Climate Security Policy Coherence and Awareness Analysis Report: East Africa and Kenya

December 2, 2022

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Suggested Citation

Schapendonk, F., Sarzana, C., Scartozzi, C., Savelli, A., Mardurga-Lopez, I., Pacillo, G., and Laderach, P. (2022). Climate Security Policy Coherence and Awareness Analysis: East African and Kenya.

Acknowledgements

This work was carried out with support from the CGIAR Initiative on Climate Resilience, ClimBeR. We would like to thank all funders who supported this research through their contributions to the CGIAR Trust Fund.

Table of Contents

Executive Summary

Given the human security and potential conflict risks attached to ineffective and incoherent governance in the context of the climate crisis, it is critical that policy- and decision-makers are provided with effective policy design and evaluation tools that help generate evidence and identify shortcomings with regards to existing policy outputs. This report aims to contribute to this need by conducting a climate security policy coherence and awareness assessment of policy and strategy documents extracted from climate- and peace and security-related sectors produced at the national level in Kenya. It will do so by making use of a policy assessment framework developed specifically for the purpose of assessing coherence and climate security-sensitivity. Specifically, we sought to answer the following research questions:

- To what extent do the selected documents engage with the topic of climate security and display an awareness of climate-related security risks?
- To what extent can coherence be detected between climate- and peace and security-related policy domains?
- How deep is the level of engagement with the topic of climate security evidenced by the documents? Does the mitigation of climate-related security risks feature in implementation-related policy components?
- To what extent to the documents display in-text evidence of deploying multi-level and adaptive governance mechanisms?

Our results suggest that whilst policy documents from across all the sectors subjected to analysis do show evidence of understanding to some extent the conditions and circumstances that may heighten the chances of climate-related security risks emerging, translating this awareness into concrete policy measures remains a persistent challenge. Policy documents were found to be much more likely to in some way acknowledge climate-conflict linkages and the presence of climate-related security risks than they were to put forward climate security-sensitive programming that explicitly sought to prevent such risks.

There was, however, notable cross-sectoral variation in the extent and depth of engagement with climate-related security risks and potential interventions to mitigate these. Peace and security- and gender-related policy documents were found to display the least amount of awareness of and sensitivity to the various ways through which climate-conflict pathways may emerge and play out. Conversely, the most climate security-sensitive policy documents that emerged from our policy coherence and awareness analysis were development and DRR strategies, which achieved the highest overall coherence and awareness scores. Within the policies subjected to analysis, therefore, it appears that policies and strategies related to disaster risk reduction are the most likely to adopt a cross-sectoral and holistic – as well as climate security-sensitive – lens. Conflicts related to short-term climatic hazards such as drought and floods in particular receive much attention. Conversely, our analysis suggests that longer-term climate adaptation and mitigation activities are less likely to be seen as entry points for addressing root causes of conflict. It could therefore be argued that within

Kenya and East Africa, policies enacted in sectors relevant to the climate security nexus are unlikely to address the *root* causes of climate vulnerability and conflict simultaneously.

It was also found that few documents appear to have successfully operationalised the logic of adaptive policymaking, argued here to be a critical policy feature if policies aim to remain sensitive to complex climate-conflict dynamics and climate-related security risks. The emergence of such risks are a product of cascading risk processes that operate across system dimensions and scales. Processes of change in complex social systems are highly emergent – the product of multiple processes and actors' activities occurring across system dimensions and across both temporal and geographical scales – and are therefore non-linear, unpredictable, and often simply unknowable. Building a social system that is resilient to potential climate-related security impacts means policies must be able to remain responsive to ever-shifting circumstances and conditions and make provisions to ensure this. However, whilst many policy documents in some shape or form agreed with or made reference to the above logic, very few successfully operationalised this and truly embedded the learning and experimentation that policymaking in complex environments requires.

On the basis of this analysis and the gaps in policy engagement it identified, a number of recommendations for improving the climate security-sensitivity of policies and strategies were generated:

1) **Identify where adaptation and mitigation efforts can form entry points for conflict prevention, conflict transformation, and peacebuilding.**

2) **Existing integrated and multi-dimensional programmatic initiatives that include reducing the risk of climate-related conflict – currently predominantly undertaken as part of DRR efforts – should be upscaled and incorporated into longer-term adaptation efforts.**

3) **Improve opportunities and capacities for cross-fertilisation between climate, environment, peace, and security policy sectors, both at the institutional and technical levels.**

4) **Improve the technical capacity of actors working at the intersection of climate, insecurity, and conflict to operate on the basis of the principles of adaptivity.**

Introduction

Climate change-related impacts – ranging from sudden shocks and more frequent extreme weather events in the short-term to more gradual changes in temperature and precipitation rates in the long-term – will not be experienced uniformly. Different degrees of vulnerability among and within countries are driven by patterns of intersecting socio-economic development, ocean and land use, marginalisation, historical and ongoing patterns of inequity such as colonialism and governance (Langsdorf et al., 2022). At the national and regional scales, for instance, certain countries (such as those located near the equator or poles) exhibit greater degrees of exposure to climatic shifts, whilst countries whose economies are highly dependent on climate-sensitive and/or face challenges in diversifying their economic base are inherently more vulnerable to climate-induced perturbations (Feitelson & Tubi, 2017).

Even within countries, large scale climate change-related shifts will have highly distinctive local manifestations. Adopting a landscape lens, for instance, invites us to recognise the multi-level and multi-sectoral character of most policymaking contexts, with the extent, direction, and rate of change differing across and within landscapes (Shuttleworth, 2017). Take, for instance, a coastal setting at risk of sea level rise. Governing authorities may need to simultaneously physically protect the communities who live there, ensure the continuation of economic activity and livelihoods, maintain tourism, and conserve the local natural habitat. The policy actions that need to be undertaken to achieve each of these things are likely very different from each other, yet policy options must be chosen that do not necessarily close the door on others and, where possible, act in a synergistic manner to strengthen a set of collective goals and desired outcomes.

As a consequence of the complex interactions between the biophysical and social worlds – occurring across multiple temporal and spatial scales and often characterised by complex feedback relationships – governance must sensitively account for both 'vertical' and 'horizontal' policy interlinkages and interactions, avoid one-size-fits-all approaches, and ensure effective stakeholder participation and collaboration across multiple scales to detect feedback (Shuttleworth, 2017). This is critical for detecting the unintended consequences a policy intervention into such a complex landscape will likely have and to adjust an intervention where required. Conventional contemporary methods of policy assessment are, however, constrained as they do not tend to focus on these complex interactions and often make use of key indicators that can miss outcomes displaced in time and space (Spicer et al., 2020).

Failure to ensure coherence and develop adequately responsive governance not only represents a missed opportunity to address interconnected issues in a coordinated manner, however. The unintended consequences and local side-effects of adaptation- and mitigation-related policy interventions may indirectly serve to undermine the human security of often already vulnerable communities, thereby also potentially heightening the risk of conflict (Church & Crawford, 2018; Tänzler & Scherer, 2018). Marginalization linked to gender, ethnicity, low income, and combinations

thereof – often manifesting in indigenous communities, local communities, and minority groups – often serves to render already excluded communities and individuals more exposed and vulnerable to climate change-related impacts whilst also causing them to possess a much-reduced capacity for coping with and adapting to climate impacts (Islam & Winkel, 2017). Such communities may be highly dependent on climate-vulnerable livelihoods whilst simultaneously lacking the financial, socio-political, and human capital to successfully reduce their exposure and vulnerability to such risks. If the needs and rights of such communities are not adequately accounted for in policy design and implementation, both adaptation measures as well as transitions to greener economies can create additional pressure on natural resources such as land or water, exacerbate existing inequalities in resource and service access, negatively affect livelihoods, and deepen social cleavages (Detges et al., 2020).

Examples of how conflict-insensitive adaptation and mitigation initiatives may threaten the human security of vulnerable communities are abundant within the literature. Effective and equitable implementation of the UNFCCC's Reducing Emissions from Deforestation and Forest Degradation (REDD) programme, for instance, is heavily dependent on addressing improved forest governance and controlling forest-linked corruption. Pre-existing corruption in contexts where REDD is implemented could work against the conservationist and developmental motivations behind the scheme by skewing the establishment of baseline carbon data or the monitoring of avoided emissions or benefits to local communities, and may also create additional incentives and opportunities for corrupt activities. Public officials might, for example, engage in corruption to extract rents from REDD resource, bringing with it the 'resource curse' (Bofin et al., 2011). Implementation efforts of REDD programmes that remain insensitive to such risks may inadvertently contribute to undermining legitimacy and trust in government. Additionally, programme design that is inadequately responsive to local socio-political dynamics can also entrench pre-existing inequalities, demonstrated by an REDD programme in Nepal which actually worsened livelihood insecurity and the potential for land conflict, as the alternative livelihood strategies provided to the Chepang ethnic community were not suitable for all groups (Patel et al., 2013).

Other mitigation efforts such as afforestation or the production of biofuels, both considered cost-effective and readily available climate change mitigation options, also carry with them implementation risks, particularly as such efforts are increasingly located in regions with high investment risks and weak governance. There are, therefore, major trade-offs and potential negative externalities for already vulnerable communities, with both afforestation and biofuel production often requiring the large-scale acquisition of land to be effective. This often simultaneously reduces the availability of agricultural land, potential resulting in increased competition for land in contexts characterised by scarcity and poorly recorded land tenure rights. This could in turn lead to higher food prices, an increasingly food insecure population, and a greater risk of conflict (Borras et al., 2011; Doelman et al., 2020).

While climate policies can therefore unintentionally trigger or fuel conflict, interventions related to peace and security may also exacerbate climate-related security risks. Military interventions often have negative impacts on the livelihoods and resilience of local populations, for instance by

contributing to displacement or restricting legal livelihoods (Detges et al., 2020). In the Lake Chad Basin, for example, both ongoing attacks and security measures undertaken in response to the presence of non-state armed groups (NSAGs) have limited the mobility of vulnerable communities who rely on migration to remain responsive to a changing climate (*Lake Chad Basin Crisis*, 2021). Restrictions on movement have also severed agricultural value chains and limited the provision of basic services, thereby reducing incomes and support mechanisms for poor households and lowering the opportunity cost for individuals to engage in violence. Traditional approaches to peacebuilding also tend to struggle to account for the complex and ever-evolving connections between climate change and conflict, hampered for example by the fact that context-specific and timely assessments of evolving climate security risks are difficult to obtain, thereby inhibiting the ability of peacebuilders to plan and adapt to changing conditions (Matthew & Hammill, 2013). Furthermore, as climate-related security risks tend to emerge as a consequence of a complex set of processes and conditions operating across multiple dimensions and timescales, responses must address both short-term needs and demands whilst also feeding into longer-term, adaptive, and climate-sensitive development trajectories. It remains challenging to effectively coordinate the wide cross-section of local actors from across the humanitarian-development-peace continuum, meaning that in most cases, responses to climate-related insecurity are reactive as opposed to preparatory or adaptive (Krampe, 2019).

Given the human security and potential conflict risks attached to ineffective and incoherent governance in the context of the climate crisis, it is critical that policy- and decision-makers are provided with effective policy design and evaluation tools that help generate evidence and identify shortcomings with regards to existing policy outputs. This report aims to contribute to this need by conducting a climate security policy coherence and awareness assessment of policy and strategy outputs extracted from climate- and peace and security-related sectors produced at the national level in Kenya. It will do so by making use of a policy assessment framework developed specifically for the purpose of assessing coherence and climate security-sensitivity. In conducting our analysis of selected policy and strategy documents, we are seeking to answer the following key research questions:

- To what extent do the selected documents engage with the topic of climate security and display an awareness of climate-related security risks?
- To what extent can coherence be detected between climate- and peace and security-related policy domains?
- How deep is the level of engagement with the topic of climate security evidenced by the documents? Does the mitigation of climate-related security risks feature in implementation-related policy components?
- To what extent to the documents display in-text evidence of deploying multi-level and adaptive governance mechanisms?

Methodology

We deploy a policy analysis framework created specifically for assessing the degree to which coherence exists between policy domains deemed relevant for the mitigation of compounding climate-related security risks, the extent to which selected documents display awareness of and engagement with the topic of climate security, and the level to which policy and strategy outputs can be said to be proposing tangible policy and programmatic measures for the mitigation of climate-related security risks.

The framework was designed to be responsive to the needs and requirements associated with the previously outlined research questions. Firstly, the results produced by the framework had to be to a certain degree quantifiable in order to produce an empirical framework within which comparisons, patterns, and trends across sectors and document types can be identified, observed, and analysed whilst also remaining cognizant of the subjective nature of analysing large quantities of text in search of particular meanings and insights. Secondly, in order for the analysis to identify specific success factors, bottlenecks, and shortcomings in the climate security-sensitivity of selected policy outputs – as well as possess sufficient specificity to be able to make practical recommendations for improvement in this regard – results must point towards specific thematic and technical areas within policy outputs where shortcomings can be detected. As such, the method proposed here forms a hybrid policy analysis tool that incorporates an automated content analysis (ACA) with a directed computer-aided textual analysis (CATA). Stemler, (2000, p.1) defines content analysis as a "systematic, replicable technique for compressing many words of text into fewer content categories based on explicit rules of coding", thereby encompassing all the techniques aimed at making inferences to identify specific features of messages (Holsti, 1969). This process can be divided into three main phases, namely, preparation, organisation, and the reporting of results (Elo et al., 2014).

The preparation phase consists of collecting data appropriate for conducting content analysis, making sense of said data, and selecting the unit of analysis. In order to identify and extract relevant policy and strategy documents for this study, a keyword search strategy was developed based on the key concepts identified by the research questions. Boolean Operators were used to help enhance and narrow down the keyword search by establishing relationships between the different terms using the connector "AND", used to only retrieve the documents that mention all of the terms included in the search (for instance, searching for "climate" AND "policy" AND "[country]"). This search strategy was enacted in a variety of online repositories – including the Climate Policy Database and the International Energy Agency's (IEA) policies database – as well as within Kenyan government and ministerial websites.

