



Policy Coherence and Awareness Analysis Report: Guatemala and Central America

July 2023

Frans Schapendonk, Cesare Scartozzi, Ignacio Madurga-Lopez, Salma Kadry, Peter Läderach, Grazia Pacillo



INITIATIVE ON
Climate Resilience

Authors

Frans Schapendonk¹, Cesare Scartozzi¹, Ignacio Madurga-Lopez¹, Salma Kadry¹, Peter Läderach¹, Grazia Pacillo¹

¹Alliance of Bioversity and CIAT

Suggested Citation

Schapendonk, F., Scartozzi, C., Madurga-Lopez, I., Kadry, S., Läderach, P., Pacillo, G. (2023). Policy Coherence and Awareness Analysis Report: Guatemala and the Central American Dry Corridor.

This work is licensed under Creative Commons License CC BY-4.0.

Acknowledgments

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

Executive Summary

The analysis of Guatemalan policy documents highlights a significant gap in the recognition of and engagement with the intersection of climate change, peace, and security, both in a thematic sense and in a technical sense. Firstly, the analysis reveals that there is a lack of engagement with the potential for climate change to exacerbate conflict related to natural resource usage and gender-based violence. Despite women and girls being the most commonly recognized social group across all policies and strategies experiencing differential rates and degrees of exposure and vulnerability to climate impacts, there is a distinct lack of in-text references to the intersection between climate change and gender-based violence. The confluence of climate change, resource scarcity, conflict, and insecurity strengthens conditions for all forms of violence to thrive and exacerbate the exposure of women, children, and other vulnerable populations to dangerous migratory journeys, human trafficking, and child marriage. Additionally, there is a lack of recognition of the potential for climate change to exacerbate conflicts related to natural resource usage, particularly with regard to land access and ownership, which remains a key function of structural inequality within Guatemala and is deserving of greater prioritisation in understanding how climate change may affect these dynamics.

Secondly, our analysis reveals a lack of engagement with indigenous communities, minority groups, and displaced communities, who are disproportionately exposed to climate impacts. Indigenous Mayan communities, for example, although constituting a significant percentage of the Guatemalan population, continue to face a variety of structural inequalities that inhibit human development, render them more susceptible to food and nutritional insecurity and related health risks, and undermine adaptive capacity in the face of evolving climate-related risks to livelihoods and physical safety. Yet references to the specific challenges such communities are likely to continue to face in the context of the climate crisis are absent in the majority of policy sectors included in the analysis.

Thirdly, our inquiry suggests that the development of climate policy instruments such as the Local Climate Change Action Plans (LCCAPs) or the National Climate Change Fund (FONCC) represents a missed opportunity for the integration and mainstreaming of climate, peace, and security considerations at the sub-national and local levels. These instruments have the potential to tie together multiple sets of stakeholders into the prioritisation, design, implementation, and monitoring and evaluation of local climate action. However, they do not appear to involve actors in the peace and security realm, nor are they formally connected to sub-national level peace and security strategies such as the municipal level Violence and Crime Prevention Policies. The integration of LCCAPs and these municipal level policies would likely result in more coordinated and synergistic opportunities for the design of conflict-sensitive and peace responsive climate action, as well as climate-sensitive conflict prevention and security strategies at the local level.

Fourthly, our analysis reveals limited technical cross-fertilization between the climate and environment- and peace and security-related policy realms, defined as the degree to which different sectors appear to deploy specific analytical tools and approaches from other sectors. The deployment of climate-related measures, tools, and approaches (such as climate vulnerability analyses) is, for instance, limited outside of the agricultural and climate and environment sectors, with only one example of such tools being deployed in a peace and security-related policy document. Similarly, the deployment of assessments, measures, and approaches relating to conflict-sensitivity (such as conflict or pro-peace analyses) is virtually entirely absent across all sectors analysed.

In conclusion, this report reveals a need for greater engagement with the intersection of climate change, peace, and security in Guatemalan policy documents. This includes the need to recognize the potential for climate change to exacerbate conflicts related to natural resource usage and gender-based violence, engage with indigenous communities, minority groups, and displaced communities, better utilise existing opportunities and mechanisms for the mainstreaming of climate, peace, and security considerations, and improve technical cross-fertilization between the climate and environment- and peace and security-related policy realms. Such engagement is crucial from the perspective of building peace and security, as well as promoting sustainable development in Guatemala. As such, this report specifically recommends the following (see Conclusions and Recommendations section for more detail):

- 1. Ensure policymakers and technical staff in the food security, gender, and humanitarian response realms are sensitised to the evolving impacts of climate change on their respective fields, and that climate change-related projections and tools are integrated into policy design and planning processes for these sectors.**
- 2. Take steps to ensure that policymakers and technical staff across all the sectors subjected to analysis in this work are sensitised to the intersection of climate, peace, and security, particularly in relation to the context-specific mechanisms whereby which the nexus is likely to manifest within Guatemala.**
- 3. Better utilise the potential of existing climate policy instruments to become instruments for peace by integrating considerations around climate, peace, and security.**
- 4. Facilitate a greater degree of technical cross-fertilisation across climate and environment and peace and security sectors by ensuring a greater deployment of peace and conflict-related analyses and measures in climate and environment-related policies, and a greater deployment of climate-related measures in peace and conflict-related policies.**
- 5. Existing recognition of climate security at the regional policymaking level should be expanded, upscaled, and incorporated into more policies, programmatic initiatives, and investments of SICA.**

Table of Contents

Executive Summary	3
Introduction	6
Country Context: Key Policy Processes and Multi-level Governance Structures.....	10
Multi-level Climate Governance Architecture	10
Multi-level Peace and Security Governance Architecture	16
Methodology	23
Results	25
Discussion	35
Conclusions and Recommendations	40
Bibliography	46
Annex 1	52

Introduction

Climate change-related impacts – ranging from sudden shocks and more frequent extreme weather events in the short-term to more gradual changes in temperature and precipitation rates in the long-term – are unlikely to be experienced uniformly. Different degrees of vulnerability among and within countries are driven by patterns of intersecting socio-economic development, unsustainable ocean and land use, marginalisation, as well as historical and ongoing patterns of inequity that can be traced in part to colonialism and specific governance choices (Pörtner, 2022). At the national and regional scales, for instance, certain countries (such as those located near the equator or poles) exhibit greater degrees of exposure to climatic shifts, whilst countries whose economies are highly dependent on climate-sensitive sectors and face challenges in diversifying their economic base are inherently more vulnerable to climate-induced perturbations (Feitelson and Tubi, 2017).

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

Moreover, the types of mandate that encompass these various sectors and scales are likely spread across various governmental departments, ministries, and local authorities, each of which tend to have their own targets and objectives, policy design and formulation processes, and budgeting procedures. What is considered a primary goal in one policy sector – say, increasing the amount of annual revenue generated by tourism in a specific area – may not automatically be aligned with the achievement of biophysical targets, such as environmental preservation. Cross-sectoral alignment must therefore consciously be forged. Similarly, if emissions reduction targets set at the national level are too rigid in their implementation or fail to take into account the effects such targets may have on local livelihoods in the short-term, the risk of human insecurity, policy inefficacy, or lack of compliance increased. As a consequence of these cross-sectoral and cross-scalar interactions between the biophysical and social worlds, climate change governance must sensitively account for both ‘vertical’ and ‘horizontal’ policy interlinkages and interactions to promote coherence, avoid one-size-fits-all approaches, and ensure effective stakeholder participation and collaboration across multiple scales to detect feedback (Shuttleworth, 2017). The nature of this challenge has increased calls for a multi-level climate governance model that effectively combines top-

down agenda and objective setting at the international and national levels with sub-national and local level implementation and input. The 2018 Intergovernmental Panel for Climate Change (IPCC) report, for instance, stresses that climate action requires multi-level governance from the local and community level to national, regional, and international levels (Dubash, N.K. *et al.*, 2022).

One example of a multi-level governance model is postulated by Ostrom (2009), who - building on her decades of observation of how people and groups in a variety of systems solve their collective action problems - proposes a polycentric approach to governance. Polycentric systems of governance tend to be interconnected and yet decentralised, with independent decision-making power and processes spread across scales and sectors. This structure encourages experimental efforts at multiple levels (thereby fostering innovation) whilst simultaneously building inclusivity and pluralism into processes of governance. Furthermore, complex adaptive systems theory would suggest that polycentric systems have a higher ability to learn from and adapt to a changing environment, and to be less affected in their integrity and effectiveness by sudden changes or failure in parts of the system due to in-built redundancy (Pahl-Wostl *et al.*, 2010). This synergistic interplay between institutions, levels of governance, and non-state actors that shape how policies and actions are defined and implemented is therefore understood here as crucial for aligning and coordinating climate action across scales and sectors, and ensuring that complex issues that are climate impacts that cross-scalar and cross-sectoral in nature are dealt with through scale- and context-appropriate policy measures.

The institutional complex of global climate governance is similarly becoming increasingly 'fragmented' due to the growing recognition that the framing of the climate domain or problem structure is broad and interconnected with a variety of other fields and sectors: the broader an environmental domain, the more likely it touches upon other environmental and non-environmental spheres and their associated institutions (Zelli and van Asselt, 2013). Whilst this, in theory, may result in a more comprehensive approach to governance in which complex issues are addressed in a coordinated manner and institutional resilience is improved, there are risks attached to ineffective multi-level governance. Policy agendas and objectives formulated and set at the national level may – if not coordinated with priorities in other sectors or scales, or if insensitive to local conditions – be ineffective or produce a range of unintended consequences with potentially destabilising effects at the sub-national and community-level. If, for instance, mitigation targets and decarbonisation pathways are designed without taking into account national development goals, international commitments, interactions with other sectors and their goals, and existing human and financial capacity, a policy's effectiveness will be highly constrained, and its implementation hindered due to confusion around prioritisation (Global Climate Action Partnership, no date).

Climate action may in this way also produce unintended effects that can run counter to human development goals, potentially causing maladaptation. Maladaptation can be defined as action taken ostensibly to avoid or reduce vulnerability to climate change that impacts adversely on, or increases the vulnerability of, other systems, sectors, or social groups (Barnett and O'Neill, 2010), and can occur through a variety of ways. As part of their maladaptation typology, Barnett and O'Neill (2010) identify the disproportionate burdening of the most vulnerable (and a related increase in the vulnerability of those most at risk) as a key maladaptive mechanism. If local climate adaptation or mitigation action directly or indirectly impose additional social, economic, or environmental costs on affected households and communities, such actions can contribute to undermining the human security of often already vulnerable polities. Disaster risk management processes, adaptation measures, as well as transitions to greener economies can all, for example, create additional pressure on natural resources such as land or water, exacerbate existing inequalities in resource and service access, negatively affect livelihoods, and deepen social cleavages (Detges, Adrien *et al.*, 2020). Particularly in already fragile or conflict-affected areas, such impacts may weaken social cohesion and conversely heighten the risk of violent conflict (Tänzler, Dennis and Scherer, Nikolas, 2013; Church, Clare and Crawford, Alec, 2018).

Climate policy formulation and design processes that do not engage in conflict-sensitive baseline assessments, or that are insensitive to local marginalisation and power structures linked to gender, ethnicity, economic status, and combinations thereof, might therefore serve to exacerbate these pre-existing inequalities. One example of how this may occur can be found in the UNFCCC's Reducing Emissions from Deforestation and Forest Degradation (REDD) programme, which has faced design and implementation challenges in many contexts over the years. In the case of one particular REDD programme in Nepal, livelihood insecurity for the local population was worsened and the risk of conflict over land was increased by the project's activities, as the alternative livelihood strategies provided to the Chepang ethnic community were not suitable for all groups (Patel *et al.*, 2013). From the perspective of climate security, therefore, these interconnections imply an important overlap between climate and environment-related institutional spheres and those spheres related to peace and (human) security, such as development, social cohesion, conflict prevention/transformation/peacebuilding, gender, preventing and countering violent extremism (P/CVE), and security. In short, it is critical that climate and environment-related policies at the very least do no harm by undermining human security or contributing to conflict dynamics (Anderson, 1999).

The opposite is also true, however, in that efforts to sustain peace and ensure security and stability can inadvertently worsen environmental degradation or render communities and populations more vulnerable and exposed to climate change-related impacts. Military interventions, for example, often have negative impacts on the livelihoods and resilience of local populations, for instance by contributing to displacement or restricting legal livelihoods

(Detges et al., 2020). In the Lake Chad Basin, 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 resilient to a changing climate. Such restrictions have severed agricultural value chains and limited the provision of basic services, thereby reducing incomes and support mechanisms for poor households, undermining household resilience to cope with climate-related shocks, and lowering the opportunity cost for individuals to engage in violence. Efforts aimed at building stability and stabilisation must also, therefore, be conscious of their interconnections with the realms of climate and environment and avoid imposing a disproportionate environmental cost on affected communities.

Yet the case for coherence may be stronger even than ensuring unintended consequences do not inadvertently undermine human security, influence conflict dynamics, or result in further vulnerability and exposure. Actively synergistic climate, peace, and stabilisation policy initiatives also offer opportunities for integrated risk management approaches that can address inter-related and often overlapping drivers of climate vulnerability and exposure, human insecurity, and conflict and violence. Building on system theory and the theory of co-benefits, Morales-Muñoz *et al.* (2022) argue that climate action contains clear entry points for contributing to a sustainable peace, and that – vice versa – peacebuilding efforts can create an enabling environment for effective adaptation and mitigation. For example, local climate action can be the basis of joint and cooperative action, such as in the case of natural resource management. The sustainable management of natural resources can help prevent resource-related conflicts between parties reliant upon access and usage of said resources; improve livelihoods and income generation, thereby reducing grievances and increasing the opportunity cost for engaging in violence or joining a NSAG; and provide a common platform for cooperation for previously hostile or distrustful parties.

The policy coherence and awareness analysis contained in this report is, therefore, grounded in the premise that both climate and environment-related and peace and security-related institutional and policy realms should take into account the complex and context-specific interactions between climate change-related impacts, human security, and conflict. In short, policies must be cognisant of and sensitive to climate-related security risks and dynamics. Moreover, policies and strategies produced by peace and security actors must be coherent and integrated with climate and environment strategies – and vice versa – both horizontally at the same level of governance, and vertically across different scales of governance. Focusing in particular on the Central American Dry Corridor and Guatemala, this report will:

- Evaluate the extent to which policies and strategies display awareness of potential climate-related security risks and dynamics and contain practical measures to ensure climate security-sensitivity.

- Chart how policies and strategies tend to understand and conceptualise key concepts relevant to the climate security nexus, such as ‘peace’, ‘security’, and ‘conflict’.
- Assess the extent to which policies from across climate security-relevant policy sectors display coherence with one another, both at the same and across different levels of governance

The structure of this report will proceed as follows. Firstly, in order to provide the appropriate context and backdrop for the analysis of selected policy and strategy documents, the country context section will briefly outline Guatemala’s national and sub-national multi-level climate and security governance architecture, including an overview of the most significant legislative milestones. Climate and security governance arrangements and processes at the regional level will also briefly be introduced. Secondly, the methodological section will present our policy analysis framework and its operationalisation, using directed content analysis and automated textual analysis (ATA) techniques. Thirdly, we will discuss and evaluate the empirical results - trends, patterns, and gaps - produced by the ATA. Finally, this report will produce a set of policy relevant recommendations on the basis of the strengths and shortcomings revealed by our analysis of selected policy and strategy documents.

