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Are climate- and peace and security-related policies coherent? A policy coherence analysis for climate security

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1. Introduction

The impacts of climate change and variability will likely be experienced in different and uneven ways depending on the different extents to which societies – and the communities within them – are exposed, vulnerable, or possess the adaptive capacity to mitigate said impacts. Certain countries, such as those located near the equator or the poles, are exposed to a rapidly changing climate to a greater degree than other countries. Furthermore, countries whose economies are highly dependent on climate-sensitive resources and sectors and that face challenges in diversifying their economic base are inherently more vulnerable to climate-induced perturbations (Feitelson & Tubi, 2017). These forms of exposure can be compounded by persistent or periodically high levels of fragility – defined by the World Bank (2011) as periods when states or institutions lack the capacity, accountability, or legitimacy to mediate relations between citizen groups and between citizens and the state – which can in turn undermine the extent to which societies as a whole and certain groups within them possess the adaptive capacity to manage, absorb or mitigate climate risks. Communities that are highly dependent on climate-vulnerable livelihoods and sectors, face socio-economic and political marginalisation (therefore possessing little scope or capacity for diversification), or that are located in unstable and conflict-prone environments are far more likely to experience tangibly destabilising climatic impacts than others. As a consequence of the uneven landscape upon which climate impacts play out, climate change is therefore likely to set in motion or accelerate any number of different existing processes of change *simultaneously* - yet in qualitatively different ways.

Detecting and measuring the exact ways in which climate impacts play out thus remains challenging, as is designing effective adaptation and mitigation responses. The contextual nature of climate impacts means policies need to be effectively shaped and right sized for different scales, geographic areas, and sectors. What works in one area may not work in another. However, climate policymakers are also faced with an additional layer of complexity in that global society is becoming increasingly complex, interconnected, and interdependent – both vertically and horizontally – meaning that actions undertaken at one level or in one sector are likely to have significant and unpredictable downstream effects elsewhere. High degrees of connectivity and interdependence within and between systems mean that a change in elements, dimensions, and the relationships within and between them can lead to further changes in other parts of the system. Depending on whether systems are tightly or loosely coupled, these impacts may be rapid, or they may diffuse over longer timescales. The increasingly 'nested' nature of our social systems means that policymakers are confronted with increasingly connected hierarchies of scale (for instance, individuals are part of families, which are part of neighbourhoods or villages, which in turn make up larger communities and so on), meaning that a process or impact occurring at one scale is likely to have implications for other both higher and lower levels of the same system. Cascading processes of change are therefore likely to occur at different spatial and temporal scales, dotting a complex landscape in which cause and effect are exceptionally difficult to detect and frequently interwoven into feedback-type relationships.

This level of complexity, however, presents a challenge to scientists and policymakers looking to parse these relationships. Climate change is a 'messy' policy issue, meaning that it does not have a well-defined form or structure, there is often not a clear understanding of the problem faced, and it is expected to involve economic, technological, ethical and political issues simultaneously (Ackoff, 1974). Contemporary policy has tended, conversely, to display a bias towards 'puzzle solving', in which the complex and interconnected nature of 'messes' is poorly understood and 'solutions' are designed to work in one narrow dimension or only at one scale, thereby ignoring broader connections and knock-on effects (Ramalingam et al., 2008). It is therefore critical that policies are coherent with each other, meaning institutions should align their mandates, policies, and objectives and make policy

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decisions that take into account the interactions amongst economic, social, and environmental dimensions with a view to address complex issues in a more balanced manner (OECD, 2019). If policy coherence is not achieved, both climate and security-related policies may at best serve to undermine the efficacy of the other, and at worst actively do harm by perpetuating or exacerbating a cycle of instability and insecurity between climate and conflict.

One way through which climate policies may cause harm is therefore by failing to deploy a conflict-sensitive lens. Adaptation and mitigation are frequently viewed as primarily technical challenges, with solutions limited to technological innovation and improving the capacity for the management and usage of natural resources in sustainable ways. The apolitical nature of such initiatives is reflected in the popularity of vulnerability assessments, analytical instruments used to develop adaptation strategies that typically lack discussion of the socio-economic consequences of climate change and its impact on political order and human security. Yet to avoid negative impacts, it is necessary to anticipate the potential socio-economic and political implications of such adaptation measures – particularly when implemented in already fragile contexts – and recognise that they impact people's livelihoods, asset base, and local power dynamics (Tänzler et al., 2013; Tänzler & Scherer, 2019). UNDP (2016), for instance, outlines several channels by which conflict insensitive adaptation or mitigation efforts may inadvertently fuel existing or create entirely new conflict dynamics:

- **Distribution effect:** distributing resources, information, or services along the lines of an existing tension or division
- **Legitimisation effect:** giving legitimacy to a particular group or leader by working with them
- **Market effects:** changing local markets with an influx of outside resources
- **Substitution effects:** replacing existing functioning systems or structures
- **Theft/diversion:** fuelling the conflict or division with stolen or diverted resources

Poorly designed and conflict-insensitive climate policies may therefore contribute to increased insecurity of land tenure, the marginalisation of minority groups, damaging economic prospects, undermine political stability, amplify social inequalities and grievances, increased environmental degradation and loss of biodiversity, and accelerated climate change (İlişkiler et al., 2017; Krampe et al., 2021; Rüttinger et al., 2015). Such implications are evident across several examples of climate mitigation and adaptation activities. In the case of the Salma Dam in Afghanistan's Herat Province, for instance – constructed as part of efforts to increase renewable energy production, reduce GHG emissions, and enhance the effectiveness of irrigation schemes – persistent mismanagement caused significant resource scarcity for local agricultural producers and downstream communities. This in turn contributed to the emergence of grievances and competition over water access, and further inhibited the broader peacebuilding process within the country by undermining state-society relations and trust (İlişkiler et al., 2017; Krampe et al., 2021). Another example of this can be found in the Reducing Emissions from Deforestation and Forest Degradation (REDD) programme, created by the United Nations Framework Convention on Climate Change (UNFCCC) to financially reward stakeholders for protecting forests. In principle, the programme could have stabilising effects in fragile or conflict-prone contexts (Tänzler & Ries, 2012). However, an initial round of pilot projects in Nepal 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, particularly poorer households. Consequently, pre-existing political economic fault lines were sustained and even strengthened (Patel et al., 2013). Local communities may therefore be inadvertently marginalised – and local peace undermined - if climate initiatives are not preceded by an assessment of local political economic contexts and conflict dynamics.

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The opposite is also true in that peace initiatives and post-conflict recovery strategies - if not sensitive to the impacts of a changing climate - are unlikely to facilitate the emergence of a sustainable peace. Military interventions, for instance, often negatively impact the resilience of local populations by contributing to displacement or harming local livelihoods. 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. Furthermore, traditional peacebuilding approaches are often climate-insensitive, unable to account for the complex and multi-faceted interconnections between climate and conflict, despite often operating in areas that are highly vulnerable to climate change. Efforts to make peacebuilding operations more sensitive to climate change impacts are hampered, for instance, 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, 2012). Furthermore, the climate security nexus as it exists in each context is characterised by a complex set of processes and conditions operating across multiple dimensions and timescales. This means that 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).

In the context of these challenges, climate-insensitive peacebuilding activities may produce negative side-effects by failing to adopt a long-term climatic perspective and integrate environmental considerations from the beginning of an intervention. In the Darfur conflict, for instance, efforts to dismantle an over-dependency on international food aid distribution efforts led to a sudden return to agricultural production, which – as it was not accounted for a priori - caused an intensification of unsustainable land use and thus land degradation, in turn further undermining livelihoods in the long-term. A lack of climate-sensitivity may also contribute to a misidentification of root and proximate causes of conflict and the discounting of climatic dynamics, thereby leading to the design and implementation of ineffective and inappropriate peace interventions (Löfvall & Jansson, 2020). It is therefore critical for peace and post-conflict recovery strategies to be cognizant of how climate impacts transform the socio-economic and political contexts in which peace and conflict interventions operate. Rethinking peacebuilding approaches using a climate-sensitive lens is essential to adopt actions that anticipate, mitigate and adapt to the various threats that the climate crisis poses to peacebuilding operations and the contexts in which they operate, as well as to identify opportunities where climate action may have tangible co-benefits for peace and security.

When designing climate adaptation and mitigation measures or climate-sensitive peace and recovery initiatives, it is therefore critical to identify the sectors of society critically affected by climate change, work closely with the relevant stakeholders, ensure institutional support, and develop methods to enable decisionmakers in fragile states to design and implement conflict- and climate-sensitive strategies (Tänzler et al., 2013). An integrated and multi-sectoral approach - in which different policy domains each work together in a coherent manner towards a collective, overarching objective simultaneously – is crucial. Ensuring that climate actions and peace and security initiatives are cognisant of other processes and sectors is therefore essential not just to ensure that they are effective, but also that they do no harm (Anderson, 1999).

2. Objectives, research gaps, and research question

This work seeks to contribute to the conflict-proofing of climate policies – and the climate-proofing of peace and security policies – through the development of a policy-relevant, evaluative, and prescriptive methodological framework that assesses the degree to which selected policies display a responsiveness specifically to climate-conflict risks and climate-peace opportunities. The incipient methodological framework deployed for this analysis has firstly, therefore, been designed to specifically evaluate the extent and nature of coherence displayed by climate (adaptation and mitigation policies and strategies) and security-related (conflict prevention, conflict transformation, peacebuilding, and post-conflict policy and strategy) documents with climate-conflict risks. The framework, secondly, builds on these specific dimensions of coherence to identify thematic areas within policies where – complemented by additional, more qualitative analyses – specific, policy-relevant recommendations and roadmaps can be produced to guide policymakers towards important climate-conflict and climate-peace considerations. In enacting these two functions, this climate security policy coherence analysis framework is a practitioner-oriented tool that can be used by researchers to identify policy shortcomings in the context of climate security implications and subsequently make practical recommendations for improving climate security coherence. In doing so, this tool builds on existing work related to both policy coherence assessments and conflict-proofing climate adaptation and mitigation initiatives. This paper is concerned with the first function of the framework, aiming to deploy this framework in more context-specific settings in the future.

Perhaps the most well-known framework for assessing and helping policymakers achieve policy coherence is the Organisation for Economic Cooperation and Development's (OECD) Policy Coherence for Sustainable Development (PCSD) methodology. The framework seeks to reduce the fragmentation of aid, prevent policy duplication and incoherence, and promote synergistic objectives and processes for the achievement of the 2030 Sustainable Development Goals (SDGs), which are broadly understood to operate across the economic, social, environmental, and governance dimensions. The PCSD framework has been designed to operate within these dimensions, forming "an approach and policy tool to integrate the economic, social, environmental, and governance dimensions of sustainable development at all stages of domestic and international policymaking" (OECD, 2016, p.83). The PCSD screening tool – which outlines the key elements to be considered when designing coherent and integrated policy – therefore mirrors these priority dimensions and, in order to remain flexible and adaptable to diverse national and institutional contexts, operates at a quite general level across the whole of government (OECD, 2016). The key elements emphasised in the PCSD analytical framework are outlined in table 1.

This work seeks to build on the PCSD framework by further localising the key principles outlined in table 1 for the specific sectors and priorities related to climate security. The SDGs and the PCSD rightfully identify and seek to address the interconnections between social, economic, and environmental realms, and through the analytical framework outlined in table 1, propose a method to map conflicts and synergies across the SDGs. The framework proposed as part of this paper is located specifically within the intersection of SDG 13 (climate action) and SDG 16 (peace, justice, and strong institutions). It builds on the PCSD framework and creates an analytical methodology capable of evaluating and prescribing the steps governments and institutions should take to be responsive specifically to the intersection that exists between climate action and peace and security. Given how the SDGs include a range of climate goals and a call to address the ways in which inequality may affect instability and human security, they provide an important opening for the climate security agenda (Vivekananda et al., 2020; Zeigermann, 2021). Methods to evaluate the extent to which policies display coherence at the specific intersection of SDG 13 and SDG 16 remain however lacking. The methodology and analysis put forward in this paper therefore forms a practical way in

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which researchers can assess and evaluate the extent to which policy and strategy documents specific to the realms of SDG 13 and SDG 16 are coherent.

Thematic area	Explanation	Questions
Actors	Policies must consider the roles of diverse actors at different levels (governments, international organisations, private sector and non-governmental organisations), as well as the diverse sources of finance – public and private, domestic and international – for achieving sustainable development outcomes	• Which actors (countries, international organisations, as well as key stakeholders such as governmental, businesses and non-governmental decision-makers) must be involved and influenced? • How can other countries and key stakeholders be better engaged in policy coherence efforts to support the implementation of SDGs? • What is the role of the private sector, civil society organisations, bilateral and multilateral donors, and other stakeholders? • Has the role of parliaments, sub-national and local governments, and municipalities been considered?
Policy inter-linkages (horizontal coherence)	Policies must consider the policy inter-linkages across economic, social and environmental areas, including the identification of synergies, contradictions and trade-offs, as well as the interactions between domestic and international policies	• Have economic, social, and environmental policy inter-linkages (synergies and trade-offs) been considered? • How do the planned policy outputs contribute to achieve sustainable development goals? • How does the actions to attain one SDG (e.g., food security) support or hinder progress in other SDGs (e.g., Water or Health)? • Are governmental organisations moving from sectoral perspectives (e.g., agriculture, trade, investment, water, energy) towards a more integrated decision-making processes and "issues-oriented" agenda (e.g., food security)?
Contextual factors	Policies must consider the contextual factors, or, in other words, the enablers (that can contribute to) and disablers (that hamper) sustainable development at the global, national, local and regional levels	• Has the existence of enabling environments which affect positively policy outcomes been considered? • Have the contextual factors (corruption, barriers to trade, knowledge, etc.) which might influence the policy outcomes been identified? What efforts have been made to address these factors?
Downstream effects	Policies must consider effects on the well-being in one particular country "here and now", on the well-being of people living in other countries "elsewhere", and of future generations "later"	• Does the policy produce unintended effects, positive or negative, that could affect the well-being of people living in other countries? • Which groups would be affected and how? How can the unintended negative effects be mitigated? • Have the potential direct or indirect long-term effects on well-being of future generations been identified? • Are the economic, social and environmental costs of policy decisions considered?

Table 1 (author's adaptation). The OECD's PCSD Analytical Framework (OECD, 2016)

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Beyond the OECD's PCSD framework, there exist a variety of approaches to assess policy coherence from within the peer-review literature. Efforts to systematise the field of policy coherence analysis (PCA) have, however, been largely absent. As a result, much of the work conducted under the banner of PCA lacks definitional coherence, often has divergent conceptualisations of the policy process, and disagrees on which process components to subject to what types of analysis. The concepts of policy coherence and policy integration are, for instance, often used interchangeably (see for example Kivimaa & Mickwitz, 2009), and different authors also conceive of the policy formation process in myriad ways. Slater et al. (2016), for instance, identify the analytically relevant stages of the policy process as coordination, outcomes, and performance. Conversely, Duraiappah & Bhardwaj (2007) argue that coherence amongst two protocols can be assessed in terms of goals, instruments, decision, and actors, whilst Koff et al. (2020) divide the process into agenda setting, policy definition, policy legitimisation, implementation and funding, and monitoring and evaluation. Lindstad et al. (2015) in turn assess coherence and integration using the three analytical layers of policy objectives, policy instruments, and thematic elements in implementation.

Within this confusing field, however, Nilsson et al.'s (2012) policy coherence framework – designed for understanding sector-environment policy interactions in the European Union – appears to be the most influential. Nilsson et al. make use of a three-step analytical approach - looking at policy objectives, instruments, and implementation practices – and divide the policy formation process as being made up of policy integration and policy coherence stages. Policy integration is defined as pertaining to the procedural aspects of policy formation, including upstream policymaking processes, stakeholder management strategies, and attendant structural and institutional arrangements. Policy coherence, on the other hand, is framed as being more applicable to policy outputs, constituted by the goals of a policy and the instruments used to achieve these goals (Howlett & Cashore, 2009). Though Nilsson et al. (2012) emphasise that this distinction is essentially heuristic and that the policy process is a messy and complex affair, this nonetheless important methodological distinction will form the basis upon which our analysis will be framed and conducted. Analysis of implementation will crucially not seek to evaluate the *impact* of implemented policies (as this lies beyond the capacity of this paper), but rather will seek to analyse the extent to which clear, cogent and realistic implementation practices and frameworks are included as part of the policy outputs.
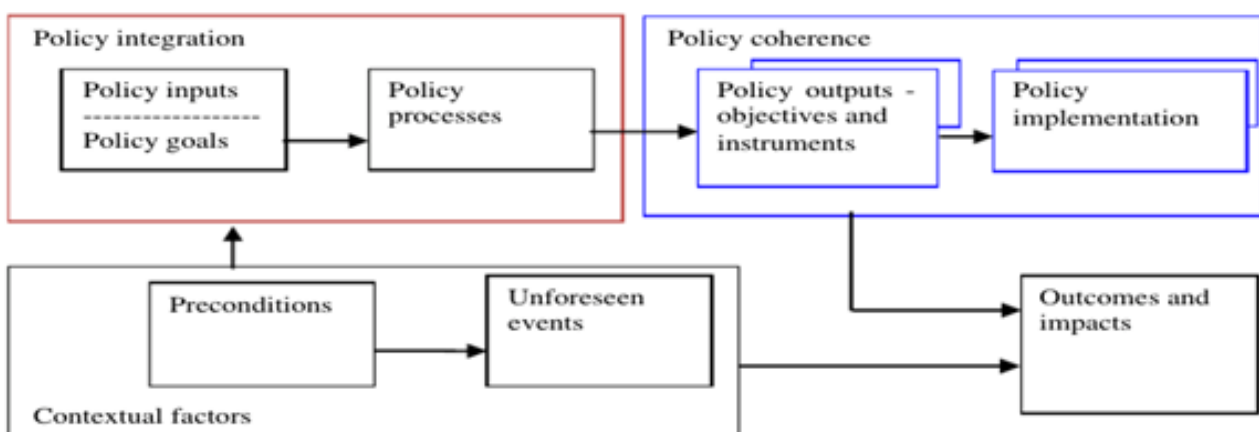

Figure 1. The Policy Formation Process (Nilsson et al., 2012)

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Furthermore, numerous sources within the literature emphasise the importance of conducting policy coherence analysis across multiple levels and scales. In the context of EU law and foreign policy, for instance, den Hertog and Stross (2013) emphasise the need for a multilevel understanding of coherence and look both at vertical- relationships across different vertical hierarchical scales of governance, investigating, for instance, how EU or national policy interacts with local and regional policies within the same policy domain- and horizontal coherence, or the relationship between policies at the same level of governance. Duraiappah (2004) concurs, arguing that coherence amongst policies within and across scales is necessary to reduce duplication and fragmentation, requiring a focus on vertical coherence, horizontal coherence, coherence between instruments and institutional and organisational coherence. Vertical coherence is also a key condition required in order for integrated, holistic policy packages designed to counter the climate security nexus and breaking the cycle between vulnerability and conflict to be effectively scaled. To truly get a sense of the landscape of interaction between the climate and security-related policy domains, this work will therefore also evaluate the degree to which vertical coherence exists within and between climate and security policy sectors.

The analysis conducted within this paper therefore occurs at the national, regional, and international levels. Climate and security-related policy documents were extracted from eight African countries (Kenya, Mali, Nigeria, Senegal, Somalia, South Sudan, Uganda, and Zimbabwe), seven regional organisations, and ten international (UN) organisations, frameworks, and conventions (see sections 4.2 and 4.3 for full list of organisations and entities), with each level being subjected to a round of analysis. Based on the insights and analytical priorities derived from the literature, the following research questions were created to help guide the creation of the methodology and frame the analysis of the documents produced by these entities:

No.	Research Question
1.	To what extent can coherence be detected between climate and security-related policy domains within the selected countries? Does this change over time?
2.	To what extent are policies likely to engage with climate security in a meaningful and implementation-oriented way, as opposed to having surface level engagement?
3.	To what extent does the analysis reveal inter-country variability? Do certain countries display a greater degree of coherence, and why?
4.	To what extent can coherence be detected across multiple scales of governance?