A set of inclusion and exclusion criteria for extracted policy and strategy documents was subsequently developed based on the thematic priorities identified by the research questions, and helped establish the sectoral, temporal, and geographical scope of the analysis. Our sectoral scope encompassed policy and strategy outputs from climate and environment-related sectors, peace and security-related sectors, and cross-sectoral plans and strategies (where cross-cutting and compounding issues are

most likely to be addressed). Secondly, our temporal scope limited analysis to documents produced in 2010 or later, ensuring that selected documents are more likely to be reflective of current national priorities and contexts, thereby improving the relevancy and utility of our document analysis. Finally, inclusion was also based on the different scales at which analysis will be undertaken. For this study, analysis will focus on policy and strategy outputs produced at the national and regional levels. As such, the analysis aims to make an assessment regarding both horizontal coherence at the national-level and vertical coherence between national and regional levels.

The organisation phase consists of the development of a categorisation matrix based on pre-existing knowledge or theory whereby all the data are reviewed for content and coded for correspondence to or the exemplification of the identified categories (Polit & Beck, 2012). These categories can be established inductively – in an emergent manner throughout the entire process of coding and analysis – or deductively, based on of a pre-existing set of research priorities or expected patterns and outcomes. This research deployed a deductive approach, with the specific categories and benchmarks being developed on the basis of the state of the art of climate security research. Our content analysis is therefore largely directed, defined by Hsieh & Shannon (2005) as an approach useful for the validation or conceptual extension of a pre-existing theoretical framework or theory that can be used for the ex-ante creation of analytical categories for the assessment of bodies of text.

The framework (see Annex 1) therefore takes the form of an analytical checklist against which the selected policy and strategic outputs are assessed. The categories that make up the framework reflect the key thematic and technical features we would expect to find within a document that can be said to be aware of and sensitive to the nature and presence of climate-related security risks. Each category consists of at least one benchmark that a policy is required to meet to successfully fulfil a given analytical category. These are organised to focus on two broad areas:

1. How well does a policy or strategy output acknowledge the topic of climate security and display awareness of climate-related security risks? (Acknowledgement)
2. How concrete is the policy or strategy in terms of implementing processes, instruments, and specific measures to actively address climate-related security risks in a coherent and cross-sectoral manner? (Implementation)

No.	Category Type	Analytical Category		Benchmarks
1.	Acknowledgement	Horizontal acknowledgement	1A	Policy makes reference to at least one other policy or strategy document from a sector relevant to climate-related security risks (determined by the sectors outlined in inclusion criteria) at the same level of governance
2.	Acknowledgement	Vertical acknowledgement	2A	Policy makes reference to at least one other policy or strategy document from a sector relevant to climate-related security risks at another policymaking level (regional if policy is national, national if policy is regional)
3.	Acknowledgement	Thematic engagement (climate)	3A	Document references climate change as a challenge, either for all sectors or for a specific sector
			3B	Document refers to specific climate change-related impacts (physical – such as natural disasters – or intangible, such as temperature increases)
4.	Acknowledgement	Thematic engagement (peace, security, and conflict)	4A	Document references insecurity, conflict, or fragility as a challenge, either for all sectors or for a specific sector
			4B	Document refers to specific drivers of conflict, fragility, or insecurity (note: not climate)
5.	Acknowledgement	Thematic engagement (climate security)	5A	Document references/states that there are links between climate change and conflict (*implicitly* or *explicitly*)
			5B	Policy mentions or spells out at least one specific climate-related security pathway that defines and explains the links between climate change and insecurity/conflict
6.	Acknowledgement	Definitional Coherence	6A	Policy clearly articulates and outlines an overarching definition of climate security
			6B	Policy articulates and operates on the basis of a human security-based understanding of climate-related security risks
			6C	Policy clearly articulates and operates on the basis of a threat/risk multiplier conceptualisation of climate-related security risks
			6D	Policy operates on the basis of a systems-based understanding of climate-related security risks
7.	Acknowledgement	Policy adaptivity	7A	Policy displays evidence of deployment of adaptive theory, including the need to learn to live with uncertainty and change (institutional learning), combine different types of knowledge for learning (knowledge pluralism), create opportunities for self-organisation, and the deployment of polycentric governance (networked governance)
8.	Implementation		8A	Policy mentions the need for coherence/integration between different policy sectors and fields

		Cross-sectoral and cross-scalar processes and awareness	8B	Policy mentions or proposes specific instruments, structures, or work processes that relate to improving coherence between ministries or other implementing partners to address climate-related security risks specifically at the same level of governance (such as, for instance, specific cross-ministerial working groups)
			8C	Policy mentions or proposes specific instruments, structures, or work processes that relate to improving coherence between ministries or other implementing partners to address climate-related security risks specifically between multiple levels of governance (such as, for instance, participatory policy design processes or the inclusion of multiple systems of knowledge production, including traditional governance mechanisms)
			8D	Policy explicitly reflects on potential vulnerabilities (potential negative externalities) and strengths (potential positive externalities)
9.	Implementation	Objectives	9A	Policy sets out specific objectives *implicitly* related to the mitigation of climate-related security risks
			9B	Policy sets out specific objectives *explicitly* related to the mitigation of climate-related security risks
10.	Implementation	Instruments	10A	Policy identifies and spells out specific policy instruments or implementation measures that *implicitly* address climate-related security risks (examples include specific programs and projects, capacity building, regulations, etc.)
			10B	Policy identifies and spells out specific policy instruments or implementation measures that *explicitly* address climate-related security risks (examples include specific programs and projects, capacity building, regulations, etc.)
			10C	Policy displays evidence of the following forms of climate-related analysis: climate change vulnerability assessments, social vulnerability assessments, risk and resilience analysis, gender-sensitive risk and resilience analysis.
			10D	Policy displays evidence of the following forms of conflict-related analysis: conflict/conflict-sensitivity analysis, driver mapping, pro-peace analysis.

11.	Implementation	Action plan	11A	Policy includes an action or implementation plan that is implicitly or explicitly related to the mitigation of climate-related security risks
			11B	Policy includes a budgetary/financial mechanism implicitly or explicitly related to the mitigation of climate-related security risks to facilitate action or implementation plan
12.	Implementation	Policy adaptivity	12A	Policy specifies signposts for monitoring changes in the policy context to identify information that should be tracked in order to determine whether reorientation or corrective action is required
			12B	Policy specifies or identifies triggers for contingency plans, reorientation, or corrective actions (such as a relevant variable being measured reaching a critical mass)

Table 1. Climate security policy coherence and awareness analytical framework.

Within the majority of evaluation categories, a distinction is also made between implicit and explicit recognition and mitigation of climate-related security risks. This is done because policies and programmes that explicitly mention and seek to mitigate climate-related security risks are the exception rather than the rule. The majority of policy outputs produced in relevant policy are therefore likely to outline activities that are pertinent for the mitigation of climate-related security risks but are unlikely to explicitly label these as such. Furthermore, identifying examples where for instance the programmatic infrastructure or policy platform may already be in place for the mitigation of climate-related security risks (although not articulated as such) is an essential step for producing relevant and actionable recommendations. The framework has thus been designed to identify both gaps as well as potential entry points.

We operationalise this distinction on the basis of our definition of climate as a risk or threat multiplier, with climate change-related impacts only tending to indirectly affect the risk of conflict by operating through critical intermediary variables (conceived of as human security risks). An implicit link between climate change-related impacts on the one hand and conflict-related outcomes on the other is conceptualised as being focused on the first two of the three components of this (non-linear) causal sequence (see figure 1). Implicit linkages or implicit implementation-related policy content are therefore defined as focusing on understanding or mitigating the relationship between climate change-related impacts and human (in)security, without necessarily identifying either a further potential link to conflict or – in the case of objectives, instruments, and action plans – without articulating any potential peace and security co-benefits of an intervention. An explicit linkage or implementation-related policy content is defined as an intervention that conversely detects or acts to mitigate the sequence leading from climate change-related impacts to conflict in its entirety, drawing a common thread through from climate to human (in)security and finally conflict-related outcomes.

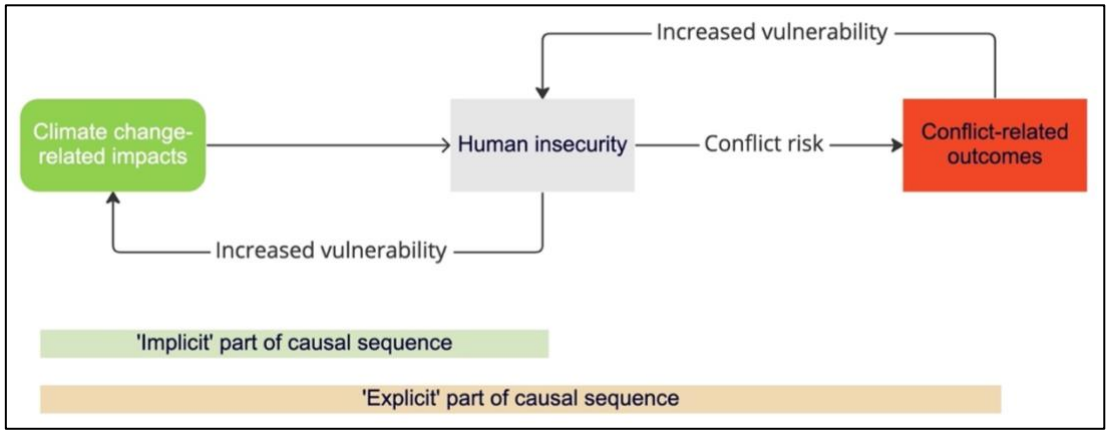

Figure 1. The three components of the (intra-state) climate-conflict sequence.

Finally, in order to report the results generated as a consequence of the analysis, coded results were subjected to empirical analysis so that key trends and patterns could emerge from the final dataset. Results were disaggregated across scale of governance, sector, and at the level of both overarching evaluation category and at the level of individual benchmarks.

In order to operationalise the framework outlined in table 1 and help facilitate the analysis, our method uses a hybrid automated content analysis (ACA) which combines the strengths of quantitative and qualitative approaches while mitigating their respective drawbacks. As noted by Baden et al, computational tools are limited in their ability to comprehend theoretical constructs but can "classify textual contents in a perfectly consistent, scalable fashion" (Baden et al., 2020). Conversely, human coders exceed algorithms in their capacity to infer meaning, but their work is affected by biases and human errors. Therefore, by combining the two approaches, we aim to be able to analyse a large-n dataset while still providing in-depth readings of selected documents. In the field of climate security, this methodology has already been proven as a successful tool of inquiry in multiple studies (Scartozzi, 2021, 2022a, 2022b).

The ACA proposed in this study is composed of four consecutive steps. The first step of the analysis involves the breakdown of broad and open-ended research questions into smaller proxy benchmarks that can be answered via an automatic or hybrid content analysis. To this end, the benchmarks are designed to be affirmative statement that can be answered with a true (1) or false (0) statement. This process of deconstruction is necessary as rule-based algorithms work best to answer well-defined and bounded questions.

The second step of the content analysis sees the use of computational algorithms to pre-process the text contained in the policy documents. First, the text is extracted in bulk from the original documents and converted into a homogenous digital format. Then, the text is labelled, using documents' metadata, and parsed into a unified dataset or corpus. Finally, to allow for statistical analysis, the text is removed of irrelevant content (e.g., stop words), stemmed, lowercased, and lemmatized. Words are also weighted by term frequency while n-grams by strength of co-occurrence. Altogether, this process cleans and homogenizes the text contained across documents and creates a corpus that is searchable by rule-based algorithms and human coders.

The third step of the ACA sees the deployment of algorithms to categorize the text and identify relevant content that can be used to assess the benchmarks. During this step, rule-based algorithms search the corpus using a series of search strings, or queries, that consist of bags of words connected by rules. For instance, if we want to test whether a document acknowledges a link between climate and conflict, we can use a search string that looks for a bag of stemmed words related to environmental variables (e.g., climat, water, etc.) near a bag of words related to conflict (e.g., conflict, violen, war, etc.). If we then wish to know whether a document refers to the link between climate and conflict as a key challenge, we add to the search string a bag of words related to "challenge" (e.g., significan, key, challenge, etc.).

The fourth step involves the coding of documents. The ACA automatically searches for co-occurring words within documents and produces a codebook with the resulting scores. The scores are then assigned a level of uncertainty, which can be either low, medium or high. The uncertainty level is a measure of the validity of the findings and the noise that has been generated by the algorithms in

analysing text. Usually, uncertainty is low when algorithms assess the occurrence of well define lexical constructs and is high when they assess loose relationship between words or open-ended lexical constructs. Scores with low uncertainty are automatically assigned by the ACA. Conversely, when policy documents have a low score and high uncertainty level, the results of the ACA are validated by human coders.

Country Context: Policy Processes and Institutional Characteristics

This section seeks to provide a brief introduction to the contemporary institutional structure of the Kenyan state and government with regards to climate change and security, outline any major processes of governance or reform that are either currently underway or that have been recently completed, and identify the Kenyan government's membership and role in relevant regional and continental multilateral organisations. Sketching out the institutional context within which the policy and strategy outputs examined as part of this study were produced is critical in appropriately contextualising and localising our interpretation of any trends and patterns, we are able to detect, as well as ground any recommendations produced on the basis of said analysis and interpretation in local institutional realities and logics.