Country Context: Key Policy Processes and Multi-level Governance Structures

Multi-level Climate Governance Architecture

Climate Change Impacts in Guatemala

The Republic of Guatemala lies in the heart of Central America, bordered by Mexico and Belize to the west, the Atlantic Ocean to the south, and El Salvador, Honduras, and the Pacific Ocean to the east and north-east. It possesses a diverse set of climates and agro-ecological zones, ranging from cool highlands and tropical semi-dry savannah to tropical jungle in the northern lowlands and humid coastal areas (Global Facility for Disaster Reduction and Recovery, 2011). Lower areas are typically warmer and more humid, whilst the highlands are usually cooler and drier. Average annual temperatures range from 25 to 30 degrees Celsius in coastal areas, and 15 to 20 degrees Celsius in the highlands. Guatemala experiences both a dry season – usually from November to April – and a rainy season, occurring from May to October, punctuated by a 5 to 15 day mid-summer drought known as *canícula* (USAID, 2020). Average annual rainfall varies substantially across the country, ranging from 600 mm in the Dry Corridor – within which the south-eastern Guatemalan departments are located – and 5000 mm in the humid coastal areas. Both temperature and precipitation patterns are affected by fluctuations in the temperature of the surrounding oceans, El Niño and La Niña cycles, as well as intensification

of the Inter-Tropical Convergence Zone (ITCZ) and the Pacific Decadal Oscillation (PDO) (Global Facility for Disaster Reduction and Recovery, 2011).

As a consequence of its geographical location and topographical characteristics, Guatemala has and will continue to experience a variety of detrimental climate change impacts. Despite taking significant steps to reduce its vulnerability and exposure over the course of the last two decades, the country still ranks 119 on the ND-GAIN index, indicating a high vulnerability to climate change whilst possessing limited readiness and coping capacity (Notre Dame Global Adaptation Initiative, 2020). It is also highly exposed and vulnerable to non-climate-related natural hazards such as earthquakes, tsunamis, and volcano eruptions (Ministry of Environment and Natural Resources, 2021). Fast-onset extreme weather events are also expected to become more frequent and more severe in the coming decades, including heat waves, droughts, and extreme rainfall events. Tropical cyclones in particular, such as the hurricanes Eta and Iota that took place in 2020, tend not only to lead to loss of life, but damage to physical infrastructure, economic assets, and productivity (Bello, Omar and Peralta, Leda, 2021; International Federation of the Red Cross, 2021). They are furthermore anticipated to become increasingly frequent and intense, contributing to flooding and often deadly landslides (Global Facility for Disaster Reduction and Recovery, 2011). Meanwhile, mid-summer droughts are projected to start earlier and last longer.

Guatemala has been experiencing changes in temperature and precipitation patterns that are likely linked to, and further exacerbated by, climate change impacts. In the past 20 years, Guatemala's average annual temperature has risen by 0.8 °C, whilst average annual rainfall patterns have increased by 122mm, although rainy periods have become less distributed throughout the year (Ministry of Environment and Natural Resources, 2021). Current estimates predict temperature increases of between 2.5 and 4°C by 2050, with the greatest increases expected in the north, on the Caribbean coast, in the east, and along the southern coast. Further, models project annual increases in rainfall until approximately 2030, followed by a 9.5 to 12.4% decrease in rainfall by 2050. This trend is expected to be coupled with increasingly variable precipitation rates, heavy rainfall events followed by dry days, an expansion of semi-arid climate regions, and a rise in sea levels of 9-13 cm by 2050 (USAID, 2022).

Adverse climate change impacts across Guatemala are also likely to have notable cascading effects across socio-ecological, economic, and political systems, due to the country's climate exposure and sensitivity. This is exacerbated by a continued reliance on climate-sensitive economic sectors, particularly agriculture. The agricultural sector is vital to the country's economic and social well-being, with around 70% of total land being dedicated to agricultural and forestry-related activities. Primary staple crops are maize, wheat, sorghum, and beans, grown widely across the entire country and which form crucial components for the Guatemalan diet. Commercial agricultural production includes coffee, bananas, African palm tree, rubber, sugarcane, and livestock. Agriculture accounts for just under 10% of Guatemala's Gross Domestic Product (GDP) as of 2021 and employs 31% of the total workforce as of 2019

(World Bank, 2023). A substantial portion of Guatemalans are therefore reliant upon the availability of and access to natural resources, which have become steadily eroded and degraded as a result of widespread deforestation and land degradation, slash-and-burn agricultural practices, and regular overexploitation of water resources (Global Facility for Disaster Reduction and Recovery, 2011).

Many of those working in the agricultural sector, furthermore, do so at a subsistence level, meaning that agricultural productivity is often directly tied to food and nutritional security. Particularly because of the high dependence of subsistence farmers on rainfed agriculture, higher temperatures and more variable rainfall – which are projected to adversely affect yields of major food crops – are likely to have broad socio-economic and nutritional consequences (Valencia, 2022). An example of this can be seen in the El Niño-intensified drought, which started in 2014 and continued into 2016 and reduced maize and bean harvests by more than 50% in the western highlands and eastern dry corridor, resulting in food insecurity for 1 in 5 households (USAID, 2017). Indigenous Mayan population groups – which make up around 40% of the population, largely live in marginal rural areas, and face already high levels of chronic malnutrition – are particularly vulnerable to further climate-related food and nutritional insecurity. Often excluded from the political and socio-economic mainstream, indigenous communities face malnutrition rates twice as high as those of the non-indigenous population, consume diets characterised by a lack of diversity, and – as a consequence of both climate change impacts and the expansion of non-traditional crop exports – are subjected to reduce food availability (Webb et al., 2016).

Further vulnerabilities arise from widespread infrastructural deficits, particularly in urban areas. Urban physical infrastructure is usually highly unstable, and access to clean water and health services are extremely limited. There are severe shortages in functioning wastewater treatment plants, with the majority of water sources considered biologically or chemically compromised (USAID, 2017). Detrimental climate change impacts on human health – such as through the increased spread of vector- and water-borne diseases, which are already amongst the most common causes of morbidity – are likely to be further compounded by such infrastructural shortcomings. Additional pressures are likely to arise from evolving mobility trends, both internal and external. Rural poverty and climate change impacts have already been linked to increase family migration rates abroad, particularly to the United States (Bermeo, Leblang, and Alverio, 2022). It is also expected that the highlands will also become climate in-migration hotspots as individuals and households increasingly decide to leave hotter, lower-lying areas in favour of the more climatically favourable highland areas. This movement will likely be urban or peri-urban in nature (World Bank, no date).

Multi-level Climate Change Governance

Since ratifying the United Nations Framework Convention for Climate Change (UNFCCC) in 1995 – and becoming a party to the Kyoto Protocol in 1997 - Guatemala has undertaken

several strategic actions to create a legal and institutional environment conducive to effective, multi-level climate change planning and action. Climate change first found an institutional anchoring when the Ministry of Environment and Natural Resources (MARN) created the internal Climate Change Unit in 2001, followed in 2005 by the National Clean Development Mechanism Office. The primary objective of this office is to co-ordinate national measures to implement the instruments and policy guidelines from international conventions and national policies that relate to sustainable development (Nachmany et al., 2015). The first policy which provided a rationalisation of climate change action within Guatemala, however, came in the Climate Change National Policy (2009), a milestone policy which outlined the legal and political basis for climate change activities, established primary objectives and responsibilities for different actors and entities within Guatemala, and set up guidelines for the development of national adaptation and mitigation targets and objectives. Following this, several sector-specific adaptation and mitigation efforts were enshrined in policy, including the National Integrated Management of Marine Coastal Zones Policy (2009), the National Cleaner Production Policy (2010), and the National Strategy for the Reduction of Deforestation and Forest Degradation (2010).

A second key milestone in the evolution of Guatemala's multi-level climate change governance architecture arrived in 2013, when the Congress passed the Framework Law for Regulating the Reduction of Vulnerability, Obligatory Adaptation to the Effects of Climate Change, and the Mitigation of Greenhouse Gases. The primary objective of the law was to establish regulations to prevent, plan, and respond to climate change impacts, with an emphasis placed on ensuring coordinated response mechanisms (Muller *et al.*, 2017). A clear institutional infrastructure was subsequently established, particularly through the creation of the Vice-Ministry of Natural Resource and Climate Change - which includes the Climate Change Unit – within MARN. The 2013 law also established the National Council of Climate Change (NCCC), a coordinating and supervisory entity responsible for regulating, supervising, and monitoring the implementation of climate actions specified by law, as well as conflict resolution. This body is on paper an ideal-type example of coordinated policymaking and implementation, with its membership consisting of members of the Presidential Council and various line ministries, representatives of indigenous and farmers' organisations, the National Association of Municipalities, several industrial and private sector associations, and representatives of non-governmental organisations (NGOs) and Guatemalan universities (Muller et al., 2017). The NCCC, however, has not met since 2017, is heavily dependent on the views of the party in power, and has struggled to mainstream climate resilience issues across the work of major ministries. Institutional coordination as such tends to happen on an ad-hoc basis, triggered most frequently by donor-funded projects (Casada-Asensio, Shin, and Kato, 2021).

Aside from the National Council of Climate Change, the Framework Law also provided the institutional basis for the creation of the National Climate Change Information System (SGCCC) and the National Climate Change Fund (FONCC). The former constitutes an expert

body composed of more than 20 institutions from different country sectors, including the government, the academia, and the private sector, which carries out research and subsequently transfers information to decision-makers. The SGCCC also fulfils the function of permanent advisory to the NCCC (Sistema Guatemalteco de Ciencias del Cambio Climatico, 2017). The FONCC, managed by MARN, finances plans, programs, and projects related to risk management and vulnerability reduction, adaptation, and mitigation, as well as capacity building, protection of ecosystem services, water production, biodiversity conservation, and other climate and environment-related activities (Muller et al., 2017). It therefore forms a key policy and financial instrument for the transposition of national level adaptation, mitigation, and conservation objectives and priorities into sub-national and local level action, and co-exists alongside existing funds, such as the Fondo de Tierras (FONTIERRAS), or land fund. The Framework Law also mandated the creation of a dedicated National Action Plan for Climate Change (PANCC) outlining specific climate adaptation and mitigation priorities and activities, the first of which was produced and updated in 2016 and 2018 respectively.

The institutional landscape at the national level is also populated by a host of other institutions possessing a mandate relating to adaptation, mitigation, conservation, disaster risk management, and the production of climate modelling and projections. The National Council of Protected Areas (CONAP), for instance, is responsible for the conservation of protected areas and biological diversity; planning, coordinating, and implementing conservation policies and models; and working together with other actors to contribute to sustainable development and growth (CONAP, no date). The National Forest Institute (INAB), established in 1996, is the body in charge of national forestry policy. Its general objectives include the promotion of forestry development in Guatemala and to contribute to rural development through the sustainable management and restoration of forest and forestry lands. Finally, the National Institute for Seismology, Volcanology, Meteorology and Hydrology (INSIVUMEH) – founded following the 1976 earthquake – is housed within the Ministry of Communications, Infrastructure, and Housing. Its mandate relates to the optimisation of activities associated with atmospheric, geophysical, and hydrological science, providing permanent systematic surveillance of volcanic and seismic activity, maintaining hydrometeorological data, and operating stations and monitoring points for climatic changes (INSIVUMEH, no date).

As previously noted, Guatemala is frequently subjected to extreme weather events, including cyclone, hurricanes, flooding, and drought. Over the last two decades, the Government of Guatemala has placed disaster risk management (DRM) firmly in its development agenda. This is apparent in the inclusion of DRM in the National Development Plan (Plan de la Esperanza) (2008), as well as in the creation of the National Program for Disaster Prevention and Reduction (2009-2011). The institutional coordinating mechanism providing the legal framework for disaster prevention and management – and acting as a platform for inter-ministerial coordination in cases of emergency – is the National Coordinator for Disaster Reduction (CONRED) and its secretariat (SE-CONRED) (Global Facility for Disaster Reduction

and Recovery, 2010). CONRED is responsible for the drafting and implementation of national recovery and disaster response plans, as well as coordinating between relevant agencies and actors in the event of a natural disaster (CONRED, 2023). For implementing actions at the different administrative levels across Guatemala, CONRED relies upon other coordinating and supervising bodies for emergency and disaster management across all administrative levels, including the Regional Coordinator for Disaster Reduction (CORRED), the Departmental Coordinator for Disaster Reduction (CODRED), the Municipal Coordinator for Disaster Reduction (COMRED) and the Local Coordinators for Disaster Reduction (COLRED) (CONRED, no date). CONRED, however – alongside the other previously mentioned national institutions and agencies with a climate and environment-related mandate – tend to operate autonomously from one another. MARN, on the other hand, generally lacks the resources and capacities to facilitate effective, coherent, and coordinated action on climate resilience (Casada-Asensio, Shin, and Kato, 2021).

The Framework Law also outlines the institutional framework and stipulates the processes whereby which climate change adaptation and mitigation priorities are integrated into sub-national level planning efforts. The law instructs MARN – alongside the Ministry of Agriculture, Livestock, and Food and the Presidential Planning Secretariat – to support local municipalities and urban and rural development councils in the modification of their local land use planning instruments in order to integrate adaptation and mitigation considerations aligned with national and international priorities (Muller et al., 2017). In aid of these efforts, MARN and the Ministry of Agriculture, Livestock, and Food produced two technical and practical guides for local governments, focused on ‘technical orientation for institutionalising environmental and risk management in municipal processes’ and ‘climate change and its inclusion in municipal land use plans’ respectively. Through the use of these instruments, national objectives, and strategies are effectively transplanted to local level realities, a process supported financially by the fact that the Presidential Planning Secretariat and the Ministry of Public Finance are able to provide priority funding for entities that have included climate policies and actions in their plans, programs, and projects (Muller et al., 2017). As of July 2022, departmental (sub-national) level climate change adaptation plans – the result of 150 workshops and consultation processes involving nearly 10,000 people – were also made public by MARN and the Secretariat of Planning and Programming of the Presidency (SEGEPLAN). These departmental plans are designed to transpose the guidelines contained in the National Development Priorities, the National Climate Change Action Plan, and the General Government Policy (2020-2024) to the social, economic, cultural, and environmental circumstances of each department.

Finally, at the regional level, the main multi-stakeholder organisation operating across Central America that possesses a climate change-related mandate, and within which Guatemala is considered a member state, is the Central American Integration System (SICA). Formed in the early 1990s as a consequence of the Tegucigalpa Protocol - which outlined a concept of regional integration along political, socio-cultural, economic, and environmental dimensions

- SICA is a body whose operations are constructed around five key pillars. These pillars are democratic security, social integration, economic integration, the strengthening of regional institutions, and climate change and comprehensive risk management. With regards to this final pillar, significant advances have been made in the coordination and regionalisation of projects through efforts led by the Central American Commission for Environment and Development (CCAD) and the Coordination Centre for the Prevention of Disasters in Central America and the Dominican Republic (CEPREDENAC), a specialised institution located within SICA. A variety of projects and programmes have been executed in partnership with national level stakeholders under the auspices of this pillar, ranging from the sustainable use of firewood and REDD+ activities to integrated marine ecosystem management and disaster risk reduction efforts. The majority of these policies are anchored within SICA's Regional Environmental Framework Strategy (2015), the Central American Sustainable Energy Strategy (2020), and the Central American Policy on Comprehensive Risk Management (2017).