Table 2. Research Questions

3. **Methodology**[2]

In order to make an assessment of the extent to which climate and security-related documents are coherent from the perspective of climate security, a methodology was created that attempted to reconcile both empirical and qualitative forms of analysis. As a first step, a keyword search strategy was developed based on the key concepts identified by the research questions through which relevant documents could be identified and extracted. Boolean Operators were used to help enhance and narrow down the keyword search by establishing relationships between the different terms through the use of 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 "Senegal"). A set of inclusion and exclusion criteria for extracted policy and strategy documents was subsequently developed on the basis of the research priorities identified by the research questions, and helped establish the sectoral, temporal, geographical, and actor scope of the analysis. For a full list of all keyword search combinations, inclusion and exclusion criteria, and the databases and repositories from which documents were extracted, see Annex 1.

The analytical framework deployed for conducting the policy coherence analysis itself was designed in a hybrid manner, cognizant of the fact that whilst empirical results were required for effective cross-comparison of trends, patterns, and results, policy analysis remains a qualitative and subjective analytical exercise. The framework also needed to possess sufficient specificity to produce useful and practical insights with regards to in which thematic areas a policy needed to improve in order to become more coherent. The analysis was therefore conducted by using a hybrid methodology, involving a synthesised combination between directed content analysis and an empirical scoring system, with the former acting as the foundations for the latter. Directed content analysis can be utilised to validate or extend conceptually a pre-existing theoretical framework or theory and is therefore useful in the ex-ante creation of analytical categories through which bodies of text can be assessed. As we developed a number of pre-conceived research questions and analytical priorities – the latter of which were refined and outlined as a series of hypotheses (see table 3) – we were able to create analytical categories relevant to an assessment of coherence in a deductive manner (see table 4). Each of the categories was organised based on whether they fell within the 'acknowledgement' dimension – covering the various ways in which a document may reference, define, and map out climate and security linkages -and the 'implementation' dimension, used to make an assessment of the extent to which a document actually takes concrete steps to design and implement integrated climate and security policy mechanisms and initiatives. Units of analysis ranged from keywords, sentences, and longer sections of text which convey more meaning, whilst assessments of overall coherence were made at the level of the entire policy output.

No.	Hypothesis	Rationale
1.	The climate and security policy domains are generally characterised by a lack of coherence	This hypothesis focuses on the informed perception that policies and strategies from the security and climate domains often fail to adequately and fully acknowledge the existing interconnections which, until recently, most of the actors did not even recognise (Dabelko et al., 2013; Mobjörk et al., 2016).
2.	The coherence of climate and security policy outputs improves the more recent the document was published	This hypothesis focuses attention on the evolutionary trend of climate-security coherence, seeking to assess the extent to which a greater awareness of the climate security nexus at high-profile international bodies such as the United Nations Security Council in recent years may have translated into a greater degree of awareness amongst national and regional-level policymakers.
3.	Policies are more likely to acknowledge linkages between climate and conflict at	This hypothesis is based on the observation that whilst it is easier for national, regional and international actors to acknowledge the interconnections

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[2] For a more comprehensive overview of the methodology deployed for this paper, see Annex 1.

	the surface level and are less likely to contain concrete policy instruments and policy recommendations	between climate and conflict, it is much more challenging to design and implement integrated climate security interventions to address interconnected risks.
4.	Higher-level policy outputs (defined within our scope of analysis as outputs that were developed at the regional or international level) display a greater cross-sectoral coherence than national or local policy outputs	This hypothesis is based on the informed assumption that macro- or conceptual-level coherence is easier to attain than the development of context-appropriate policy objectives, instruments, and policy mechanisms.
5.	Security policy outputs display a greater degree of coherence with the climate security nexus than climate adaptation and mitigation policies	This hypothesis is based on the informed observation that since the UNSC acknowledged the climate security nexus for the first time in 2007, the debate has often been framed from a military perspective, regularly tending to revolve around the threat of climate change to national security rather than human security (van Schaik et al., 2020). As such, we expect to see a greater degree of familiarity with - and perhaps also a greater degree of successfully integrated policy and strategy - the climate security nexus.

Table 3. Hypotheses

No.	Category Type	Analytical Category	Explanation
1.	Acknowledgement	Horizontal Acknowledgement 1 and 2	These categories are designed to reflect whether or not a document acknowledges other fields at the same level of governance. Acknowledgement category 1 is scored 1 if, for instance, a document identifies another policy field relevant to the climate security nexus (does a climate policy identify a peace and security-related policy field and vice versa). Acknowledgement category 2 is scored 1 if the document then also mentions a specific policy instrument or mechanism in said field.
2.	Acknowledgement	Vertical Acknowledgement 1 and 2	These categories are designed to reflect whether a document acknowledges a policy operating at a higher level of governance (regional or international). For vertical acknowledgement 1, a score of 1 is awarded if the policy makes reference to a higher-level climate document. For vertical acknowledgement 2, a score of 1 is awarded if the policy makes reference to a higher-level peace and security-related document.
2.	Acknowledgement	Definitional Coherence	Conceptions of what encompasses security as well as what encompasses climate security differ within and across organisations and across mandates. What climate security means cannot therefore be taken for granted. Furthermore, whilst the presence of a clear overarching definition of climate security reflects a clear clearer conceptual picture of how the climate security nexus operates, the absence of an overarching definition may hint at a lack of this. Documents were therefore awarded a score of 1 if they presented a clear definition of climate security, and a score of 0 if they failed to provide said specific definition.
3.	Acknowledgement	Self-reference	This category is designed to capture whether a document mentions or proposes specific instruments, structures, or work processes that relate to improving coherence between ministries or other implementing partners. A score of 1 is awarded if any of the above appears in the documents, whilst a score of 0 is awarded if no mention of cross-sectoral or cross-ministerial coordination coherence is made at all.
4.	Acknowledgement	Depth of Engagement	Policy documents related to the realms of peace, conflict and security may mention climate issues only indirectly and at a surface level, thereby only implicitly drawing connections between the two policy domains. Climate adaptation and mitigation policy documents may similarly mention conflict, peace and security issues implicitly. Conversely, the overlaps between the two domains may be addressed explicitly, with causal relationships between climate and conflict being deliberately identified. A score of 1 was therefore awarded to documents that actively identified impact pathways leading from climate to conflict and insecurity. A score of 0 was awarded to documents that failed to identify some of the specific channels and mechanisms whereby climate could act to increase the risk of conflict.
5.	Implementation	Objectives	Whether or not a policy document sets out a specific set of synergistic objectives that seek to build connecting bridges across different policy fields is a key first step in moving from acknowledging climate security as an issue to actively seeking to deal with it. As such, documents were awarded a score of 1 when the presence of integrated objectives was detected, and a score of 0 when no objectives that bridged climate and peace and security-related fields were detected.
6.	Implementation	Temporal Coherence	Differing time frames and understanding of at what rates processes play out in the climate versus the humanitarian-development-peace nexus forms a key hindrance to coherence and integration, impacting for instance how objectives are created and prioritised, and what instruments are deemed appropriate for delivering them. A score of 1 was awarded to policies that in some way considered the interplay of fast- and slow-onset temporal processes, whilst a score of 0 was awarded for those that did not reflect on this.
7.	Implementation	Instruments	This category reflects whether a document identifies a specific policy instrument that can be seen to help promote or facilitate a specific set of integrated climate security-sensitive policies. A score of 1 was awarded if a document included a synergistic policy instrument that made reference in some way to both

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9.	Implementation	Breadth of Engagement	climate and peace and security-related fields (such as a regulatory framework, market incentives, education, capacity building or awareness raising, or monitoring mechanisms). A score of 0 was awarded to documents in which this was absent.
			This category captures whether a policy document successfully identifies specific communities, sets of beneficiaries, or geographic areas a policy mechanism should be targeted and from which said constituencies should receive tangible co-benefits. This forms a key step in the implementation of a policy. Documents received a score of 1 if specific societal groups or communities were identified as being at risk of climate security risks and identified as relevant policy beneficiaries. A score of 0 was awarded if the document omitted identifying specific constituencies.
10.	Implementation	Recommendations	The final level of implementation within the scope of this analysis is whether a document is responsible for identifying or helping implement a specific set of climate security-sensitive policy mechanisms or recommendations. A score of 1 was awarded to policies in which this was detected (for example, specific policies relating to reducing the reliance of a population on charcoal production, which is both a source of emissions *and* helps underpin and sustain a war economy). A score of 0 was awarded to documents in which no specific synergistic policy mechanisms or recommendations were observed.

Table 4. Analytical categories

Each of the categories outlined in table 4 represents an area deemed of relevance for climate security policy coherence and within which an analytical assessment could be made by the researchers. To do so in a way that produced empirical and quantifiable results, one to two questions were developed within each category which the researcher would answer with either a 'yes' or a 'no' (corresponding to a 1 or a 0 respectively). This subsequently formed the basis of a policy scoring system in which the lowest attainable score is 0 and the highest is 12. After receiving a score, a document was classed as possessing no, low, medium, or high coherence based on a meta-scoring system (see table 5).

Score Range	Degree of Coherence	Description
0	No Coherence	A policy document scoring 0 points can be said to possess no degree of coherence at all and likely does not acknowledge the other relevant policy field at all.
1-4	Low-level Coherence	A score of 1-4 denotes a policy document that possesses low levels of coherence. Such a document may make a passing reference or acknowledge the links between policy field A and policy field B, but likely does not represent an attempt to develop and pursue a synergistic set of objectives in a coherent, cross-sectoral manner.
5-8	Medium-level Coherence	A score of 5-8 describes a policy document that possesses a medium level of coherence. Such a document may seek to actively try and pursue integrated, and synergistic objectives across sectors, but falls short in one or two key areas that prevent optimisation.
9-12	High-level Coherence	A score of 9-12 denotes a policy document with high levels of coherence. Such a document likely has both intended to and succeeded in the systematic promotion of mutually reinforcing policy objectives and actions across policy sectors.

Table 5. Meta-scoring system

Finally, in order to ensure the validity of our results, we deployed a number of quality assurance techniques at various stages of the analysis. Firstly, it was important to consider whether the concepts and categories we developed were adequately reflective of the phenomenon under assessment. To ensure this, we followed Islam and Asadullah (2018) in utilising a small sub-set of the selected documents (around 15-20%) to check the appropriateness of the categorisations, after which a series of small adjustments were made to the framework. Secondly, aware that researchers must compensate for the fact that there exists always a degree of interpretation when analysing a text

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(Granheim & Lundman, 2004), analysis was conducted by more than one person and the coding process was subjected to an internal cross-check system, in which multiple researchers evaluated a document subsequent to the initial round of content analysis in order to ensure inter-coder reliability and coherence.

4. Results and interpretation
4.1 Country-level Results

A number of interesting trends and accompanying narratives emerged from our analysis of documents produced at the country-level. As previously mentioned, analytical categories were split across acknowledgement and implementation-related categories (see table 9), with acknowledgement and implementation scores per policy document emerging from averaging out the analytical category scores that composed them, yielding coherence levels between 0 and 1, with 1 being the highest coherence. A total of 60 country-level documents were analysed.

Firstly, as shown in Figure 2, the selected policy and strategy documents from across all eight countries scored on average much higher in acknowledgement-related categories (blue bars) than implementation-related categories (red bars). The majority of documents examined at least acknowledge and identify to some extent the channels through which climate may exacerbate or fuel conflict (depth of engagement) – and approximately two-thirds of both climate and security-related documents recognise a connection with the opposite policy field (horizontal acknowledgement 1). However, less than half of the documents mention specific cross-sectoral and synergistic objectives (objective) and make specific policy recommendations (recommendations), and only approximately one-third of documents include the development of specific policy instruments (instruments) and identify specific constituent groups (breadth of engagement). This is despite the fact that most documents put forward specific proposals, instruments, or governance mechanisms to improve inter-ministerial or inter-departmental coherence (self-reference). This suggests that, in general, the documents are much more likely to acknowledge and – in some cases – articulate how climate may become an issue for peace and security than they are to design or propose specific policy objectives, instruments, and mechanisms to tackle these interconnections.

This pattern is observed across all countries (see Figure 3), as the categories that consistently score highest are horizontal acknowledgment 1, vertical acknowledgement 1 (describing whether a document makes reference to a higher-level climate policy or governance mechanism), depth of engagement, and self-reference. Whilst general underperformance in the implementation categories is also reflected in this figure, some countries perform particularly poorly in multiple categories. No documents from Senegal, for example, received a score in implementation-related categories, whilst documents from Zimbabwe only score breadth of engagement, meaning that none of their analysed documents featured specific integrated objectives, instruments, or policy recommendations. This trend remains fairly consistent over time. Figure 4 shows the temporal evolution of average acknowledgement and implementation dimension scores across all countries between 2011 and 2021. Regardless of the year of publication - with the exception of 2014 – document score lower in implementation-related categories than in acknowledgement-related categories. This may suggest that policymakers are and have been aware, at least at surface-level, of how climate may impact peace and security, but lack the capacity or will to design integrated responses for these complex interconnections. However, the 2014 peak in implementation following the 2013 peak in acknowledgment, and more generally the congruous temporally intercalating trend between these two dimensions, suggests that acknowledgment - or lack thereof - of the climate security nexus does influence policy implementation over time.

These results suggest that some of the key obstacles to achieving a greater degree of coherence between climate and security-related policy fields have less to do with awareness amongst policymakers that climate *can* act as a threat multiplier – as they in fact do frequently tend to recognise and articulate the channels by which this is likely to occur within their own country contexts – but rather in the design and implementation of integrated climate security practices and approaches.
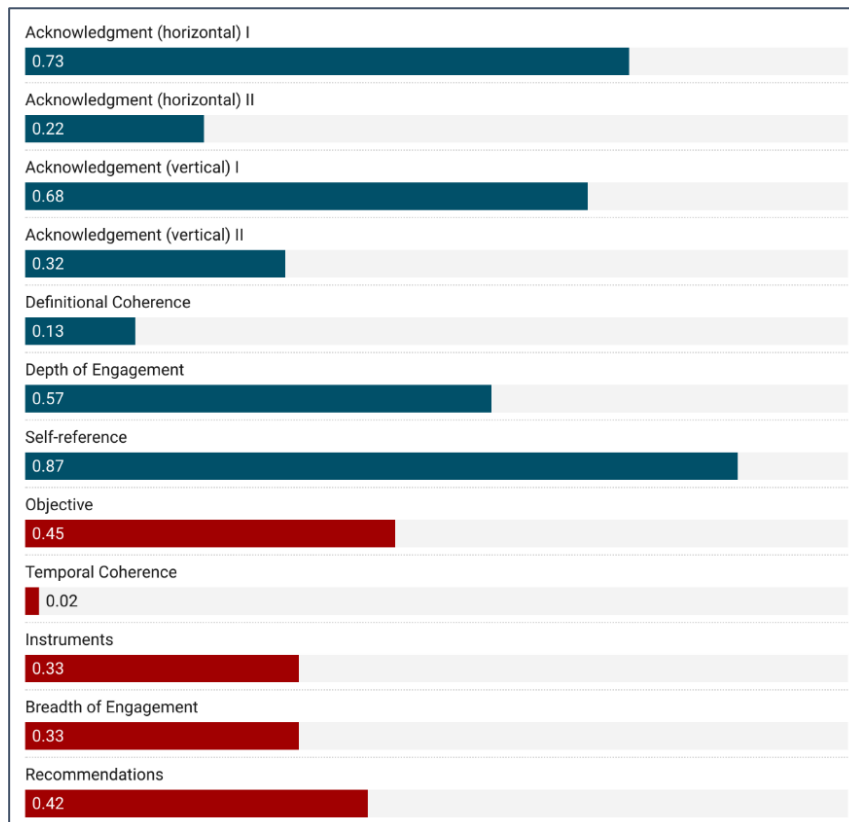

Figure 2. Average policy coherence scores (broken down across acknowledgment and implementation analytical categories, blue and red respectively) across all countries and documents. Scores are derived by averaging each analytical category across all documents reviewed and range between 0 and 1, with 1 being maximum coherence
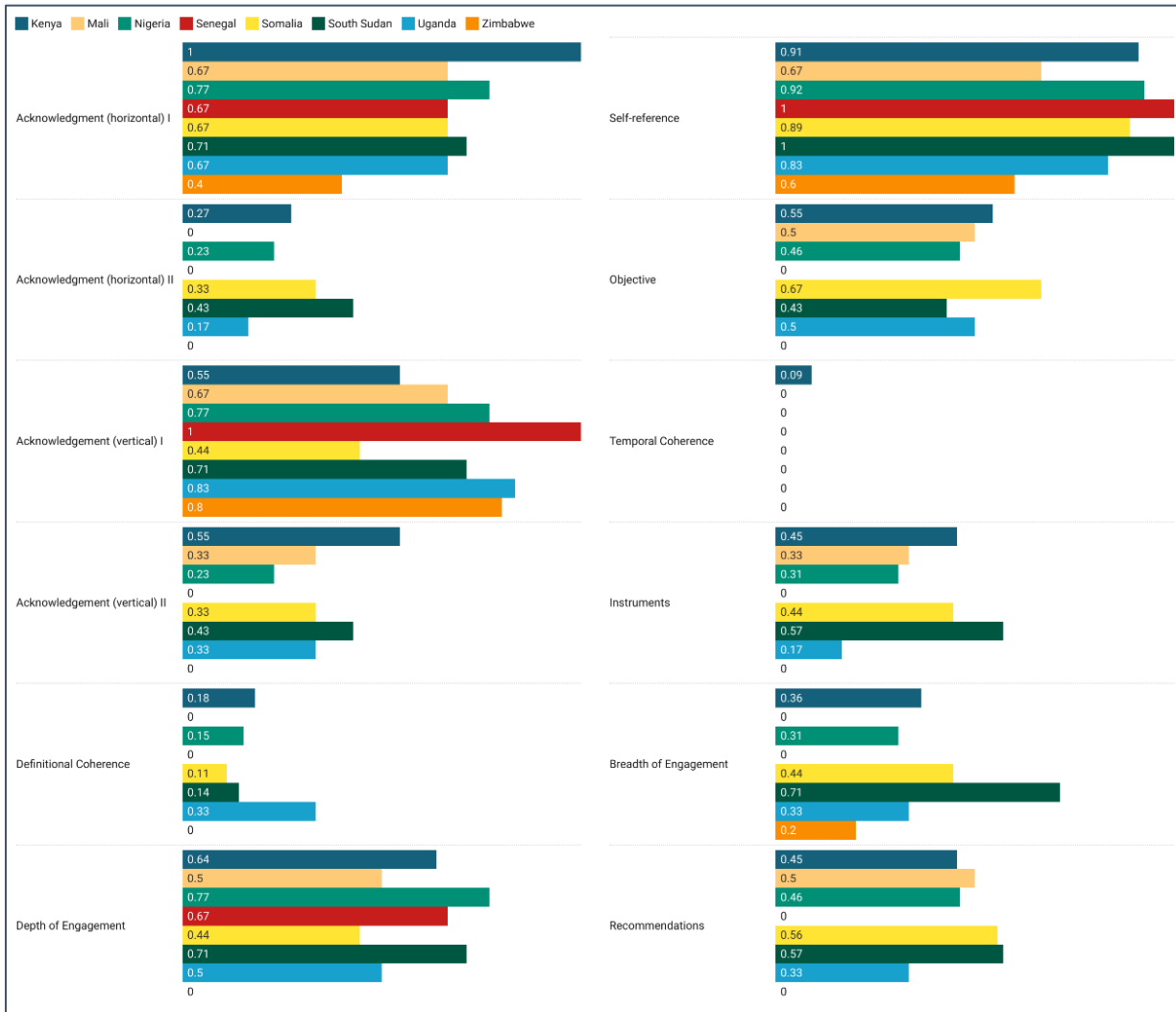
Figure 3. Average coherence category scores across all countries. Scores are derived from averaging each analytical category across all documents reviewed and are disaggregated across all countries. Scores range between 0 and 1, with 1 being maximum coherence
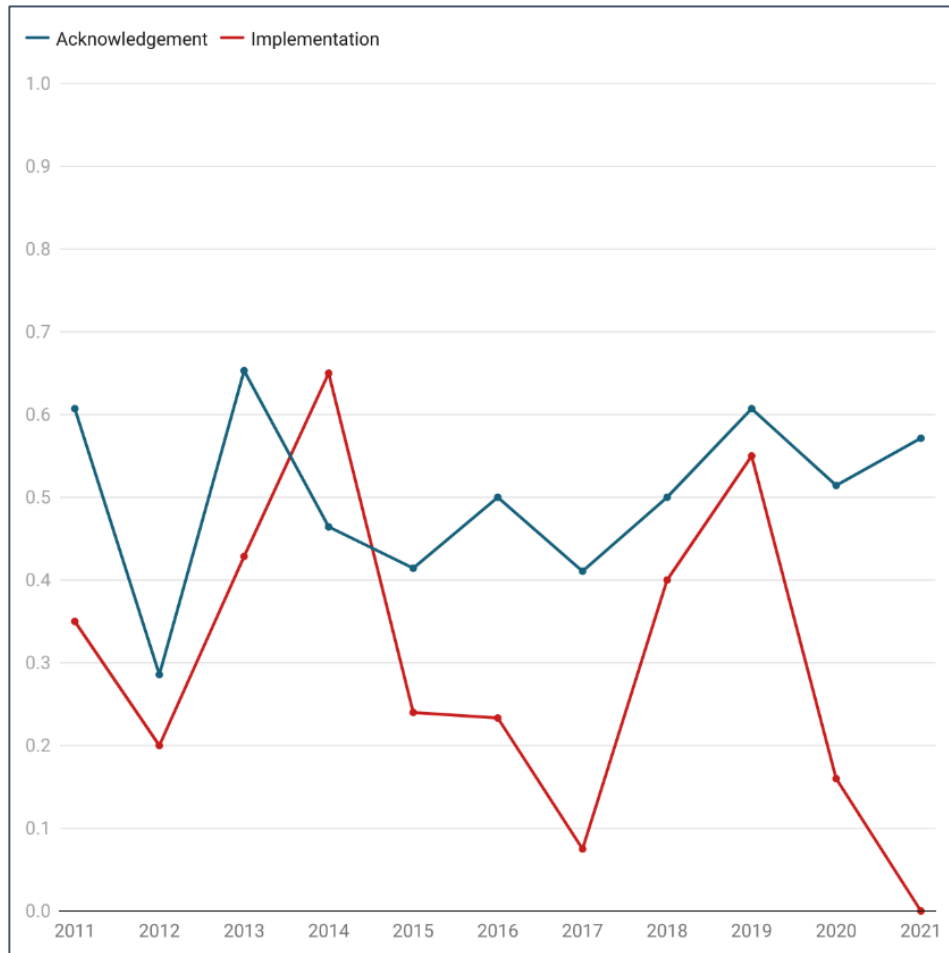
Figure 4. Evolution of acknowledgement and implementation category scoring over time. Scores result from averaging the analytical categories composing them (table 7). Scores were disaggregated by year and range between 0 and 1, with 1 being maximum coherence

