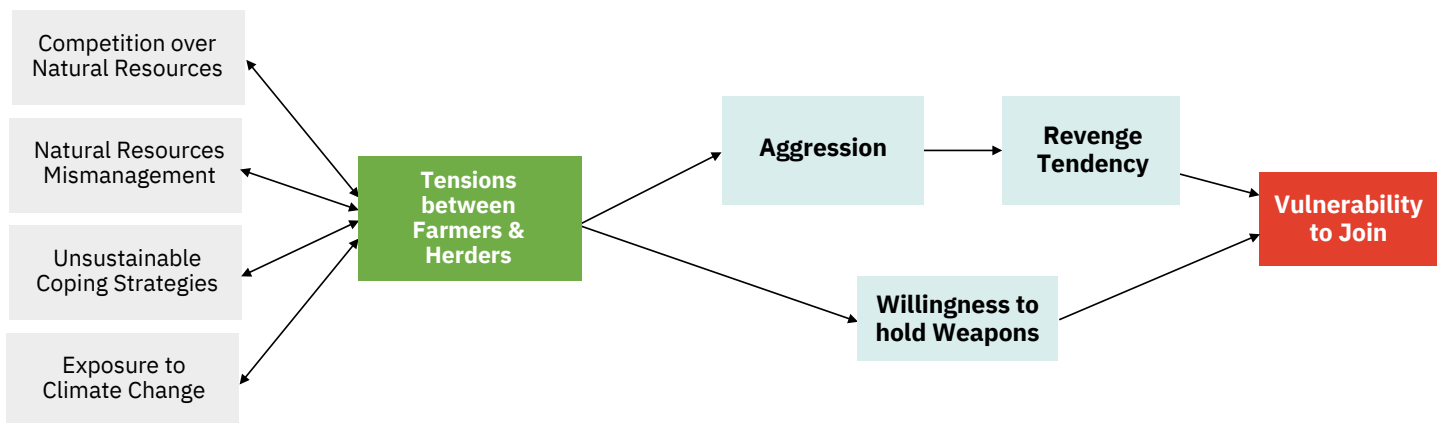
Table 3: Framework of the interventions

The table above shows the structure of the approach and describes how each layer aims to tackle the specific indicators identified during the analysis.