The Central American Agricultural Council (CAC) is the body within SICA responsible for proposing and executing regional actions, projects, and programs in the agricultural, forestry, and fisheries sectors. It is integrated by the Ministers Responsible for Agriculture of the different SICA member states. CAC is responsible for the technical execution of the Agricultural Policy of the SICA region (2019 – 2030). Recently, CCAD and CAC have been pushing for a stronger cooperation between the Ministries of Agriculture and Environment of the SICA countries as well as between CAC and CCAD in the context of the initiative "AFOLU 2040: Building Resilience in the SICA Region under a Synergistic Approach between Mitigation and Adaptation focusing on Agriculture, Forestry and Other Land Uses (AFOLU)". AFOLU is currently the most prominent scheme within SICA to push for a stronger integration between the agriculture and the environment sectors.

Multi-level Peace and Security Governance Architecture

Conflict Legacy and Current Conflict Dynamics in Guatemala

Understanding contemporary dynamics of conflict and peace within Guatemala – as well as the structures and actors that are active in either sustaining or mitigating these dynamics – requires adopting a longitudinal perspective to assessing the evolution of the Guatemalan state and society. Most notably, modern Guatemalan society and its political economy are arguably still imprinted with the experience of the Guatemalan civil war, a conflict which took place with inconsistent intensity from the 1960s until the beginning of the 1990s. Throughout its 36-year duration, this conflict was characterised by oscillating periods of non-conventional, guerrilla-style warfare conducted by a set of (primarily) leftist guerrilla groups against a succession of military juntas. These clashes were offset by periods of intense state-directed violence against leftist opposition groups, guerrilla factions, as well as the core polities amongst which these groups found support – particularly the urban and rural poor, as well as

indigenous Mayan communities (Álvarez A., Tischler Visquerra and FLACSO, 2012; Molden, 2015; Uppsala University, 2023).

Throughout the conflict, the widespread deployment of para-statal military groups to control political opposition and inflict tremendous violence on predominantly civilians is well documented, with post-conflict investigations finding that state forces and related paramilitary groups were responsible for 92% of arbitrary executions and 91% of forced disappearances. The intensity of such violence increased particularly after 1980, when the Guatemalan army instituted 'Operation Sophia' in an effort to systematically dismantle insurgent guerrilla warfare by destroying the civilian base in which armed groups tended to hide. Over the course of the next 3 years, the indigenous Mayan population was subjected to a genocide in which an estimated 200,000 were killed, 40,000 disappeared, and an additional 1.5 million were displaced (Alvarez, 2020).

In 1996, following several years of United Nations (UN)-moderated peace talks between the Government of Guatemala and representatives from the *Unidad Revolucionaria Nacional Guatemalteca* (URNG), both parties signed the Agreement on a Firm and Lasting Peace. Aside from a cessation of violence, the Peace Accords also sought to initiate a process of national reconciliation and democratisation in order to enshrine a new political order and help Guatemalan society transition away from autocratic rule. Both parties, for instance, agreed on the establishment of the Commission of Historical Clarification (CEH) to explain and clarify the roots and course of the conflict and provide a common basis of understanding from which further reconciliation and restorative justice could be pursued. The work of the commissions was supported by many of Guatemala's civil society organisations, the private sector and the media, members of the international community such as the UN, the European Union (EU), several international non-government organisations, as well as bilateral actors such as the governments of the United States, Canada, and several European states (Eckhardt, 2005). Furthermore, the 1996 National Reconciliation Law mandated the government to provide reparations for victims, help the families of victims of disappearance identify their missing loved ones, and assist through the pursuit of justice (Washington Office on Latin America, 2021).

More than 25 years after the end of the conflict, however, the successful delivery and distribution of widespread peace dividends has been limited. Guatemala's status as an upper middle-income country has not, for instance, translated into a significant reduction of the acute poverty and inequality that already characterised Guatemala prior to and throughout the conflict. As of 2014, Guatemala had a Gini coefficient of 48.3, ranking amongst the highest rates of inequality in the world (World Bank, 2014). Limited purchasing power, combined with a continued lack of economic diversification away from primary sectors such as (subsistence) agriculture and the evolving impacts of climate change have also contributed to widespread food and nutritional insecurity, particularly amongst indigenous communities. Guatemala has the fourth highest level of chronic malnutrition in the world and the highest in Latin America and the Caribbean, whilst 50% of Guatemalan children younger than 5 years of age are

stunted due to chronic malnutrition (USAID, 2020). A total of 59.3% of the country's population experience poverty, a rate that reaches 79% when looking specifically at indigenous communities. Additionally, partially as a consequence of limited government revenues and investment in the provision of public goods, educational and healthcare outcomes are amongst the lowest in the region, particularly for marginalised indigenous communities (Ippolito *et al.*, 2017; Porter, Alex *et al.*, 2019). These socioeconomic vulnerabilities also affect women in particular since high levels of gender inequality jeopardize women's access to land, financial services, inputs and employment opportunities (Howland *et al.*, 2021).

Alongside stagnating human development, efforts towards creating a more peaceful, inclusive, and tolerant society have similarly been limited and faced many obstacles over the years. As of 2022, Guatemala ranks 121 on the Positive Peace Index (PPI), declining 10 places since the previous year (Institute for Economics and Peace, 2022), whilst also continuing to be plagued by insecurity. Instability is primarily driven by the widespread presence of illicit criminal networks engaged in cross-border drug and people trafficking, kidnapping and extortion, as well as gang violence, causing Guatemala to be ranked 23rd on the Global Organised Crime Index (ENACT Programme, 2021). The pursuit of transitional justice for households and families affected by the conflict has also been hampered by systematic elite efforts to undermine the rule of law and judicial independence, particularly by infringing upon the independence of the Human Rights Ombudsman and the persistent pursual of legislation designed to dismantle anti-impunity efforts and grant amnesty for past war crimes (Washington Office on Latin America, 2021).

Socio-environmental conflicts between the local communities and extractive industries connected to transnational corporations are also an important source of instability in the country. These conflicts are often linked to the access and use of natural resources - mainly land and water – but also including those related to cash crops such as sugar cane and African palm tree (such as in Polochich), mining (El Estor), as well as the construction of hydroelectric plants (Northern Transversal Strip highway) (Aniorte and Garcia, 2009; López, *et al.*, 2021). There is also evidence of inter- and intra-community conflict in Sololá between Santa Catarina Ixtahuacán and Nahualá municipalities as well as in San Marcos between the municipalities of Tajomulco and Ixchiguán (Tejiendo Paz, 2020; Garcia, 2022). Because they are concentrated in areas with unequal distribution of power and resources and that were severely impacted by the civil war, these conflicts—while not directly connected—are seen as continuations of the social and economic injustices of the previous armed conflict (López *et al.*, 2021).

To understand exactly how and why human development remains stunted whilst pervasive insecurity and instability persist within Guatemala, it is essential to recognise the degree of continuity between the conflict- and post-conflict period. Moreover, it is crucial to assess the particular structures and functionalities of power that are embedded within not only Guatemalan but also other state formation processes across Central and Latin America. At a

structural level, the Peace Accords and attendant processes of democratisation failed to undo historically exclusionary and often violent processes of state formation and maintenance rooted in the political and economic exploitation of indigenous peoples. Over time, the social, political, and economic model of the colonial state building process cemented the privileged position of a comparatively small yet powerful (Spanish) elite, whom in turn used their privileged access to the levers of power to promote private commercial interests (Alvarez, 2020). This longstanding feature of institutional development in Central and Latin America in turn precluded the development of independent and public-facing institutions in favour of opaque, informal, and often patrimonial networks of power within and underlying formal state structures (Eckhardt, 2005).

The concentration of political and economic capital in the hands of a minority of elites – alongside the development of an exploitative economic model based on agro-export production – continued to feature heavily even following various processes of independence in the early- and mid-nineteenth century. As a consequence, Cruz (2016) argues that modern Central American states consolidated in line with the needs of economic elites to control the peasant population and access cheap land and labour, leading to a qualitatively different state formation process than what occurred in Europe. Some theorists have argued, for example, that European state formulation largely played out as efforts to centralise for the purposes of external war-making and bargaining with their own citizens for the purposes of taxation arrangements to support these endeavours (Tilly, 1985). State-building in Central and Latin American countries was conversely characterised by a much greater degree of centre-periphery contestation, in which relations with elites in the centre were mediated often through local powerbrokers (*caudillos*). Countries such as Guatemala therefore witnessed the creation of coercive institutions better suited to controlling internal populations than to waging war against other states (Centeno, 2015), whilst also experiencing the at times paradoxical co-development of both highly centralised and highly decentralised networks of power. Local landowners, for example, retained armed men to force peasants to collaborate in their economic or political projects and bargained with the centralised, coercive institutions of the state as opposed to citizens and subjects, therefore integrating citizens into society not as individuals, but as members of patron-client networks attached to local landowners, political bosses, and military commanders (Cruz, 2016).

State reliance upon informal networks of power and client-patron hierarchies to operationalise mechanisms of control and repression is therefore a practice long embedded within Central American socio-economic and political relationships. Post-conflict efforts at re-constituting the Guatemalan state and society in the modern age have arguably equally fallen prey to this institutional path dependency, with many traditional elites adapting to new political and economic circumstances (such as globalisation and the implementation of neoliberal structural adjustment programs) whilst also maintaining the linkages between formal coercive state institutions and the informal networks of actors around them (Cruz, 2016). Ostensible steps taken towards ensuring transparent electoral processes therefore

failed to undo the cross-scalar logics of power and reproduction of violence embedded within the structure of the Guatemalan state, with the connections between violence specialists, informal armed groups, and state institutions built on alliances established by state elites, party leaderships, and local power brokers surviving (Pearce, 2018).

Pearce (2018) argues that this continued instability and insecurity within Central and Latin American states reflects the nature of the kind of state through which elites – in particular oligarchic elites defined by wealth rather than power and status alone – believe best protects and promotes their interests. This set of circumstances is denoted as a ‘fragmented security state’, a permeable arrangement in which security services offer fractured and selective security determined by partial interests. In the case of Central and Latin America, this not only includes the prioritisation of guaranteed property rights and commercial transactions over criminal and civil law and rights, but the creation of a particular socio-political and economic ecosystem in which both formal and informal actors, oligarchic and criminal elites, work in mutually advantageous - if fractured – symbiosis (Pearce, 2018). Whilst the notion of elite capture is frequently used to explain how statehood remains contested within Guatemala – a concept first applied to transition economies in Russia and Eastern Europe – Salamanca and Albarán (2015) argue that this concept does not truly capture how in Guatemala and other contexts across the continent, illegal armed groups, drug traffickers, and coercion rather than exclusively bribery and corruption have penetrated the state. They instead emphasise the notion of ‘co-opted state reconfiguration’ to conceptual contexts where both lawful and unlawful groups participate; where the benefits are not strictly economic but also judicial, political, and social; and where coercive methods and/or political alliances complement or displace bribery in different branches of public power.

Multi-level Peace and Security Governance

Given this complex political economic ecosystem in which vested powers hold a disproportionate sway over institutional development, it may not come as a surprise that the Guatemalan peace institutions established in the aftermath of the Peace Accords have become steadily eroded over the course of the last two decades. In the aftermath of the Peace Accords, four main institutions were established to act as tools for confronting and overcoming a variety of structural causes of the conflict and the subjugation of the vast majority of the indigenous population, namely, the Secretariat for Peace (SEPAZ), the National Reparations Program (PNR), the Secretariat for Agrarian Affairs (SAA), and the Presidential Commission for the Coordination of the Executive’s Human Rights Policy (COPREDEH). Additionally, in 2007, the International Commission against Impunity in Guatemala (CICIG) was also formed. The first of these, SEPAZ, was created in 1997 with the objective of ensuring that government agencies and projects were in line with the fulfilments of its commitments outlined in the Peace Accords, coordination and providing technical support for national and

sub-national state and non-state actors in fulfilling their obligations under the Accords. It also formed the overarching institutional structure within which the PNR and SAA were housed.

The PNR's primary mandate was, in turn, related to documenting and repairing the damages caused to the victims of human rights violations during Guatemala's civil war, whilst the SAA was created in response to the Peace Accords' recognition of how the resolution of the agrarian problem is fundamental in responding to root causes of rural underdevelopment (especially referencing the intense inequality of land ownership). The Accords committed the Guatemalan state to addressing the structural causes of these inequalities through, for instance, the broader participation of the campesino and indigenous populations in decision-making processes and civil life; improved access to land and resources; increased access to commercial facilities, information, technology, training, and credit; and a reformed legal framework for agriculture that countered dispossession and social vulnerabilities suffered by indigenous communities in particular (Peace Brigades International, 2021). COPREDEH's mandate and functioned centred around efforts to coordinate the actions of the ministries and institutions of the executive branch, providing for the effective enforcement and protection of human rights, and guaranteeing communication and cooperation with the Judicial Branch and the Human Rights Ombudsman's office (Peace Brigades International, 2021). Finally, CICIG's mandate is primarily centred around the provision of technical assistance to revamp and reform Guatemala's justice system and the prosecution of corruption cases.

As noted previously, however, the independence and very existence of these various institutions dedicated to rectifying some of the structural injustices within Guatemalan socio-economic relations has been under significant threat. In fact, in July of 2020, the administration of President Giammattei – without any consultation with relevant civil society organisations – declared the closure of COPREDEH, SEPAZ, and the SAA. This decision follows the previous Morales administration's successful efforts to shutter the CICIG in 2019. The mandate of these institutions is supposedly now housed within the newly created Presidential Commission for Peace and Human Rights (COPADEH), yet one year on, substantial confusion remains around this body's function and the extent to which it will be given the resources to fulfil these various mandates (Peace Brigades International, 2021). The body was, for instance, not allocated any funding in the 2021 budget proposal and has since its inception become something of a ghost institution (Washington Office for Latin America, 2021).

The closure of the SAA in particular has left a huge vacuum, as the body was heavily involved in the handling of cases to obtain legal certainty over historical property rights and in the resolution of land conflicts through, for instance, the facilitation of roundtable dialogues involving campesino organisations, communities, farmers, agricultural companies, the Human Rights Ombudsman's Office, the state, and local and agrarian institutions (Peace Brigades International, 2021). Exactly where these mandates will be housed in the future remains unclear. Similar concerns have arisen amongst civil society and community-based organisations around the future of the PNR, which has been housed in and will now be

administered by the Ministry of Social Development (MIDES). According to the victims' collectives, this distorts the concept of the reparations and their focus on a firm and lasting peace by threatening its independence from the agenda of the government of the day. Equally worrisome is the future of the PNR's archives, which contain over 85,000 testimonies of human rights abuse suffered during the conflict (Peace Brigades International, 2021). The future of institutional efforts to promote a sustainable peace and dismantle structural barriers to human development within Guatemala is therefore, for the moment, bleak.

Regarding formal security institutions, the National Security Council forms the highest ranking body with a security-related mandate. It is integrated by a series of ministries and government entities, including mainly the Presidency of the Republic, the Ministry of Foreign Affairs, the Ministry of the Interior, and the Ministry of National Defence. It is supported by the Technical Secretariat of the National Security Council, whose functions include the formulation of the National Security Policy; following upon those policies, plans, and directives determined and actioned by the National Security Council; maintain active communication mechanisms between members of the National Security System; and provide logistical and administrative support to the Advisory and Planning Commission (Technical Secretariat of the National Security Council, 2023). The aim of the National Security Policy is to strengthen state institutions and guarantee those actions of a preventive or reactive nature that the State must adopt to guarantee the achievement of national interests in the face of any threat, aggression or situation that by its nature represents a risk to the security of the inhabitants or the state.