These results suggest that some of the key obstacles to achieving a greater degree of coherence between climate and security-related policy fields have less to do with awareness amongst policymakers that climate *can* act as a threat multiplier – as they in fact do frequently tend to recognise and articulate the channels by which this is likely to occur within their own country contexts – but rather in the design and implementation of integrated climate security practices and approaches.

Several inferences can be gleaned from this finding. Firstly, the absence of climate security practices and approaches may reflect an absence of clear examples of how to design successfully integrated climate security policy mechanisms and when and where specific policy options are appropriate (Von Lossow et al., 2021). There are institutional and practical challenges in communicating to the relevant communities of practices what works where, and likely also a lack of actionable data that would help underpin the design of truly integrated climate security practices. Whilst the 'why' of climate security were frequently answered (acknowledgement-related categories), questions relating to 'what', 'how', and 'where' (implementation-related categories) were answered much less frequently. Secondly, it appears that despite coherence and cross-sectoral coordination being at the forefront of the vast majority of analysed documents, the relevant communities of actors – those related

to climate and those active in peace and security-related policy fields – do not engage with each other sufficiently. Amongst the policy and strategy documents that did identify the specific ministries and governing bodies and clearly delineated coordinated responsibilities for each, actors relevant to conflict prevention, conflict transformation, and peacebuilding were frequently missing from this. Alongside the 'what', 'how', and 'where', therefore, the 'who' was often also missing.

Also notable in Figures 2 and 3 is the general absence of definitional coherence - based on whether a document provides a clear definition of climate security - and temporal coherence, which records whether a document articulates the complex interplay of short- and longer-term climate and conflict-related timeframes. The fact that depth of engagement is present in most documents whilst overall definitions remain lacking shows the extent to which national level policymakers appear to be more attuned to how climate impacts the likelihood or nature of conflict in their local contexts, but may lack a clear and overarching climate security framework that can be used to map and identify the presence and interaction of climate security risks. Very few documents, for example, explicitly conceive of climate as a threat or risk multiplier. Such a framework is critical for conceptualising the ways in which multiple climate security risks may interact and compound, creating a comparative evidence base of what works and where, and for formulating clear best practices. The absence of such a clear conceptual framework is perhaps also reflective of the lack of consensus on the exact nature of climate and conflict links within the peer-review literature, which makes it difficult to establish an evidence-base that extends beyond quite specific national or regional contexts (Von Uexkull & Buhaug, 2021). The lack of specific engagement with the interplay of different temporal scales is also reflective of how the complexity of the climate-conflict interface is perhaps still poorly understood amongst policymakers.

Figure 5 shows the average coherence across all selected countries broken down by whether the policy or strategy document fell within a climate or security-related policy field. Disaggregating the data this way reveals that fewer security policies are available for assessment than climate-related ones (barring Zimbabwe and Senegal, for which no security-related documents were able to be extracted). Furthermore, this disaggregation reveals that climate documents are more coherent overall than security-related documents in almost all country contexts, having received higher total average coherence scores. This trend is particularly visible in Mali, where hardly any security-related documents scored highly in terms of overall coherence. To complement this, figure 6 also shows which specific categories of coherence climate and security-related policies performed well or poorly in, in an attempt to analyse whether climate or security-related sectors are perhaps more successful in particular regards. From this, it emerges that there is not a significant difference across the sectors, suggesting that the issues identified at a general level are equally present in both and that no sector is particularly better at either acknowledgement or implementation. Both sectors likely lack access to boundary spanning, cross-sectoral expertise and do not possess sufficient tools or methods to facilitate the design of integrated policy.

The only major differentiation exists across the categories of vertical acknowledgement - an expected result, given how vertical acknowledgement 1 and 2 are meant to record whether a policy makes reference to a higher-level climate or security-related document respectively – and definitional coherence, in which security-related documents do score markedly higher in. Security-related documents are therefore more likely to engage with a more robustly conceptualised understanding of what climate security entails. This is perhaps a consequence of how policymakers working in security-related fields are more likely to be aware of climate security literature and debates, whereas those policymakers producing climate documents may not have as expansive a familiarity with the concept or how climate and conflict links are framed in grey- and peer-review literature.
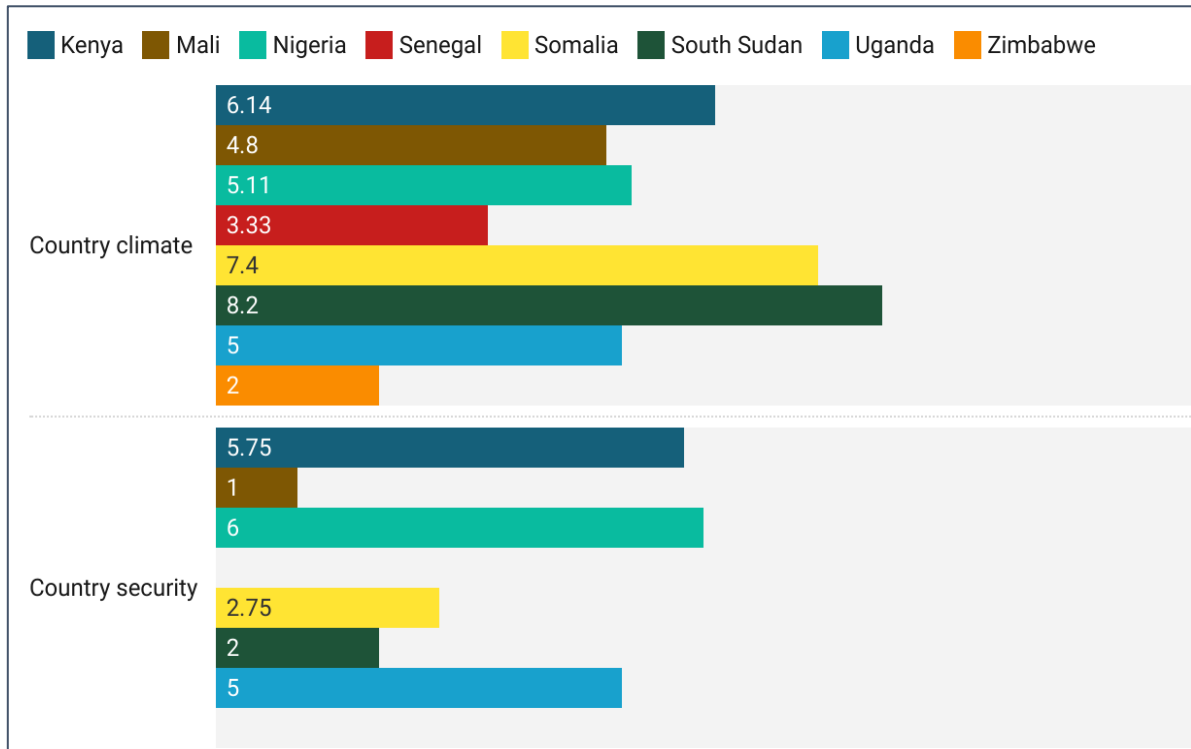
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Figure 5. Average coherence score per country and policy sector. Scores derived from averaging total scores disaggregated by policy sector and country. Scores range from 0 to 12
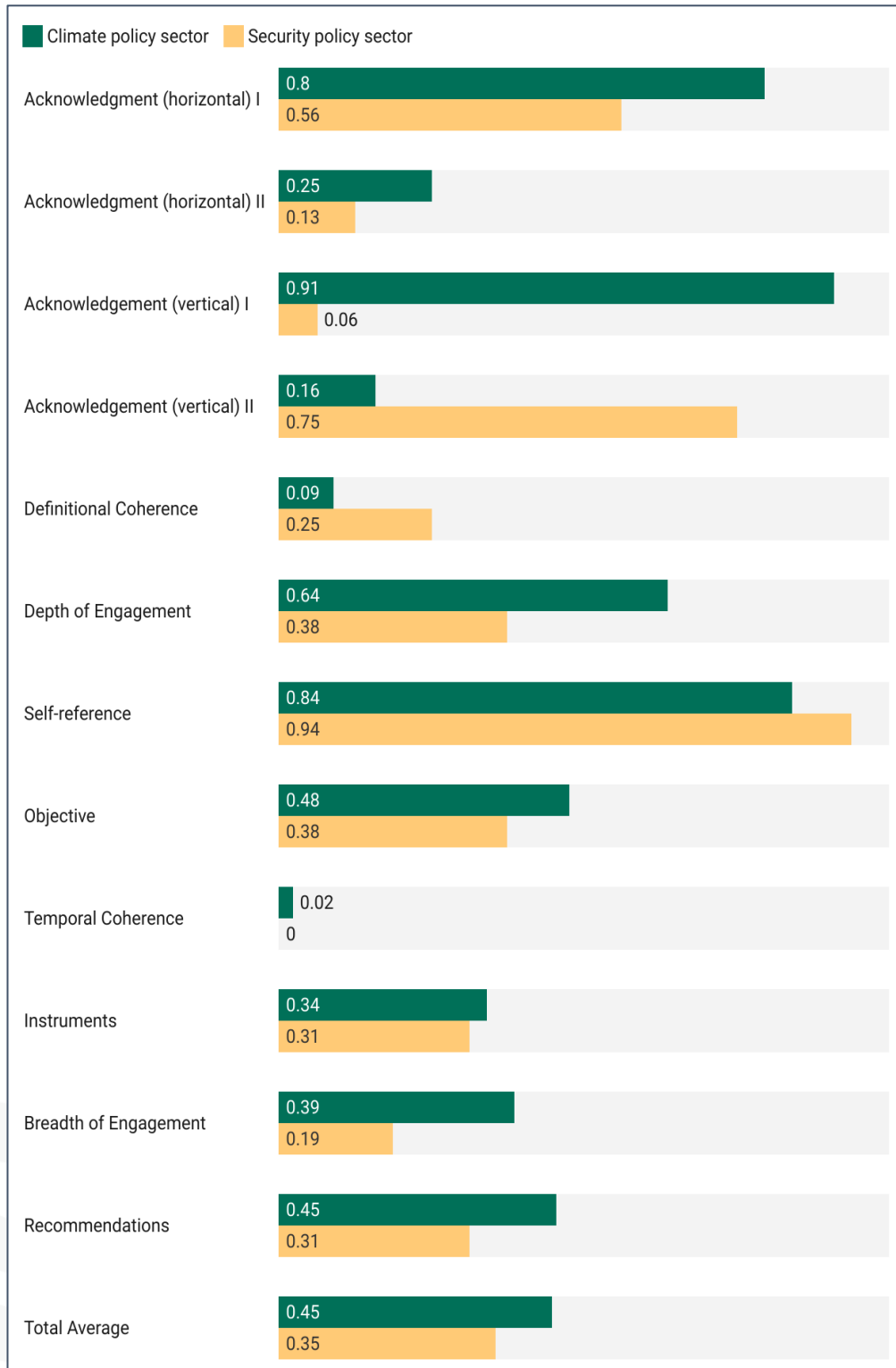
Figure 6. Average coherence score across all countries per analytical category and policy sector. Scores derived from averaging each analytical category across all documents and disaggregated by policy sector and analytical category. Scores range from 0 to 1

Finally, as demonstrated in Figures 7 and 8 – which show the average total coherence scores that each country received across all of their documents and their geographic distribution – climate and peace and security-related documents from South Sudan scored on average the highest, followed in descending order by Kenya, Nigeria, Somalia, Uganda, Senegal, Mali, and Zimbabwe. However, given a maximum potential score of 12, the policies of no country should be considered to exhibit a high degree of average coherence across all documents. South Sudan, Somalia, Kenya, Nigeria, and Uganda possess – based on the meta-scoring system (see table 8) – a medium degree of coherence from the perspective of climate security, but they fall at the lower end of the medium coherence range. Senegal, Mali, and Zimbabwe all qualify as possessing low climate security policy coherence.

Figure 9 dives deeper into the relationship between specific countries - and the degree to which climate security coherence was detected within them - by overlaying total average coherence scores with a measure of the extent to which a country can be deemed vulnerable to climate security risks. This was achieved by creating an integrated climate security policy responsiveness index that assesses total policy coherence scores in relation to both climate vulnerability and fragility indexes. The ND GAIN vulnerability index was used to proxy climate vulnerability in this index since it holistically evaluates the predisposition of human societies to be negatively impacted by climate hazards, whereas the FFP Fragility Index proxied fragility as it assesses country-based violence and conflict risks (Chen, 2015; Fund for Peace, 2017). Since both fragility and vulnerability indexes are both given by year and by country, policy coherence scores were first disaggregated by those factors. All indexes and total average policy coherence scores for each country were thereafter transformed to have a common denominator of 1 (the Vulnerability Index remained the same as it ranges between 0 and 1 with 1 being maximum vulnerability, the Fragility Index was divided by 120 as it ranges between 0 and 120 with 120 being maximum fragility, and the total policy coherence scores were divided by 12 as they range between 0 and 12 with 12 being maximum coherence). Then, by averaging out Fragility and Vulnerability Indexes, a yearly score of climate insecurity proneness for each country was created.

Dividing the total policy coherence scores by their respective yearly climate insecurity proneness scores provided values illustrating the extent to which climate and security risks are being responded to (see annex for yearly evolution of policy responsiveness per country). When such responsiveness values are equal to 1, policies are coherent enough to neutralize climate insecurity risks since in this case the scores of this relationship equalize each other. When such responsiveness values are inferior to 1, policies are not coherent enough to offset climate insecurity risks since this entails that policy coherence scores are smaller than their respective climate insecurity risk scores. When such responsiveness values are superior to 1, policies are more than coherent with respect to contextual climate insecurity proneness since this entails that policy coherence scores are larger than climate insecurity proneness ones. Finally, an overarching score was defined by averaging out the resulting integrated policy responsiveness index scores across the years, which provided the necessary data to map the country-based climate insecurity policy responsiveness throughout the timeframe of this study.

While the documents examined don't indicate that any country has comprehensively addressed the interconnections between climate and peace and security-related policy domains, Zimbabwe, Mali, Senegal, and Somalia in particular appear to be ill-prepared for dealing with potentially escalating

climate security risks. These countries are characterised by low and mid-levels of coherence between climate and peace and security-related policy domains and face a combination of high levels of climate vulnerability and fragility-related risks. As such, whilst all countries should certainly strive to improve coherence between climate and peace and security-related policy domains, the countries that are more immediately at risk of climatic shocks and stressors interacting with pre-existing insecurities and fragility in particular should seek steps to promote better cross-sectoral interaction and fertilisation.