Kenya is unitary state divided into 47 counties and is governed at the national level by a national government consisting of 21 line ministries. Kenya's 2010 constitution – approved by two-thirds of voters – radically altered Kenya's system of governance in arguably the biggest political shift since independence, ushering in a process of devolution alongside a new Supreme Court and Bill of Rights. The decentralisation measures were extensive, providing for 47 county governments completed with elector governors and assemblies (Cheeseman et al., 2016). A Ministry of Devolution and Planning was created to further facilitate the process of decentralisation, along with ensuring that the governments at the national- and county-levels are distinct, yet inter-dependent, and mutual relations are conducted on the basis of consultation and cooperation (Government of Kenya, 2010).

Occurring almost in parallel to this process is Kenya's most central predominant governance initiative, *Kenya Vision 2030.* This ambitious development agenda for the period from 2008 to 2030 aims to maintain macro-economic stability, reform governance, correct economic and social inequalities, build the infrastructure and energy systems needed for economic growth, reform land policy and legal frameworks, enhance human capital, and improve the public service (Parry et al., 2012). The Medium-Term Plans (MTPs) – setting out a set of short- to medium-term activities and pathways to achieve the long-term Vision 2030 development objectives – have become a key vehicle for the enactment of this wide-ranging agenda (PATPA, 2019). These are further operationalised at the county-level through 5-year County Integrated Development Plans (CIDPs), which are intended to outline the strategic mid-term priorities of county-level governments and inform annual budget processes and development plans (OpenAfrica, 2021).

Both processes form the backdrop for Kenya's comparatively rich history of climate change governance, beginning with the passing of the National Climate Change Response Strategy (NCCRS) in 2010. The NCCRS established goals to mainstream climate mitigation and adaptation into national planning and budgeting and outlined priority projects in key sectors (including agriculture, tourism,

energy, infrastructure, water, and urban development) (PATPA, 2019). To enable the NCCRS, Kenya's first five-year National Climate Change Action Plan (NCCAP) and the National Adaptation Plan (NAP) were both created in 2013, followed by the elaboration of the country's Intended Nationally Determined Contribution (INDC) in 2015. Climate change was, furthermore, increasingly mainstreamed throughout the *Vision 2030* agenda and the MTPs, the latter becoming a key mechanism for anchoring development in a low-emissions pathway and for facilitating climate proofing within the economy. Kenya has also recently updated the NCCAP, covering the period 2018-2022 (Bellali et al., 2018)(Bellali et al., 2018), as well as having submitted a finalised Nationally Determined Contribution (NDC) in 2020.

These incipient efforts at climate change governance remained, however, hampered by a key set of challenges. The most prominent of these included the dominance of national-level governance institutions, with the majority of policy action related to climate change and disaster risk management undertaken at the national level; a lack of coordination across ministries and an absence of clear institutional guidance as to how to achieve an integrated response to disaster risk reduction and climate change adaptation; and a lack of technical and human capacity in key areas (Parry et al., 2012). More recent climate change governance and legislation, however, appears to be on route to addressing several of these key bottlenecks. Kenya's Climate Change Act – signed into law in 2016 – sought to promote climate action at the county level, strengthen accountability for climate action, and establish a multi-level climate governance architecture (which remains under development). Under the provisions of the Act, climate change governance is distributed across several national and sub-national entities, as well as a number of cross-scalar committees and parastatal bodies that serve to link the various cross-scalar processes and coordinate with a broad set of stakeholders.

Key activities have thus far included the establishment of the Climate Change Directorate (CCD) within the Ministry for Environment, Natural Resources, and Forestry, which operates as the principal technical agency for climate change; the creation of the National Climate Change Council within the Office of the President and the National Climate Change Fund within the National Treasury; the development of the Kenya Climate Change Knowledge Portal (KCCKP) and the National Climate Change Registry; and the creation of the Climate Change Resource Centre (Government of Kenya, 2016). Below this, the 47 county governments are responsible for operationalising climate change planning and budgeting within their jurisdictions, with each being responsible for developing a five-year Country Integrated Development Plan (CIDP), a 10-year County Spatial Plan, and a County Sectoral Plan, as well as mainstreaming the implementation of the NCCAP into all relevant strategies and plans (Parry et al., 2012). The Government of Kenya has also developed a number of cross-scalar budgeting and planning systems aiming to mainstream climate adaptation into local, county-level budgeting and planning system. The County Climate Change Funds (CCCFs) are the most prominent example of this, forming key coordination mechanisms for climate change action at the county level and allowing county governments to access the national government's climate change fund (Murphy & Orindi, 2017).

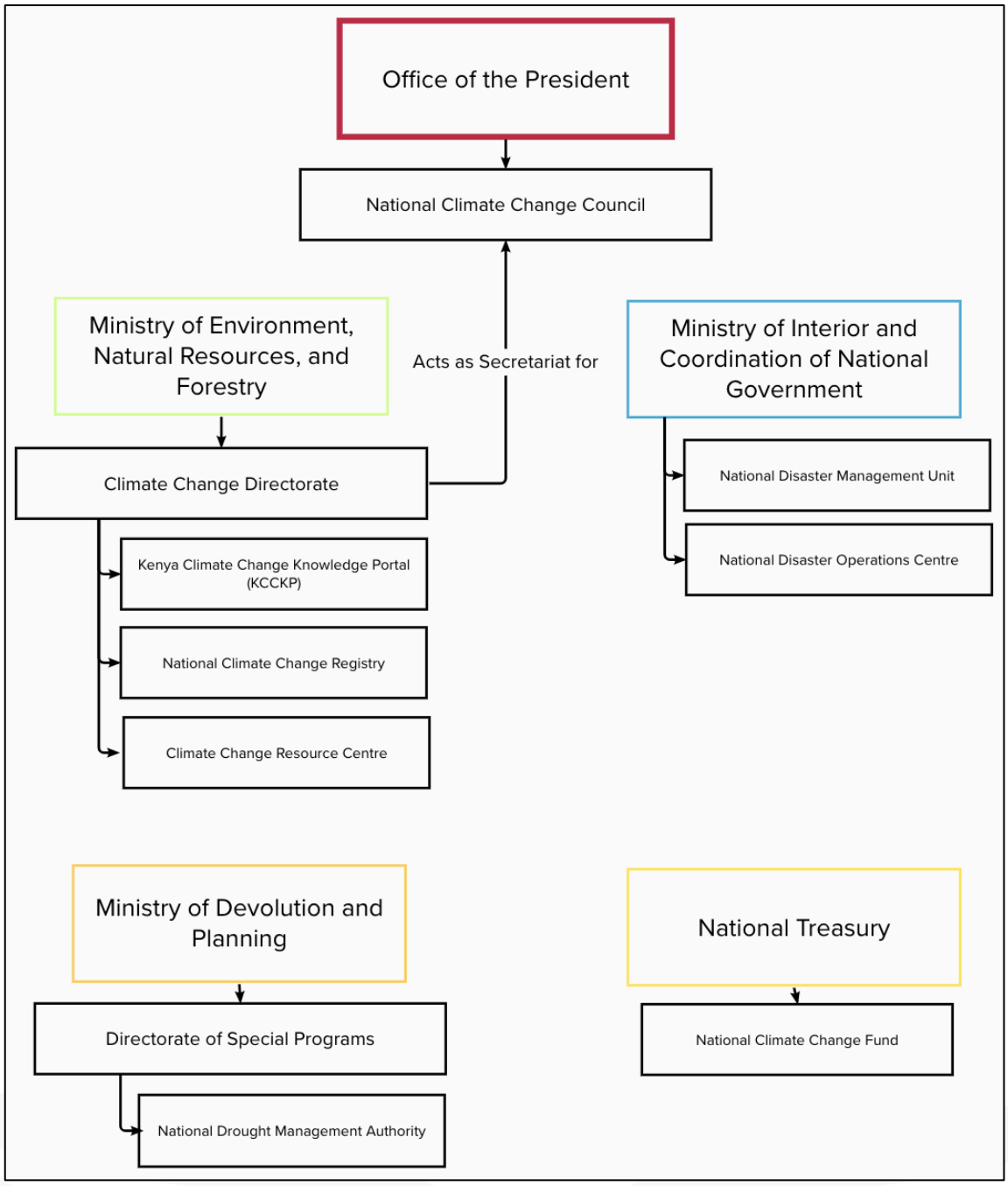

Figure 2. Climate change and disaster risk management governance in Kenya.

Governance of peace and security-related issues within Kenya was also affected by the large-scale devolutionary process. Following the 2013 elections and the inception of devolution, it became evident that the new system of devolved governance had precipitated changes in various sectors that sometimes blurred the lines of demarcation laid out in the constitution, and in some cases had given rise to new unanticipated dynamics. Whilst the constitution enshrines security as the mandate of the

national government, county governments in practice play a vital role in priority setting, and – as a consequence of their development-oriented mandate – tend to enact activities that impact upon drivers of insecurity such as (youth) unemployment, inequality, natural resource access, and land disputes. Consequently, managing security risks is emerging as a concurrent function involving both national and county-level governments (Mkutu et al., 2014).

At the national level, the Office of the President hosts the Kenyan National Security Council, consisting of the relevant cabinet members, the chief of Kenya's Defence Forces, the Director-General of the National Intelligence Service, and the Inspector-General of the National Police Service. Beyond this however, the main mandates with regards to peacebuilding and conflict management fall within the Ministry of Interior and Coordination of National Government, specifically with the Directorate of Peacebuilding and Conflict Management and the Directorate of National Cohesion and Values. The first of these hosts the National Steering Committee on Peacebuilding and Conflict Management (NSC), a body which provides the foundation of a multi-agency architecture to coordinate peacebuilding and conflict management across the country (National Steering Committee on Peacebuilding and Conflict Management, 2022). The NSC thus forms a space where a multitude of ministerial and agency actors are able to coordinate on issues of peacebuilding and security, attempting to ensure a horizontally coherent approach. In addition to this, however, the body also seeks to foment stability and social cohesion from the bottom-up through the creation at the provincial level of Peace Forums (of which three have been created to date) and Peace Committees at the community level. These entities bring together traditional dispute resolution mechanisms involving elders, women, and religious leaders, as well as deploying modern mechanisms for conflict resolution as required (National Steering Committee on Peacebuilding and Conflict Management, 2022).

The Directorate of National Cohesion and Values has a somewhat comparable mandate to spearhead and coordinate mainstreaming of national values, national reconciliation, and healing in Kenyan society through the development of strategies and programmes that promote national cohesion and values (Directorate of National Cohesion and Values, 2022). It pursues this agenda predominantly through capacity building exercises, both at the national level (by engaging ministerial, departmental, and agential focal points) and at the community level (by engaging County Public Service Boards on the promotion of national values and principles of good governance). A similar approach is adopted by the National Counter Terrorism Centre (NCTC), a multi-agency institution established to counteract one of Kenya's arguably greatest security risks, namely, violent extremism and terrorism. The NCTC's mandate is focused on the coordination of counter terrorism strategy and policy implementation; the coordination of counter radicalisation, disengagement, and rehabilitation; and acting as a focal point for bilateral and multilateral partnerships in counter terrorism (National Counter Terrorism Centre, 2022). Aside from drafting the National Strategy to Counter Violent Extremism (launched in 2016 and updated in 2019), the institution – likely in recognition of the important role played by county-level governments in pursuing a holistic approach to countering violent extremism – has also assisted in the drafting of 47 County Action Plans, designed to implement the Countering Violent Extremism (CVE) strategy from the bottom-up.

The exact confluence of climate, development, and peace and security actors – and the exact nature of their mandates – therefore remains spread across both national-, county-, and community-level governance structures. There is some limited evidence to suggest that there is an institutional space where the climate-conflict interface can be understood and mitigated (the Steering Committee for Peacebuilding and Conflict Management, for instance, or other multi-agency and boundary-spanning institutions such as the NCTC and the National Drought Management Authority respectively), but further research and institutional analysis is needed to conclusively ascertain this and to identify what if any coordination and integration gaps may exist.