The National Security Council is responsible, firstly, for defining and approving the Strategic Security Agenda, a mechanism in which the Guatemalan State establishes areas of thematic relevance and priority with regards to security, as well as defines and prioritises the instruments of a preventive or reactive nature to guarantee the security of the Nation. The Council is, secondly, responsible for drafting the Strategic Plan for National Security that determines actions to be carried out by the institutions that make up the National Security System. Thirdly, the Council oversees the design and implementation of the National Security Policy, which established a set of guidelines that define the courses of action designed to prevent and counteract risks and threats to the conditions of vulnerability of society and its institutions. Its purpose is to guarantee those actions of a preventive or reactive nature that the State must adopt to guarantee the achievement of national interests in the face of any threat, aggression or situation that, due to its nature, represents a risk to the security of the inhabitants or the Guatemalan state.

Finally, the Ministry of Interior has the mission to execute judicial orders and resolutions, administer the penitentiary system, manage and regulate the security forces and fulfil the functions of governance assigned by law, we exercise the leadership of policies related to the maintenance of peace, public order and internal security for the benefit of the population (Ministry of Interior, 2020). It is composed of five vice-ministries and a series of thematic sub-entities that cover its different functions, including the Special anti-narcotics unit, the Unit of

the new prison management model, and the Unit for Community Violence Prevention, among others (Ministry of Interior, 2020).

Methodology

This research conducts an analysis of policy coherence and awareness of the climate, peace, and security intersection (PCAA) among regional, national, and sub-national policy documents issued by Guatemala. Policy coherence, as explained by Nilsson *et al.* (2012), refers to the alignment and consistency of policy objectives, instruments, and implementation strategies across multiple levels of governance, as well as across various sectors and domains. For the scope of this study, coherence is conceptualized as a measure of thematic engagement, the presence of cogent policy instruments and objectives related to implementation, and multi-level integration. Thematic engagement measures the extent to which documents address and display awareness of relevant topics, issues, and solutions pertaining to climate change, peace, and security. The presence of cogent policy instruments and objectives assesses the level of operability of policies, as well as the extent to which thematic engagement with the climate, peace, and security nexus is transposed into specific implementation measures. Lastly, multi-level integration evaluates the consistency and alignment of policies within the same level or across different levels of governance, thereby capturing both horizontal and vertical integration. Through the investigation of these three aspects, this study provides an in-depth assessment of coherence levels in Guatemala's policies for addressing the interconnected issues of climate change and security.

The dataset compiled for this study included 81 policy documents in the Spanish language. The documents include policies and strategies originating from a range of pre-determined sectors deemed of relevance for the prevention and mitigation of climate-related security risks in the context of Guatemala and the Central American region, as well as for the effective integration of climate action with conflict prevention, transformation, and peacebuilding. Specifically, the sectors that fell within the scope of the analysis include climate and environment, disaster risk reduction (DRR), agriculture, food security, development, gender, humanitarian response, and peace and security. The temporal inclusion boundary for the dataset was set at 2008. No documents published before this year were assessed as part of the study. 2008 was selected as Guatemala published its first National Climate Change Policy in 2009 – a major legislative milestone with regards to climate policy. The policy was preceded in 2008 by the Plan of Hope, one of two long-term development frameworks included in the analysis that were designed to help transform post-war Guatemalan society into a more equitable, inclusive, and tolerant space. Alongside the fact that the climate, peace, and security agenda began its ascension to global relevance only in the mid-2000s, and that its presence in regional, national, and sub-national policies cannot reasonably be expected before this point, our desire to include these two policy documents determined the temporal scope be set at 2008 to the present day.

The documents were downloaded manually from publicly available repositories and institutional websites. The first publicly available repository that was utilised for this purpose was the *New Climate Institute's Climate Policy Database*, a global repository containing around 6000 policy and strategy documents relating primarily to adaptation and mitigation. Secondly, the study accessed documents from the *United Nations Food and Agricultural Organisation's (FAO) FAOLEX database*, a collection of national legislation, policies, and bilateral agreements on food, agriculture, and natural resources management that is continually updated to include new legislation. A third repository that provided relevant documents for the study is the *United Nations Framework Convention on Climate Change's Public Repository*, which was used for the identification of global reporting requirements and communications, including National Adaptation Plans (NAPs) and National Adaptation Plans/Programmes of Action (NAPAs), (Intended) Nationally Determined Contributions (INDCs/NDCs), and national communications. For other sector specific documents, public libraries were accessed on relevant Guatemalan ministerial and national agency websites. After the data collection, all the documents were converted into a homogenous digital format and pre-processed using Python to remove artifacts produced by the conversion (Scartozzi, 2023). Scanned PDFs were instead converted using Adobe's Acrobat optical character recognition tool.

The parsed textual data was analysed via CtrlFindr, an open-access toolkit for natural language processing and automated content analysis (Scartozzi, 2023b). CtrlFindr works by tokenizing documents into lists of sentences that are evaluated using a pre-compiled assessment framework. The assessment framework allows researchers to outline a list of variables and proxies with associated search strings and taxonomy. Variables indicate topics or constructs that are related to the research questions of the study, while proxies designate narrow-scope constructs that serve to quantify and measure the variables. Each proxy is in turn associated with a search string, which consists of a set of instructions for CtrlFindr on how to search content and use the taxonomy. The search functions that can be used in CtrlFindr include looking at the presence of specific words, n-grams, or co-occurring words within sentences. Using CtrlFindr is also possible to exclude specific words from searches or filter documents that meet specific requirements.

To ensure that the search strings are effective, it is key that the taxonomy is accurate and comprehensive. The taxonomy consists of a set of categories or topics, arranged in a hierarchical structure, with associated keywords or phrases that are indicative of the content they represent. In this study, the taxonomy was compiled using a mixed inductive and deductive approach that sought to maximize construct validity. The researchers initially compiled a list of words for each proxy in the assessment framework, which was then expanded using a W2V Model Explorer, an open-source software that can be used to train and explore Word2Vec (W2V) models (Scartozzi, 2023). W2V is an unsupervised machine learning method that examines word relationships in a corpus, enabling the identification of semantic similarities. In other words, it makes it possible to find terms and synonymous

inductively based on the language that is used in the documents that are analysed. The neural network used in this research trained on a dataset containing approximately 1.7 million words, resulting in highly accurate and robust findings. The final taxonomy consisted of 41 categories of topics and 1326 keywords/n-grams.

Overall, the taxonomy and the assessment framework were used to assess the policy documents based on 12 variables and 45 proxies. These variables reflect thematic engagement with 1) environment, 2) climate change, 3) environment and security, 4) climate and security, 5) climate security and marginalized groups, 6) climate, migration and security. They also measure the presence and degree of 7) policy integration, 8) climate policy instruments, 9) cross-sectoral processes, 10) climate security objectives, 10) climate assessments and measures, and 12) climate sensitive assessments and measures.¹ Ultimately, the analysis offers a comprehensive assessment of coherence levels in Guatemala's policies for tackling the intertwined challenges of climate change and security. However, it is essential to note that the methodology employed in this study has its limitations and requires a careful reading of selected documents, which can be guided by the findings, to provide contextual understanding.

Results

In order to facilitate an easier interpretation of the results of our in-text content analysis, the results are disaggregated and visually represented in several different ways. Firstly, frequency of engagement with particular topics are translated as a percentage of *document engagement* (the percentage of documents which contained at least one reference to the variables in question) and *sentence engagement* (percentage of sentences within all documents which contained in-text references to the variables in question), disaggregated across the sectors that were subjected to analysis (figure 1). This same categorisation is similarly disaggregated across scales of governance, ranging from the sub-national to the regional level (figure 2). Classifying our results in this manner provides not only an indication of the extent of engagement at the document level, but – by delving deeper to the sentence level - also provides a proxy for the importance and weight these topics are afforded within documents. According to this logic, the higher the percentage of sentences within which specific keywords or keyword combinations relating to a particular variable is, the greater its importance (and vice versa). Representing our results in this way allows for trends, patterns, and gaps to be identified across the three dimensions of interest outlined in the methodological section (thematic engagement, implementation, and multi-level integration). Several key lessons with regards to the extent and nature of engagement with the climate, peace, and security nexus can be derived as a consequence.

¹ See Annex 1 for a full overview of the policy coherence and awareness analysis assessment framework.

Thematic Engagement

Engagement with the Natural Environment and Climate Change

Firstly, it is apparent that in-text engagement with variables relating to the natural environment is almost ubiquitous across the sectors subjected to analysis (variable 1) (figure 1). Only the peace and security sector contained documents that did not reference environmental keywords at least once (89%). At the sentence level, documents originating from the agricultural and climate and environment sectors demonstrated the highest depth of engagement with the natural environment, with 24.4% and 25.5% of sentences in documents that fulfilled the variable category containing references to environmental variables, respectively. Peace and security-related policy and strategy documents demonstrated the lowest frequency of in-text engagement, with 1.2% of sentences referring to environmental issues. Notable, however, is that this level of engagement with the natural environment does not extend to in-text references to climate change-related keywords (variable 2). With the exception of documents related to the agricultural sector, the number of documents in each sector that references climate change- versus environment-related keywords drops by at least 50%, a trend that is broadly mirrored by a similar drop in engagement at the sentence level (figure 1). Particularly significant is the fact that engagement with climate change appears to be entirely absent in policy documents relating to food security and gender.

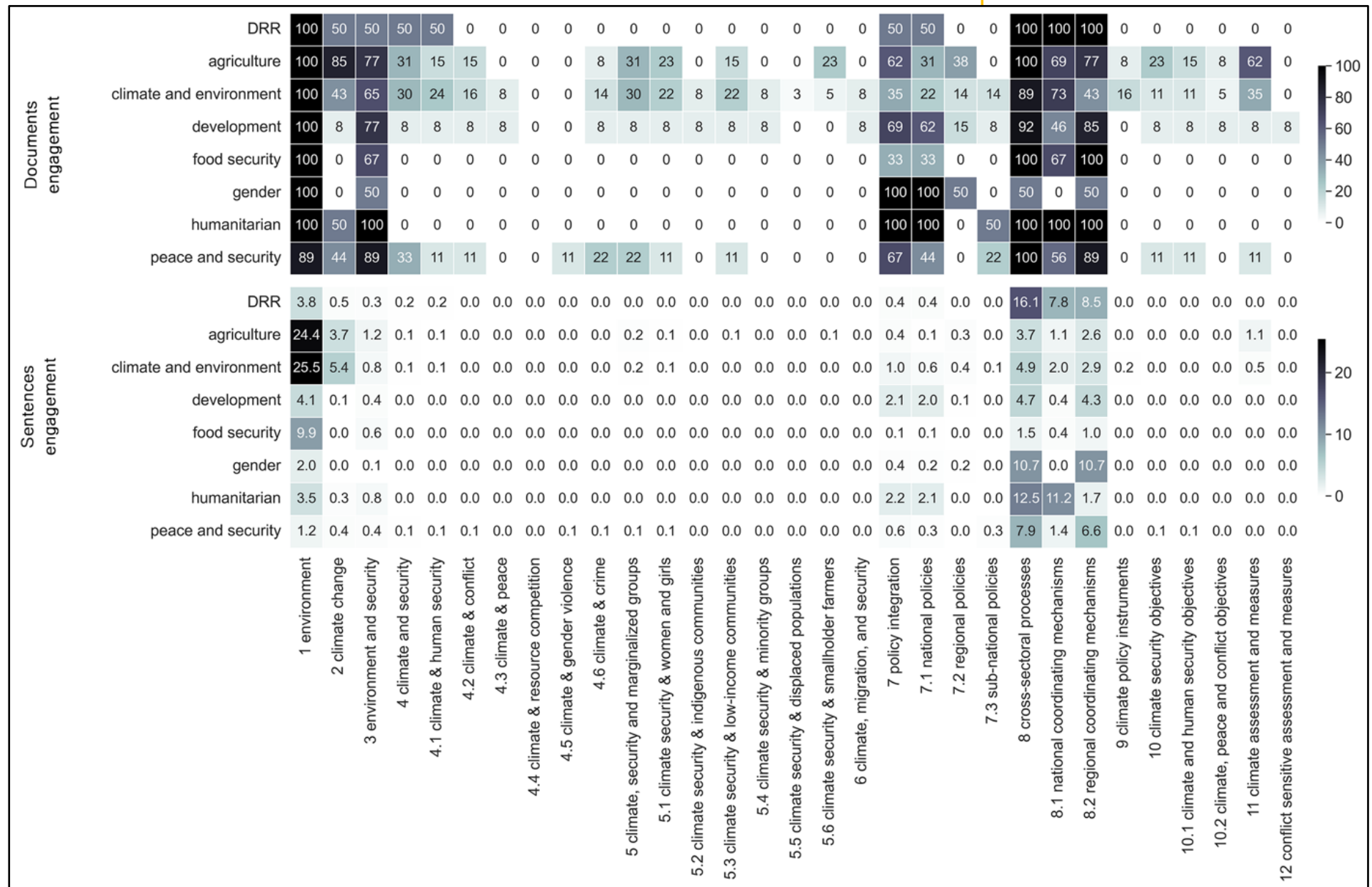


Figure 1. Textual analysis results (percentage) at document and sentence level, disaggregated by sector.

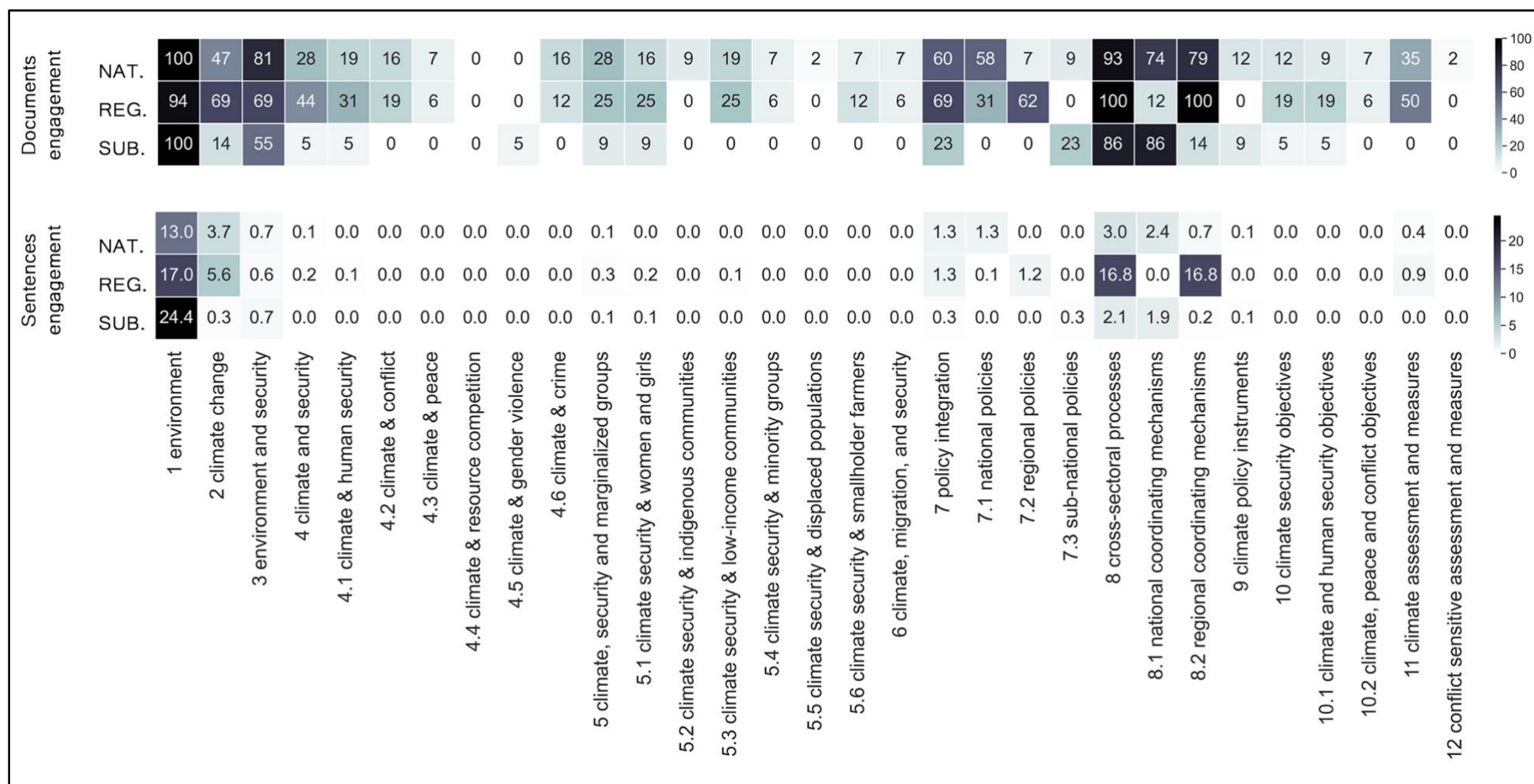


Figure 2. Textual analysis results (percentage) at document and sentence level, disaggregated by scale.