For instance, even though Somalia scored medium level policy coherence, indicating the active pursuit of synergistic objectives across sectors, the vulnerability to climate and security-related concerns Somalia faces calls for a higher level of policy coherence. Kenya, similarly, which ranked second amongst all countries in terms of policy coherence, scored low in terms of responsiveness because of mid-high levels of fragility. On the other hand, countries that face mid-and high levels of fragility, such as Nigeria and Uganda, scored higher for their responsiveness through mid-levels of policy coherence. Similarly, South Sudan, which faces extremely high fragility and vulnerability risks, scored higher responsiveness because of stronger policy coherence scores. It is additionally important to note, however, that the coherence scores of these countries might be reduced not only by the fact that there is low climate policy coherence, but also because of a disparity between the number of climate and security policy and strategy documents (more climate-related documents were available and extracted than peace and security-related ones). Moreover, disparities in the number of available policy documents per country that may cause bias must be acknowledged.
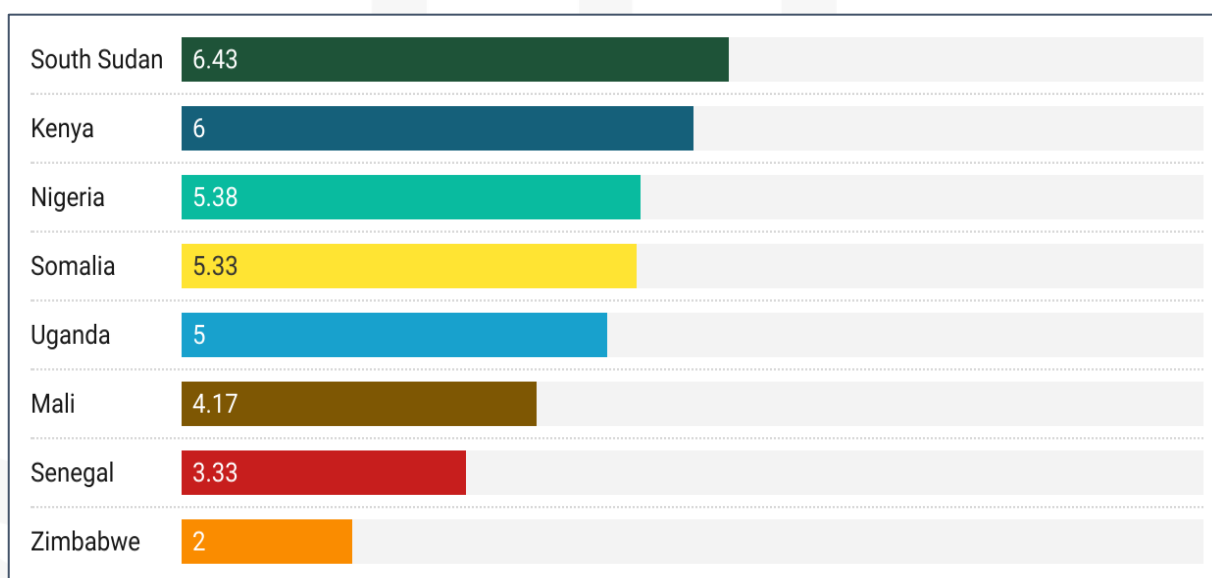

Figure 7. Average total policy coherence score across all countries. Scores result from averaging each total coherence score across all documents reviewed and are disaggregated by country. Scores range between 0 and 12, with 12 being maximum coherence
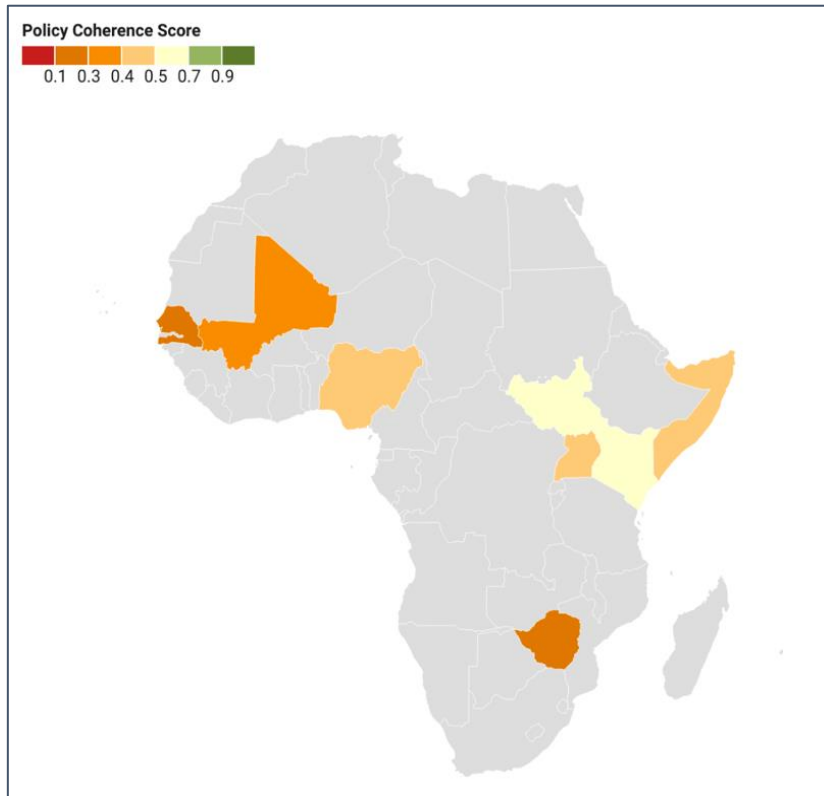
Figure 8. Average total policy coherence score disaggregated geographically. The scale ranges from 0 to 1, with 1 being the maximum score possible
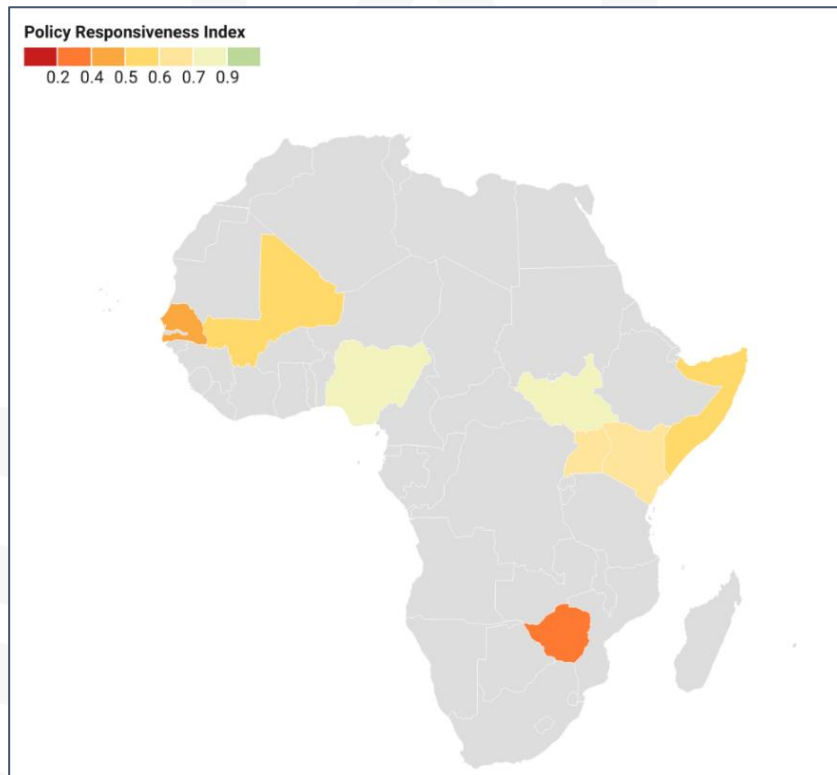

Figure 9. Geographic representation of policy responsiveness. Results derived from integrating the Climate Vulnerability Index, the Fragility Index, and average total policy coherence scores. The scale ranges from 0 to 1, with 1 being the minimum policy coherence score to neutralize fragility and climate vulnerability risks
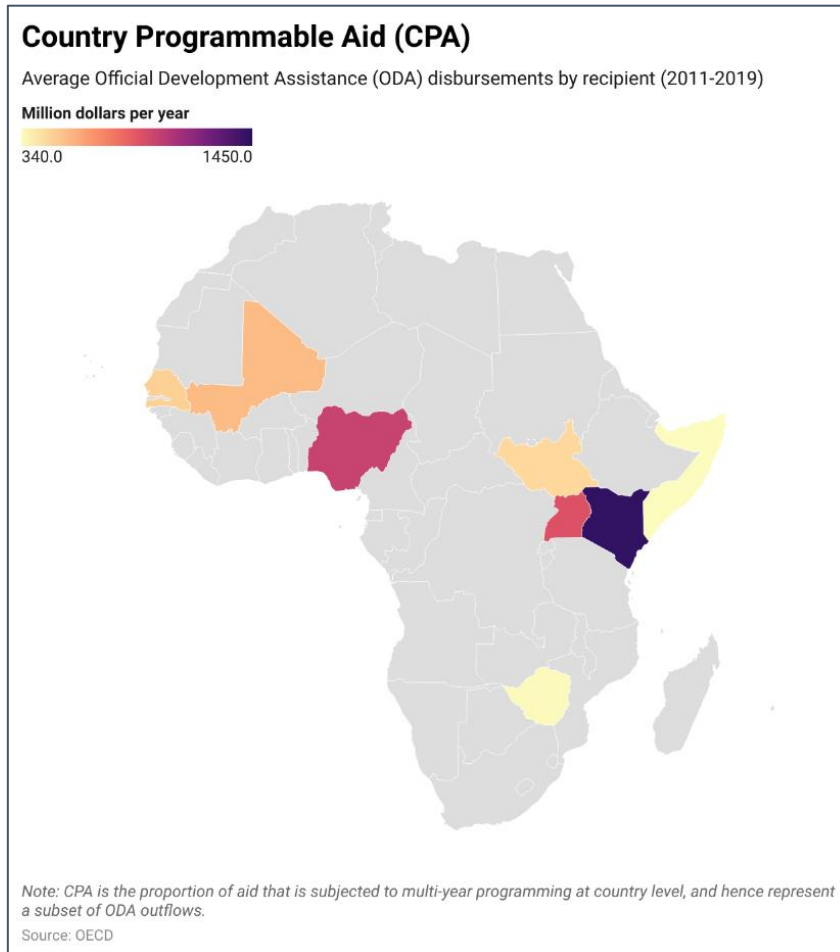
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Figure 10. Geographic representation of overseas development aid (ODA) flows

A number of concluding insights can be drawn from the country-level analysis that enable us to prove and, in some cases, disprove our previously outlined hypotheses. Firstly, the results appear to confirm our first hypothesis, which captured our expectation that climate- and security-related policy domains would generally be characterised by a quite low degree of coherence. Overall levels of coherence hover between medium and low in our meta-scoring system, with no country achieving high levels of coherence across all documents and years. Our analysis suggests that Mali, Senegal, and Zimbabwe in particular are characterised by a combination of incoherent climate and security-related policy domains, high climate vulnerability, and/or high fragility-related risks, meaning that these national contexts are arguably ill-prepared for potentially destabilising climate security impacts in the short- to medium-term (see figures 7, 8, and 9). These countries in particular should therefore be subjected to further qualitative and localised analysis in order to assess the specific shortcomings in their respective institutional and legislative landscapes, and what changes or additions may be required within this.

Our second hypothesis outlined how we expected policy coherence scores to improve over time, given the ever-increasing visibility of climate security as a policy topic. There is some limited but speculative evidence to suggest that the coherence of climate and peace and security-related policy and strategy documents has improved between 2010 and 2021 at the country-level. Figure 3 shows that whilst documents prior to 2015 and 2016 were quite sporadic in their engagement with climate security, coherence improves from 2015 onwards. This may be attributable, at least in part, to the drafting and signing of the 2015 Paris Agreement by 192 states, which – although not directly mentioning peace, security, or conflict risks in its text – represents a clear escalation of climate change-related priorities

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on national and international policy agendas. Nearly all domestic climate policies reference the UNFCCC and its subsidiary frameworks, including the NAP and NDC processes. The extent to which climate security coherence displays a relationship with international and inter-governmental legislation is perhaps an interesting area for future research, as it may reveal pathways for increasing the visibility and prominence of climate security priorities and further leveraging the potential co-benefits of climate action for peace and security. Further qualitative and context-specific analysis is required to unpack these hypothetical causal relationships.

The results generally confirmed our third hypothesis, which stated that we expected engagement with climate security to occur mainly at the surface level as opposed to it filtering into design and implementation. The analysis revealed that whilst the climate security nexus is indeed often acknowledged, it is rarely met with specific objectives, instruments, and recommendations for integrated climate security interventions. This is further evidenced by the fact that those individual documents that bucked the low-scoring trend and were determined to possess a high degree of coherence (largely developed in South Sudan and Somalia) consistently scored higher in categories related to implementation (table 10). This trend may be representative of how policymakers simply do not have ready access to an evidence base of what kind of policy interventions exist for mitigating climate security risks, where these might be implemented, and how (Busby, 2018). Foresight and horizon-scanning studies of vulnerability are, for instance, useful tools, but the question as to how this data should inform future policy action remains (Moran et al., 2018).

This outcome was therefore somewhat expected, yet it is notable that some countries do tend to perform better than others in this regard, particularly South Sudan and Somalia. One reason for this is that the policy drafting processes in these two countries were heavily sponsored and, in some cases, entirely controlled by UN bodies such as UNEP, UNDP, or the UNDPPA. The fact that these documents scored higher on implementation and acknowledgement categories is therefore perhaps to be expected, given the greater familiarity these bodies have with climate-conflict linkages and climate security-sensitive approaches (particularly those that make up the Climate Security Mechanism). The extent to which documents drafted either directly by or under the supervision of an external entity are more coherent than those drafted exclusively by national and sub-national stakeholders is as of yet an unexplored area of research. There is, however, some evidence to suggest that governments may engage in a degree of posturing, demonstrating at least at the surface level an alignment with international priorities and objectives in order to attract a greater degree of international funding (**CITA**). As such, policy and strategy documents may themselves display a high degree of coherence, but the extent to which the measures prescribed in these documents are actually prioritised by those responsible for implementing them is likely dependent on the specific political and institutional dynamics within a given governing context. Unpacking this relationship in each specific country context is beyond the scope of this paper, yet whether there exists a relationship between climate security coherence and overseas development aid (ODA) does form an important area for future research. Figure 10, which shows average disbursement aid per country, does suggest that document coherence scores could be positively correlated with ODA since countries that received more funding generally scored higher, such as Kenya and Nigeria. A preliminary exploration of this relationship through a linear regression showed that an increase in country programmable aid is associated with an increase in the integrated responsiveness index (p-value<0.1), although not significantly statistically since this model featured an error rate of 53%. More research is required to dissect for instance the role played by specific donors for whom climate security is a priority, specific climate security funding streams, and the interplay between domestic and international objective setting.

Countries	Year	Policy Sector	Analytical categories
Somalia (30%)	2018 (30%)	Climate (80%)	Acknowledgment horizontal 1
South Sudan (30%)	2013 (20%)	Security (20%)	Objective
Nigeria (20%)	2019 (10%)		Breadth of engagement
Kenya (10%)	2011 (10%)		Recommendations
Uganda (10%)	2015 (10%)		
	2016 (10%)		

Table 6. Breakdown of high-scoring documents (total average equal to or greater than 9) by country, year of publication, selection type, document type and high scoring analytical categories

Whilst our fourth hypothesis on whether higher-level policy and strategy documents is not relevant at this stage of the analysis, our results did at this stage disprove our fifth hypothesis, which embodied our expectation that security-related documents would achieve a higher degree of overall coherence than climate-related documents. In fact, our analysis suggests that the opposite appears to be the case. In all country contexts, climate-related policies and strategies appear to be more coherent with, cognisant of, and engage with climate security risks to a greater extent than peace and security-related ones. Whilst the general trends of acknowledgement versus implementation are visible across both policy realms, climate-related policy and strategy documents perform better in almost all analytical categories. This, however, may also be a reflection of an imbalance between the climate and security policy documents available for analysis.

4.2 Regional-level results

At the regional level, policy and strategy documents from across the climate and peace and security-related sectors evince somewhat similar trends and patterns to the country-level documents. Regional-level documents were analysed on the same basis of average analytical category scores (ranging between 0 and 1), average acknowledgment and implementation scores (composed of relative analytical category scores and also ranging between 0 and 1), with cumulative coherence scores ranging between 0 and 12. A total of 25 regional-level documents were analysed.

Firstly, it can be observed that regional level documents consistently score higher in categories related to acknowledgement than in categories related to implementation (see figure 11). This may suggest that policymakers at the regional level are also unsure of the specific policy mechanisms through which climate security risks can be tackled in an integrated manner. Similarly, regional-level documents received low scores for categories relating to definitional and temporal coherence. This may again indicate the absence of a clear conceptual framework within which the interaction of relevant variables – and how their impact and interaction across dimensions and timeframes may result in compounded climate security risks – can be assessed and measured.

The analysis, however, does also reveal insights specific to the regional scale. Figure 11 highlights, for instance, how even though over half of documents at least recognise the relevance of the opposite policy domain (horizontal acknowledgement 1), hardly any regional level documents scored well in horizontal acknowledgement 2, which indicates whether a document makes reference to a specific policy from the opposite policy realm. This may reflect how at the regional level, and despite recent efforts to mainstream climate security across different areas of governance (see below), climate- and security-related policymaking is still done in a siloed manner. Climate policy and strategy documents

rarely demonstrate awareness of or attempt to seek alignment with policies and strategies produced in the realms of peace and security, and vice versa. This trend – although more erratic – remains consistent over time, much like at the country level (see figure 12). The absence of a clear overarching climate security conceptual framework; the notable lack of implementation-oriented measures; the fact that regional level documents tend not to seek alignment with those from other relevant policy domains; and the fact that climate security risks are frequently regional and cross-border in nature, all emphasise the need for the development of a coherent, collective, and integrated climate security framework that can be deployed across regions (Krampe, 2020).
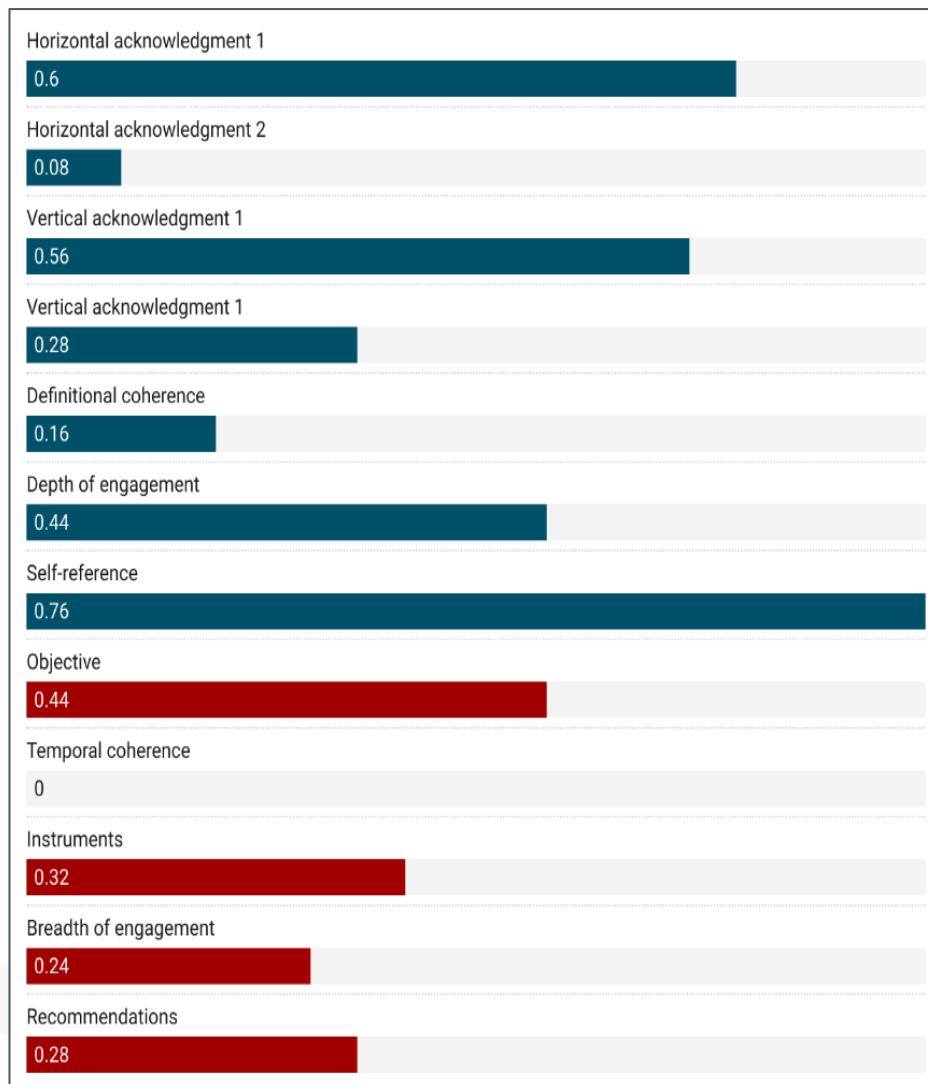

Figure 11. Average policy coherence scores (broken down across acknowledgment and implementation analytical categories, blue and red respectively) across all regional actors and documents. Scores are derived by averaging each analytical category across all documents reviewed and range between 0 and 1, with 1 being maximum coherence

Figure 12. Evolution of acknowledgement and implementation category scoring over time. Scores result from averaging the analytical categories composing them (table 7). Scores were disaggregated by year and range between 0 and 1, with 1 being maximum coherence