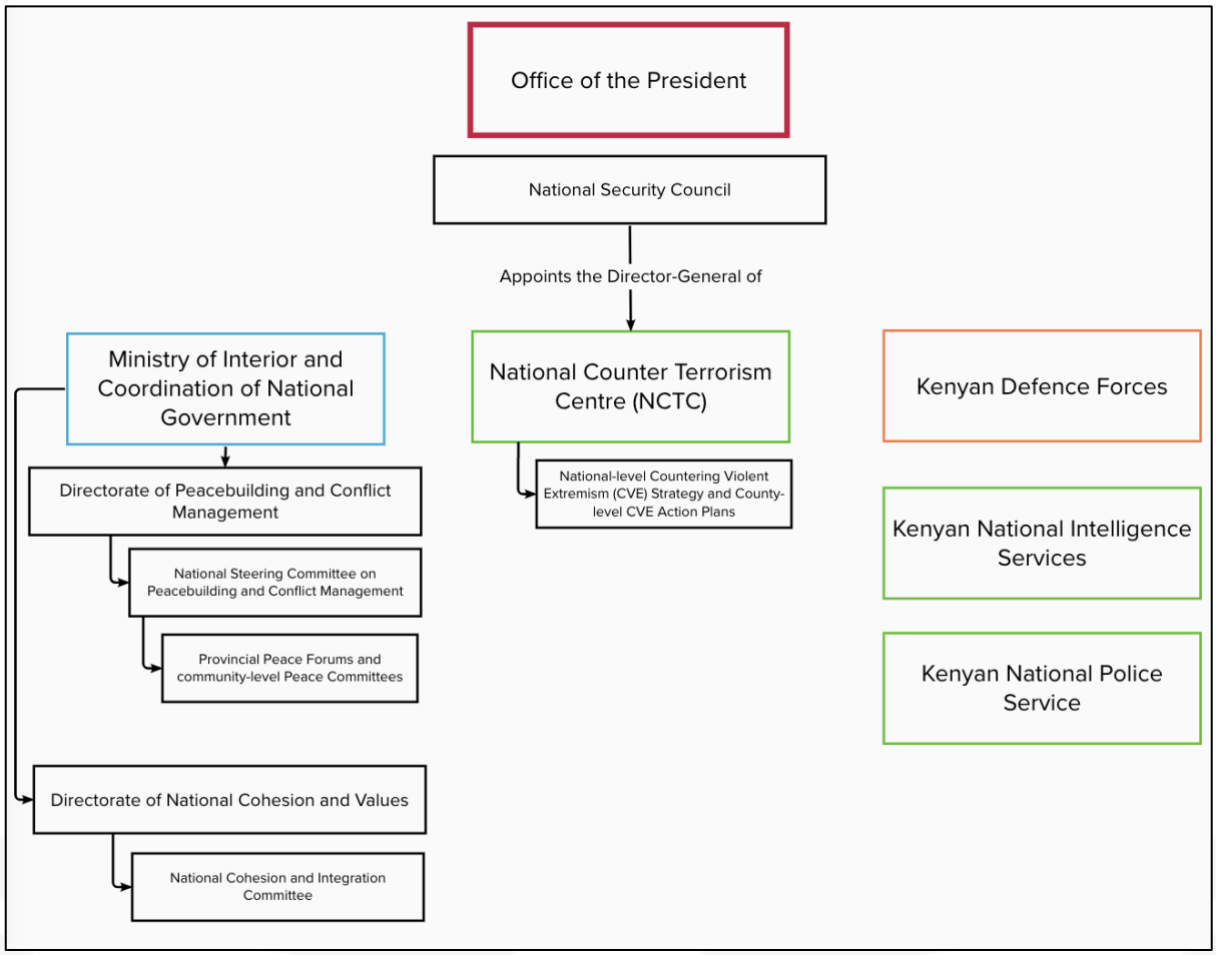

Figure 3. Peace and Security Governance in Kenya

Finally, Kenya is also an active member of a number of multilateral institutions at the regional level, including the East African Community (EAC) and the Intergovernmental Authority on Development (IGAD). The EAC is an intergovernmental organisation consisting of 7 partner states, broadly aiming to widen and deepen cooperation amongst its member states in political, economic, and social areas for the pursual of mutual benefit. The EAC hosts a number of sector-specific mandates, including those most pertinent for climate security, such as 'Environment and Natural Resources' and 'Peace and

Security'. Under the former, the regional body pursues activities related to cross-boundary cooperation and management of natural resources amongst its member states; harmonisation of policy and legal frameworks for the management of trans-boundary ecosystems; supporting region-wide climate change adaptation and mitigation strategies, programmes, and actions; and coordinates cross-border cooperation for disaster risk reduction (DRR) (EAC, 2022a). The latter mandate is predominantly related to tackling cross-border security threats, with an emphasis on the reduction of drug trafficking, the proliferation of small arms and light weapons, and cooperation on police matters (EAC, 2022b).

IGAD is a regional body made up of 8 active member states and possessing a broad mandate related to regional development and integration. As stipulated in Article 7 of its Establishing Agreement, IGAD aims to (amongst other things) promote joint development strategies and gradually harmonise macro-economic policies and programmes in the social, technological, and scientific fields; initiate and promote programmes and projects to achieve regional food security and sustainable development of natural resources and environmental protection, and assist efforts to Member States to collectively combat drought and other natural and man-made disasters and their consequences; and promote peace and stability in the region and create mechanisms within the region for the prevention, management, and resolution of inter-state and intra-state conflicts through dialogue (IGAD, 2022a).

For environment and climate-related sectors, IGAD's areas of intervention include regional natural resource management efforts, initiatives to improve the resilience of agricultural systems and improve food security, and to ensure sustainable environmental protection of key resources and ecosystems. IGAD also hosts several specialised institutions with specific mandates related to the environment, climate, and improving the resilience of productive systems and livelihoods, including the IGAD Climate Prediction and Application Centre (IGAD CPAC) and the IGAD Centre for Pastoral Areas and Livestock Development (IGAD CPALD) (IGAD, 2022b). IGAD's activities related to regional peace and security form a comprehensive response to region-wide security risks, and include a Mediation Support Unit, a dedicated South Sudan Office, and a dedicated Red Sea, Gulf of Aden, and Somalia Mission (RESGAS). Several specialised institutions serve to underpin these region-wide activities and provide support to national-level governments where possible, including the IGAD Conflict Early Warning and Response Mechanism (IGAD CEWARN) and the Centre of Excellence for Preventing and Countering Violent Extremism (IGAD CEPCVE) (IGAD, 2022c).

Results

A total of 63 policy and strategy documents were assessed as part of this analysis. Policies produced prior to 2010 were not included in the initial dataset in order to ensure the relevancy of the results, and in order to reflect the fact that the topic of climate security still represents a fairly new thematic intersection for many (Conway, 2021)(Conway, 2021). Documents were extracted from government agencies and institutions active in sectors that are related to the climate security nexus (table 2). It is important to note in this regard that the number of documents extracted for each sector hinged upon policies and strategies actually having been produced by the relevant institutions within the temporal scope of this analysis and their online accessibility, meaning that the amount of documents extracted per sector does differ. To qualify, a document had to have constituted either a formal policy or a formal strategy output produced by a policymaking or governance entity at the national or regional level. This excluded grey literature or third party analyses or evaluations of policies and strategies.

Policy Sector	Total no. of national-level policies	Total no. of regional-level policies	Total no. of policies
Climate and Environment	21	7	28
Food Security	1	2	3
Disaster Risk Reduction	5	0	5
Development	6	10	16
Peace and Security	5	2	7
Gender	4	0	4
	42	21	63

Table 2. Policy and strategy document dataset.

These documents were assessed against the backdrop of the evaluation categories and benchmarks visible in table 1. For each benchmark, a document received either a 0 (if the attached conditions were not met) or a 1 (if the attached conditions were successfully met). In order to fulfil an evaluation category, a document must have met the criteria associated with at least 50% of the respective benchmarks that make up each category. Thereafter, for each category, a document was assigned either a 0, if the average score of all benchmarks comprising it was smaller than 0.5, or a 1, if this average was larger than 0.5. Based on these category scores, aggregations were made by policy sector, by year and by actor. Aggregated documents that fulfilled these evaluation categories were represented through pie charts to analyse the extent to which they were fulfilled across the database and to visually represent the combinations and proportions of benchmarks which allowed to fulfil them. Pie charts were also made to represent these benchmark combinations by sector. Category scores were further averaged out across all the dataset to create overall average scores by sector, which were represented through bar charts. These overall average scores were also aggregated by year and by category type and plotted on scatter plots in order to represent temporal variations of climate security policies acknowledgment and implementation scores.

A number of observations can be made with regards to the results of the document coding process. This section outlines six key observations that emerged from empirical analysis conducted upon the coding data.

Firstly, when examined across all scales and sectors, policy documents received lower scores for categories related to implementation than they did for categories related to acknowledgement (figure 4). This divide is based on the fact that the first half of our policy analysis framework is made up of categories that record conceptual awareness of climate-related security risks in problem definitions, challenge statements, and baseline assessments (acknowledgement), whereas the second half consists of categories related to operationalising acknowledgement through the creation of specific objectives, instruments, and programmatic activities and projects (implementation). The majority of policy documents subjected to analysis demonstrated an awareness of the role that climate change-related impacts may play in exacerbating existing forms of insecurity and instability. Out of 63 documents, 39 (61.9%) scored positively for the thematic engagement – climate security benchmark, meaning that they displayed evidence of recognising climate-conflict linkages. Of these 39 documents, 77% additionally identified at least one specific climate security pathway through which climate change-related impacts are understood to act as a risk of threat multiplier (figure 5).

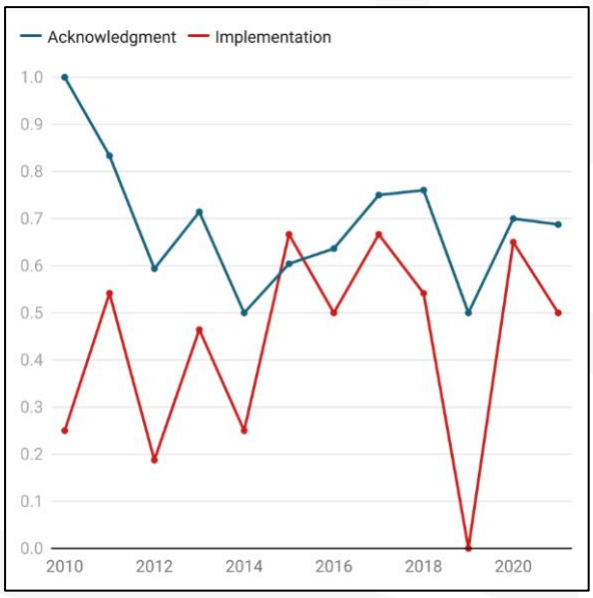

Figure 4. Acknowledgement versus implementation scores over time.

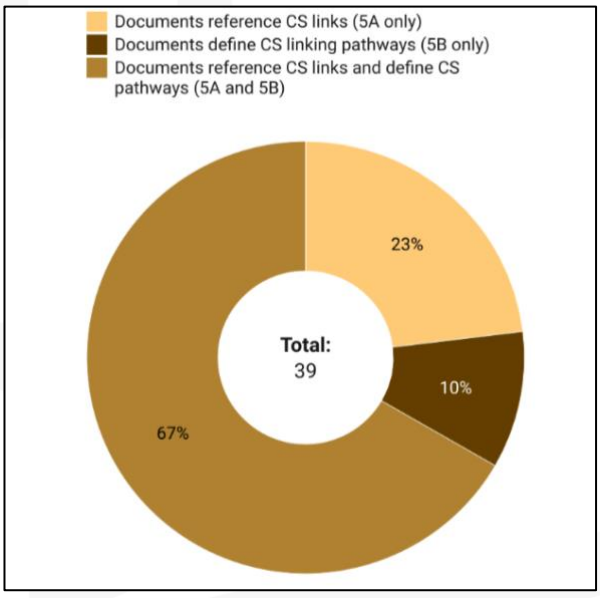

Figure 5. Percentage of documents displaying evidence of engagement with the topic of climate security.

Fewer assessed documents, however, included integrated climate and peace and security objective setting, programming options, or climate security-sensitive monitoring and evaluation (M&E) systems. As previously mentioned, an analytical distinction was made between objectives, instruments, and action plans that may *implicitly* address climate-related security risks (by addressing climate-related insecurities – such as, for example food and nutritional insecurity – but not drawing a link to conflict) and those that *explicitly* address climate-related security risks (by actively recognising the role played

by climate in impacting conflict, either through an intermediary variable such as food security or directly). This distinction is reflected in the benchmarks that compose the evaluation categories. As such, our results find that of the 38 documents that did outline climate-related objectives (60.32% of total documents), only 36.6% contained objectives that showed evidence of explicitly seeking to address climate-related security risks (figure 6). Furthermore, of the documents that contained an action plan with components relating to the mitigation of or adaptation to climate change-related impacts, 8% contained specific projects and programs for the mitigation of both climate-related insecurities and climate-related security risks without allocating specific financial disbursements to these activities (2 policies); 54% contained activities related exclusively to the mitigation of climate-related insecurities without drawing a link to conflict (14 documents); and 38% outlined projects and programs with components that mitigate both climate-related insecurities and climate-related security risks whilst also fully costing these (10 documents) (figure 7). A minority of documents thus put forward specific, costed, and climate security-sensitive projects and programs.

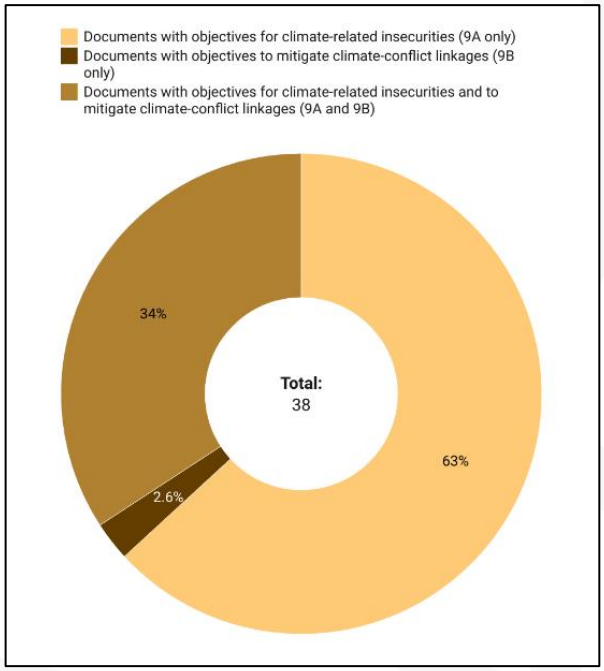

Figure 5. Percentage of documents with implicit climate security-related objectives versus explicit climate security-related objectives

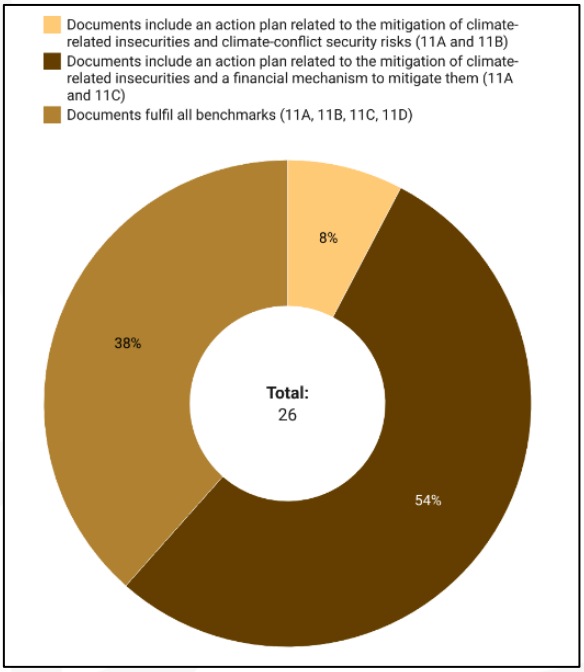

Figure 4. Percentage of figures with implicit climate security-related action plan components versus explicit climate security-related action plan components.