Engagement with the Relationship between the Natural Environment, Climate Change, and Peace and Security

A similar trend emerges for how the intersection of environment/climate, peace, and security is understood within the text of selected documents. The evidence of in-text engagement on the intersection of the natural environment and security (variable 3) is fairly substantial. Across all sectors included in the analysis, at least half of policy documents appear to engage with this intersection at least once (figure 1). At the sentence level, the agricultural sector appears to attribute the most weight to this intersection within its policy documents (1.2% of sentences), followed by the climate and environment and humanitarian sectors (0.8% of sentences each). Once again, however, recognition of how climate change impacts specifically may undermine security is much less pervasive (variable 4). Whilst half of all DRR policy documents engage with this intersection at least once, only around a third of policy documents originating from the agriculture, climate and environment, and peace and security sectors appear to draw on this conceptual linkage. Notable again here is the fact that policy documents relating to food security, gender, and humanitarian response entirely fail to engage with this intersection.

To further deepen our understanding of the nature with which policy documents that did engage with climate and security linkages conceive of this intersection, the analytical framework deployed as part of this work draws a theoretical distinction between climate change, human security, and (violent) conflict. This is based on the notion that in order to avoid succumbing to an overly deterministic or teleological narrative around the relationship between climate change and violent conflict, it is imperative to recognise that not all climate change impacts intrinsically result in an increased risk of conflict. The extent to which a given context and the communities that inhabit it are (differentially) vulnerable and exposed to climate change impacts; the adaptive choice architecture communities and households have available to them; the degree to which said adaptive options and coping strategies are more cooperative or competitive in nature; as well as the cost-benefit calculations individuals, households, and communities undertake with respect to engaging in violence are all dependent on place-specific and historically contingent political economic formations (Le Billon and Duffy, 2018). As such, the ways through which climate change may increasingly undermine various dimensions of human security (such as livelihood security, food and nutritional security, and community security) are but one part of the equation. How affected communities and households respond to climate-induced insecurity – and how the surrounding environment conditions, incentivises, and renders profitable certain adaptive strategies over others – is an equally important causal mechanism that influences a potential increased risk of conflict (Barnett and Adger, 2007). As such, a distinction is made within the analytical framework used to assess in-text engagement and understanding between human security, conflict (across its various iterations and modalities), as well as peace.

Bearing this in mind, variable 4 – climate and security – is further disaggregated into a set of sub-variables that provide a better indication as to exactly how documents conceive of this

nexus (figure 1). Our results suggest, for instance, that the vast majority of in-text references to climate and security linkages do so through a human security lens (variable 4.1), tending to discuss the role that climate change impacts may play in undermining specific dimensions of human security. Common ways through which the relationship between climate change and human (in)security is discussed and framed include, for instance, by negatively affecting livelihoods (economic security), destroying harvests (food security), spreading diseases and plagues to new geographies (health insecurity), and by degrading natural resources and biodiversity (environmental security) (as put forward in Guatemala's Intended Nationally Determined Contributions). At the regional level, the Updated Climate Change Regional Strategy from SICA outlines a similar set of connections, highlighting for instance how tropical storms have caused floods that have caused losses of life, destroyed infrastructure, and curtailed livelihoods.

By contrast, explicit references to climate change's indirect bearing on conflict risk are rarer, with just agriculture- (15%), climate and environment- (16%), development (8%), and peace and security-related documents (11%) appearing to engage with this intersection at least once. This engagement appears, however, to be largely surface level as opposed to being substantially integrated, with less than 0.1% of sentences per sector's policy documents that fulfilled this variable category containing references to these variables. Importantly, the converse of the climate-conflict interface – the climate-peace intersection, which accounts for the various ways through which climate action can also provide an entry point for conflict prevention, social cohesion, and peacebuilding (Morales-Munoz et al., 2022) – is also virtually entirely absent, bar 4 exceptions from the climate and environment and development sectors (see Box 1) (variable 4.3). However, upon closer examination, these examples are not evidence of true engagement with the peace potential of climate action but are instead false positives in our results (for example constituting a list of the Sustainable Development Goals containing references to both SDG 13 on Climate Action as well as SDG 16 on Peace, Justice, and Strong Institutions).

Generally, however, policy and strategy documents from across all sectors subjected to analysis display no evidence of having conceptually mainstreamed considerations around the interactions, trade-offs, or complementarities between climate change, peace, and security. This particularly includes the intersection of climate change and natural resource competition (variable 4.4), which was not mentioned even once across all the policy documents subjected to analysis, as well as the relationship between climate change and gender-based violence (GBV) (variable 4.5). Much more apparent within the text – perhaps reflective of Guatemala's particular socio-economic, political, and security-related challenges – is the relationship between climate change and criminal activities (variable 4.6). The sectors that demonstrated evidence of engagement with this intersection include agriculture (8% of documents), development (8% of documents), climate and environment (14% of documents), and peace and security (22% of documents).

Variable 5 in our analytical framework was designed specifically to understand the extent to which policy and strategy documents conceive of the intersection between climate change and security in relation to the specific differential vulnerabilities and exposures experienced by particular social and demographic groups. Around one third of agriculture- and climate and environment-related and just over a fifth of peace and security-related policy documents contained at least one sentence that referenced one of the particular social groupings included in our keyword taxonomy, mainly related to women and girls (variable 5.1), low-income communities (variable 5.3), and smallholder farmers (variable 5.6). Less frequently recognised as being at risk of climate-related security implications are indigenous communities, ethnic minorities, and displaced populations, with only a small percentage of climate and environment- and development-related policy documents engaging with this intersection. Furthermore, whilst women and girls are amongst the groups most frequently discussed in relation to their specific and differential vulnerabilities and exposure to climate change impacts, it is notable that references to the intersection of climate change and its indirect impacts on GBV remain – as stated earlier – almost entirely absent.

The above trends – described at aggregate level across all scales of governance and policymaking – can be further unpacked when policy documents are examined disaggregated across their regional, national, and sub-national origin. The most significant scalar trend that emerges based on our results is that sub-national policy documents are – for the majority of variables – much less likely to display in-text evidence of thematic engagement with the climate, peace, and security nexus. The tendency to have a greater in-text focus on the natural environment as opposed to climate change and its attendant impacts is, for example, consistent across all scales. This trend is even more pronounced at the sub-national level, with only 14% of sub-national level policy documents referencing climate change (variable 2) (figure 2). Similarly, whereas over half (55%) of sub-national policy documents draw a thematic link between the natural environment and human security (variable 3.1), only 5% contain in-text references to the relationship between the natural environment, conflict, and peace (variables 3.2 and 3.3).

Sub-national policy documents are generally also less likely than national and regional policy documents to identify the specific differential vulnerabilities and exposures experienced by particular social and demographic groups in relation to climate-related security risks, with only 9% of sub-national documents referencing women and girls in relation to climate change impacts (variable 5.1). The specific policy documents that account for these percentages are the Municipal Policy for Violence and Crime Prevention Santa Cruz Verapaz (2017-2021) – a municipality located in the Alta Verapaz department and where climate-related security risks are indeed present (Hatting and Long, 2018) - and the Local Climate Change Adaptation Plan (LCCAP) of the San Marcos department, where climate vulnerabilities and violence (mainly related to drug trafficking) intersect.

Implementation

Whereas the first collection of the variables contained in our analytical framework focus predominantly on thematic engagement, the second set of variables concerns the evaluation of cogent policy instruments and objectives. We thereby seek to assess the level of operability a policy possesses and the extent to which references to climate, peace, and security in problem definitions and context/baseline assessments are transposed into implementation measures. This evaluation is conducted across variables relating to the presence of climate policy instruments (variable 9), climate security objectives (variable 10), climate assessments and measures (variable 11), and conflict-sensitive assessments and measures (variable 12).

Climate Policy Instruments

Regarding variable 9, climate policy instruments are here defined as the various policy mechanisms whereby which national and international climate change objectives and targets relating to mitigation and adaptation are transposed into specific sub-national and local policy processes. Examples of this include the creation of specific department-level LCCAPs, the mandated mainstreaming of climate change considerations into local land use and development planning, the mainstreaming of climate change considerations into budget processes (e.g., green expenditure tagging), and the creation of specific financial mechanisms through which local adaptation and mitigation activities are funded. The extent to which the climate policy instruments present in Guatemala appear to involve multiple sectors relevant to the intersection of climate, peace, and security appears minimal. Whilst 16% of climate and environment- and 8% of agriculture-related policy documents referenced at least one climate policy instrument, no other sector's policies were recorded as having in-text references to said instruments (figure 1). This may suggest that although agricultural considerations around adaptation and mitigation are more likely to be accounted for, other key topics such as DRR, gender, food security, and peace and security are not systematically integrated into important climate policy instruments such as the recently completed LCCAPs.

Climate Security Objectives

Aside from evaluating the integration of other sectoral actors and considerations into climate policy instruments and implementation processes, our assessment framework also evaluates the presence of what are termed climate security objectives (variable 10). This variable accounts for in-text objective setting that simultaneously considers objectives related to climate resilience as well as peace and security and is – similarly to previous conceptualisations of climate security in the thematic engagement section – disaggregated into objectives relating to climate and human security (variable 10.1) and objectives relating to climate and conventional security (i.e., explicit peace and conflict objectives) (variables 10.2). Firstly, the majority of policy documents and sectors did not include any joint reference

in their objective setting to climate change and security, whether it be human security or more conventional security implications (figure 1). The policy documents that did include examples of integrated objective setting originated from the agriculture, climate and environment, development, and peace and security sectors. From these examples, the vast majority were recorded as including a reference to building climate resilience and simultaneously mitigating or reducing a human security-related risk, such as livelihood or food and nutritional insecurity. There were some examples of where objectives were initially found to be positioned in relation to explicit references to peace, conflict, and security (variable 10.2), but upon closer examination, these were found to be false positives that did not display true evidence of engagement with this nexus.

Deployment of Assessments and Measures

The final variable in our assessment framework related to implementation concerns the in-text presence of climate assessments and measures (variable 11) and conflict-sensitive assessments and measures (variable 12). Examples of the former include climate vulnerability assessments, climate monitoring and early warning, and climate change adaptation planning, whilst examples of the latter include conflict analyses and conflict mapping exercises. These variables are of interest as they act as a proxy for the extent to which policymakers and those involved in the policy design and implementation processes appear to make use of the technical tools and approaches required to ensure climate action is conflict-sensitive and interventions relating to peace, social cohesion, and security are climate-sensitive. With regards to variable 11, the majority of examples of the deployment of climate assessments and measures can be found in policy documents produced in the agricultural sector (62% of documents) and the climate and environment sector (35% of documents), followed by development-related policy documents (8% of documents) and peace and security-related policy documents (11% of documents). The specific instance in which climate assessments and measures were deployed within a peace and security-related document can be found in Guatemala's National Security Policy (2020). By contrast, the deployment of assessments and measures related to conflict-sensitivity and peace responsiveness is far more limited and deficient. Only a single policy document related to development was recorded as including any form of such analyses, specifically, the deployment of National Development Plan K'atun (2014).

The above trends can again be further unpacked when policy documents are examined disaggregated across the scale of governance they were produced at. For instance, it is apparent all in-text references to climate policy instruments were made in policy documents produced at the national and sub-national level (variable 9) (figure 2). This result is not particularly surprising, given how the climate policy instruments in question relate specifically to the national institutional context of Guatemala. More notable, however, is the fact that only 5% of sub-national policy documents included evidence of climate security-related

objective setting (variable 10), and that all climate security objectives that made an explicit reference to climate resilience and peace, conflict, and security were produced at the national and regional scales (variable 10.2). This suggests that – although there appears to be an overall shortcoming with regards to integrated, climate security-sensitive objective setting – the potential co-benefits of climate action for peacebuilding have not been realised at a sub-national or local level.

Multi-level Integration

Our third and final dimension of interest for assessing coherence and awareness comes in the form of detecting linkages and coordination between and across different sectors and scales. The variables of particular interest in this regard are policy integration (variable 7), sub-divided into references to national policies (variable 7.1), references to regional policies (variable 7.2), and references to sub-national policies (variable 7.3); and the presence of cross-sectoral processes and coordinating mechanisms (variable 8), sub-divided into national (variable 8.1) and regional coordination mechanisms (variable 8.2).

At the aggregate level of policy integration (i.e., policy documents that make references to policies produced in other sectors across any unspecified level of governance) (variable 7), it is apparent that certain sectors display a higher degree of integration than others (figure 1). All policy documents extracted from the gender and humanitarian sectors contain at least one reference to another policy produced in a different sector. However, this may also be a consequence of the smaller dataset of documents that was extracted for these sectors. Over two thirds of peace and security- (67%), development- (69%), and agriculture-related policy documents (62%), half of DRR-related policy documents (50%), and around a third of climate and environment- (35%) and food security-related policy documents (33%) similarly fulfilled this variable.

Different sectors were equally inconsistent in the frequency with which they made reference to policy documents produced across different scales of governance. The only two sectors to make reference to policies produced in a different sector included in the analytical scope of this work at regional, national, and sub-national levels were climate and environment and development (figure 1). The majority of policy sectors in fact failed to make reference to any sub-national legislation, although both humanitarian- (50% of documents) and peace and security-related documents (22% of documents) did so. References to regional level policies were not ubiquitous but slightly more prevalent, with agriculture- (38% of documents), climate and environment- (14% of documents), development (15% of documents), and gender-related policy documents (50%) all referencing a regional policy or strategic framework at least once.

Beyond this, by disaggregating results across the scale at which a given policy document was produced at, our results also give a sense of the extent to which horizontal and vertical

integration is present within the policy documents subjected to analysis. For example, 58% of national policy documents displayed evidence of horizontal integration (variable 7.1), whilst only 7% and 9% of national policies displayed vertical integration with regional and sub-national policies respectively (figure 2). At the regional level (variable 7.2), 31% of policies displayed vertical integration with national policies, whilst 62% displayed evidence of horizontal integration with other policy documents produced at the regional scale. No regional policies displayed any interaction with sub-national level policies. Finally, at the sub-national level (variable 7.3), 9% of sub-national policy documents displayed vertical integration with national level policies, whilst 23% displayed horizontal integration with other policy documents produced at the sub-national level (almost exclusively other sub-national climate and environment-related policies) (figure 2). The notable lack of integration between sub-national and national-level policies in particular perhaps serves to further substantiate the suggestion made in the previous section regarding the fact that climate policy instruments serving to transpose national level objectives into sub-national realities are not particularly inclusive other sectoral policies or actors, as the majority of sub-national level policy documents subjected to analysis were LCCAPs.