The generalised interpretations made above do not, however, take away from the fact that some regional bodies displayed notably higher degrees of climate security coherence than others. The East African Community's (EAC) policy and strategy documentation was found to generate an average total coherence score of 7, followed by the Common Market for Eastern and Southern Africa (COMESA) and the African Union (AU) (see figure 13). The Southern African Development Community (SADC) and the Economic Community of Central African States (ECCAS) are located near the middle of the scoring range, with an average total score of 4 and 3.67 respectively. The lowest-scoring policy and strategy documents were extracted from the Economic Community of West African States (ECOWAS) and the Intergovernmental Authority on Development (IGAD). These results, however, must be analysed against the fact that the number of documents that were available for extraction varies quite significantly across both organisation and policy sector, with regional security documents appearing particularly absent (see figure 14). This may simply be reflective of the selection of documents available online, but may also be, in some cases, reflective of the extent to which a regional body or entity possesses a mandate within the relevant policy sector.
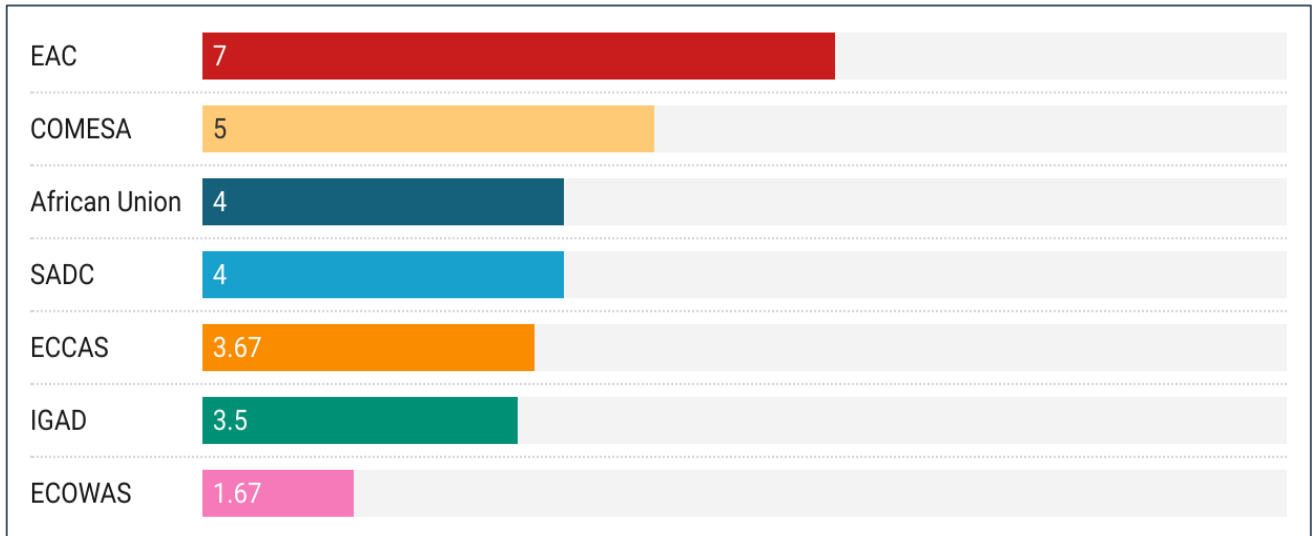
Figure 13. Average total policy coherence score across all regional actors. Scores result from averaging each total coherence score across all documents reviewed and are disaggregated by regional actor. Scores range between 0 and 12, with 12 being maximum coherence
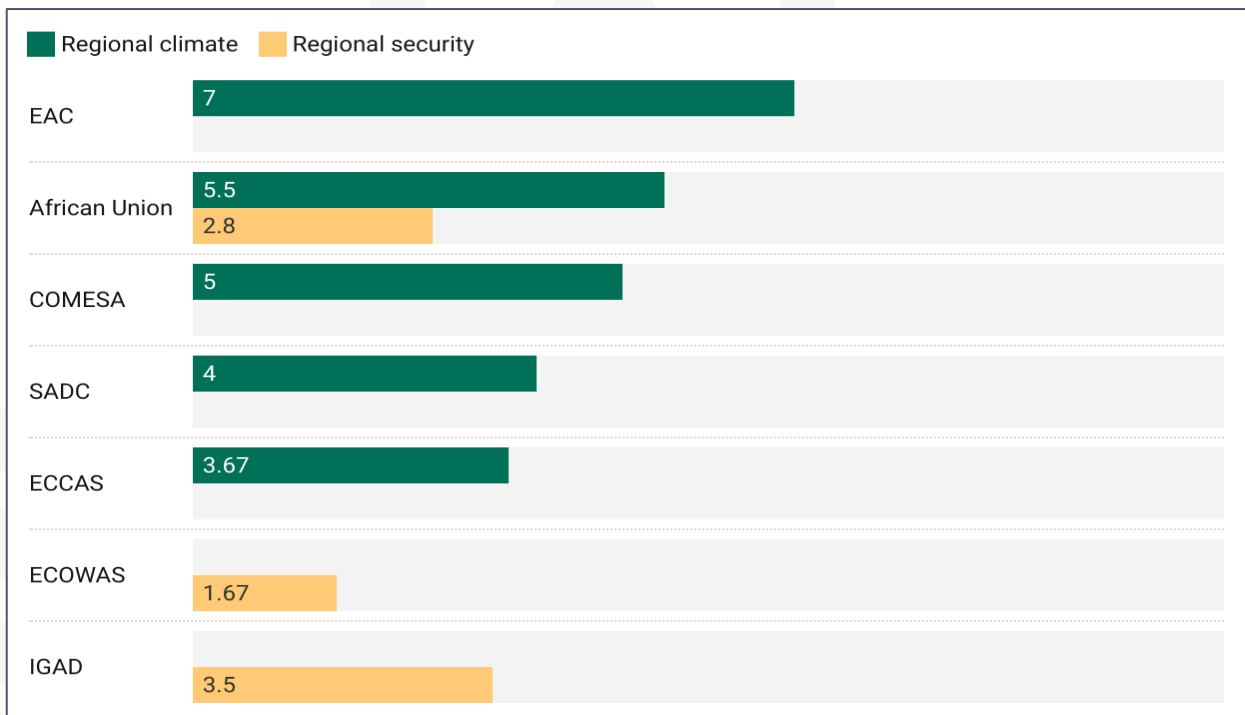

Figure 14. Average coherence score per regional actor and policy sector. Scores derived from averaging total scores disaggregated by policy sector and regional actor. Scores range from 0 to 12

At first glance, for example, the EAC appears to display a comparatively high policy coherence score, falling on average on the higher end of medium coherence. However, this is likely due to the body's unequal remit across the two policy realms. All documents extracted from the EAC were climate-related, whilst no peace and security-related documents were identified. Whereas the EAC has a dedicated climate adaptation and mitigation mandate as part of the Environment and Natural Resources sector (EAC, n.d.-a), its peace and security sector activities are more focused on cross-border issues including drug trafficking, small arms and light weapons, and police matters (EAC, n.d.-b). Whilst the extracted climate-related documents did score comparatively high for climate security policy coherence, it must therefore also be recognised that - due to the EAC's relatively narrow peace and security-related mandate - its current institutional mandate is arguably not sufficient to effectively operationalise and implement integrated, climate security-sensitive *intra*-state peace-related activities (such as conflict prevention, peacebuilding, and stabilization). Given the fact that countries from the EAC have witnessed numerous conflicts related to natural resources – such as those around Lake Turkana and Lake Victoria or the conflicts involving pastoralist communities in northern Uganda and Western Kenya – expanding the EAC's peace and security mandate may be of relevance and could generate greater scope to tackle climate change in an integrated, conflict-sensitive way.

The opposite is true for ECOWAS and IGAD – the two lowest scoring regional entities – from which only security-related policy and strategy documents were extracted. Both bodies have conflict and peace mechanisms: ECOWAS operates the Directorate of Political Affairs, Peace and Security (PAPS), which is responsible for a variety of conflict prevention, peacebuilding, and stabilisation activities, including recent interventions in Mali and in Guinea-Bissau (ECOWAS, 2021b); similarly, IGAD maintains several well-established peace and conflict-related mechanisms, including specialized institutions such as the Conflict Early Warning and Response Mechanism (CEWARN) and the IGAD Centre of Excellence in Preventing and Countering Violent Extremism (ICPAC) (IGAD, 2021b). However, both ECOWAS and IGAD have a limited or otherwise narrow mandate within climate-related sectors, conceiving of climate change predominantly through the lens of agriculture and building food and nutritional security rather than having a dedicated and overarching climate action agenda (ECOWAS, 2021a; IGAD, 2021a). ECOWAS's Climate Prediction and Application Centre, for example – whilst possessing a limited climate change-related mandate – is mainly active in producing climate projections and monitoring, rather than actual climate change adaptation and mitigation programming. This institutional environment can therefore again be identified as less than favourable for the development of integrated climate-peace programming. Furthermore, the security-related documents produced by the two actors subjected to analysis possessed low climate security policy coherence, demonstrating limited engagement with the climate security interface. As ECOWAS and IGAD include some of the countries most-affected by farmer-herder conflicts in Africa (such as Nigeria, Ethiopia, Mali, and Uganda), there exists potential to both expand their organizational climate mandates, and better integrate climate mitigation and adaptation with their peace and security policies to better ensure the development of integrated climate security interventions (Krätli et al., 2020)[3].

Policy and strategy documents produced by COMESA, with a total average coherence score of five, were on average attributed a medium level of coherence. As COMESA is a common market project predominantly focused on trade and economic integration, climate change and conflict have not been the main focus of the organisation and therefore excluded from the priority areas which include the

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[3] At time of writing, CEWARN has just published an exploratory info note on the relationship between climate and conflict in the areas it has a mandate in. This document was not included in the analysis due to the recency of its publication (CEWARN, 2021).

free trade area, the customs union and the trade promotion (COMESA, n.d.). This may at least in part explain the overall lack of relevant policy and strategy documents. Nevertheless, following the COMESA Treaty - which enshrines in Article 163 that peace and security are essential for socio-economic development and crucial to achieving regional economic integration goals - the COMESA Authority mandated the establishment of the Programme on Peace and Security as well as a three-tier structure that addresses issues of peace and security (in co-ordination with the African Union and other sub-regional organizations), including conflict prevention, conflict Management and post conflict reconstruction (COMESA, 2018). However, the original documents from these peace and security initiatives were not found in the initial search process as they were not available online, and therefore not subjected to the analysis. Only one climate-related policy document identified as relevant to our analysis.

ECCAS policy and strategy documents were recorded as possessing a low level of coherence, with a total average coherence score of 3.67. ECCAS does appear to have a presence within the peace and security policy realm, particularly through the Department of Political Affairs, Peace and Security. Additionally, ECCAS established in 1999 the Council for Peace and Security in Central Africa (COPAX), within which exist the Central African Early-Warning System (MARAC), the Defence and Security Commission (CDS) and the Multinational Force of Central Africa (FOMAC). During the civil war in the Central African Republic (CAR) – which raged throughout the 2000s and early 2010s - ECCAS led the deployment of the Mission for the Consolidation of Peace in CAR (MICOPAX). However, no peace and security-related documents appear to have been published within the last 10 years, which could indicate how peace and security-related activities have moved off of the agenda more recently. There is some evidence to suggest that recent activities have been undertaken to strengthen ECCAS's mandate on peace and security and engage more extensively in preventative diplomacy throughout the Central African region (United Nations Security Council, 2021). Both COMESA and ECCAS therefore have the potential to develop more synergetic actions through a climate security-sensitive lens that acknowledge the role that trade can play in addressing food insecurity, increasing resilience in fragile and conflict-affected settings, and tackling the effects of the climate crisis, but also recognising the beneficial impact that integrated and coherent climate security interventions can have for the overall economic performance, development and integration efforts (Brenton & Chemutai, 2021; Cali, 2015). To do so, however, both bodies may need to expand their current activities and mandates to sectors and themes relevant to the climate security nexus.

Finally, both SADC and the AU – which both received an average total coherence score of four - possess climate and peace and security-related mandates. SADC has a dedicated Environment and Sustainable Development governance theme, which predominantly focuses on waste management, air quality, biodiversity, and assisting with the country-level implementation of multilateral environmental agreements (SADC, 2021a). In addition, SADC possesses an Organ on Politics, Defence and Security Affairs, but this body has not published a significant policy or strategy body in the last decade (SADC, 2021b). Some governance pillars related to peace and security are included in SADC's Vision 2050 (2020) and the Regional Indicative Strategic Development Plan (2020), which – although not subjected to the same empirical analysis as the other documents, as they fell outside of our analytical scope – were reviewed and deemed to not draw together climate action and peace and security realms. For this reason, all extracted SADC documents are climate related. Based on the average total coherence scores, these documents fall within the low category of coherence, with SADC documents scoring particularly badly in the implementation-related categories and scoring higher in the acknowledgement-related categories (see figure 12). These results would therefore suggest – first and foremost - that SADC climate policies and strategies should pay greater attention to addressing integrated climate security concerns, but also that despite a relatively broad peace and security

mandate, the Organ on Politics, Defence and Security Affairs appears to be inactive. No policy and strategy documents appear to have been published by the body since 2010, meaning that this body could take greater steps to ensure cross-fertilisation between climate and peace and security-related policy sectors.

The AU's climate-related mandate exists within the Department of Rural Development, Blue Economy, and Sustainable Environment (ARBE) - specifically within the Division or Rural Economy and Agriculture. The mandate of this division is broad, ranging from putting in place systems that help addressing vulnerability to disaster risks and improving environmental monitoring and meteorological services, to combating desertification, mainstreaming water resource management into climate change responses, and drafting and implementing an overall AU climate change strategy (African Union, 2021). The AU also aims to assist member states with the implementation of various multigovernmental environmental agreements. On the other hand, the AU also has a quite extensive peace and security programmatic structure under the mandate of the Peace and Security Council (PSC), the standing decision-making organ of the AU for the prevention, management and resolution of conflicts. The African Union Commission's (AUC) Department of Peace and Security (PAPS) supports the PSC in carrying out its responsibilities, at the core of which lies the 'Agenda 2063' flagship initiative of Silencing the Guns by 2020.

Both climate and peace and security-related policy and strategy documents were extracted from the AU - reflective of this mandate – but climate-related documents are on average much more coherent than peace and security-related documents (see figure 13). This suggests that despite having an institutional infrastructure likely to be well-suited for the development of integrated responses to climate security risks, this potential has not yet been borne out in practice. Whilst there are recent examples of efforts to break down climate and security-related governance siloes, this appears to not as of yet be reflected in AU policy and strategy documents – particularly in those produced by peace and security-related bodies. These findings are in line with analysis of the extent to which the African Union has sought to institutionalise integrated approaches to climate security risks, but has as of yet not successfully operationalised them (Aminga & Krampe, 2020). Recent steps taken to improve cross-sectoral coordination include the revamping and reintroduction of the Interdepartmental Taskforce on Conflict Prevention (IDTFCP), originally established in 2014 to synergize African Union interdepartmental efforts in addressing roto causes of instability (Aminga & Krampe, 2020). Furthermore, the Department of Rural Development, Blue Economy, and Sustainable Environment (ARBE) has also worked to bring together multi-sectoral groups of stakeholders through its Climate and Security Cluster (CGIAR Focus Climate Security, 2021). The AU should build on these structural changes and continue to improve cross-sector fertilisation between climate action and peace and security-related programming, with a particular focus on integrating climate science and climate-related programming options into its work on conflict prevention, transformation, and peacebuilding.

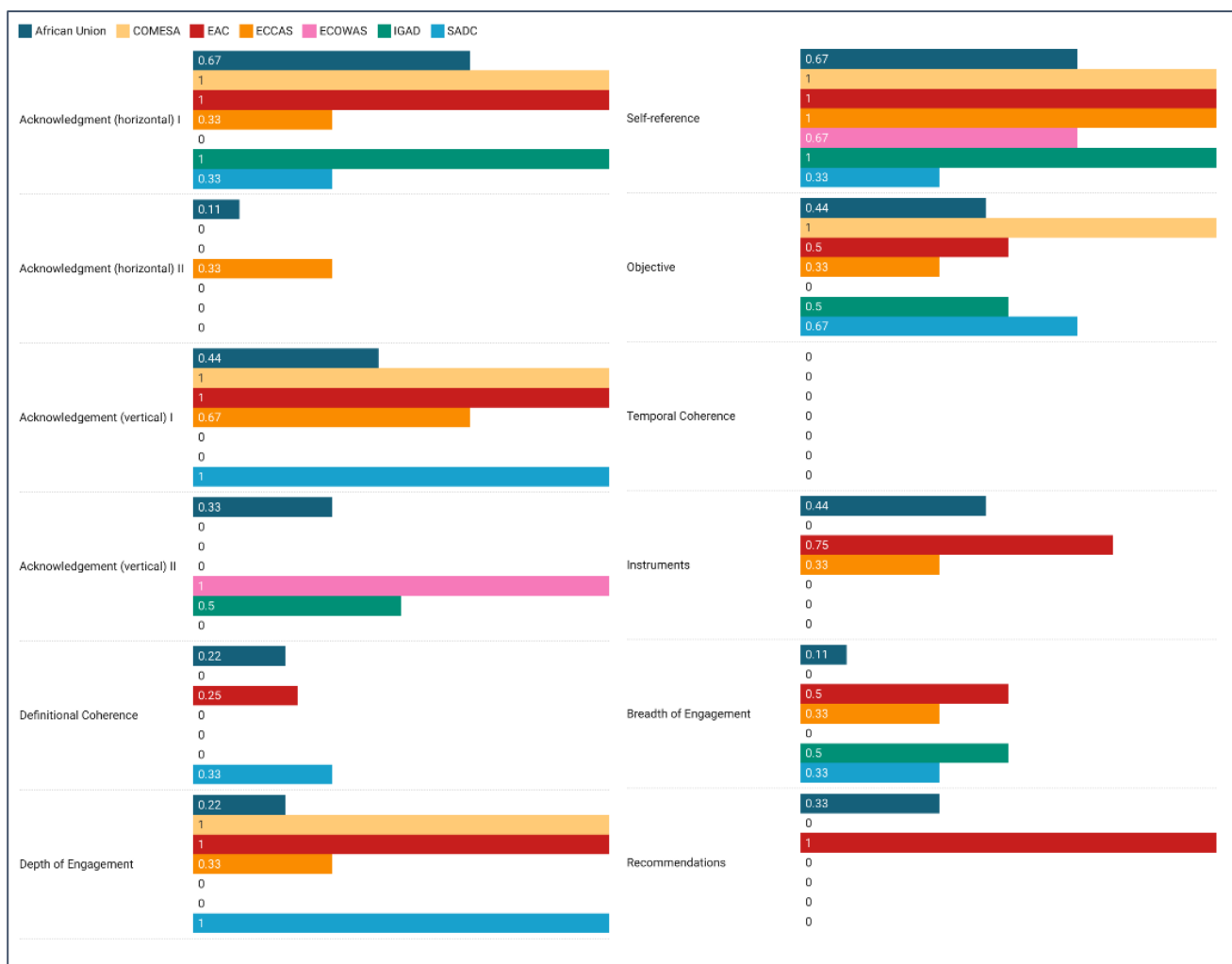| Coherence category	African Union	COMESA	EAC	ECCAS	ECOWAS	IGAD	SADC
Acknowledgment (horizontal) I	0.67	1	1	0.33	0	1	0.33
Acknowledgment (horizontal) II	0.11	0	0	0.33	0	0	0
Acknowledgement (vertical) I	0.44	1	1	0.67	0	0	1
Acknowledgement (vertical) II	0.33	0	0	0	1	0.5	0
Definitional Coherence	0.22	0	0.25	0	0	0	0.33
Depth of Engagement	0.22	1	1	0.33	0	0	1
Self-reference	0.67	1	1	1	0.67	1	0.33
Objective	0.44	1	0.5	0.33	0	0.5	0.67
Temporal Coherence	0	0	0	0	0	0	0
Instruments	0.44	0	0.75	0.33	0	0	0
Breadth of Engagement	0.11	0	0.5	0.33	0	0.5	0.33
Recommendations	0.33	0	1	0	0	0	0

Figure 15. Average coherence category scores across all regional actors. Scores are derived from averaging each analytical category across all documents reviewed and are disaggregated across all regional actors. Scores range between 0 and 1, with 1 being maximum coherence

The regional-level analysis conducted above again allows us to reflect on our hypotheses. Our first hypothesis – that climate- and security-related policy domains would display low levels of coherence – is proven correct. Disaggregating total coherence scores by regional actor shows that coherence is generally low, except for specific actors which score medium levels of coherence (see figure 13). The higher scores received by some regional bodies, such as the EAC, should be viewed against the backdrop of a varied set of institutional mandates, which impact the frequency with which relevant documents are produced and, in turn, the number of documents that can be extracted for analysis.

Whilst further qualitative and localised research is needed, the relationship between regional total average policy coherence scores, the varied availability of sector-specific policy and strategy documents, and the institutional mandates of several regional bodies may point to an institutional landscape not particularly conducive to the development and implementation of climate security-sensitive programming and legislation. Some regional actors – such as ECOWAS and IGAD – have limited climate-related mandates and programmatic infrastructure whilst possessing a more developed peace and security-related mandate, however others appear to be the opposite (such as the EAC). There are also regional entities that possess an extensive mandate and programmatic

infrastructure in both sectors, including the AU. The results also suggest that COMESA and ECCAS may currently be ill-equipped to detect, assess, and mitigate compounding climate security risks. The notably low number of extracted documents is perhaps reflective of the limited extent to which these bodies engage with the sectors our analysis deemed most relevant to the climate security nexus, and those documents that were identified displayed on average low coherence scores, thereby demonstrating a limited engagement with climate security risks. The extent to which each regional entity is positioned to develop and implement integrated climate-peace programming and address climate security risks therefore varies substantially.