Secondly, it is worth emphasising that these findings are not, however, uniform across all sectors subjected to analysis. The results suggest that within the Kenyan and East African regional context, peace and security- and gender-related policy documents in particular appear to show limited thematic or conceptual engagement with climate change and the insecurities it may produce or cause (thematic engagement – climate), as well as how climate change-related impacts may affect or exacerbate conflict-related outcomes (thematic engagement – climate security) (figure 8). Policy

documents from climate and environment, development, DRR and food security are by contrast notably more consistent in how they appear to recognise the impacts of both climate change- and peace and security-related risks. The extent to which these risks are recognised as acting in tandem and compound one another is in some sectors more limited, however, with development and food security strategies especially being less likely to mention linkages between climate change- and peace and security-related risks (thematic engagement – climate security).

The limited thematic engagement displayed by peace and security-related policy documents is also reflected in the comparatively limited extent to which documents from the sector shows evidence of cross-sectoral engagement. Most sectors analysed as part of this study (bar food security) received a fairly high average score for horizontal acknowledgement. The horizontal acknowledgement category was designed to assess whether a policy document demonstrates evidence of integration with a policy or strategy produced in one of the other sectors subjected to analysis at the same level of governance. This category is therefore a proxy for horizontal coherence. Whilst all policy documents from the climate and environment, development, and gender sectors – and the vast majority of DRR strategies – in some way referenced or sought to integrate with other sectors at the same level of governance, only around two thirds of peace and security-related policies displayed evidence of doing so (figure 9).

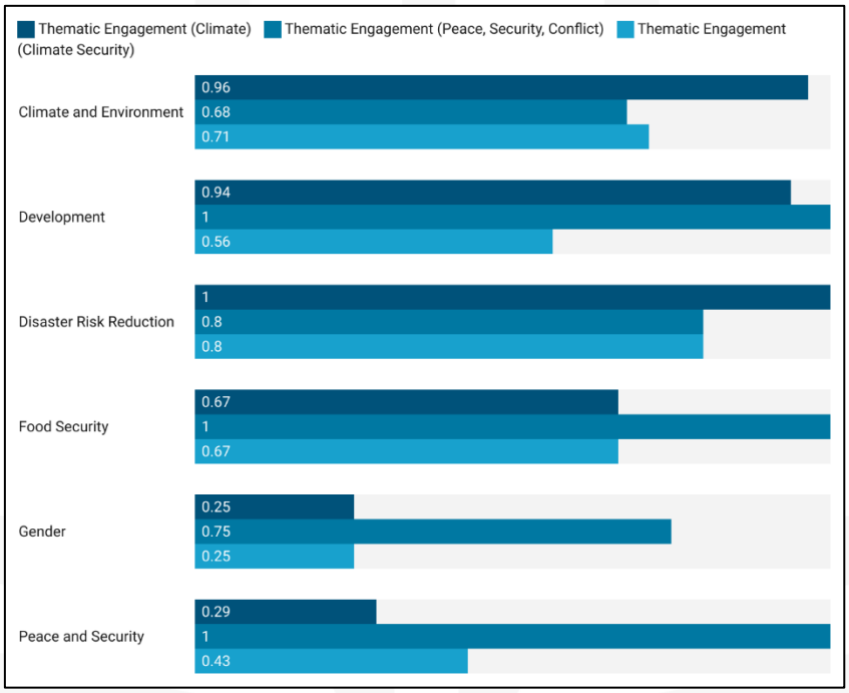

Figure 6. Engagement with the topic of climate security disaggregated across sectors subjected to analysis.

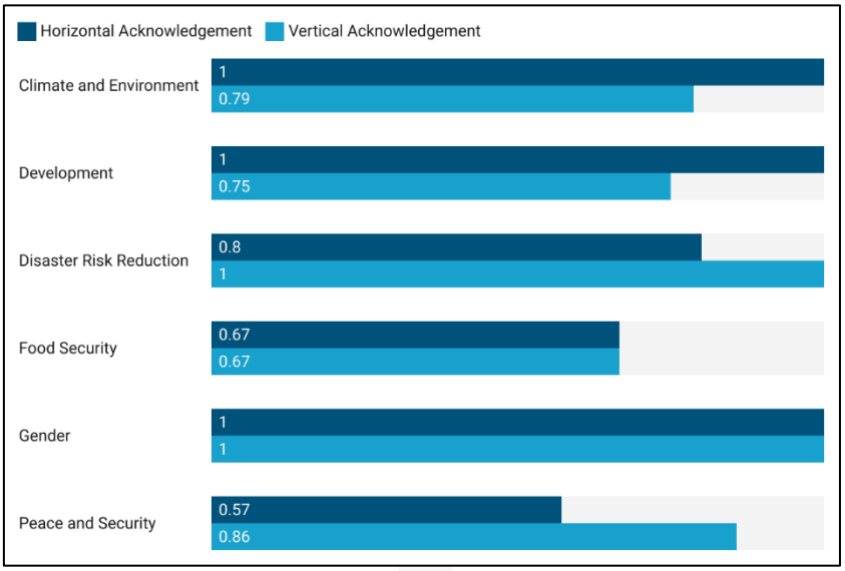

Figure 7. Engagement with other sectors relevant to the climate security nexus disaggregated across sectors.

Thirdly, whilst it is clear that peace and security- and gender-related policy documents are the weakest in terms of acknowledging and pursuing programmatic measure relating to climate-related security risks, it is also clear that development and DRR strategies were the most successful in doing so. Aside from also being the most likely to demonstrate thematic, conceptual level engagement with the topic of climate security and recognise compounding climate-related security risks, development and DRR strategies were also amongst the most likely to include integrated climate security-sensitive objectives and action plans (figures 10 and 11). As a consequence of scoring highest in both acknowledgement- and implementation-related categories, DRR and development strategies also scored the highest total average coherence and awareness scores (figure 12).

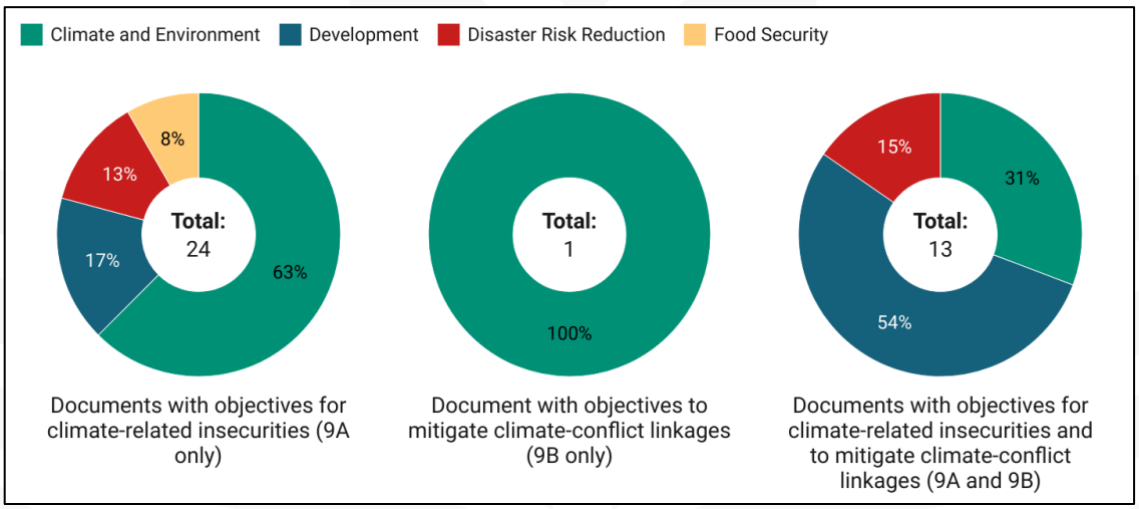

Figure 8. Percentage of documents with implicit climate security-related objectives versus explicit climate security-related objectives disaggregated across sectors.

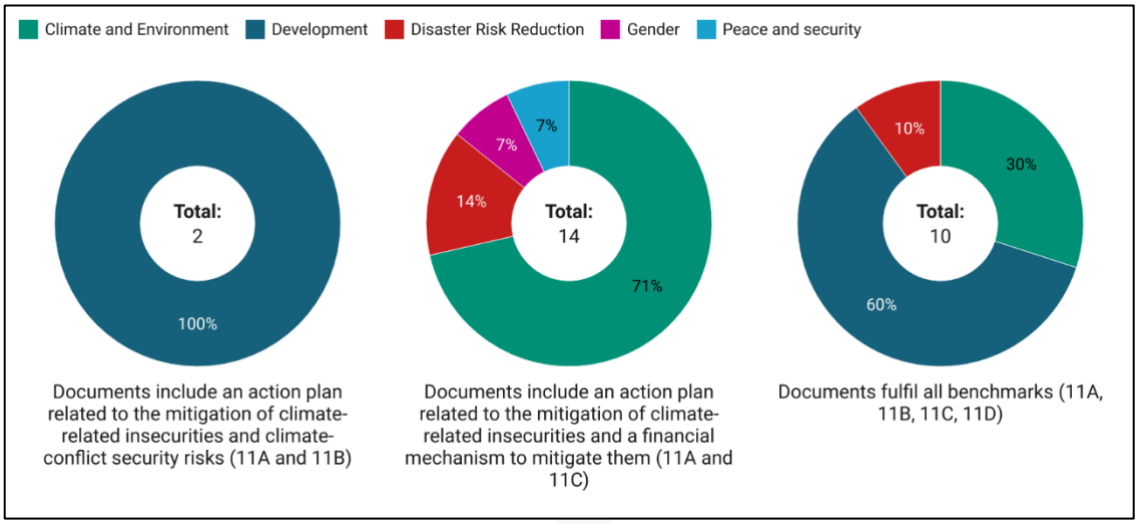

Figure 9. Percentage of figures with implicit climate security-related action plan components versus explicit climate security-related action plan components disaggregated across sectors.

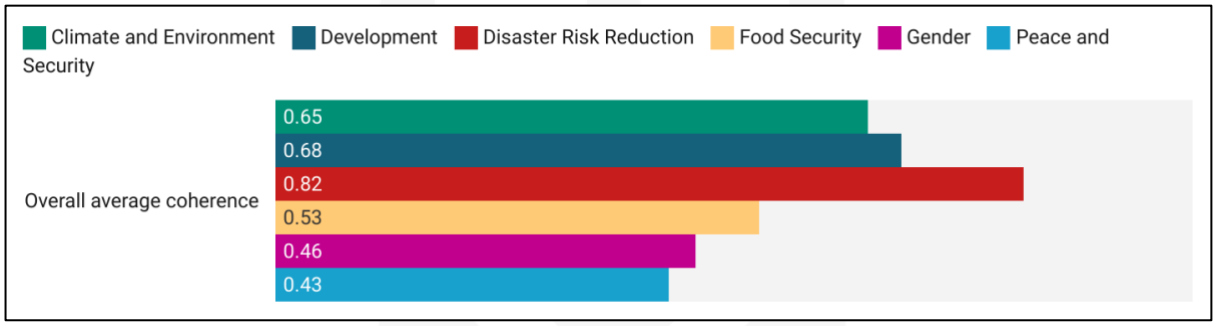

Figure 10. Total average coherence and awareness scores disaggregated across sectors.

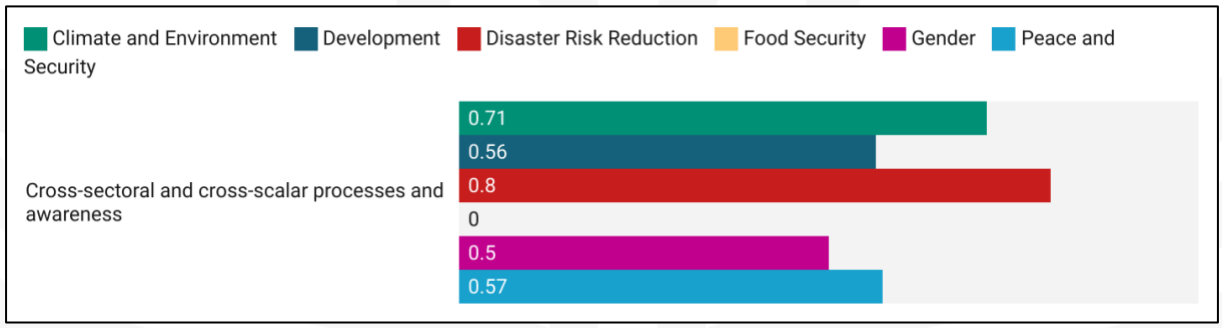

Figure 11. Evidence of a document being the product of or making reference to a cross-sectoral institutional space disaggregated across sectors.

Out of 5 DRR strategies that were subjected to analysis, 2 contained integrated, explicit climate security-sensitive objectives and 3 contained an action plan with an explicitly climate security-relevant component to it. Development strategies were the second most likely to put forward climate security-sensitive programmatic options, with 7 out of 16 development-related strategies containing explicit climate security-related objectives and 8 putting forward an action plan containing a climate security-related component. DRR strategies were also the most likely to appear to be the product of or make reference to specific cross-sectoral and/or cross-scalar institutional spaces where multi-sector actors appear to be able to coordinate and pursue joint agendas (figure 13). However, in general, the likelihood of a policy document displaying any sort of evidence of such a coordinating body or space is quite low, with less than half of documents produced by each sector (bar DRR) having made reference to this.