Discussion

Several in-text trends and patterns with regards to the extent and nature of policy engagement and awareness of the climate, peace, and security intersection that emerge from the previous discussion of results warrant categorising as particularly important. These main points – which will also form the basis of the recommendations below - will be identified in this section.

Firstly, although there is to a fairly strong degree an in-text recognition of the relationship between the natural environment and human security, conceptual and thematic engagement with the intersection of specifically climate change and human security is much less prevalent in the policy documents included in our analysis. At least one policy document from each sector subjected to analysis (and in most sectoral contexts, more than one) was for instance recorded as making reference to the former. In-text references to the relationship between climate change and human security, however, were less frequent overall and tended to be concentrated in policy documents relating to DRR, agriculture, climate and environment, and peace and security. Particularly notable with regards to this is the fact that references to climate change and its related impacts in general were entirely absent from food security and gender strategies, whilst engagement with climate change's impact on human security in particular were absent from food security, gender, as well as humanitarian response strategies and policies. This represents a significant engagement gap on the part of these sectors.

Beyond human security, explicit in-text references to the potential intersection of climate change, conflict, and peace were moreover even more rare. Recorded references to this relationship were clustered in policies produced within the agriculture, climate and environment, development, and peace and security sectors, but in all sectoral contexts, less than 20% of documents analysed fulfilled this assessment variable. Analysis of engagement frequency at the sentence level furthermore suggests that instances where this intersection is recognised in policy text are few and far between, totalling no more than 0.1% of sentences. Even in the examples where potential linkages between climate change and conflict are recognised, systematic mainstreaming of this nexus has likely not been achieved. Evidence of engagement with the relationship between climate change and the potential for (transformative) climate action to contribution to peace is similarly virtually entirely absent. The degree to which there appears to be a robust conceptual understanding and awareness of the climate change, peace, and security intersection in the analysed Guatemalan policy documents is, as such, minimal.

Secondly, beyond engagement with the general linkages between climate change, peace, and security, our analysis reveals that there are specific dimensions and iterations within this intersection with which in-text engagement is entirely absent, and that arguably require a much greater degree of attention. In particular, in-text references to climate change and natural resource competition are non-existent. The absence of the recognition that climate change may further exacerbate and engender conflicts related to natural resource usage and exploitation – particularly with regard to land access and ownership, which remains a key function of structural inequality within Guatemala – is particularly notable. Just 2% of the population in Guatemala own 72% of arable land (Mason, Sguaitamatti and Gröbli, 2016), whilst only 8% of women have access to land (UNWomen, 2019). Conflicts related to land have moreover increased in number, complexity, and diversity in recent years. A 2015-2018 comparative study, for example, shows that incidents of social conflict (excluding agrarian conflicts) rose from 1704 to 2196, whilst agrarian conflicts alone total more than 1500. Data collected up to June 2014 furthermore shows that nearly 1.5 million people were involved in agrarian conflicts across Guatemala (Oller, 2020). Whilst organised land redistribution efforts have ostensibly been a key mechanism in post-conflict peacebuilding and sustainable development efforts, such efforts have remained largely ineffective and – as our results suggest – recognition of the escalating impact that climate-related livelihood stressors and environmental degradation may have on such conflict dynamics is entirely absent in policy and strategy documents.

Additionally, the intersection between climate change and gender-based violence (GBV) is similarly lacking – despite women and girls being the most commonly recognised social group across all policies and strategies experiencing differential rates and degrees of exposure and vulnerability to climate impacts. The convergence of climate change, heightened competition over scarce natural resources, and violence (including GBV) restrict women's coping capacity; their participation in decision making, leadership, educational and income-generating

opportunities; and destabilizes local economies and undermines the resilience of families (Castañeda Carney *et al.*, 2020). Guatemala ranks among the countries with the highest rate of violent deaths among women, estimated at 9.7 in 100,000 (UNWomen, 2019). GBV is rooted in structural inequalities, gendered power dynamics and discriminatory norms – both legal and customary, and it is often reinforced to maintain socio-economic control, including over access, use and ownership of natural resources (Castañeda Carney *et al.*, 2020). Accordingly, the risk of GBV is augmented in the face of increasing natural resource scarcity, particularly when combined with a lack of targeted and gender-responsive policies and projects to ensure the protection and economic empowerment of women, including indigenous and rural women. A recent report by the UN Special Rapporteur on Violence against Women and Girls notes that “climate change and biodiversity loss aggravate all types of gender-based violence against women and girls, which are exacerbated by discriminatory legal systems and governance structures and unequal power distribution” (Alsalem, 2022).

A study by Chowdury *et al.* (2017) for Christian Aid – part of which interviews and focus group discussions were conducted with 251 people (184 women and 67 men) in communities in Honduras, Nicaragua, Guatemala and El Salvador – demonstrates that climate-induced water scarcity and migration have caused additional responsibilities and care work to be attributed to women. Women travel longer distances to fetch for water and spend more time caring for ill people at all ages due to increased incidences of disease. Similarly, the study notes that when women migrate, their care-related duties fall on other women in the community, whilst when men migrate, women take new responsibilities associated with breadwinning and being the head of household (Chowdury, *et al.*, 2017). Despite their growing responsibilities, women continue to face discriminatory practices, particularly related to land tenure (UNEP, UNWomen, UNDP, and UNDP/PA/PSO, 2020). The confluence of climate change, resource scarcity, conflict and insecurity strengthen conditions for all forms of violence to thrive and exacerbate the exposure of women, children and other vulnerable populations to dangerous migratory journeys, human trafficking, and child marriage – among others (Castañeda Carney *et al.*, 2020). The absence of this topic in the policy documents subjected to analysis therefore potentially represents a significant gap in understanding and prioritization.

A similar lacuna was detected within policies and strategies regarding recognition more broadly of indigenous communities and minority groups – as well as displaced communities - within Guatemala as groups that are disproportionately exposed to climate impacts and attendant climate-related security risks. Less than 10% of agriculture and development related documents appeared to make reference to these groups in the context of climate change, whereas all other sectors failed to do so entirely. As stated previously in the introductory institutional context section, indigenous Mayan communities – although constituting a significant percentage of the Guatemalan population – continue to face a variety of structural inequalities that inhibit human development, render them more susceptible to food and nutritional insecurity and related health risks, and undermine adaptive capacity in the face of evolving climate-related risks to livelihoods and physical

safety. A poverty rate that is 1.7 times higher than observed in non-indigenous populations, higher rates of growth retardation and infant mortality, lower rates of literacy, low rates of property and land ownership, and a high dependence on unregulated and informal income generation (particularly related to agricultural activities) together contribute to indigenous communities being amongst the most exposed to climate change impacts in Guatemala (with indigenous women and girls being particularly vulnerable) (Fraga, 2020). Yet references to the specific challenges such communities are likely to continue to face in the context of the climate crisis are entirely absent in the majority of policy sectors included in our analysis.

The role that climate change may play in adding additional layers of complexity to the management and integration of displaced communities within Guatemala is similarly absent across policy and strategy documents, despite the fact that Guatemala faces a unique set of challenges in this space. Human mobility in, into, and out of Guatemala is underpinned by a multi-variate set of drivers, including violence, poverty, economic inequality, human rights violations, natural disasters, and extreme weather events caused by climate change. Mobility trends in Guatemala encompass high rates of international out-migration (predominantly to North America), transitory migration routes for migrants and refugees originating in countries located further south of Guatemala, as well as increasing rates of internal mobility and displacement to urban areas, the latter increasingly driven by high rates of food insecurity in rural areas (Oller, 2020). Increasing rates of internal mobility and displacement – whilst an important adaptation and development strategy deployed by households if managed correctly – may nonetheless put pressure on municipal governments' ability to deliver basic public goods and services, threaten local labour market absorption, and render urban and per-urban areas more vulnerable to future climate shocks and extreme weather events through the growth of informal housing areas and greater rates of environmental degradation (Läderach *et al.*, 2021). Yet only 3% of climate and environment-related policy documents discuss the intersection of climate change, human security, and displacement, whilst such engagement is entirely absent in other sectors. This is despite the growing importance this intersection will likely have for urban planning and development, DRR efforts, food and nutritional security strategies, humanitarian responses, and peace and security. This lack of engagement once again represents a notable gap within Guatemalan policy documents.

Thirdly, our results suggest that there is a lack of multi-sectoral integration into specific climate policy instruments, such as the LCCAPs or the FONCC. Apart from policy documents produced as part of the climate and environment (and, to a lesser extent, the agricultural) sector, no sectors appeared to make reference to or be in some way formally connected to climate policy development and implementation instruments. Understanding in which policy and strategy documents these types of instruments are present, and which sectors appear to in some way be involved or connected to their enactment, is crucial from the perspective of climate, peace, and security. This is particularly relevant as these instruments in many contexts form a primary entry point where climate-related security considerations can be mainstreamed. This is due to the fact that, firstly, such instruments tend to be accompanied

by technical guidance – often provided by designated central planning and/or local government authorities – within which conflict-sensitive and peace responsive approaches can be integrated. Secondly, the process(es) whereby which local climate change activities are undertaken offer a policy platform through which a multitude of local stakeholders and actors can together overcome collective action problems and jointly develop integrated solutions, including in this case those involved in building peace and security. Assessing, therefore, the extent to which policy documents from across different sectors and scales make reference to such instruments is important, not only to gauge the extent to which peace and security-related actors are currently involved in the process of developing local climate action interventions, but also to identify entry points for future integration.

As such, our results suggest that the development of climate policy instruments – particularly the LCCAPs (published in 2022) and the FONCC (created in 2013) – represent something of a missed opportunity for the integration and mainstreaming of climate, peace, and security considerations at the sub-national and local levels. Despite being a potential institutional vehicle capable of tying together multiple sets of stakeholders into the prioritisation, design, implementation, and monitoring and evaluation of local climate action, the LCCAPs do not appear to involve, for instance, actors in the peace and security realm. They are also not in any way formally connected to sub-national level peace and security strategies, such as the municipal level Violence and Crime Prevention Policies. Better integration between these two policy planning instruments would likely result in the generation of many more coordinated and synergistic opportunities for the design of conflict-sensitive and peace responsive climate action – as well as climate-sensitive conflict prevention and policing strategies – at the local level. Similarly, very few policy documents in general appear to make reference to the FONCC, whilst no documents from the peace and security sector demonstrate any engagement with this financial mechanism. This is despite the fact that the FONCC is likewise an important instrument through which conflict-sensitivity and peace-responsiveness can be mainstreamed, for instance by making such considerations mandatory for the disbursement of climate adaptation or mitigation finance. Capacities to implement measures are, however, limited within the FONCC, representing a technical challenge that will need to be overcome.

Fourthly, on the basis of our evaluation of the in-text presence of both climate- and peace and conflict-related measures, it appears that there is extremely limited technical cross-fertilisation between the climate and environment- and peace and security-related policy realms. Our analysis reveals that the deployment of climate-related measures, tools, and approaches (such as climate vulnerability mapping) is limited outside of the agricultural and climate and environment sectors, with only one example of such tools being deployed in a peace and security-related policy document. Similarly – and perhaps more noticeably – the deployment of assessments, measures, and approaches relating to conflict-sensitivity (such as conflict analyses, conflict mapping, and pro-peace analyses) is almost entirely absent across all sectors subjected to analysis. Whilst evaluating the exact nature of implementation processes is beyond the scope of this paper, the in-text evidence of policy documents

themselves seems to indicate that conflict-sensitivity is broadly lacking across sectors relevant to the intersection of climate, peace, and security.

Conclusions and Recommendations

This final section of the report distils the previously outlined results, findings, and discussion and seeks to provide practical recommendations in order to overcome the gaps and challenges – both thematic and technical – that have been identified by our analysis. As overcoming the challenges previously outlined likely requires the involvement of and coordination amongst a broad array of actors – including those related to government, academia and research, the private sector, and external development actors, amongst others – these recommendations are not aimed at any particular set of actors in particular. Rather, they form specific courses of action and interventions that will likely require multiple sets of the previously outlined actors to work together. As such, our recommendations to improve the sensitivity of Guatemalan policies and strategies to the intersection of climate, peace, and security are as follows.

- 1. Ensure policymakers and technical staff in the food security, gender, and humanitarian response realms are sensitised to the evolving impacts of climate change on their respective fields and that climate change-related projections and tools are integrated into policy design and planning processes for these sectors.**

Whilst references to the relationship between the natural environment and human security are quite common throughout the policy documents subjected to analysis, recognition of the potential effect climate change and its impacts may have on human security is discussed much less frequently. Particularly notable is the fact that references to climate change as a phenomenon in and of itself were entirely absent from food security and gender-related policies, whilst recognition of the impacts of climate change on human security were additionally absent in documents related humanitarian response strategies and policies. This represents a significant gap in engagement on the part of these sectors, particularly given how climate change-related impacts are increasingly closely tied to food and nutritional outcomes across Guatemala; will have socially differentiated and gendered impacts contingent upon varying degrees of pre-extant structural vulnerabilities, which will need to be accounted for when designing strategy and policy for the purposes of gender inclusion; and is expected to play an increasingly prominent role in inducing displacement and migration, as well as causing additional challenges for those on the move or those already displaced. It is therefore critical that these thematic intersections are recognised and reflected within policies' situational analyses and priority setting. For this purpose, we specifically recommend:

- i. *Conduct Training Needs Assessments (TNAs) and develop sensitisation programming relating to the impact of climate change targeted specifically at officials and technical staff within the food security, gender, and humanitarian response sectoral spaces.*
- ii. *Mainstream the deployment of climate-related measures, tools, and assessments – such as climate change adaptation planning and climate vulnerability assessments – into the design and implementation of specific interventions across the aforementioned sectors.*

2. Take steps to ensure that policymakers and technical staff across all the sectors subjected to analysis in this work are sensitised to the intersection of climate, peace, and security, particularly in relation to the context-specific mechanisms whereby which it is likely to manifest within Guatemala.