Whether or not our second hypothesis – that coherence scores would improve over the assessed time period – is borne out at the regional level is unclear. Results do not yield significant trends concerning the temporal evolution of climate security coherence across all documents, bar the insights relating to acknowledgement- and implementation-related scores (see below). Whilst scores appear to peak in 2014 and in 2018 and drop significantly in 2016 and 2019, these results are likely a consequence of the smaller number of documents that were extracted and analysed and are therefore not necessarily representative of the overall temporal progression of coherence.

Our third hypothesis, that documents would score higher in acknowledgement-related categories than in implementation-related categories, again appears to be correct for regional-level results. Regional-level documents are more likely to score higher in acknowledgement-related analytical categories than implementation-related ones (see figure 11). These results again suggest that whilst policymakers do demonstrate an awareness of the climate and security interface and some of the interlinkages between climate and conflict, there remain obstacles to operationalising this.

The results disprove our fourth hypothesis, which speculates that regional and international-level documents would exhibit greater coherence than national level documents. The opposite appears true, as total coherence scores are in fact lower across the vast majority of analytical categories compared to national level scores and remain essentially the same in others, such as definitional coherence and objectives (see figure 9). Less than half of documents outline specific synergistic objectives, and just one-third of documents outline specific policy instruments, vulnerable constituencies, or make climate security-specific recommendations. Similar to the country-level results, documents exhibit low levels of definitional coherence and temporal coherence, again suggesting the absence of a clear, overarching conceptual framework within which the climate and security interface is examined, and potential climate-conflict linkages can be unpacked.

Regional-level results also disproved our fifth hypothesis, which theorised that security-related policy and strategy documents would possess a greater total coherence score than climate documents. Climate-related policy and strategy documents again appear to exhibit greater average coherence than security-related ones. This result should be considered in the context of the varying numbers of documents that were extracted for each actor and policy sector (see figure 13), which are in turn reflective of the extent to which the selected regional bodies possess both a climate- and peace and security-related mandate, as discussed previously.

4.3 International-level results

For international-level documents, our resource extraction focused exclusively on policy and strategy documents pertaining to the strategic planning and priorities of the UN organisations and conventions selected for the analysis. Tools, frameworks, guidelines and guides, and reports were therefore excluded from the analysed documents due to the focus of this analysis lying on the extent to which integrated climate security programming is prioritised and possible within the strategic infrastructure of the key UN bodies, rather than the specific guidance they may produce. Additionally, the focus of this round of analysis lies specifically on *climate-* and security-related documents, therefore again limiting the scope for which documents could be identified and extracted for. The United Nations Environmental Programme (UNEP), for instance, has over the course of the last decade and beyond worked extensively on environmental peacebuilding, predominantly around inclusive and sustainable common-pool natural resource management in conflict-affected or post-conflict settings, environmental diplomacy and mediation, and the impacts of conflict on the environment (UNEP, 2015). This work, however, is defined as separate from the type of climate-peace programming we are seeking to identify, as it is focused more broadly on the intersection of conflict, peace and any given local natural environment, rather than specifically at climate change-related activities. An example of such an integrated climate change-related activity may be a project that aims to increase agricultural resilience against climate change impacts by bringing together different or potentially hostile communities to build communication and trust between these, whilst also increasing the availability of food and sustainable farming (Von Lossow et al., 2021).

The results of the international-level analysis demonstrate how the selected documents again appear to score higher in acknowledgement-related categories than they do in implementation-related categories (see figure 16). The average category scores taken from across all international-level documents shows that documents received particularly low scores in 'definitional coherence', 'temporal coherence', 'instruments' and 'breadth of engagement', perhaps indicating the absence of a clear conceptual framework within which climate and conflict linkages and climate security risks are understood. Furthermore, implementation-related scores remain consistently lower than acknowledgement-related over time (see figure 17). Whilst the temporal trend visible in figure 17 is somewhat erratic, the number of datapoints does appear to noticeably increase from 2015 onwards, which may be to some extent a reflection of how the Paris Agreement caused climate-related issues more broadly to receive increased attention and prioritisation within the strategic considerations of the agencies and conventions subjected to analysis.

For the purposes of the international-level analysis, a distinction was made between climate and non-climate documents as opposed to explicitly climate- and security-related policy and strategy documents. This is due to the fact that even though the selection of agencies and conventions for this analysis was based on some of the key channels whereby climate may serve to increase the risk of conflict (such as, for instance, food insecurity and migration), these organisations are often not explicitly related to the field of security. As such, strategy documents retrieved from international-level organisations that did not explicitly outline a strategic approach to climate change were coded as non-climate documents (see figure 19 for a breakdown of this across organisations). Results indicate that bar 'vertical acknowledgement 1' and 'depth of engagement' - the former of which is to be expected, given that this category is designed to reflect whether a policy makes reference specifically to a climate strategy or document at a different governance level – non-climate documents score higher in every category of coherence (see figure 18). Non-climate documents also scored notably higher in several implementation-related categories, with over half of such documents outlining specific synergistic objectives and just under half making specific policy and programming recommendations. This may suggest that whilst non-climate documents are somewhat aware of
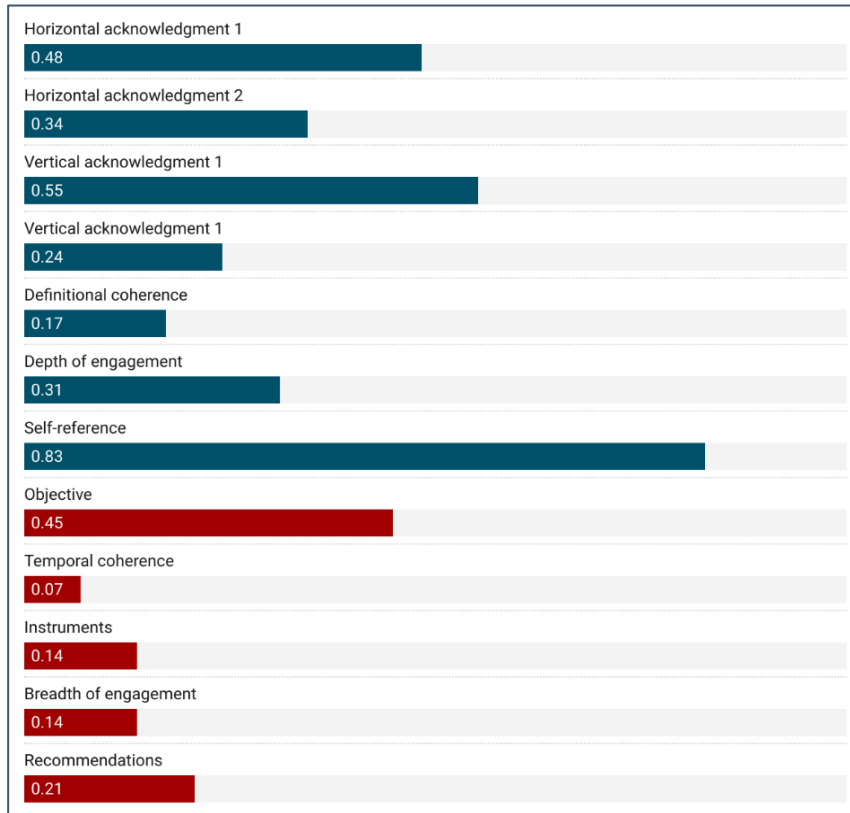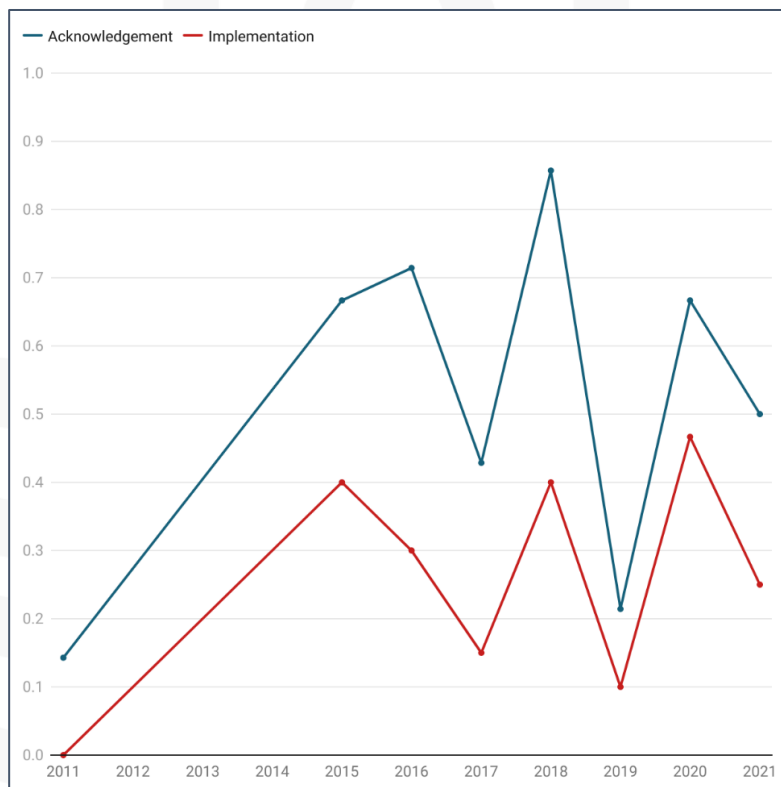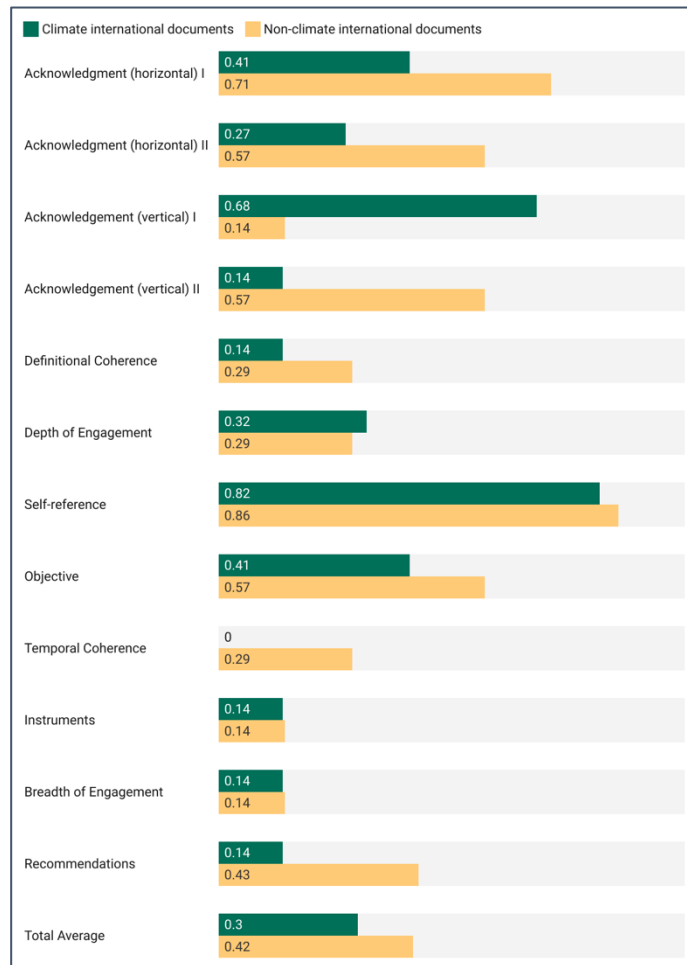
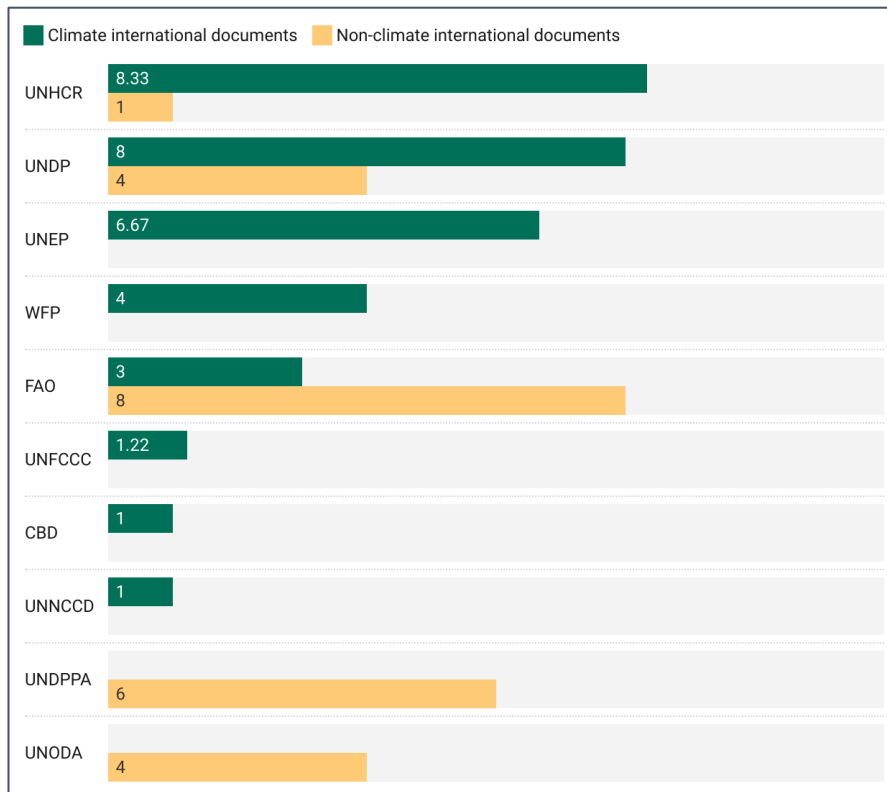*Figure 16.*

Figure 17.

Figure 18.

Figure 19.

the nature of climate-related risks and are more likely to recommend climate security-sensitive courses of action and activities (thereby more frequently answering the 'why' and 'what' of climate security), climate-related documents appear to be engaged to a much lesser extent with climate security risks. Climate-related documents, conversely, are much less likely to even make reference to a security-related field and are also somewhat less likely to recommend specific implementation measures (figure 18) (thereby rarely answering the 'why' and 'what 'questions around climate security).

This pattern continues to play out when examining the extent to which specific organisations and conventions achieved climate security coherence within their documents, with non-climate bodies and conventions generally far more likely to score higher total average coherence scores than climate ones. UNEP, the United Nations High Commissioner for Refugees (UNHCR), the United Nations Development Programme (UNDP), and the United Nations Department for Peacebuilding and Political Affairs (UNDPPA) all appear to display a fairly consistent medium degree of coherence (see figure 20). Three of these organisations (UNEP, UNDP, and the UNDPPA) make up the UN's Climate Security Mechanism (CSM), an initiative founded in 2018 which aims to assist in the mainstreaming of climate security-related concerns and priorities throughout the entirety of the UN infrastructure, and which has produced a variety of tools and guidelines to assist practitioners in doing so. As such, the documents produced by these three organisations are perhaps expected to display a much more consistent degree of climate security coherence than others, although areas for improvement are certainly apparent. Figure 21 shows, for instance, that the three organisations scored particularly poorly in the 'temporal coherence' (except the UNDPPA), 'instruments', and 'breadth of engagement' categories, whilst scoring slightly better in the 'recommendations' category. This suggests that few of the analysed documents reflect on the complex, cross-temporal interplay between long- and short-term climatic and socio-economic processes in producing climate security risks, or the role that

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programming with a short-term horizon could play for fostering long-term resilience (or vice versa). Furthermore, few specific policy constituents are identified by the CSM organisations, which may simply be a reflection of the level at which these documents operated. It may also, however, indicate that international-level documents require a greater degree of specificity in identifying potentially vulnerable groups towards which resources and investment should be channelled.
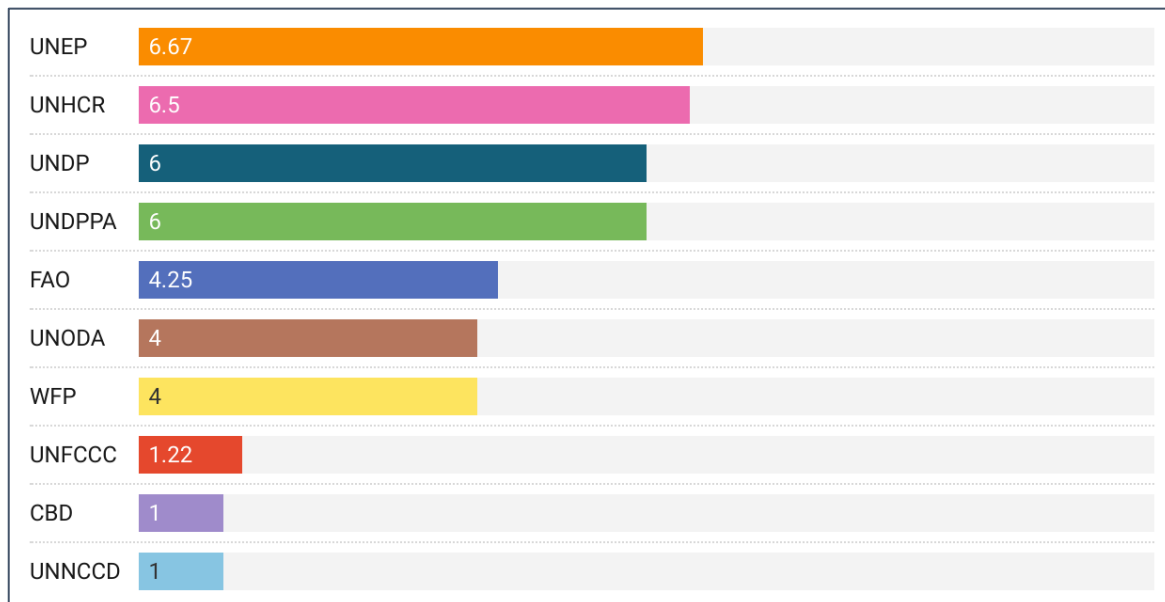

Figure 20. Average total policy coherence score across all international actors. Scores result from averaging each total coherence score across all documents reviewed and are disaggregated by international actor. Scores range between 0 and 12, with 12 being maximum coherence

Following the medium coherence achieved by these organisations, the Food and Agricultural Organisation (FAO) and the World Food Programme (WFP) both achieved similar scores, placing them at the higher end of low coherence. This may indicate that although food systems and the availability of food more broadly are critical intermediary variables in many pathways leading from climate to conflict and insecurity (Läderach et al., 2021), these organisations have not as of yet reflected this important intersection in their strategic and policy priorities. There are indications, however, that FAO and WFP are beginning to investigate the relationship between climate change, food systems and food security, and conflict in a more systematic manner. At a recent World Economic Forum event, the Director-General of the FAO Qu Dongyu highlighted the need for a more holistic approach to food and climate security, noting that all three pillars of sustainability – economic, social, and environmental – must be at the heart of multilateral efforts to make food systems more sustainable (FAO, 2021b). Furthermore, FAO has since 2018 been partnered with Interpeace to develop specific tools, guidance, and training to enable more systematic and robust context analyses and conflict-sensitive programming, as well as beginning to investigate the typical pathways through which specific FAO programmes could contribute to specific local peace impacts (FAO, 2021a).