Fourthly, the results generated by the coding indicate that very few policy documents subjected to analysis deployed both climate- and peace and conflict-related forms of assessment or analysis (figure 14). 37 documents displayed evidence of having conducted some sort of baseline assessment and included specific policy instruments (60.32% of total documents). Of these, the vast majority (41%) stipulated policy instruments specifically for mitigating climate-related insecurities – backed up by a form of climate vulnerability analysis or assessment only – without drawing links to security or conflict risk (15 documents). Just shy of a quarter of the 37 documents contained instruments designed to mitigate both climate-related insecurities and climate-related security risks, but without displaying evidence of having conducted a conflict-related analysis (9 documents). 11% did not display evidence of having conducted any sort of baseline assessment (4 documents). This means that only 9 documents (24%) were found to deploy climate vulnerability-type assessments alongside conflict analyses, displaying a lack of technical integration between the two fields. Of these 9 documents, only 4 were found to have contained both climate- and peace and conflict-related forms of analysis whilst also containing instruments with the purpose of addressing both climate-related insecurities and climate-related security risks, all of which were either DRR or development policies.

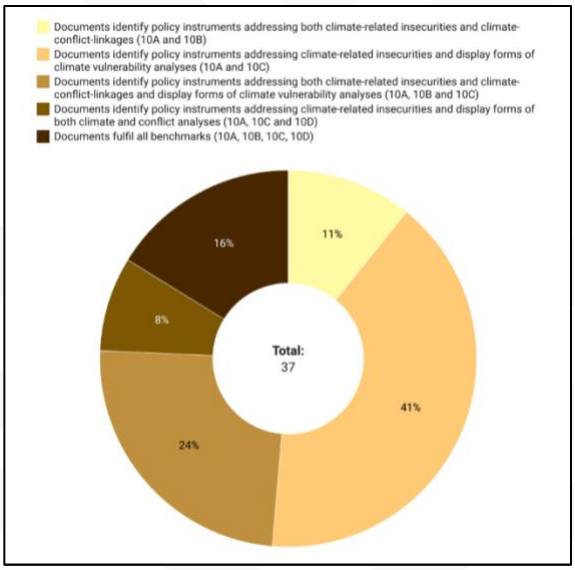

Figure 12. Percentage of documents that engaged in climate- and conflict-related analyses.

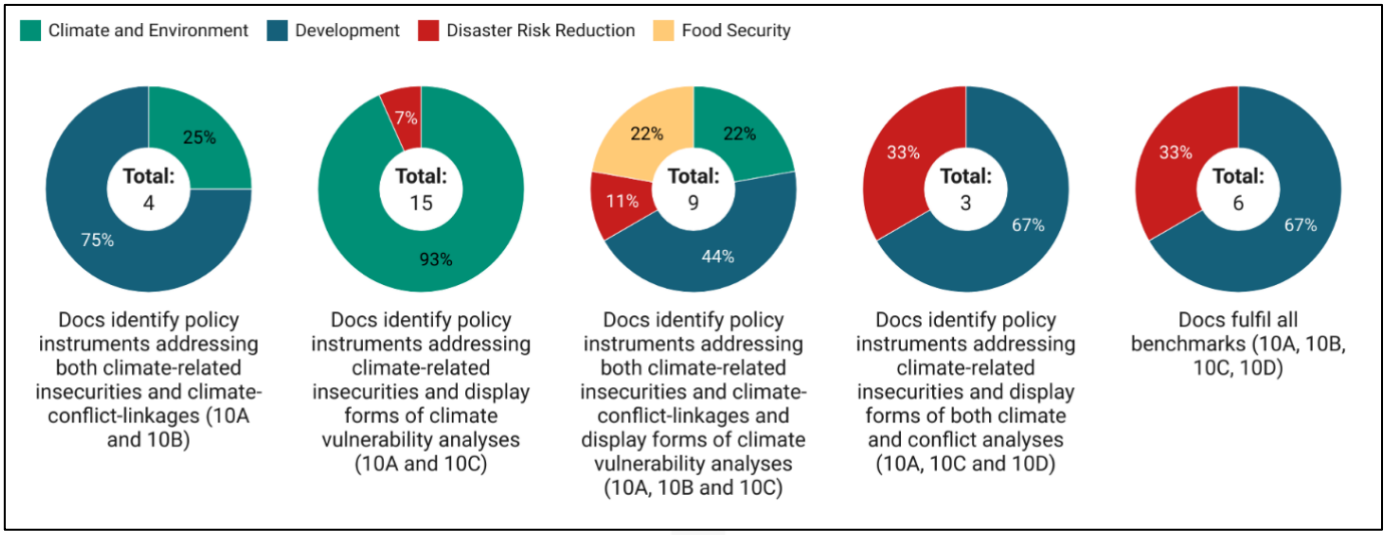

Figure 13. Percentage of documents that engaged in climate- and conflict-related analyses disaggregated across sectors.

Results also suggest that climate and environment-related policy documents do not tend to contain peace and conflict-related analyses or assessments, whilst peace and security-related documents tend not to undertake any form of climate vulnerability mapping or a comparable form of assessment (figure 15). Instead, all documents which displayed evidence of having undertaken *only* a peace and conflict-related analysis were produced by peace and security or gender sectors, whilst 68% of the 25 documents found to have conducted *only* climate vulnerability analyses or mapping were produced by climate and environment sectors.

Fifthly, whilst the majority of documents from across all sectors and scales of governance in some way appear to engage with the logic of policy adaptivity, operationalising this awareness was much rarer. At least two thirds of documents from all sectors showed evidence of engaging with the need to ensure that corrective action should in some circumstances be undertaken in order to respond to shifting circumstances, mentioning for instance how consistent and regular M&E is critical to ensure that projects and programmes remain on track and their objectives met. However, policy documents in general were far less likely to receive a score for operationalising this engagement, for instance through the creation of specific signposts and triggers (figure 16). Signposts and triggers within a policy are values that are considered critical to successful implementation and the critical thresholds at which a change in those values would trigger a re-assessment of any given intervention strategy respectively. Developing these components is a critical step in making sure that a policy is, when faced with a complex and unpredictable set of circumstances which may quickly evolve, able to detect and learn from changes in external stimuli and adapt to these if need be. However, few policies succeeding in undergoing these steps.

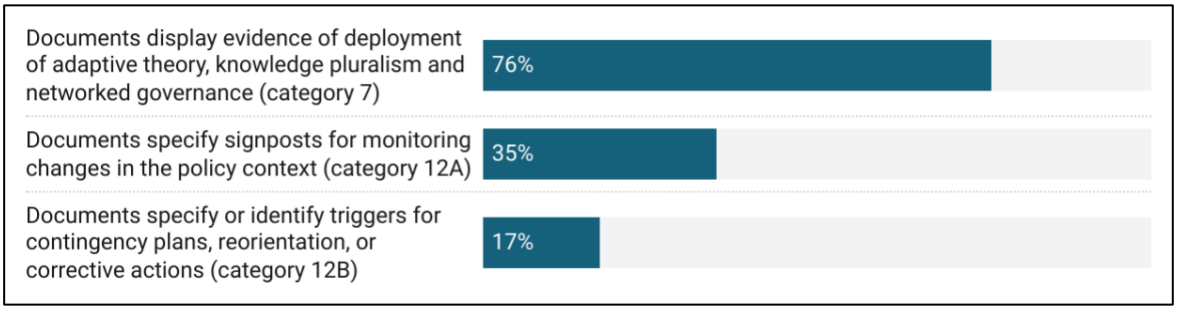

Figure 14. Percentage of documents that engaged with versus successfully operationalised the logic of adaptive policymaking.

Finally, aside from evaluating exclusively whether policy documents integrate the topics of climate, peace, security, and conflict in an interconnected and climate security-sensitive manner, our analysis also sought to investigate how these topics are understood across all policy documents – even if evidence for integrated understanding is absent. Whereas this study has primarily sought to conduct analysis from a normative perspective (evaluating documents on the basis of how they *should* integrate the topic of climate security), this particular line of inquiry conducts analysis from a positive perspective (ascertaining how policy documents currently appear to understand key topics related to climate security). To do so, network analysis was undertaken and a set of keyword clusters produced around the words 'climate', 'peace', and 'security/conflict/violence'. The construction of a keyword network in this way gives an indication of the topics that are most commonly discussed in proximity to the keywords previously outlined, allowing us to additionally ask how these topics actually are addressed within policy documents. Three networks were therefore created using the connected nodes or 'neighbours' of these keywords and keyword combinations, and following their creation, the 24 top nodes for each were identified on the basis of network centrality (i.e., betweenness centrality). The nodes corresponding to selected words are sized according to their betweenness centrality and coloured based on network modularity.

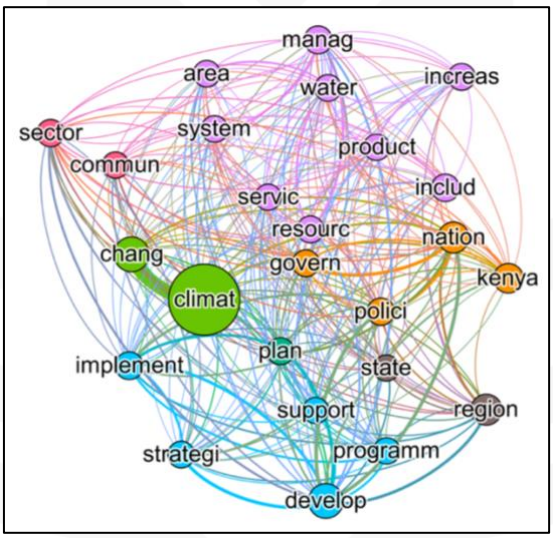

Figure 17. Close neighbours of the word "climate"

Several observations can be made on the basis of these keyword clusters. Firstly, mentions of climate within the policy documents subjected to analysis tend not to be correlated with peace, security, or conflict either directly or indirectly. Some of the proximate words visible in figure 17 do suggest that the main channels through which climate change-related impacts are known to manifest in Kenya and East Africa – such as through natural resource scarcity (particularly water), natural resource management dynamics, and declining productivity – are well-known and understood. A particular focus appears to be on community-level structures and impacts. However, recognition of the role that these dynamics may play as an intermediary between climate change-related impacts and conflict in particular is – when assessed across all analysed policy documents from across all sectors – generally absent. Other word clusters appear to emerge around policy design and implementation (blue), governance (orange), and scale of governance (brown).

However, when conflict *is* mentioned – which as previous analysis has identified, is most likely to happen within development- and DRR-related policies and strategies – it is notable that the proximity link to climate change is fairly strong (figure 18). This finding supports the previous argument that although their mentioning does appear to be highly localised to a set of specific sectors, climate-related security risks and specific climate-conflict linkages are to some extent recognised and understood. Supporting this is the fact that 'violence', although much less frequently mentioned, appears to be correlated to 'resources' through 'community/communal'. This implies that those policies that do discuss violence recognise how the availability of and access to resources can drive communities to engage in inter-communal conflict.

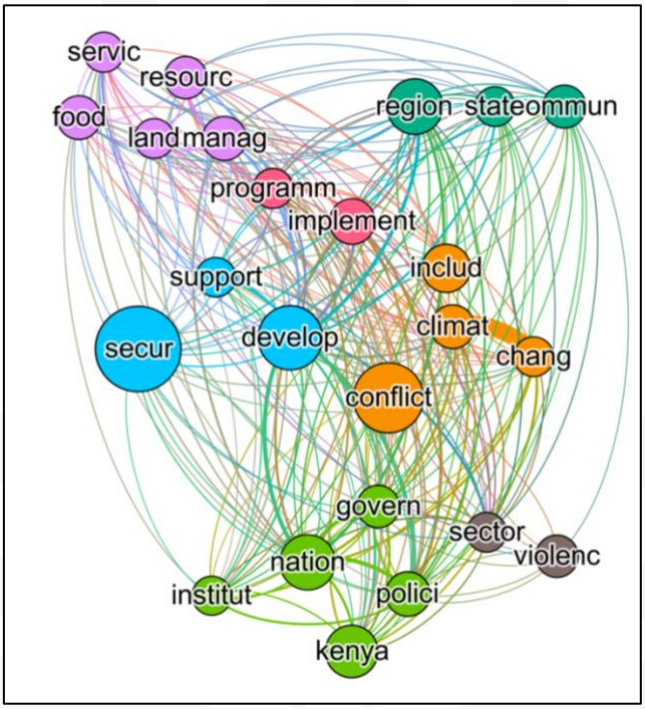

Figure 18. Close neighbours of the words "security", "conflict" and "violence"

Figure 19 reveals that whilst climate-conflict linkages may be present within the analysed documents, climate-peace opportunities are essentially entirely missing[1]. 'Peace' is correlated to other expected keywords related to conflict resolution and transformation, such as 'reconcil*(iation)' and 'manage*€', yet climate- or environment-related keywords such as 'resources' or 'adaptation' are notably absent from this dynamic. Also notably absent are words related to other aspects of the spectrum of conflict, such as 'prevention' or 'peacebuilding'. Finally, figure 20 represents a visualisation of the keywords and topics that were most frequently found to be within a three-word proximity of *both* climate change and conflict, although not necessarily together. For instance, 'livestock' may be discussed in relation to both climate change and conflict and peace, without necessarily being framed within the policy text as being components of the climate security nexus. Identifying keyword proximities in this manner allows for the identification of thematic areas that climate- and peace and security-related sectors currently perhaps tackle in isolation, but that could also therefore form thematic entry points for pursuing integration that may currently be lacking between climate action, conflict prevention and transformation, and peacebuilding activities. Our analysis suggests that within the policy documents subjected to analysis, the topics discussed most in relation to both climate change and conflict include 'development', 'water', 'climat*', 'pastoralist', 'livestock', 'mobility', 'rangeland', and 'livelihood'. These results suggest that activities in these sectors and areas in particular could yield benefits for the mitigation of climate-related security risks.