Our analysis found that explicit in-text references to the potential intersection of climate change, conflict, and peace were rare, with examples usually only being present in single policy documents from either the peace and security, agriculture, climate and environment, or development sectors. These rather isolated examples suggest that awareness of this intersection is far from being mainstreamed – instead implying only a surface level engagement. Moreover, interventions relating to DRR, humanitarian assistance, or climate action have as of yet not been successfully conflict-sensitised or harnessed for their peace potential. Evidence of engagement with the intersection of climate change and natural resource competition was particularly absent, despite the fact that social and agrarian conflicts relating to land usage and access are prominent and on the rise within Guatemala. In-text awareness of the relationship between climate change and GBV was similarly lacking, as well as – to a somewhat lesser extent – the intersection of climate change impacts and criminal activity and the effects of climate change on human mobility.²

Similar shortcomings can be detected in the extent to which climate-related threats to human security are discussed in relation to specific vulnerable groups and communities. In particular, references to how climate change may disproportionately affect the wellbeing and (human) security of indigenous groups and displaced communities and populations are notably absent. References to marginalised groups, women and girls, and low-income communities are more prevalent, yet remain present in only a minority of the policy documents subjected to analysis. As such, it is generally evident that awareness of the potentially exacerbating effects that climate change may have on existing conflict dynamics, the role it may play in shaping new

² There is a promising emerging debate around the climate change and mobility nexus at the policymaking level in Guatemala, including various actors like MARN, the Ministry of Foreign Affairs (MINEX), SEGEPLAN, the International Office for Migration (IOM), and the Guatemalan Migration Institute (IGM). These actors have collectively established technical working groups to facilitate knowledge sharing and enhance the comprehensive integration of climate-related mobility into national policies, including the PANCC. Such existing activities and platforms can become key sources of knowledge and advocacy and should be scaled up.

ones, and the specific groups that are likely to be most at-risk of these dynamics is lacking within policies and strategies. This implies that such considerations are subsequently not filtered down to the design and implementation of specific programmes and projects. We therefore specifically recommend to:

- i. Conduct TNAs and develop sensitisation programming for policymakers and technical staff within MARN; the Ministry of Agriculture, Livestock, and Food; DRR-related entities such as CONRED, relevant peace and security-related bodies, such as the recently created COPADEH; as well as other relevant institutional actors relevant to the intersection of climate, peace, and security in Guatemala.*
 - a. Beyond training and capacity building on the climate, peace, and security intersection at a general level, such training and sensitisation programming should also specifically focus on the climate-related security risks that are likely to become most pertinent for Guatemala specifically. These include, but are not necessarily limited to, the implications that climate change may have for natural resource competition (particularly land); the relationship between climate change, human mobility, and how insecurity in both sending and receiving areas can be minimised; as well as how climate change impacts may affect the strategic considerations of armed non-state or criminal groups.*
- ii. Identify an existing – or create a new – institutional body that can possess an explicit institutional mandate related to climate, peace, and security, and that can act as a focal point for the coordination of knowledge production efforts, technical assistance and capacity building, and the mainstreaming of climate, peace, and security considerations throughout the relevant sectors of government.*
 - a. Whilst the National Council of Climate Change may on paper emerge as an ideal candidate to be attributed with such a mandate, its operational status remains unclear, and its ability to mainstreaming climate change and resilience issues into the traditional work of line ministries has been previously questioned. More research will need to be conducted in order to identify the most feasible entry point for such a body, however, its mandate should arguably include acting as a coordinating platform to improve cross-sectoral and cross-scalar coordination on matters relating to climate, peace, and security, including for instance facilitating relevant information flows across different line ministries; the production of knowledge products to aid understanding of country-specific climate-related security risk landscapes, perhaps in partnership with external partners; and to act as the primary source of technical expertise on the climate, peace, and security intersection, thereby being responsible for training and capacity building.*
 - b. Alongside the creation of a climate, peace, and security-specific political mandate that can be given to an either existing or new national level entity, such a platform will likely require the support of a specific technical unit within MARN capable of translating priority and objective setting at the national level into specific technical*

guidance and support. Such a mandate could perhaps be attributed to the already extant SGCCC, although technical skills and capacities related specifically to the climate, peace, and security intersection may need to be built up within this body.

3. Better utilise the potential of existing climate policy instruments to become instruments for peace by integrating considerations around climate, peace, and security.

Our analysis reveals that climate policy instruments within Guatemala appear not to formally include the involvement of other sectoral actors, being instead largely confined to actors within the climate and environment and agricultural space. Despite this, however, instruments such as the LCCAPs and the national level FONCC represent important institutional platforms around which multiple sets of stakeholders can coalesce in order to inform planning, priority and objective setting, programme design, and evaluation processes. The involvement of a cross-sectoral cross-section of actors and representatives representing the full breadth of institutions working on climate and environment, DRR, peace and security, and other spaces is critical for the development of integrated programmatic solutions that can simultaneously address climate resilience and peacebuilding objectives. As such, the recent drafting of the department-level LCCAPs represents something of a missed opportunity for the mainstreaming of climate, peace, and security considerations, although fairly substantial institutional support and capacity building will likely be required for national level planning authorities and MARN in order to ensure the appropriate infrastructure is in place to inform local level conflict-sensitive and peace responsive climate action. We therefore recommend:

- i. Target sensitisation, training, and capacity building efforts specifically at technical staff within the FONCC (housed within MARN) around the climate, peace, and security intersection; conflict-sensitive approaches to programme design and climate finance; and peace responsiveness. Such capacity building efforts could additionally include the provision of user-responsive tools and approaches that can aid staff in ensuring their financial disbursement and grant approval processes are conflict-sensitive and peace responsive.*
- ii. Cooperate with technical staff within national level planning authorities – specifically, the Presidential Planning Secretariat and the Ministry of Public Finance – and MARN to develop technical guidance and tools that help mainstream conflict-sensitivity and peace responsiveness into the design of local level adaptation and mitigation programming and policy, and mandate the consideration of externalities (both positive and negative) for climate-related peace and conflict within the LCCAPs, local land use plans, and other sub-national level policies and strategies.*
 - a. Specifically, such efforts could focus on mainstreaming climate security considerations into existing technical guidance processes designed by MARN for sub-national and*

local governments, such as the ‘technical orientation for institutionalising environmental and risk management in municipal processes’ or the ‘climate change and its inclusion in municipal land use plans’ guidance notes. Should integration into existing technical guidance not be feasible, external partners could also work with MARN and other entities to create an entirely new guidance note on the promotion of conflict-sensitive and peace-responsive climate action programme and policy design.

- ii. *Seek greater integration and coordination between the LCCAPs and local land use planning instruments and other sub-national level policies related to conflict prevention, peace, and security – such as the municipal level Violence and Crime Prevention Policies – to help facilitate the emergence of integrated policy design between climate actors and peace and security actors.*
 - a. *In order to pursue greater integration between municipal level conflict prevention and security planning on the one hand, and climate adaptation and mitigation planning on the other, structural and procedural changes to the governance of these activities will likely need to be made. These may include, for instance, the active participation of relevant technical staff from each sector in the drafting and enactment of respective plans; a permanent climate- or peace and security-related representative being included in the relevant governance procedures for both climate and peace and security initiatives and plans; or the facilitation of joint workshops, consultation, and sounding sessions between members of each sector.*

4. Facilitate a greater degree of technical cross-fertilisation across climate and environment and peace and security sectors by ensuring a greater deployment of peace and conflict-related analyses and measures in climate and environment-related policies, and a greater deployment of climate-related measures in peace and conflict-related policies.

Our analysis suggests that the deployment of peace and conflict-related analyses and measures – such as conflict analysis, conflict driver mapping, and pro-peace analysis – is virtually non-existent in policies from essentially all sectors included in our analysis. Conversely, barring a few individual exceptions, the usage of climate-related analyses and measures – such as climate vulnerability analysis – is largely absent outside of climate and environment and agricultural policy domains. Although evaluating implementation of specific programmes that may be attached to specific policies falls outside the scope of this analysis, the total absence of these measures in respective policy fields may suggest that there is both a lack of conflict-sensitivity in the design of climate policies, as well as lack of climate-sensitivity in the design of peace and security-related measures. The in-text absence of these kinds of tools and approaches may also point to the fact that there is a lack of technical know-how on behalf of the

relevant technical staff on how to deploy these tools. Our recommendations to counter this gap are as such:

- i. *Focus capacity building efforts on training technical staff to be able to make use of a greater variety of technical tools from across different sectors and epistemological realms, or ensure that those who have the capacity to make use of such approaches are actively integrated into the teams and departments responsible for policy design, formulation, consultation, and drafting processes.*
- ii. *Design new, user-friendly, and user-specific tools and approaches that integrate both climatic and peace and conflict-related components and that enable policymakers to easily integrate either a conflict- or climate-sensitive lens into their work.*

5. Existing recognition of climate security at the regional policymaking level should be expanded, upscaled and incorporated into more policies, programmatic initiatives, and investments of SICA.

SICA has been a pioneer in the acknowledgement of climate security in regional policies, with its Climate Change Regional Strategy (2010) being one of the first examples of a regional organisation integrating this emerging topic into policymaking. Opportunities therefore remain to continue strengthening the integration of climate security within SICA's policymaking, expanding it to other sectoral areas, such as agriculture and disaster prevention, as well as other bodies and entities that fall under its umbrella, including CAC. There is also a great potential for integrating climate security into SICA's programmatic agenda to ensure that its action become more sensitive to the compounding risks posed by climate change, conflict and insecurity and enhances its potential to contribute to building a sustainable and climate-resilient peace.

- I. *Identify extant policies and strategies which have a thematic or strategic bearing on the climate, peace, and security nexus in Central America and identify opportunities within existing policy cycles to mainstream climate security priorities, objectives, and investments.*

Bibliography

Alsalem, Reem (2022) *Report of the Special Rapporteur on violence against women and girls, its causes and consequences*. A/77/136. New York: United Nations General Assembly.

Álvarez A., V., Tischler Visquerra, S. and FLACSO (Organization) (eds) (2012) *Guatemala: historia reciente (1954-1996)*. Primera edición. Guatemala: Facultad Latinoamericana de Ciencias Sociales, FLACSO--Sede Académica Guatemala.

Alvarez, G.R. (2020) 'The Battle for Guatemala: Multilevel Governance and the Nation-state', *Leadership and Developing Societies*, 5(1), pp. 55–68. Available at: <https://doi.org/10.47697/lds.34348004>.

Anderson, M.B. (1999) *Do no harm: how aid can support peace--or war*. Boulder, Colo: Lynne Rienner Publishers.

Aniorte, Juan Carlos and Garcia, Claudia (2009) *Conflicto Por El Uso de la Tierra: Nuevas Expresiones de la Conflictividad Agraria en Guatemala*. Guatemala City: Instituto de Transformación de Conflictos para la Paz en Guatemala (INTRAPAZ).

Barnett, J. and Adger, W.N. (2007) 'Climate change, human security and violent conflict', *Political Geography*, 26(6), pp. 639–655. Available at: <https://doi.org/10.1016/j.polgeo.2007.03.003>.

Barnett, J. and O'Neill, S. (2010) 'Maladaptation', *Global Environmental Change*, 20(2), pp. 211–213. Available at: <https://doi.org/10.1016/j.gloenvcha.2009.11.004>.

Bello, Omar and Peralta, Leda (2021) *Evaluación de los efectos e impactos de las depresiones tropicales Eta y Iota en Guatemala*. CEPAL. Available at: https://repositorio.cepal.org/bitstream/handle/11362/46681/1/S2100038_es.pdf.

Bermeo, Sarah, Leblang, David, and Alverio, Gabriela (2022) 'Rural Poverty, Climate Change, and Family Migration from Guatemala', *Future Development*. Available at: <https://www.brookings.edu/blog/future-development/2022/04/04/rural-poverty-climate-change-and-family-migration-from-guatemala/> (Accessed: 11 April 2023).

Casada-Asensio, J., Shin, H., and Kato, T. (2021) *Lessons on Engaging with the Private Sector to Strengthen Climate Resilience in Guatemala*. OECD. Available at: <https://www.oecd.org/environment/environment-development/climate-resilience-guatemala-2021.pdf> (Accessed: 11 April 2023).

Castañeda Carney, I. et al. (2020) *Gender-based violence and environment linkages: The violence of inequality*. Edited by J. Wen. IUCN, International Union for Conservation of Nature. Available at: <https://doi.org/10.2305/IUCN.CH.2020.03.en>.

Centeno, M.A. (2015) *Blood and Debt: War and the Nation-State in Latin America*. Penn State University Press. Available at: <https://doi.org/10.5325/j.ctv14gphb8>.

Chowdury, Nushrat et al. (2017) *Women on the Frontline: Healing the Earth, Seeking Justice*. London: Christian Aid. Available at: <https://www.christianaid.org.uk/sites/default/files/2022-08/women-on-the-front-line-final-report.pdf>.

Church, Clare and Crawford, Alec (2018) *The Fuels of Conflict in the Transition to a Low Carbon Economy*. Winnipeg: International Institute for Sustainable Development. Available at: <https://www.iisd.org/system/files/publications/green-conflict-minerals.pdf>.

CONAP (no date) 'About CONAP', *About CONAP*. Available at: <https://conap.gob.gt/elementor-17153/> (Accessed: 8 April 2023).

CONRED (no date) 'How We Work'. Available at: <https://conred.gob.gt/como-funciona/> (Accessed: 11 April 2023).

Cruz, José Miguel (2016) 'The State and the Reproduction of Violence in Post-transition El Salvador and Guatemala', in *Non-state Challenges in a Re-ordered World: The Jackals of Westphalia*. London: Routledge, pp. 157–174.

Detges, Adrien *et al.* (2020) *10 Insights on Climate Impacts and Peace: A Summary of What We Know*. Berlin: adelphi.

Dubash, N.K. *et al.* (2022) 'National and sub-national policies and institutions', in *IPCC 2022 - Climate Change 2022 - Mitigation of Climate Change, Contribution of Workign Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge: Cambridge University Press. Available at: https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC_AR6_WGIII_Chapter13.pdf.

Eckhardt, Ivan (2005) 'The Guatemalan Civil War: The Bipolarisation of an Internal Conflict', *The Central European Review of International Affairs*, 25, pp. 23–42.

ENACT Programme (2021) 'Global Organised Crime Index: Guatemala'. Available at: <https://ocindex.net/country/guatemala> (Accessed: 11 April 2023).

Feitelson, E. and Tubi, A. (2017) 'A main driver or an intermediate variable? Climate change, water and security in the Middle East', *Global Environmental Change*, 44, pp. 39–48. Available at: <https://doi.org/10.1016/j.gloenvcha.2017.03.001>.

Fraga, Federico (2020) *Central American Dry Corridor: An Exploration the Potential of a Job Creation Strategy for Guatemala and Honduras*. Working Paper No. 23. London: International Labour Organisation. Available at: https://www.ilo.org/wcmsp5/groups/public/---ed_emp/---ifp_skills/documents/publication/wcms_744900.pdf.

Garcia, Manuel (2022) 'Otro conflicto se reactiva: Pobladores de Ixchiguan y Tajumulco intercambian disparos', *LaHora.gt*. Available at: <https://lahora.gt/nacionales/mgarcia/2022/01/06/otro-conflicto-se-reactiva-pobladores-de-ixchiguan-y-tajumulco-intercambian-disparos/> (Accessed: 3 April 2023).

Global Climate Action Partnership (no date) *Developing Forestry and Land Use Policy in the Context of Climate Change*. Global Climate Action Partnership, pp. 1–12. Available at: https://globalclimateactionpartnership.org/app/uploads/2016/01/LEAF-Policy_Web-format-20101123.pdf (Accessed: 28 April 2023).

Global Facility for Disaster Reduction and Recovery (2010) *Disaster Risk Management in Latin America and the Caribbean Region: GFDRR Country Notes (Guatemala)*. GFDRR. Available at: <https://www.gfdr.org/sites/default/files/publication/drm-country-note-2010-guatemala.pdf>.

Global Facility for Disaster Reduction and Recovery (2011) *Climate Risk and Adaptation Country Profile (Guatemala)*. GFDRR. Available at:

https://climateknowledgeportal.worldbank.org/sites/default/files/2018-10/wb_gfdrr_climate_change_country_profile_for_GTM.pdf.

Howland, F. *et al.* (2021) 'Examining the Barriers to Gender Integration in Agriculture, Climate Change, Food Security, and Nutrition Policies: Guatemalan and Honduran Perspectives', *Frontiers in Sustainable Food Systems*, 5, p. 664253. Available at: <https://doi.org/10.3389/fsufs.2021.664253>.

INSIVUMEH (no date) 'About Us'. Available at: <https://insivumeh.gob.gt/?p=130> (Accessed: 11 April 2023).