Similarly, WFP has in recent years also engaged more extensively with the interlinkages between climate, food security, and conflict, perhaps most evidently visible in how the organisation received the Nobel Peace Prize in 2020 in recognition of the important link between conflict and food security. WFP has also recently sought to strengthen its partnership with the Stockholm International Peace Research Institute for the Climate Change and Food Security project (SIPRI, 2021), and has recently signed a Memorandum of Understanding with CGIAR in order to continue strengthening broken or dysfunctional, climate-pressured food systems in fragile settings, signalling an increased institutional

focus on these topics (ReliefWeb, 2021). These recent steps taken by both organisations may lay the groundwork for helping to further operationalise the role that food aid and food systems can play at the intersection of climate, conflict, and peace, with the analysis suggesting that it is in the implementation-related categories that FAO and WFP are particularly lacking (see figure 21).
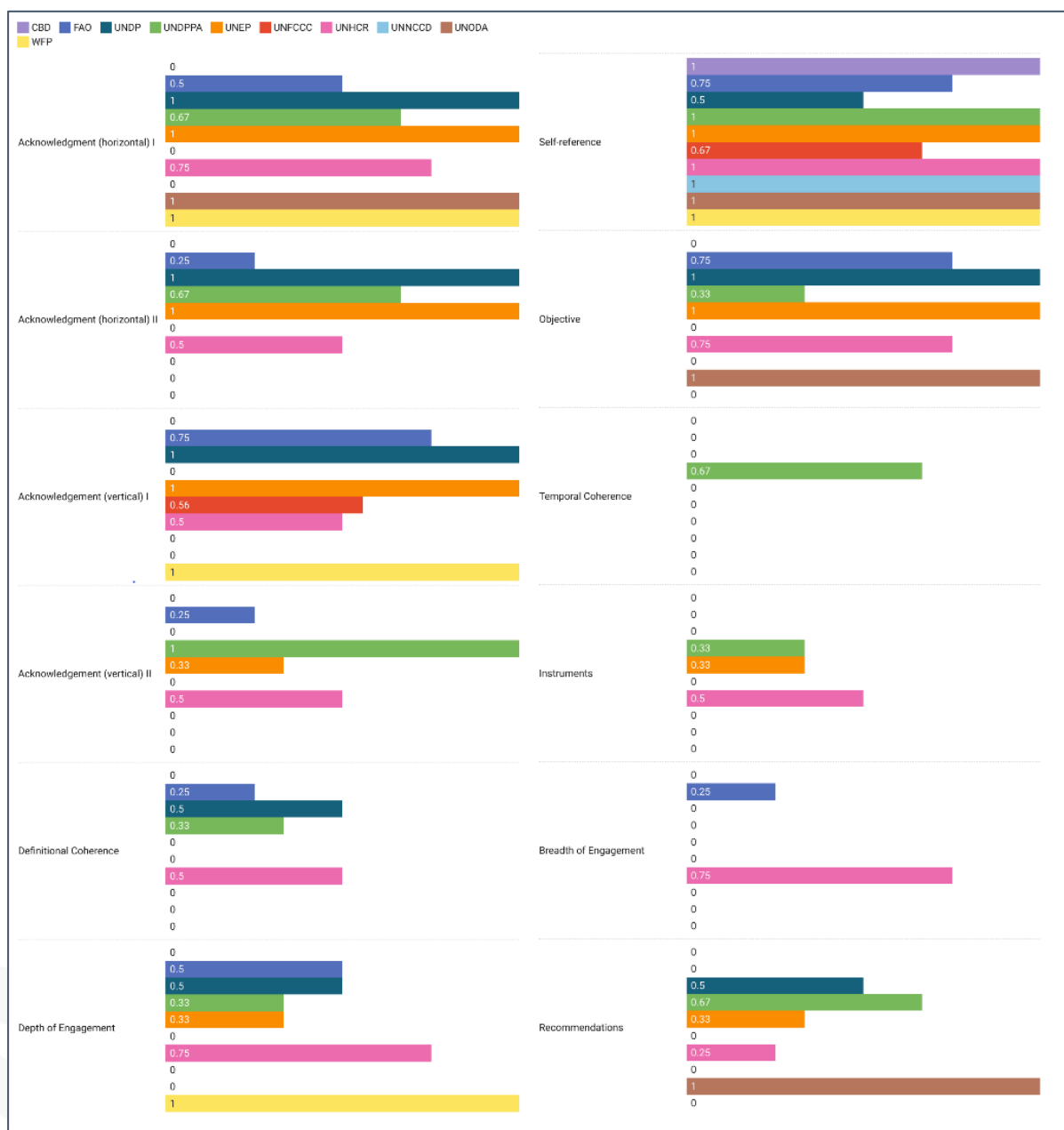
Figure 21. Average coherence category scores across all international actors. Scores are derived from averaging each analytical category across all documents reviewed and are disaggregated across all international actors. Scores range between 0 and 1, with 1 being maximum coherence

By contrast, documents extracted from the three UN conventions that explicitly deal with climate-related matters scored notably low total average coherence scores. The United Nations Framework Convention on Climate Change (UNFCCC), the Convention on Biological Diversity (CBD), and the UN Convention to Combat Desertification (UNCCD) all qualify as possessing low coherence according to our framework, with most documents extracted from these bodies failing to even recognise climate

security risks or climate-conflict linkages (see figure 21). These results emerge despite the fact that within these conventions there exist several subsidiary and constituted bodies whose mandate is arguably well-suited to the design and implementation of climate-peace and climate security-sensitive interventions, and within which climate security risks could be identified and addressed. Within the UNFCCC, for instance, this includes the Adaptation Committee (UNFCCC, 2021a), the Least Developed Countries Expert Group (UNFCCC, n.d.), and the Executive Committee of the Warsaw International Mechanism for Loss and Damage – which includes a climate-related migration mandate (UNFCCC, 2021b).

The absence of climate security prioritisation within documents extracted from the UNFCCC and other climate-related conventions may simply reflect the nature of what is in essence a contentious political process, in which the objectives and priorities of nearly two hundred countries and their groupings must be accommodated. UNFCCC negotiations, for example, are conducted within the spirit of key underlying principles such as 'Equity' and 'Common But Differentiated Responsibilities and Respective Capabilities (CBDR-RC)', as well as being grounded in a consensus-based decision-making process wherein each party is provided with an equal veto (Prasad & Sud, 2021).

These operating principles have, however, been subject to debate and variable sets of interpretations. Previous negotiations have, for instance, almost collapsed due to disagreements among countries with regards to what is equitable and how the principle of equity should be operationalised. Contention has historically remained over issues such as emissions responsibility (historical and contemporary) and economic capability, but also over other facets of equitability – such as whether adaptation and resilience-related activities should be given weight and count towards national contributions (Morgan & Waskow, 2014). Similarly, the specific grounds of the CBDR-RC principle continue to be deeply contested, with developing countries frequently defining responsibilities according to states' historical contributions to the climate problem, and developed countries resisting this notion in favour of a focus on capacity and current and future contributions to climate change (Brunnée & Streck, 2013). Within this political quagmire, the integration of climate security concerns – which remains a politically sensitive discourse[4] within the UN and elsewhere – is a daunting prospect. Yet it also remains abundantly clear that multilateral settings such as the UNFCCC are critical in the generation and implementation of crucial actions that address the cross-border nature of climate security risks. Appropriate governance regimes for issues such as climate-related migration, for instance, are critical in ensuring that potentially destabilising climate impacts in one country do not cascade into broader regional instability.

A number of final concluding remarks can be made with regards to the international- level results and how they relate to our initial hypotheses. Our first hypothesis – that documents are generally characterised by a lack of coherence – appears to be substantiated by our international-level results. Whilst certain organisations (particularly those in the CSM) appear to score somewhat consistently higher than others, their scores remain within the medium coherence range as per our meta-scoring system. It is perhaps to be expected that the organisations that make up the CSM all fall within top three of international-level organisations, however, it is notable that documents extracted from the three climate conventions selected for the analysis are assessed to have particularly low coherence. In terms of our second hypothesis - which speculated whether coherence would improve over time - there is some limited evidence to suggest that coherence has somewhat improved since the beginning of the temporal scope of this analysis. Whereas documents from 2011 possessed low coherence, more

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[4] See, for instance, recent vetoes enacted by China and Russia on the topic of climate security in the United Nations Security Council (ReliefWeb, 2021).

recent documents can be seen to score higher, and the amount of documents extracted increased following 2015, suggesting increased attention to climate-related issues at the international scale of governance (see figure 17).

Our third hypothesis also appears to be correct in the context of international-level documents, as documents scored consistently higher in acknowledgement-related categories versus implementation-related categories (see figure 16). Particularly low-scoring categories include 'temporal coherence' and 'breadth of engagement', implying that perhaps at the international level, greater steps should be taken to identify specific affected communities and policy constituents that may be potentially affected by climate security risks. However, it should be noted that other categories such as 'definitional coherence' also remained low scoring, again perhaps hinting at the need to develop a conceptual framework of climate security that is transferable across scales and contexts.

Our fourth hypothesis – that higher level policy and strategy documents would display a greater degree of coherence than those produced lower on the scale of governance – is somewhat validated by the international level results. Whilst the documents analysed did not indicate any organisation as possessing a high degree of coherence, those extracted from organisations making up the CSM did on average possess a medium degree of coherence at a more consistent rate. However, there were also examples of extremely low-scoring conventions and bodies, predominantly those that worked exclusively on climate-related issues. Our fifth hypothesis, therefore, is borne out at the international level. Security-related and otherwise non-climate documents were observed to achieve a higher total average climate security coherence score than climate-related documents, in line with the fact that documents extracted from climate-related entities, bodies, and conventions received particularly low coherence scores. It is striking that this hypothesis only proved to be correct at the international level, whereas the opposite appeared to be the case at the national and regional levels (see section 5 for more detail on this).

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5. Conclusions and recommendations

The analysis conducted in this paper occurred at three connected but different levels of governance, with trends and patterns being identified and assessed at the country, regional, and international levels. Results have thus far been interpreted and assessed within the context of their respective governance level, but in this concluding section, the trends that have appeared consistent across all three levels will be outlined and several lessons learned and recommendations will be presented.

1) **Based on the country-level analysis, it may be the case that there are certain countries subjected to the analysis that appear to be particularly vulnerable to climate security risks, whilst also seemingly not possessing sufficient cross-sectoral interaction and coordination between the relevant sectors to adequately manage these risks**. These countries include Zimbabwe, Senegal, and Mali, all of which are facing a combination of disproportionate and compounding climate and fragility-related risks. However, the policy and strategy documents extracted from these countries are determined to demonstrate insufficient awareness of climate security risks, and frequently lack implementation-oriented measures. As such, these countries especially should consider what institutional, structural, or practical changes they should make to help better facilitate the integration of climate- and security-related policy domains.

2) **Whilst certainly demanding more in-depth and context-specific analysis, the relationship between regional-level organisational mandates, regional average total coherence scores, and the varied extent to which policy and strategy documents were actually available for analysis across all sectors may indicate that the institutional mandates of several regional bodies are not particularly conducive to the development of integrated climate-peace programming and legislation**. Some regional actors appear to have a much greater scope to address climate security risks in an integrated way within their current institutional mandates and structures, whereas others have either a less extensive climate action or peace and security-related mandate. In particular, the EAC appears to have a limited climate-related mandate, whilst ECOWAS and IGAD are more active in peace and security-related realms. SADC and the AU were identified as possessing a more extensive institutional infrastructure in both climate and security-related sectors, and as such, are likely well-positioned as vehicles for tackling compounding climate security risks in an integrated, cross-siloed, and cross-border manner.

   This forms an interesting area for future research, as comparatively little work has been done on the ways through which intergovernmental organisations are able to engage in integrated governance specifically between climate and security domains. Future studies could investigate or test theoretical expectations as to what the drivers of integrated climate security governance might be in an inter-governmental institutional setting, thereby creating robust theories of institutional change that help understand when and why more concrete integrated governance arrangements occur (Dellmuth et al., 2018). Within realist or liberal traditions, scholars have emphasised barriers to institutional change such as the rise of new state powers, increasing complexity of policy problems, perceived scientific uncertainty about risks, a more complex global governance landscape, and cooperation dilemmas (Keohane, 2005; Snidal, 2012). A more constructivist lens in turn emphasises organisational culture, norms, ideas, and a lack of common problem definitions as common obstacles to adopting new forms of governance (Adler, 2012; Finnemore & Sikkink, 1998). Future research could therefore deploy these frameworks in the context of climate and security sectors to test and identify impediments to cross-sectoral fertilisation across specific institutional contexts.

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3) **Throughout all three levels of analysis, acknowledgement-related categories consistently scored higher than implementation-related categories - often substantially so – and this trend also remains consistent over time**. This finding may be more broadly indicative of how whilst there exists some knowledge of the relevant variables and conditions that may heighten the chances of climate security risks emerging – as well as the pathways through which this might occur - an absence of knowledge regarding appropriate responses to these risks remains. It is likely that policymakers do not currently have access to clear data or evidence with regards to what kind of climate security intervention works, where, and under what conditions, making it incredibly challenging to move beyond simply acknowledging the role that climate may play and towards the implementation of integrated responses. This is likely due to several interrelated reasons.

Firstly, interventions in the field of climate security are, much like the climate-conflict interface itself, always context specific, as the underlying causes of conflict, historical dynamics between actors, and visions of the future differ across circumstances. This makes conceptualising the relationship between climate and conflict challenging, limits the extent to which one can generalise across cases, and inhibits the generation of transferrable experiences (von Lossow et al., 2021). Secondly, as climate impacts are likely to be felt across a wide variety of sectors, the coalition of actors that are potentially required to help mitigate climate security risks is not always immediately obvious and likely differs across contexts. It is therefore challenging to design institutional set ups and communities of practice that facilitate cross-sectoral interaction, and an absence of such structures disincentivises experimentation and learning. Thirdly, it is difficult to untangle the specific impacts and co-benefits of climate security programming, and as a consequence, there are notably few frameworks that provide appropriate indicators and proxies to help evaluate the success of integrated climate security policy and programming for peace and security-related outcomes[5]. The absence of tools that can be used to conclusively demonstrate the impacts of climate security policies and programming makes it harder to justify the allocation of resources, which in turn, prevents experimentation and limits the scope for learning.

These results therefore suggest several priority actions for the research and programming community. Firstly, researchers should work to devise and deploy methods that can be used for conducting comparative analysis across contexts characterised by climate insecurity. This would enable the construction of a more robust evidence base regarding the root and proximate drivers of climate-related conflict, enabling conditions, and common climate-conflict trajectories. Secondly, researchers and practitioners active in the realm of climate security should strengthen and expand their institutional partnerships to encourage a continuous culture of experimentation, exchange, and learning. Given the often rapidly evolving nature of the climate security nexus, it is important for programming to be adaptive and responsive to changing circumstances by consciously engaging in a process of evolutionary learning (de Coning, 2018). By strengthening the interface between research and programming, practitioners are likely to be able to remain more responsive whilst also allowing for the development of a corpus of potential climate security interventions, whether they worked, how, as well how to appropriately evaluate them. These steps are likely to help operationalise climate security theory and are crucial endeavours in assisting policymakers to become more climate security-sensitive in the designing and implementation of policies and interventions.

4) **In contrast to national- and regional-level documents, climate-related documents at the international level generally possessed less climate security coherence than non-climate**

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[5] See, for example, Morales-Muñoz et al. (2021).

documents[6]. This may be reflective of how climate change and multilateral responses to it remain subject to political contention, and although evidence suggesting linkages (albeit somewhat opaque, unpredictable, and context-specific) between climate and conflict, pathways to integrated and coherence policy activity on climate security remain largely absent. The exact constellation of multilateral, regional, and national actors and bodies required to tackle climate security risks in an integrated and coherent manner is perhaps still unclear, and discussion remains within the UN system as to exactly which bodies, organisations, or conventions should have a mandate relating to climate security. This paper argues that there indeed exists within the climate-related conventions analysed here a set of mandates that are related to climate security, and that such multilateral conventions are also arguably crucial platforms for developing and implementing activities that help mitigate the cross-border nature of climate security risks in an integrated way. This would involve bringing together a broader set of stakeholders – including those related to peace and security – within the structure of subsidiary and constituted bodies previously identified.

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[6] See page … for differentiation between non-climate documents and security-related documents.

Annex 1 - Methodology

Information generation: keyword search strategy, selection and inclusion protocol, and online search platforms

The creation of an effective keyword search strategy is an essential step to ensure that the search boundaries for the extraction of policy and planning documents are well defined and remain within the scope of the subject matter, as well as improving robustness by helping to maximize the number of relevant resources and publications that are extracted. As a first step, it is important to break down the research questions into concepts that can be used for the search strategy. It is essential to also consider synonyms and abbreviations that can be used to describe those concepts which help to ensure that all the relevant results are found. The use of Boolean Operators helps to enhance and narrow down the keyword search by establishing relationships between the different terms through the use of 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 "Senegal"). The outcome of this process can be found in Table 4, which lists the pre-determined keywords that were used in the systematic search and screening.

As multiple levels of governance will be subjected to the analysis, chosen actors span across national, regional, and international actors and entities. Keywords and keyword combinations were developed based on the selection and inclusion protocols and analytical priorities outlined in Table 3. The full list of keyword and keyword combinations used to extract the relevant resources can be found in Table 4, whilst an outline of the online search platforms used for extraction- and the search protocols used for each- is listed in Table 5.

Relevant policies and strategy documents were collected from the databases, archives and repositories listed in table 5 using the keywords and keyword combinations outlined in table 4. Extracted resources were subsequently listed and checked for duplicates using both the URL address and document title. This list subsequently formed the basis of a work plan, created to ensure the coding process was organized and robust and to reduce the risk of duplication or incomplete coding. Within this work plan, individual policies and documents were assigned to each coder within specified time slots. Coders were required to complete an initial round of coding as well as a round of cross-check.

Area	Criteria	Rationale
Sectoral scope	Only policy and strategy documents related specifically to the climate adaptation, climate mitigation, and security sectors will be extracted.	Whilst expanding the policy search to other sectors (such as agriculture, development, or energy) was considered, the choice was made to limit the analytical scope to just two sectors, both due to how there existed a limited time frame within which the analysis could take place, as well as the fact that sector-specific evaluation criteria may will likely have to be developed, particularly for agricultural and energy-related sectors.
Temporal scope	Only policy and strategy documents dating from between 2011- present day will be extracted.	As examining and evaluating policies from prior to when the climate security nexus began to draw international attention would not yield any analytically relevant results, it was decided to examine policies from 2011 onwards, as this was the year that the UNSC debated climate security for the second time and when it agreed a presidential statement acknowledging the

		potential impact of climate change on peace and security (UNSC, 2011).
Geographical scope	The focus of this analysis will remain within the continent of Africa. Policy and strategy documents will be extracted from South Sudan, Kenya, Uganda, Somalia, Zimbabwe, Mali, Nigeria, and Senegal.	The selection of the countries was done on the basis of selecting representative countries of the various African regions where CGIAR works, including North Africa, West Africa, Central Africa, and Southern Africa – that are subjected to varying degrees of both climate-related and conflict-related risks and vulnerabilities, and where current projections suggest that climate security risks may become more salient in the short- to medium- term. The selection of the countries also considered the relevance of the cases for the UN Security Council by, for instance, selecting several countries that currently host multilateral peace operations (SIPRI, 2021). The selection also took into consideration the existence of initiatives from the ONE CGIAR dynamic reformulation in which CGIAR's partnerships, knowledge, assets, and global presence are being unified, aiming for greater integration and impact in the face of the interdependent challenges facing today's world (CGIAR, 2021).
Actor scope (regional)	Climate and security sector policy and strategy documents will be extracted from the Arab Maghreb Union (UMA); Common Market for Eastern and Southern Africa (COMESA); Community of Sahel–Saharan States (CEN–SAD); East African Community (EAC); Economic Community of Central African States (ECCAS); Economic Community of West African States (ECOWAS); Intergovernmental Authority on Development (IGAD); and the Southern African Development Community (SADC).	For the purposes of both climate- and security-related policies and documents, keyword search strategies were focused on the regional bodies officially recognized by the African Union (African Union, n.d.). Some regional bodies – such as the community of Sahel-Saharan States (CEN-SAD) – were found to be essentially defunct, and documents produced by these bodies fell outside of the temporal scope of our analysis.
Actor scope (international)	For international level climate and security-related strategy documents, resources will be extracted from bodies, agencies, entities, programmes and conventions within the architecture of the United Nations. As such, documents were extracted from UNFCCC, UNCCD, and CBD conventions; WFP, UNDP, and UNEP (programmes); UNDRR (departments); and FAO, IFAD, and UNHCR (agencies).	For the purposes of both international climate- and security-related policies and documents, keyword search strategies were focused on the UN bodies, agencies, entities, programmes and conventions that focus on the two sectors that are pertinent for the analysis.