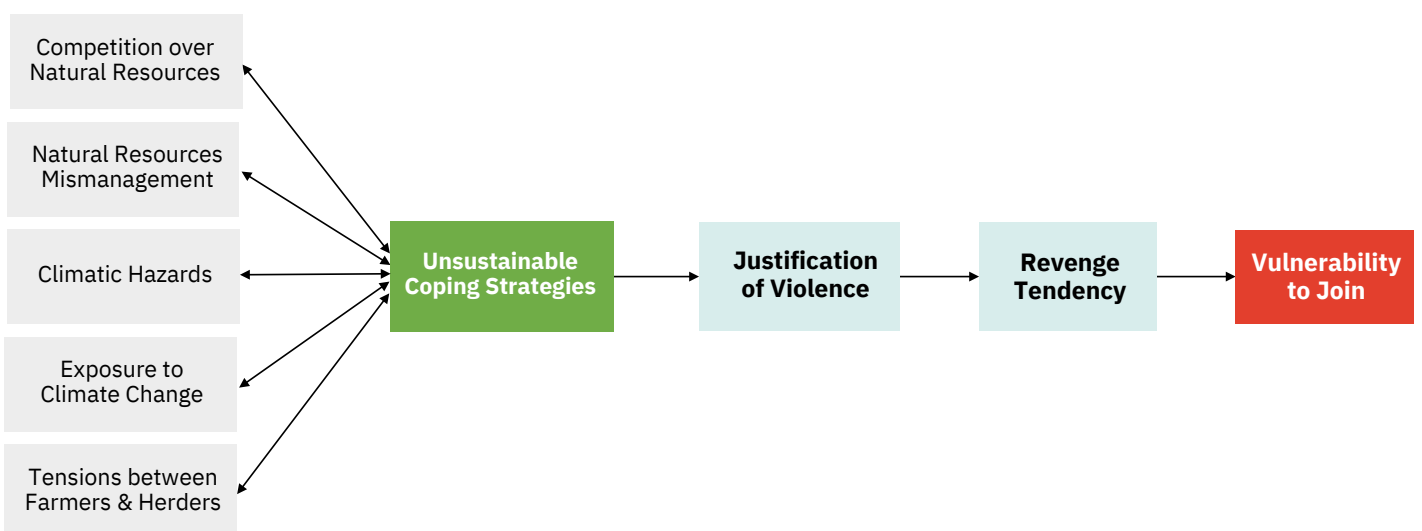
## ANNEXES



**Figure 13:** Pathway 1: pathway from the entry point "Climate Change Risk".

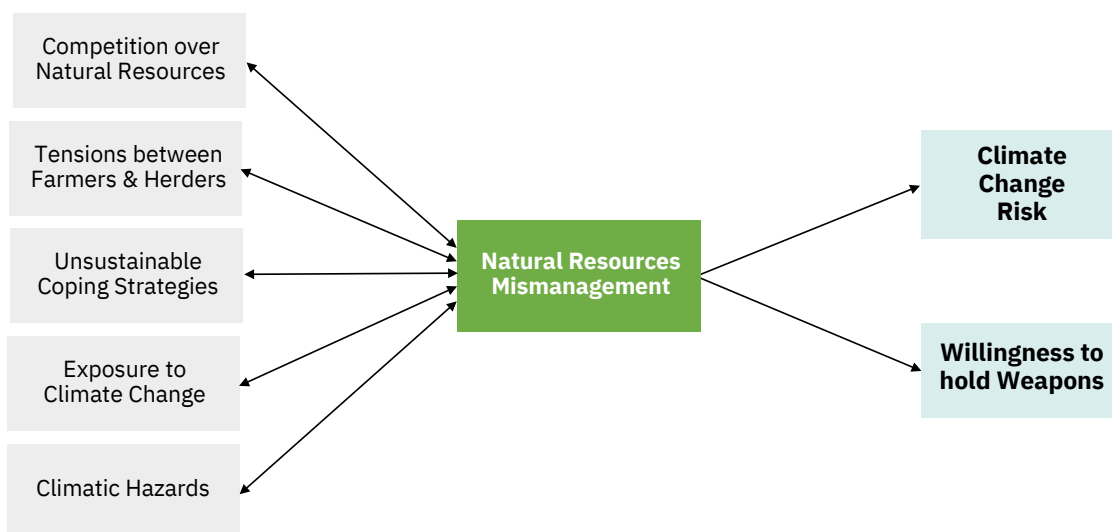


**Figure 14:** Pathway 2: pathway from the entry point "Tensions between Farmers & Herders".



**Figure 15:** Pathway 3: pathway from the entry point "Unsustainable Coping Strategies".





**Figure 16:** Pathway 4: pathway from the entry point “Natural Resources Mismanagement”.

<b>Climatic Hazards</b>	Weather-related events that can be extreme and include rapid-onset events (e.g. flood or hurricane) and slow-onset events (e.g. loss of biodiversity or change in rainfall patterns).
<b>Climate Stressors</b>	Weather-related or human-induced phenomena that affect the situation of individuals. They are usually slow-onset events such as salinization and soil degradation.
<b>Exposure to Climate Change</b>	Impact of climatic hazards on the socioeconomic situation of individuals (i.e. livelihood or health), reflecting the vulnerability of people to weather events.
<b>Climate Change Risk</b>	Combination of climatic hazard and exposure to climate change.
<b>Natural Resource Management</b>	Governance mechanisms responsible for controlling the use of natural resources that balance environmental sustainability, economic well-being and social equity.
<b>Unsustainable Coping Strategies</b>	Maladaptive individual behaviours towards ecosystems; these self-serving practices prioritize personal and immediate interests in accessing or utilizing natural resources.

**Table 4:** Key terms



MINISTRY OF FOREIGN AFFAIRS  
OF DENMARK



DANISH MINISTRY OF DEFENCE



UNOCHA/MICHELE CATTANI



STOCKHOLM INTERNATIONAL  
PEACE RESEARCH INSTITUTE



FBA



[www.seedsofpeace.eu](http://www.seedsofpeace.eu) |  
<https://app.scoreforpeace.org/>

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