International Federation of the Red Cross (2021) 'Communities affected by Hurricanes Eta and Iota are threatened by food security, displacement and climate change'. Available at: <https://www.ifrc.org/es/press-release/las-comunidades-afectadas-por-los-huracanes-eta-e-iota-estan-amenazadas-por-seguridad#:~:text=Eta%20e%20Iota%20acabaron%20con,y%20niveles%20de%20pobreza%20preexistentes> (Accessed: 22 April 2023).

Ippolito, M. *et al.* (2017) 'Expectations of health care quality among rural Maya villagers in Sololá Department, Guatemala: a qualitative analysis', *International Journal for Equity in Health*, 16(1), p. 51. Available at: <https://doi.org/10.1186/s12939-017-0547-5>.

Läderach, P. *et al.* (2021) *Climate Security in the Central American Dry Corridor*. CGIAR FOCUS Climate Security. Available at: <https://hdl.handle.net/10568/116948>.

Le Billon, P. and Duffy, R. (2018) 'Conflict ecologies: Connecting political ecology and peace and conflict studies', *Journal of Political Ecology*, 25(1). Available at: <https://doi.org/10.2458/v25i1.22704>.

López, David *et al.* (2021) *Determinantes de los conflictos socioterritoriales en Guatemala: Un análisis estadístico*. Documento de Trabajo 270. RIMISP.

Mason, S.J.A., Sguaitamatti, D.A. and Gröbli, M.D.P.R. (2016) 'Stepping stones to peace? Natural resource provisions in peace agreements', in C. Bruch, C. Muffet, and S.S. Nichols (eds) *Governance, Natural Resources, and Post-Conflict Peacebuilding*. 1st edn. Abingdon, Oxon ; New York, NY: Earthscan, 2015. | Series: Post-conflict peacebuilding and natural resource management: Routledge, pp. 71–120. Available at: <https://doi.org/10.4324/9780203109793-4>.

Ministry of Environment and Natural Resources (2021) *Third National Communication on Climate Change*. Guatemala City: MARN. Available at: <https://sgccc.org.gt/congreso/wp-content/uploads/2021/08/Tercera-Comunicacion-Nacional-de-Cambio-Climatico-de-Guatemala.pdf>.

Ministry of Interior (2020) 'Institutional Philosophy of the Ministry of the Interior and its Dependencies'. Available at: <https://mingob.gob.gt/mision-y-vision/> (Accessed: 14 April 2023).

Molden, B. (2015) 'La Guerra Civil guatemalteca: historias y memorias cruzadas en el entorno global de la Guerra Fría', *Anuario de Estudios Centroamericanos*, 41(1), p. 67. Available at: <https://doi.org/10.15517/aeca.v41i1.21840>.

Morales-Muñoz, H. *et al.* (2022) 'Co-Benefits Through Coordination of Climate Action and Peacebuilding: A System Dynamics Model', *Journal of Peacebuilding & Development*, 17(3), pp. 304–323. Available at: <https://doi.org/10.1177/15423166221132149>.

Muller, Scott *et al.* (2017) *Forging Low Emission Development Paths in Latin America: Multi-level Dynamics in the World's Most Urbanised Region*. LEDS Global Partnership. Available at: https://ledsgp.org/app/uploads/2017/05/GIP01771-CDKN_LEDS_LAC_Urbanization_final_web-res.pdf (Accessed: 16 April 2023).

Nachmany, Michal *et al.* (2015) *Guatemala: An Excerpt from the 2015 Global Climate Legislation Study (A Review of Climate Change Legislation in 99 Countries)*. Grantham Institute. Available at: <https://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2015/05/GUATEMALA.pdf> (Accessed: 12 April 2023).

Nilsson, M. *et al.* (2012) 'Understanding Policy Coherence: Analytical Framework and Examples of Sector-Environment Policy Interactions in the EU: Understanding Policy Coherence', *Environmental Policy and Governance*, 22(6), pp. 395–423. Available at: <https://doi.org/10.1002/eet.1589>.

Notre Dame Global Adaptation Initiative (2020) *ND-GAIN Country Index, ND-GAIN Country Index*. Available at: <https://gain.nd.edu/our-work/country-index/rankings/> (Accessed: 1 February 2023).

Oller, Santiago (2020) *Exploring the Pathways from Climate-related Risk to Conflict and the Humanitarian-development-peace Nexus as an Integrated Response: Guatemala Case Study*. 21. Oslo: UNDP, pp. 1–8. Available at: https://www.undp.org/sites/g/files/zskgke326/files/migration/oslo_governance_centre/57c6af4d8d86147aab7b214a53603bbfd17605e110bb2a443cecf4931d526b5a.pdf (Accessed: 18 April 2023).

Pahl-Wostl, C. *et al.* (2010) 'Analyzing complex water governance regimes: the Management and Transition Framework', *Environmental Science & Policy*, 13(7), pp. 571–581. Available at: <https://doi.org/10.1016/j.envsci.2010.08.006>.

Patel, T. *et al.* (2013) 'Predicting Future Conflict under REDD+ Implementation', *Forests*, 4(2), pp. 343–363. Available at: <https://doi.org/10.3390/f4020343>.

Peace Brigades International (2021) *The Closure of the Peace Institutions*. 45. PBI, pp. 1–24. Available at: https://pbi-guatemala.org/sites/pbi-guatemala.org/files/B45_Eng.pdf.

Pearce, Jenny (2018) *Elites and Violence in Latin America: Logics of the Fragmented Security State*. London: LSE Latin America and Caribbean Centre. Available at: <https://www.lse.ac.uk/lacc/publications/PDFs/VSP1-Pearce-Elites-Violence-Latin-America-web.pdf>.

Porter, Alex *et al.* (2019) *The Future of the Guatemalan Education System: A Macro Analysis of Education Quality and Quantity's Impact on Development*. Boston: Fredrick S. Pardee Centre for the Study of the Longer Range Future. Available at: <https://drupalwebsitepardee.s3-us-west-2.amazonaws.com/pardee/public/The+Future+of+Guatemalan+Education.pdf> (Accessed: 12 April 2023).

Pörtner, Hans (2022) *Climate Change 2022: Impacts, Adaptation, and Vulnerability (Summary for Policymakers)*. IPCC.

Salamanca, Garay and Albarán, Salcedo (2015) *Drug Trafficking, Corruption, and States: How Illicit Networks Shaped Institutions in Colombia, Guatemala, and Mexico*. Bloomington: iUniverse.

Scartozzi, Cesare (2023a) 'Bulk PDF 2 txt.' Available at: https://github.com/CeMSc/bulk_pdf_2_txt.

Scartozzi, Cesare (2023b) 'CtrlFinder'. Available at: <https://github.com/CeMSc/CtrlFindr>.

Scartozzi, Cesare (2023) 'Word2Vec Model Explorer (1.0)'. Available at: https://github.com/CeMSc/Word2Vec_Model_Explorer.

Shuttleworth, S. (2017) 'Editorial annex: key findings and recommendations from the HERCULES research project, and the need for a landscape approach to environmental governance', *Landscape Research*, 42(8), pp. 819–830. Available at: <https://doi.org/10.1080/01426397.2017.1385751>.

Sistema Guatemalteco de Ciencias del Cambio Climatico (2017) 'Guatemalan System of Climate Change Sciences'. Available at: https://sgccc.org.gt/wp-content/uploads/2016/07/Bifoliar_SGCCC_2017_ingles.pdf (Accessed: 14 April 2023).

Tänzler, Dennis and Scherer, Nikolas (2013) *Guidelines for Conflict-sensitive Adaptation to Climate Change*. Berlin: Umwelt Bundesamt. Available at: https://www.umweltbundesamt.de/sites/default/files/medien/1410/publikationen/guidelines_for_conflict-sensitive_adaptation_190917.pdf.

Technical Secretariat of the National Security Council (2023) 'About Us'.

Tejiendo Paz (2020) *Boletín sobre conflictividad en Guatemala: Breve panorama de land conflictividad social y agraria (2019-2020)*. 1. USAID. Available at: <https://www.tejiendopaz.com/img/galerias/boletin-sobre-conflictividad-en-guatemala.pdf> (Accessed: 8 April 2023).

Tilly, Charles (1985) 'War Making and State Making as Organised Crime', in *Bringing the State Back In*. Cambridge: Cambridge University Press, pp. 169–191.

UNEP, UNWomen, UNDP, and UNDPPA/PBSO (2020) *Gender, Climate, and Security: Sustaining Inclusive Peace on the Frontlines of Climate Change*. UNEP, UNWomen, UNDP, and UNDPPA/PBSO.

UNWomen (2019) 'Guatemala: Background'. Available at: <https://lac.unwomen.org/en/donde-estamos/guatemala> (Accessed: 24 April 2023).

Uppsala University (2023) 'Uppsala Conflict Data Program: Guatemala Country Profile'. Available at: <https://ucdp.uu.se/encyclopedia> (Accessed: 24 April 2023).

USAID (2017) *Climate Change Risk Profile: Guatemala (Fact Sheet)*. USAID. Available at: https://www.climatelinks.org/sites/default/files/asset/document/2017_USAID%20ATLAS_Climate%20Change%20Risk%20Profile_Guatemala.pdf.

USAID (2020) *Climate Risks to Food Security in Food for Peace Geographies: Guatemala*. USAID. Available at: https://www.climatelinks.org/sites/default/files/asset/document/2020_USAID_FFP-CRP-Guatemala.pdf.

USAID (2022) *Guatemala: Climate Change Fact Sheet*. USAID. Available at: <https://www.climatelinks.org/sites/default/files/asset/document/2022-11/2022-USAID-Guatemala-Climate-Change-Fact-Sheet.pdf>.

Valencia, Sandra (2022) *WFP's Contributions to Improving the Prospects of Peace in the Central American Dry Corridor*. Solna: SIPRI. Available at: https://www.sipri.org/sites/default/files/2022-11/wfp_dry_corridor.pdf.

Washington Office on Latin America (WOLA) (2021) 'Years After the Peace Accords, Ending Impunity and Advancing Justice in Guatemala is Imperative'. Available at: <https://www.wola.org/2021/12/25-peace-accords-guatemala/> (Accessed: 9 April 2024).

Webb, M.F. *et al.* (2016) 'Exploring mechanisms of food insecurity in indigenous agricultural communities in Guatemala: a mixed methods study', *BMC Nutrition*, 2(1), p. 55. Available at: <https://doi.org/10.1186/s40795-016-0091-5>.

World Bank (2023) *World Bank Databank: World Development Indicator*. World Bank. Available at: <https://databank.worldbank.org/source/world-development-indicators>.

World Bank (no date) *Groundswell: Preparing for Internal Climate Migration (Policy Note 3)*. World Bank. Available at: <https://documents1.worldbank.org/curated/en/983921522304806221/pdf/124724-BRI-PUBLIC-NEWSERIES-Groundswell-note-PN3.pdf> (Accessed: 12 April 2023).

Zelli, F. and van Asselt, H. (2013) 'Introduction: The Institutional Fragmentation of Global Environmental Governance: Causes, Consequences, and Responses', *Global Environmental Politics*, 13(3), pp. 1–13. Available at: https://doi.org/10.1162/GLEP_a_00180.

Annex 1

variable	proxy	parent_var	variable_number	search_tpy	group_1	operator_1	group_2	operator_2	group_3	description
environment	biosphere	1	1.1	g2v	biosphere					the document mentions words related to the biosphere
	hydrosphere	1	1.2	g2v	hydrosphere					the document mentions words related to the hydrosphere
	lithosphere	1	1.3	g2v	lithosphere					the document mentions words related to the land
	atmosphere and climate	1	1.4	g2v	atmosphere					the document mentions words related to climate or weather events
	climate and weather impact	1	1.5	b2v	climateimpact	or	climate_impact2			the document mentions words related to the impact of climate or wether events
climate change	climate change	2	2.1	g2v	climatechange					the document specifically mentions climate change and related processes
	climate change releted variables	2	2.2	b2v	doc_climatechange	and	1.4			
	climate change impacts	2	2.3	b2v	doc_climatechange	and	climateimpact	or	climate_impact2	A document that mentions climate change also mentions words related climate or weather
environment and security	humansec	3	3.1	b2v		1 and	humansec	or	human1_security2	The document discusses human security
	conflict	3	3.2	b2v		1 and	conflict			The document discusses conflict
	peace	3	3.3	b2v		1 and	peace			The document discusses peace
	resource competition	3	3.4	b2v		1 and	resource1_competition2			The document discusses resource competition
	gender violence	3	3.5	b2v		1 and	genderviolence	or	gender_violence2	The document discusses gender violence
	crime	3	3.6	b2v		1 and	crime			The document discusses crime
climate and security	humansec	4	4.1	b2v		2 and	humansec	or	human1_security2	The document discusses human security in relation to environmental factors
	conflict	4	4.2	b2v		2 and	conflict			The document discusses conflict in relation to environmental factors
	peace	4	4.3	b2v		2 and	peace			The document discusses peace in relation to environmental factors
	resource competition	4	4.4	b2v		2 and	resource1_competition2			The document discusses resource competition in relation to environmental factors
	gender violence	4	4.5	b2v		2 and	genderviolence	or	gender_violence2	The document discusses gender violence in relation to environmental factors
	crime	4	4.6	b2v		2 and	crime			The document discusses crime in relation to environmental factors
climate, security and marginalized groups	women and girls	5	5.1	b2v		2 and	mwomen			The document discusses women and girls in relation to security
	indigenous communities	5	5.2	b2v		2 and	mindigenous			The document discusses indigenous communities in relation to security
	low-income communities	5	5.3	b2v		2 and	mlowincome			The document discusses low-income communities in relation to security
	minority groups	5	5.4	b2v		2 and	minority			The document discusses coastal communities in relation to security
	displaced populations	5	5.5	b2v		2 and	mdisplaced			The document discusses displaced populations in relation to security
	smallholder farmers	5	5.6	b2v		2 and	mshholder			The document discusses smallholder farmers in relation to security
climate, migration, and security	climate, migration, and humansec	6	6.1	b2v	4.1	and	migration			
	climate, migration, and conflict	6	6.2	b2v	4.2	and	migration			
	climate, migration, and peace	6	6.3	b2v	4.3	and	migration			
	climate, migration, and resource competition	6	6.4	b2v	4.4	and	migration			
	climate, migration, gender violence	6	6.5	b2v	4.5	and	migration			
	climate, migration, crime	6	6.6	b2v	4.6	and	migration			
	climate, migration, food security	6	6.7	b2v		2 and	migration	and	food security	
policy integration	national policies	7	7.1	g2v	natpol					
	regional policies	7	7.2	g2v	regpol					
	sub-national policies	7	7.3	g2v	sub_pol					
cross-sectoral processes	national coordinating mechanisms	8	8.1	g2v	natcoord					
	regional coordinating mechanisms	8	8.2	g2v	regcoord					
climate policy instruments	instrument names	9	9.1	g2v	instr					
climate security objectives	climate and human security objectives	10	10.1	b2v	objectives	and	4.1			
	climate, peace and conflict objectives	10	10.2	b2v	objectives	and	4.2	or	4.3	
climate assessment and measures	climate assessments	11	11.1	b2v	doc_climatechange	and	cliassess			
	climate measures	11	11.2	b2v	doc_climatechange	and	climeasure			
conflict sensitive assessment and measures	conflict assessments	12	12.1	g2v	cs1_analysis2					
	conflict management	12	12.2	g2v	cs1_management2					
action plans	presence of action plans	13	13.1	g2v	actionp					