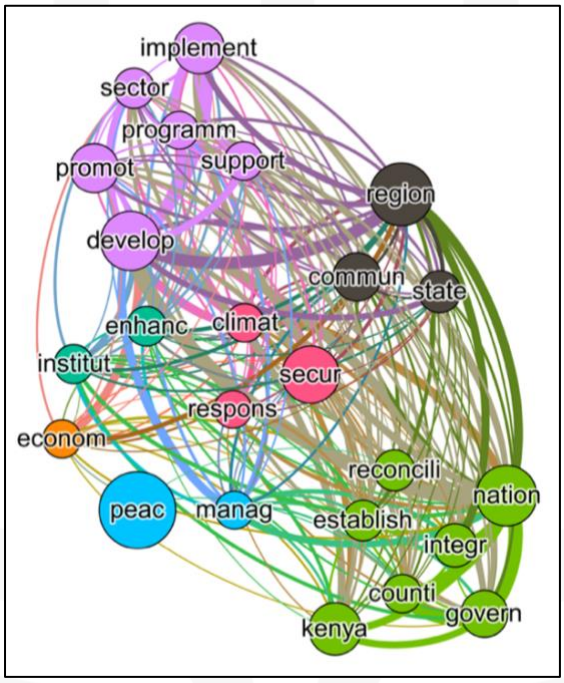

Figure 19. Close neighbours of the word "peace"

[1] Note that whilst 'climat*' is present within the network visualisation, analysis suggests that climate in the context of this network visualisation does not reference climate change (note the absence of 'change'). Instead, climate in this context exists as a synonym for 'milieu' or 'context'.

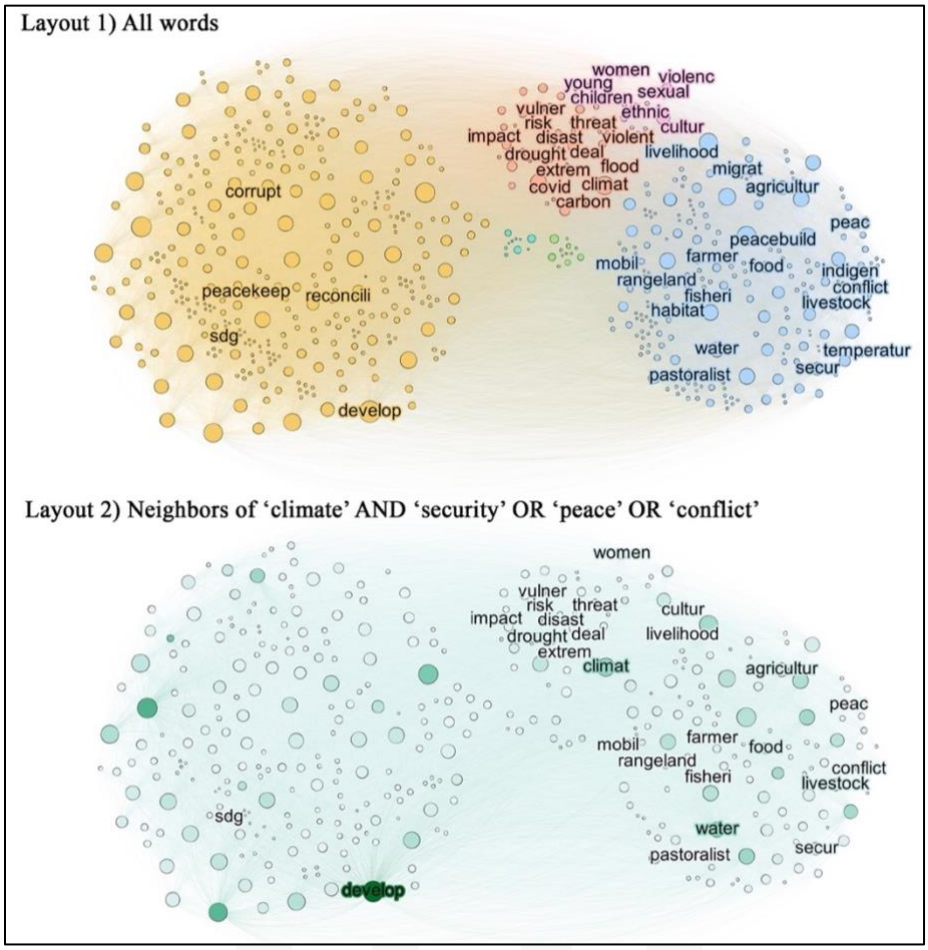

Figure 20. Word co-occurrence networks

Discussion and Conclusions

A number of key interpretations and lessons learned can be derived from the results outlined in the previous section. This section will elucidate 5 key takeaways from the analysis which will in turn form the basis of a set of recommendations in the final section.

Firstly, given how the documents tend to score higher in acknowledgement-related categories than in implementation-related categories, our results suggest that policymakers do appear to some extent understand the conditions and circumstances that may heighten the chances of climate-related security risks emerging. To a lesser degree, the policy documents engage with some of the key causal pathways and mechanisms through which this may occur, such as through natural resource scarcity, livelihood insecurity, mobility and migration, or a combination of multiple. Translating this awareness into concrete policy measures appears as of yet, however, a persistent challenge, despite the fact that over two thirds of the documents analysed did outline a set of climate-related objectives and contained a specific action plan with climatic components. This implies that opportunities for greater integration crucially do exist. Climate adaptation and mitigation priorities appear to be fairly well mainstreamed throughout the majority of sectors subjected to analysis (bar peace and security and gender, as discussed below), meaning that they form an important entry point for the pursual of integrated climate-peace programming. As of right now, however, our investigation suggests that in general, the policy documents subjected to analysis tend not to observe these entry points to the point they could (see lack of integrated objectives and action plans).

Secondly, despite this overarching trend, our results also demonstrate notable cross-sectoral variation in the extent and depth of engagement with climate-related security risks and potential interventions to mitigate these. The fact that documents extracted from the peace and security and gender sectors in particular displayed a notable lack of engagement with both climate change-related insecurities and climate-related security risks implies that policies in these fields do not currently appear to sufficiently consider the risk multiplier role that climate may play. Our analysis suggests that there is little consideration within peace and security and gender policy documents for how climate change-related impacts may influence ongoing conflict dynamics, exacerbate the root or proximate causes of conflict, or give rise to gender-specific forms of insecurity. Climate adaptation and mitigation activities do not currently appear to feature in peace and security or gender policies and strategies as entry points to pursue conflict prevention, conflict transformation, or peacebuilding objectives. Conversely, however, it is equally important to recognise how the most successful documents that emerged from our policy coherence and awareness analysis were development and DRR strategies, which achieved the highest overall coherence and awareness scores.

The most climate security-sensitive strategy subjected to analysis, for instance, came in the form of the Kenyan National Drought Management Authority's (NDMA) Common Programme Framework for Ending Drought Emergencies, a multi-pillared initiative designed to respond in a holistic manner to the multi-dimensional drivers of vulnerability (security, infrastructure, and human capital) that make particular areas more prone to drought emergencies. Its six pillars include a focus on peace and security alongside climate-proofed infrastructure, human capital development, sustainable livelihoods, drought risk management, and institutional development and knowledge management.

Interventions within each of these pillars are coordinated with others and the framework is also designed to bring together interventions over time, ensuring that immediate and short-term responses to hazards contribute to sustainable development in the long-term.

These results are additionally supported in the form of the patterns revealed by the keyword co-occurrence networks. Although climate-conflict linkages were not mentioned consistently across all documents, the times that conflict was mentioned do correlate fairly well with mentions of climate change or climate-related impacts. Integrated discussions on how climate action may contribute to peace and social cohesion (and vice versa) was, however, essentially entirely absent. This suggests that when peace is discussed within the policy documents subjected to analysis, this is rarely if ever done in the context of climate action or sustainable natural resource management. Climate action relating to adaptation or mitigation therefore does not appear to be viewed as an entry point for peacebuilding interventions, and when peace is mentioned, it appears to rarely be in the context of either conflict prevention or in addressing proximate or root causes of conflict through peacebuilding activities. Whilst more research is needed to further explore this dynamic, the fact that development and DRR strategies appear to be much more successful than peace and security-related documents at incorporating climate security concerns, that longer-term opportunities to interweave climate action and peace appear largely absent from discussions within policy documents, and that the majority of discussions around conflict appear to be centred on 'reconciliation' as opposed to prevention or addressing root causes of conflict, together may point to something of a disconnect between the humanitarian and development and peace components of the humanitarian-development-peace (HDP) nexus in Kenya and East Africa.

The increasingly complex risk landscape characterising many fragile areas – in which humanitarian crises, violent conflict, displacement, extreme climatic events, and epidemics overlap and compound – indicates that those working in humanitarian assistance, development, and peacebuilding need to develop more integrated and sustainable ways of working in order to deliver more impactful interventions (BMZ, 2021). Achieving the correct mix of humanitarian, development, and peace-oriented approaches is critical for alleviating immediate threats to human security in the short-term whilst also building resilience to both climate and conflict risks in the long term. When long-term development goals are prioritised, there is a risk that immediate humanitarian needs do not receive adequate responses and short-term requirements remain unaddressed. On the other hand, prioritising humanitarian assistance risks failing to strengthen local systems for the provision of essential social services and build resilience to crises and shocks (Fanning & Fullwood-Thomas, 2019). Our analysis suggests that as things currently stand, DRR strategies especially are the best equipped to act as a vehicle for integrated, climate security-sensitive programming in which climate- and conflict-related risks are simultaneously addressed. The large-scale absence of climate security and climate-related conflict dynamics from strategies relating to peace and security in the long term, however, suggests that capacities may currently be focused more on alleviating more short-term climate-conflict linkages – such as those caused by drought – rather than utilising the need for climate action to address root vulnerabilities to both climate- and conflict risks.

In general, therefore, there appears to be very limited cross-fertilisation between peace and security policy documents and policies and strategies produced by other sectors relevant to climate security, such as climate and environment, development, DRR, food security, and gender. This also appears to be the case with regards to technical and institutional cross-fertilisation. The deployment of, for instance, climate vulnerability analytical assessments is entirely absent from peace and security and gender documents, whilst the opposite is also true in that conflict or pro-peace analyses are almost entirely absent from climate and environment documents. The only sectors which displayed some evidence (albeit limited) of having undertaken some form of integrated baseline or impact analyses were DRR and development. Although more specific research would be needed to confirm this, these findings may suggest that the technical capacities to conduct integrated analysis are somewhat lacking across several of the sectors that are arguably most critical to mitigating climate-related security risks.

This lack of cross-fertilisation is also represented in how peace and security policy documents were the least likely to in some way reference or build upon a policy or strategy produced in another sector relevant to the climate security nexus. Further research is needed to explore exactly how, where, and if these sectors are institutionally connected and integrated, but our analysis here does suggest at least from the perspective of the policy documents themselves that integration across sectors is limited. Our analysis also suggests that activities such as improved management of common pool water resources, rangeland management activities, and building resilience for pastoralist livelihoods and production systems in the long-term offer critical entry points where the co-benefits for peace and security could be actively incorporated, and where investments in cross-sectoral integration could thus be prioritised.

Finally, few documents appear to have successfully operationalised the logic of adaptive policymaking. Adaptive policymaking is theorised here to be a critical logic for policymakers to make use of when ensuring policies remain sensitive to potentially shifting climate-conflict dynamics and climate-related security risks. The emergence of such risks are a product of cascading risk processes that operate across system dimensions and scales. Processes of change in complex social systems are highly emergent – the product of multiple processes and actors' activities occurring across system dimensions and across both temporal and geographical scales – and are therefore non-linear, unpredictable, and often simply unknowable. As such, when seeking to build a social system that is resilient to potential climate-related security impacts, policies must be able to remain responsive to ever-shifting circumstances and conditions and make provisions to ensure this.

In such complex environments, it is therefore necessary to 'probe' – to experimentally test out a range of intervention strategies and modalities to see which ones work or fail, and then use this knowledge for scaling up or replicating where appropriate. This evolutionary approach to programme design requires building organisational cultures, management strategies, and technical competencies relating to rapid learning and adaptation (Kurtz & Snowden, 2003; Woodhill, 2010). As some of the most important instruments of change, policies have an important role to play in stimulating such experimentation and are critical vehicles within which learning and adaptation can be embedded. Fixed policies can fail as they are unable to exploit opportunities that may arise, ignore crucial vulnerabilities or spill over effects, or depend for their performance on critical assumptions that fail

to hold. As such, constructing clear definitions of policy success and policy failure – and actively identifying the necessary conditions under which success has been achieved or when a policy is potentially producing unintended, negative externalities – is key to ensuring a policy can remain adaptive (Walker et al., 2001).

Our analysis, however, reveals that whilst many policy documents in some shape or form agreed with or made reference to the above logic, very few successfully operationalised this and truly embedded learning and experimentation. Policies were far less likely to actually translate conditions of success or failure into monitorable signposts (key values that should be monitored in order to be certain that the underlying analysis remains valid and that any corrections are undertaken in a timely manner), nor were they likely to identify critical thresholds in those values or triggers that would then set off an appropriate contingency plan related to mitigating, hedging, defensive, corrective, or reassessment actions (Walker, Rahman, and Cave, 2001). The fact that these provisions tend to be absent from policy documents produced by sectors that are central to the climate security nexus suggests that policies risk being unresponsive to complex socio-ecological systems dynamics. The realities of how complex adaptive systems operate have important repercussions for policy design, particularly when policies are seeking to address what are in essence perhaps poorly understood, 'wicked' problems emerging due to complex causal processes. Designing policies and programming for the purposes of mitigating – or at least seeking to be sensitive to – climate-related security risks are similarly required to be able to actively learn from their operating environment, detect changes in circumstance, and alter course to avoid doing harm and pursue opportunities for peace.