Table 1. Selection and inclusion criteria

Topic	Actor	Type of document
Conflict Peace Security Stability War Violence Migration Mobility	Senegal Uganda Zimbabwe South Sudan Somalia Mali Kenya Nigeria	Policy Strategy Plan Protocol Framework Programme Report Pact Guidelines Communication Intended Nationally Determined Contributions INDCs
Climate change Climate adaptation Climate mitigation Climate risks Climate variability Extreme weather events Natural hazards Natural disasters	Arab Maghreb Union UMA Common Market for Eastern and Southern Africa COMESA East African Community EAC Economic Community of Central African States ECCAS) Economic Community of West African States ECOWAS Intergovernmental Authority on Development IGAD Southern African Development Community SADC United Nations Framework Convention on Climate Change UNFCCC United Nations Convention to Combat Desertification UNCCD Convention on Biological Diversity CBD World Food Programme WFP United Nations Development Programme UNDP UN Environment Programme UNEP United Nations Office for Disaster Risk Reduction UNDRR Food and Agriculture Organization FAO International Fund for Agricultural Development IFAD United Nations High Commissioner for Refugees UNHCR United Nations Political and Peacebuilding Affairs UNDPPA	

Table 2. Keyword combinations

Platform	Description	Searching strategy	
Grantham Research Institute on Climate Change and the Environment (GRICCE) - https://climate-laws.org	International database developed by the GRICCE of the London School of Economics for climate laws, legislation, and regulation, which was searched using the keywords and keyword combinations listed above.	The keyword search will focus on first, selecting the relevant country-level actor and then narrowing down the search to "laws and policies".	
United Nations Framework Convention on Climate Change – INDCs as communicated by parties - https://www4.unfccc.int/sites/submissions/INDC/Submission%20Pages/submissions.aspx	Open access repository from UNFCCC which includes all the INDCs from the different countries. It was found through the UNFCCC official website.	Because of the reduced number of documents and the absence of filters, the keyword search will solely focus on searching for each country-level relevant actor	Th da do the list
FAO Open Access Repository: https://www.fao.org/policy-support/en/	Open access database from FAO which includes tools and publications from the organization. It was found through the FAO official website.	For each keyword combination, following filtering settings: -Policy themes: climate change, disaster risk reduction in agriculture, emergencies and rural livelihoods, migration, resilience in protracted crises. -Resource type: report, framework -Year: 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021.	
UNEP Document Repository - https://wedocs.unep.org/handle/20.500.11822/7419	Open access database from UNEP which includes publications and documents from the organization. It was found through the UNEP official website.	For each keyword combination, following filtering settings: -Author: United Nations Environment Programme -Subject: Climate Change, CLIMATE CHANGE -Date Issued: 2020-2021, 2010-2019	
UNDPPA Reports and Policy Documents - https://dppa.un.org/en/reports-and-policy-documents	Open access database from UNPPA which includes reports and policy documents. It was found through the UNDPPA official website.	For each keyword combination, following filtering settings: -January 2011 / 2021	
WFP Publications: https://www.wfp.org/publications	Open access database from WFP which includes various types of publications It was found through the UNEP official website.	For each keyword combination, following filtering settings: - Topics: climate action, Disaster risk reduction, emergencies, resilience building, sustainable livelihoods and ecosystems -Publication type: strategies and policies -Year: 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021.	
UNCCD Library online catalogue: https://library.unccd.int/search/advanced	Online library catalogue from UNCCD which includes various types of publications. It was found through the UNCCD official website.	For each keyword combination, following filtering settings: -Year: From 2011 to 2021	

UNFCCC Documents: **https://unfccc.int/documents**	Open access database from UNFCCC which includes different types of publications. It was found through the UNFCCC official website.	For each keyword combination, following filtering settings: -Document category: official documents -Publication year: 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021. -Language: English, French, Spanish
UNDP Research and publications: **https://www1.undp.org/content/oslo-governance-centre/en/home/library.html**	Open access database from UNDP which includes research and publications. It was found through the UNDP official website.	For each keyword combination, following filtering settings: -Topic: Climate change and disaster risk reduction, crisis response, governance and peacebuilding
UNDRR Publications: **https://www.undrr.org/publications**	Open access database from UNDRR which includes different types of publications. It was found through the UNDRR official website.	For each keyword combination, following filtering settings: -Type: documents and publications, UN resolutions and reports -Subtype: reports, other, UNDRR documents
IFAD Tools and guidelines: **https://www.ifad.org/en/web/knowledge/tools?start=3**	Open access database from IFAD which includes different types of publications. It was found through the IFAD official website.	For each keyword combination, following filtering settings: -Topics: climate and environment, institutions and organizations -Year: 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021.
IGAD Documents: **https://igad.int/documents**	Open access database from IGAD which includes different types of publications. It was found through the IGAD official website.	For each keyword combination, following filtering settings: -Category: Migration, IGAD Center of Excellence in Preventing and Countering Violent Extremism, Strategies, AED, IGAD SS Office
EAC Document Manager: **https://www.eac.int/documents**	Open access database from EAC which includes different types of publications. It was found through the EAC official website.	For each keyword combination, following filtering settings: -Type: Framework, Protocol, act, rules and regulations, agreement, policy, strategy. -Categories: environment and natural resources, climate change, peace & security
AU Common Repository: **https://archives.au.int/discover**	Open access repository from the AU which includes different types of publications. It was found through the AU official website.	For each keyword combination, following filtering settings: - Subject: decision, refugees, declaration, climate change, -Date issued: 2020-2021 / 2010-2019 -Type: Other, decision, resolution -Language: en, fr

Table 3. Document databases and repositories

Analytical Methodology: Directed Content Analysis and Policy Scoring System

Based on the research questions outlined in section 2, a number of analytical and methodological priorities emerged that informed the design of an appropriate methodological framework. Firstly, results had to be to a certain degree quantifiable in order to produce an empirical framework within which comparisons, patterns, and trends could be observed and analyzed, whilst also remaining cognizant of and managing the inherently subjective nature of analyzing large quantities of text in search of particular meanings and insights. Secondly, for the analysis to possess sufficient specificity to be able to make practical recommendations, results needed to point towards specific thematic areas within policy and strategy documents where a coherence deficit could be detected. This work therefore deploys a hybrid methodology involving a synthesised combination between directed content analysis and an empirical scoring system, with the former acting as the foundations for the latter.

Stemler (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). To ensure the robustness of this analytical exercise, the process of categorisation and classification of words, sentences, or paragraphs to be extracted from the text must be consistent and reliable (Weber, 1990). Elo et al. (2014) divide the process of conducting a content analysis into three main phases- preparation, organisation, and the reporting of results. The preparation phase consists of collecting suitable data for content analysis, making sense of the data, and selecting the unit of analysis, which- in the context of this research- entailed the resource extraction and selection and inclusion processes described in section 3.1. The organisation phase involves 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 and Beck, 2012). These categories can be established inductively- in an emergent manner throughout the entire process of coding and analysis- or deductively, on the basis of a pre-existing set of research priorities or expected patterns and outcomes. Given how the research priorities and objectives of this research were pre-defined, we deployed what Hsieh and Shannon (2005) define as directed content analysis. Directed content analysis can be utilised to validate or extend conceptually a pre-existing theoretical framework or theory and is therefore useful in the ex-ante creation of analytical categories through which bodies of text can be assessed. Units of analysis ranged from keywords, sentences, and longer sections of text which convey more meaning, whilst assessments of overall coherence were made at the level of the entire policy output.

In order to clearly articulate these areas of analytical priority, a set of basic hypotheses were created on the basis of existing policy coherence literature, the climate security literature, and our own expectations and assumptions which specify what to analyse (key in-text variables such as key words, sentences, and paragraphs), and what thematic categories are worthy of attention (Elo and Kyngas, 2008; Schreier, 2012) (table 6). Finally, in the reporting phase, results are described and their implications analysed in accordance with the research objectives.

No.	Hypothesis	Rationale
1.	The climate and security policy domains are generally characterised by a lack of coherence	This hypothesis focuses on the informed perception that policies and strategies from the security and climate domains often fail to adequately and fully acknowledge the existing interconnections which, until recently, most of the actors did not even recognise (Mobjörk et al. 2016; Dabelko et al. 2013).

2.	The coherence of climate and security policy outputs improves the more recent the document was published	This hypothesis focuses attention on the evolutionary trend of climate-security coherence, seeking to assess the extent to which a greater awareness of the climate security nexus at high-profile international bodies such as the United Nations Security Council in recent years may have translated into a greater degree of awareness amongst national and regional-level policymakers.
3.	Policies are more likely to acknowledge linkages between climate and conflict at the surface level and are less likely to contain concrete policy instruments and policy recommendations	This hypothesis is based on the observation that whilst it is easier for national, regional and international actors to acknowledge the interconnections between climate and conflict, it is much more challenging to design and implement integrated climate security interventions to address interconnected risks.
4.	Higher-level policy outputs (defined within our scope of analysis as outputs that were developed at the regional or international level) display a greater cross-sectoral coherence than national or local policy outputs	This hypothesis is based on the informed assumption that macro- or conceptual-level coherence is easier to attain than the development of context-appropriate policy objectives, instruments, and policy mechanisms.
5.	Security policy outputs display a greater degree of coherence with the climate security nexus than climate adaptation and mitigation policies	This hypothesis is based on the informed observation that since the UNSC acknowledged the climate security nexus for the first time in 2007, the debate has often been framed from a military perspective, regularly tending to revolve around the threat of climate change to national security rather than human security (van Schaik et al. 2020). As such, we expect to see a greater degree of familiarity with - and perhaps also a greater degree of successfully integrated policy and strategy - the climate security nexus.

Table 4. Hypotheses

On the basis of these hypotheses, several analytical categories expected to be of interest for the purpose of answering the research questions in section 2 were developed (table 7). In text-variables that could not be immediately and effectively coded using these pre-determined coding categories were identified separately and subsequently analysed to determine whether they represented a new category or a sub-category of an existing coding category. Each of the categories listed in table 7 was organised based on whether they fell within the 'acknowledgement' dimension – covering the various ways in which a document may reference, define, and map out climate and security linkages -and the 'implementation' dimension, used to make an assessment of the extent to which a document actually takes concrete steps to design and implement integrated climate and security policy mechanisms and initiatives.

No.	Category Type	Analytical Category	Explanation
1.	Acknowledgement	Horizontal Acknowledgement 1 and 2	These categories are designed to reflect whether or not a document acknowledges other fields at the same level of governance. Acknowledgement category 1 is scored 1 if, for instance, a document identifies another policy field relevant to the climate security nexus (does a climate policy identify a peace and security-related policy field and vice versa). Acknowledgement category 2 is scored 1 if the document then also mentions a specific policy instrument or mechanism in said field.
2.	Acknowledgement	Vertical Acknowledgement 1 and 2	These categories are designed to reflect whether a document acknowledges a policy operating at a higher level of governance (regional or international). For vertical acknowledgement 1, a score of 1 is awarded if the policy makes reference to a higher-level climate document. For vertical acknowledgement 2, a score of 1 is awarded if the policy makes reference to a higher-level peace and security-related document.
2.	Acknowledgement	Definitional Coherence	Conceptions of what encompasses security as well as what encompasses climate security differ within and across organisations and across mandates. What climate security means cannot therefore be taken for granted. Furthermore, whilst the presence of a clear overarching definition of climate security reflects a clear clearer conceptual picture of how the climate security nexus operates, the absence of an overarching definition may hint at a lack of this. Documents were therefore awarded a score of 1 if they presented a clear definition of climate security, and a score of 0 if they failed to provide said specific definition.

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3.	Acknowledgement	Self-reference	This category is designed to capture whether a document mentions or proposes specific instruments, structures, or work processes that relate to improving coherence between ministries or other implementing partners. A score of 1 is awarded if any of the above appears in the documents, whilst a score of 0 is awarded if no mention of cross-sectoral or cross-ministerial coordination coherence is made at all.
4.	Acknowledgement	Depth of Engagement	Policy documents related to the realms of peace, conflict and security may mention climate issues only indirectly and at a surface level, thereby only implicitly drawing connections between the two policy domains. Climate adaptation and mitigation policy documents may similarly mention conflict, peace and security issues implicitly. Conversely, the overlaps between the two domains may be addressed explicitly, with causal relationships between climate and conflict being deliberately identified. A score of 1 was therefore awarded to documents that actively identified impact pathways leading from climate to conflict and insecurity. A score of 0 was awarded to documents that failed to identify some of the specific channels and mechanisms whereby climate could act to increase the risk of conflict.
5.	Implementation	Objectives	Whether or not a policy document sets out a specific set of synergistic objectives that seek to build connecting bridges across different policy fields is a key first step in moving from acknowledging climate security as an issue to actively seeking to deal with it. As such, documents were awarded a score of 1 when the presence of integrated objectives was detected, and a score of 0 when no objectives that bridged climate and peace and security-related fields were detected.
6.	Implementation	Temporal Coherence	Differing time frames and understanding of at what rates processes play out in the climate versus the humanitarian-development-peace nexus forms a key hindrance to coherence and integration, impacting for instance how objectives are created and prioritised, and what instruments are deemed appropriate for delivering them. A score of 1 was awarded to policies that in some way considered the interplay of fast- and slow-onset temporal processes, whilst a score of 0 was awarded for those that did not reflect on this.
7.	Implementation	Instruments	This category reflects whether a document identifies a specific policy instrument that can be seen to help promote or facilitate a specific set of integrated climate security-sensitive policies. A score of 1 was awarded if a document included a synergistic policy instrument that made reference in some way to both climate and peace and security-related fields (such as a regulatory framework, market incentives, education, capacity building or awareness raising, or monitoring mechanisms). A score of 0 was awarded to documents in which this was absent.
9.	Implementation	Breadth of Engagement	This category captures whether a policy document successfully identifies specific communities, sets of beneficiaries, or geographic areas a policy mechanism should be targeted and from which said constituencies should receive tangible co-benefits. This forms a key step in the implementation of a policy. Documents received a score of 1 if specific societal groups or communities were identified as being at risk of climate security risks and identified as relevant policy beneficiaries. A score of 0 was awarded if the document omitted identifying specific constituencies.
10.	Implementation	Recommendations	The final level of implementation within the scope of this analysis is whether a document is responsible for identifying or helping implement a specific set of climate security-sensitive policy mechanisms or recommendations. A score of 1 was awarded to policies in which this was detected (for example, specific policies relating to reducing the reliance of a population on charcoal production, which is both a source of emissions *and* helps underpin and sustain a war economy). A score of 0 was awarded to documents in which no specific synergistic policy mechanisms or recommendations were observed.

Table 5. Analytical categories

Score Range	Degree of Coherence	Description
0	No Coherence	A policy document scoring 0 points can be said to possess no degree of coherence at all and likely does not acknowledge the other relevant policy field at all.
1-4	Low-level Coherence	A score of 1-4 denotes a policy document that possesses low levels of coherence. Such a document

		may make a passing reference or acknowledge the links between policy field A and policy field B, but likely does not represent an attempt to develop and pursue a synergistic set of objectives in a coherent, cross-sectoral manner.
5-8	Medium-level Coherence	A score of 5-8 describes a policy document that possesses a medium level of coherence. Such a document may seek to actively try and pursue integrated, and synergistic objectives across sectors, but falls short in one or two key areas that prevent optimisation.
9-12	High-level Coherence	A score of 9-12 denotes a policy document with high levels of coherence. Such a document likely has both intended to and succeeded in the systematic promotion of mutually reinforcing policy objectives and actions across policy sectors.

Table 6. Meta-scoring system

Each of the categories outlined in table 7 represents an area deemed of relevance for policy coherence and within which an analytical assessment can be conducted by the researchers. To do so in a way that produced empirically relevant and quantifiable results, one to two questions were developed within each of the categorisations which the researcher answered with a 'yes' or 'no' (corresponding to 1 or 0 respectively). This then formed the basis of a policy scoring system in which the lowest attainable score is 0 and the highest is 12. After receiving a score, a document was classed as possessing no, low, medium, or high coherence based on a meta-scoring system (table 8). The use of such a policy scoring system, in which different degrees of coherence are attached to certain meta-ranges of point scores, to firstly rank and secondly compare and assess the degree to which policies display coherence is well established within the literature. Ashley (2019, 2020), for instance, deploys a policy scoring methodology in order to make an empirical assessment of policy coherence between climate and livestock policies in 8 countries over the course of two publications. Similarly, Gouais and Wach (2013), England et al. (2018), and Papadopoulou et al. (2020) all use a similar scoring system to assess the extent and nature of coherence. Table 9 outlines the category-specific questions that were used to code and categorise policies.

Coherence Dimension	Analytical category	Coding Questions
Acknowledgment	Acknowledgment (horizontal)	Does policy A acknowledge policy field B?
		Does policy A mention a specific policy in field B?
	Acknowledgement (Vertical)	Does the policy refer to at least one higher-level climate policy or strategy document?
		Does policy refer to at least one higher-level security policy or strategy document?
	Definitional Coherence	Does the policy produce a clear definition of climate security?
	Depth of Engagement	Does policy A engage substantially with policy field B by referencing interconnections, synergies and/or risks and impacts?
	Self-reference	Does policy A mention policy coherence?
Implementation	Objective	Does policy A contain specific, synergetic objectives that refer to policy field B?

	Temporal Coherence	Does policy A reflect and act upon the basis of diverging time scales of security (short-term) and climate processes (long-term)?
	Instruments	Does policy A provide for a specific, synergetic instrument (budget, grant, law etc.) or a specific governance instrument (working groups, committees etc.) to make progress in policy field B?
	Breadth of Engagement	Does policy A refer to specific stakeholders in policy field B?
	Recommendations	Does policy A make specific recommendations on how to improve progress and/or build synergies in policy field B?

Table 7. Analytical categories and coding questions

Quality Control: Ensuring Validity and Trustworthiness of Results

Qualitative research stresses the importance of validity. In a broader sense, validity exists when the methodological process succeeds in capturing the phenomenon under analysis (Krippendorff, 2004; Neuendorf, 2002; Schreier, 2012). This emphasises the importance of developing a coding frame with appropriate categories that correctly represent the priorities established in the research questions. As such, steps were taken at every stage of category development to ensure accurate and robust analytical results.

Within the preparation phase, Elo et al. (2014) identify the main trustworthiness issues as surrounding the selection of an appropriate data collection method, sampling strategy, and the selection of a suitable unit of analysis, of which the first and last are relevant to our analysis. According to Kabir (2016), "data collection is the process of gathering and measuring information on variables of interest, in an established systematic fashion that enables one to answer stated research questions, test hypotheses, and evaluate outcomes" (p. 202). The objective of this process is to gather quality data that captures the reality in order to develop a fruitful analysis that enables the construction of valid answers to the research questions. The analysis conducted as part of this work relied on the collection of qualitative data, specifically strategies, policies, roadmaps and plans at national and regional levels and strategies, memorandums of understanding and communication documents at an international level. In addition, this work focused on the analysis of primary data official documents were gathered directly from national governments as well as regional and international organisations. The use of this type of data strengthens the validity of the data as it has not been previously modified by anyone (Kabir, 2016). Based on the objectives and scope of the research, our data collection method was therefore purposive in nature, as the research relied upon the extraction of the resources that were expected to yield the most knowledge regarding the phenomenon under investigation.

In the organisation phase, it was crucial to consider whether the concepts and attendant categories were adequately reflective of the phenomenon under assessment. In order to ensure the former, we followed Islam and Asadullah (2018) in deploying two key strategies. Firstly, a small sub-set of the pre-selected policies, perhaps around 15-20%, was initially analysed in order to check the appropriateness of the categorisations, as recommended by Weber (1990) and Cohen (2007). Secondly, according to Granheim and Lundman (2004), researchers must compensate for the fact that there always exists a degree of interpretation when approaching a text. As such, analysis was conducted by more than one

person and the coding process was subjected to an internal cross-check system, in which multiple researchers evaluated a document subsequent to the initial round of content analysis in order to ensure inter-coder reliability and coherence. Within the results phase, findings were reported systematically and carefully, with particular attention paid to how the connections between the data and results were reported.