Recommendations

1) **Identify where adaptation and mitigation efforts can form entry points for conflict prevention, conflict transformation, and peacebuilding.** Whilst engagement with climate security as a topic and context-specific climate-related security risks at a more conceptual level could clearly be improved, our analysis mainly highlights the need to translate the awareness that currently does exist into the design and implementation of integrated climate security-sensitive programming. Given the fact that objectives, programmes, and action plans for adaptation and mitigation efforts do tend to be present in the majority of policy documents subjected to analysis – but discussion of how these may present entry points for conflict prevention and peacebuilding are largely absent – identifying opportunities for the improved integration of peace and security concerns into climate resilience building efforts should be a priority.

   Efforts should therefore be directed at identifying and pursuing the co-benefits for peace and social cohesion that specific climate action initiatives may have – or, conversely, the benefits for climate-resilience a conflict prevention or peacebuilding intervention may have - in a more systematic manner. This would include, for instance, embedding objectives relating to climate resilience, peace, and social cohesion from the very beginning of programme design; undertaking climate security-sensitive baseline assessments; and ensuring that proxies for climate resilience, peace, and social cohesion are included in M&E exercises. Doing so will

likely help contribute to the construction of a much-needed evidence base with regards to what works, how, and under what conditions with regards to integrated programming, although improvements in organisational culture and practices will likely be required to enable such progress (see recommendation 4).

2) **Existing integrated and multi-dimensional programmatic initiatives that include reducing the risk of climate-related conflict – currently predominantly undertaken as part of DRR efforts - should be upscaled and incorporated into more longer-term adaptation efforts as well.** The majority of policy and programming that our analysis found to be sensitive to climate-related security risks was produced and implemented by entities working on DRR. Successful initiatives - such as the previously mentioned National Drought Management Authority's (NDMA) Common Programme Framework for Ending Drought Emergencies - that bring together actors from across multiple sectors and scales of governance should be upscaled and regarded as a model for other initiatives.

   Particularly absent, for instance, is the holistic integration of security, peace, and social cohesion concerns and priorities into not just responding to short-term climatic hazards, but also more long-term efforts at adaptation and mitigation. Adaptation efforts in particular have the potential to incorporate a significant social justice component, in which initiatives do not only seek to render households, communities, and societies less vulnerable to detrimental climatic impacts, but simultaneously attempt to address imbalanced and unequal power structures that enshrine and perpetuate what can be termed 'relational' vulnerability (Taylor, 2015). Peace positive adaptation efforts that consciously seek to use climate action as an entry point for broader structural transformation of communities and societies are therefore crucial to work towards a climate-resilient peace for all (Nicoson, 2021). In the context of Kenya and East Africa, adaptation policies and strategies produced in the climate and environment sectors do not tend to incorporate peace and security concerns or opportunities to the extent that they could, a situation influenced by the apparent lack of integration and cross-fertilisation between these two sectors (see recommendation 3).

3) **Improve opportunities and capacities cross-fertilisation between climate and environment and peace and security policy sectors, both at the institutional and technical levels.** Our analysis of policy and strategy documents appears to show that – as things currently stand – there is little cross-sectoral coordination occurring between climate and environment and peace and security initiatives. Particular shortcomings in this regard were detected at the institutional and technical levels. In the institutional realm, there is a need to create entirely new or utilise existing institutional spaces where actors working on various elements of the climate security nexus are able to coordinate, share knowledge and experiences, and anchor any collective action initiatives. The creation of a purposeful community of practice operating across sectors and scales is critical to facilitate institutional learning and innovation as it would allow for the creation of a network of likeminded actors able to jointly operate on a set of

shared understandings and overarching objectives. Improved knowledge and data generation and sharing between these actors in turn creates conditions ripe for the design of integrated climate-peace programming, and the subsequent cycles of learning that arise from implementation.

The creation of such networks of actors should also assist in improving technical cross-fertilisation between actors operating across different sectors. Whilst current climate and environment and peace and security policy and strategy documents generally displayed little evidence of integrated, climate security-sensitive baseline analyses or impact assessments, it is critical that the ability of actors in both fields to be able to appreciate how climate vulnerabilities *and* conflict risks overlap in any given area. As such, more investment and attention should be paid to building the capacity of actors in both the formal and informal policy formation cycle to conduct integrated climate-conflict analyses and assessments.

4) **Improve the technical capacity of actors working at the intersection of climate, insecurity, and conflict to operate on the basis of the principles of adaptivity.** Given how climate-related security risks in Kenya and East Africa are very much a product of and embedded within an increasingly complex landscape, it is imperative that policies and strategies that are in some way working on elements within the climate security nexus are able to remain responsive to changing circumstances. Cascading processes of change occurring over multiple spatial and temporal scales are often emergent and non-linear, and the exact ways through which such processes may manifest in different localities is likely to differ depending on a particular constellation of cross-scalar and cross-dimensional factors and processes. These realities are hard – if not impossible – to predict. Those seeking to design policies and programming that respond to climate-related security risks must therefore take much greater steps to instil and cultivate an organisational culture in which adaptivity stands central. Adaptivity emphasises experimenting with different intervention types and modalities in parallel and ensuring that regular cycles of learning and reflexiveness occur (de Coning, 2018). Depending on institutional context and scale, moving towards increased adaptive governance may require reforms to institutional infrastructure, a shift in mindset and culture, building capacity and skills, or all three of these.

Bibliography

Baden, C., Kligler-Vilenchik, N., & Yarchi, M. (2020). Hybrid Content Analysis: Toward a Strategy for the Theory-driven, Computer-assisted Classification of Large Text Corpora. *Communication Methods and Measures*, *14*(3), 165–183.

Bellali, J., Strauch, L., Oremo, F., & Ochieng, B. (2018). *Multi-level Climate Governance in Kenya*.

BMZ. (2021). *The Humanitarian-development-peace Nexus in Practice: A Literature Review*.

Bofin, P. M., du Preez, A., Standing, A., & Williams, A. (2011). *Addressing governance and corruption challenges in schemes for Reducing Emissions from Deforestation and Forest Degradation (REDD)*.

Borras, S. M., Hall, R., Scoones, I., White, B., & Wolford, W. (2011). Towards a better understanding of global land grabbing: an editorial introduction. *Journal of Peasant Studies*, *38*(2), 209–216. https://doi.org/10.1080/03066150.2011.559005

Cheeseman, N., Lynch, G., & Willis, J. (2016). Decentralisation in Kenya: the Governance of Governors. *Journal of Modern African Studies*, *54*(1), 1–35.

Church, C., & Crawford, A. (2018). *Green Conflict Minerals: The Fuels of Conflict in the Transition to a Low-carbon Economy*.

Conway, G. (2021, November 12). *On peace, security, and finance at COP26*. UNDP Blog.

Detges, A., Klingenfeld, D., König, C., Pohl, B., Rüttinger, L., Schewe, J., Sedova, B., & Vivekananda, J. (2020). *10 Insights on Climate Impacts and Peace*.

Directorate of National Cohesion and Values. (2022). *Core Functions*. https://www.cohesionandvalues.go.ke/services/our-services/

Doelman, J. C., Stehfest, E., Vuuren, D. P., Tabeau, A., Hof, A. F., Braakhekke, M. C., Gernaat, D. E. H. J., Berg, M., Zeist, W., Daioglou, V., Meijl, H., & Lucas, P. L. (2020). Afforestation for climate change mitigation: Potentials, risks and trade-offs. *Global Change Biology*, *26*(3), 1576–1591. https://doi.org/10.1111/gcb.14887

EAC. (2022a). *Environment and Natural Resources*. https://www.eac.int/environment

EAC. (2022b). *Peace and Security*. https://www.eac.int/security

Elo, S., Kääriäinen, M., Kanste, O., Pölkki, T., Utriainen, K., & Kyngäs, H. (2014). Qualitative Content Analysis: A Focus on Trustworthiness. *SAGE*, *4*(1), 1–10. https://doi.org/10.1177/2158244014522633

Fanning, E., & Fullwood-Thomas, J. (2019). *The Humanitarian-development-peace Nexus: What does it mean for multi-mandated organisations?*

Feitelson, E., & Tubi, A. (2017). A main driver or an intermediate variable? Climate change, water and security in the Middle East. *Global Environmental Change*, *44*, 39–48.

https://doi.org/10.1016/j.gloenvcha.2017.03.001

Government of Kenya. (2010). *Constitution of Kenya*. http://www.kenyalaw.org/lex/actview.xql?actid=Const2010

Government of Kenya. (2016). *Climate Change Act*. http://www.environment.go.ke/wp-content/uploads/2018/08/The_Kenya_Climate_Change_Act_2016.pdf

Holsti, O. (1969). *Content Analysis for the Social Sciences and Humanities*. Addison-Wesley Publishers.

Hsieh, H. F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research*, *15*(9), 1277–1288. https://doi.org/10.1177/1049732305276687

IGAD. (2022a). *About IGAD - Aims and Objectives*. https://igad.int/about/?tab=aims-and-objectives

IGAD. (2022b). *Agriculture and Environment*. https://igad.int/agriculture-environment/

IGAD. (2022c). *Peace and Security*. https://igad.int/peace-security/

Islam, N., & Winkel, J. (2017). *Climate Change and Social Inequality*.

Krampe, F. (2019). *Climate change, peacebuilding and sustaining peace*.

Kurtz, C. F., & Snowden, D. J. (2003). The new dynamics of strategy: Sense-making in a complex and complicated world. *IBM Systems Journal*, *42*(3), 462–483.

Lake Chad Basin Crisis. (2021).

Langsdorf, S., Löschke, S., Möller, V., & Okem, A. (2022). *Climate Change 2022 Impacts, Adaptation and Vulnerability Working Group II Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. www.ipcc.ch

Matthew, R., & Hammill, A. (2013). Peacebuilding and Adaptation to Climate Change. In *Assessing and Restoring Natural Resources in Post-conflict Peacebuilding*. Routledge.

Mkutu, K., Marani, M., & Ruteere, M. (2014). *Securing the Counties: Options for Security After Devolution in Kenya*.

Murphy, D., & Orindi, V. (2017). *Snapshot: Kenya's County Climate Change Fund - Country Brief 2B*.

National Steering Committee on Peacebuilding and Conflict Management. (2022). *National Steering Committee on Peacebuilding and Conflict Management - Peacebuilding and Conflict Management Directorate*. National Steering Committee on Peacebuilding and Conflict Manage

Nicoson, C. (2021). Towards a climate resilient peace: an intersectional and degrowth approach . *Sustainability Science*, *16*(1), 1147–1158.

OpenAfrica. (2021). *County Integrated Development Plans - Kenya - 2018-2022*. https://africaopendata.org/dataset/county-integrated-development-plans-kenya-2018-2022

Parry, J.-E., Echeverria, D., Dekens, J., & Maitima, J. (2012). *Climate Risks, Vulnerability and Governance in Kenya: A Review*.

Patel, T., Dhiaulhaq, A., Gritten, D., Yasmi, Y., De Bruyn, T., Paudel, N. S., Luintel, H., Khatri, D. B., Silori, C., & Suzuki, R. (2013). Predicting future conflict under REDD+ implementation. *Forests*, *4*(2), 343–363. https://doi.org/10.3390/f4020343

PATPA. (2019). *Multi-level Governance and Coordination under Kenya's National Climate Change Act*. https://transparency-partnership.net/system/files/document/200114_GPD_Kenya_RZ.pdf

Polit, D. F., & Beck, C. T. (2012). *Nursing research: Principles and methods*. Lippincott Williams & Wilkins.

Scartozzi, C. M. (2021). Reframing Climate-Induced Socio-Environmental Conflicts: A Systematic Review. *International Studies Review*, *23*(3), 696–725.

Scartozzi, C. M. (2022a). Climate-Sensitive Programming in International Security: An Analysis of UN Peacekeeping Operations and Special Political Missions. *International Peacekeeping*, *29*(3), 488–521. https://doi.org/https://doi.org/10.1080/13533312.2022.2084387

Scartozzi, C. M. (2022b). Climate Change in the UN Security Council: An Analysis of Discourses and Organizational Trends. *International Studies Perspectives*. https://doi.org/https://doi.org/10.1093/isp/ekac003

Shuttleworth, S. (2017). Editorial annex: Key findings and recommendations from the HERCULES research project, and the need for a landscape approach to environmental governance. *Landscape Research*, *42*(8), 1–12.

Spicer, E. A., Swaffield, S., & Moore, K. (2020). A landscape and landscape biography approach to assessing the consequences of an environmental policy implementation. *Landscape Research*, *45*(4), 444–457. https://doi.org/10.1080/01426397.2019.1669147

Stemler, S. (2000). An overview of content analysis. *Practical Assessment, Research and Evaluation*, *7*(17), 2000–2001. https://doi.org/10.1362/146934703771910080

Tänzler, D., & Scherer, N. (2018). *Guidelines for Conflict-sensitive Adaptation to Climate Change*.

Walker, W., Rahman, A., & Cave, J. (2001). Adaptive policies, policy analysis, and policy-making. *European Journal of Operational Research*, *128*(2), 282–289.

Woodhill, J. (2010). Capacities for Institutional Innovation: A Complexity Perspective . *IDS Bulletin*, *41*(3), 47–59.