

# TOWARDS A COMMON VISION OF CLIMATE SECURITY IN GUATEMALA



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This document is based on the reflections of the following conveners and participants:





PHOTO: LEONARDO MEDINA

# Executive Summary

This report explores the interconnections between climate change, human security and conflicts in Guatemala based on the Climate Security Workshop held in Ciudad de Guatemala on the 21st and 22nd of February 2023

The security implications of climate change, commonly referred to as the climate-security nexus, have been widely discussed in both policy circles and academia. Climate security refers to the security threats and risks to states, societies and individuals caused directly or indirectly by the effects of climate change. Security risks in this paper are understood in a broad way focusing not only on national security risks seen from the point of view of states but mainly on human security risks focusing on challenges to the survival and livelihoods of the population which includes economic, food, health, environmental, personal, community and political security (UNTFHS, 2016).

While climate change is rarely the sole cause of conflict, it can exacerbate human security and conflict risks by negatively affecting livelihoods and natural resources, and exacerbating socioeconomic, environmental, and political vulnerabilities, straining the capacity of already overstretched institutions. Central America is considered a primary hotspot for climate change because of its high vulnerability and low resilience. The region is heavily affected by climate variability and extreme weather events as well as by non-climatic-related disasters. At the same time, the impacts of climate change are compounded by high violence and insecurity levels, which also reduce the resilience and coping capacities of communities. However, despite being heavily affected by both climate and insecurity, Central America remains an understudied region and there is a lack of a clear understanding of how these complex climate security dynamics operate.

CGIAR's Climate Resilience Initiative, also known as ClimBeR, is working to address these needs. On the 21st and 22nd of February, we ran in Guatemala City the first climate security workshop in Central America: **Towards a common vision on the relationship between climate, conflict, and human security in Guatemala.** The workshop was organized by the Alliance of Bioversity and CIAT along with the CGIAR's Climate Resilience Initiative; the Fragility, Conflict, and Migration Initiative; the regional integrated initiative AgriLAC Resiliente; and the CGIAR FOCUS Climate Security and benefited from the participation of 45 individuals from 20 different organizations, including regional & local organizations, government institutions, UN agencies, and national universities.

Through a series of focus group discussions, participants reflected on and shared their experience of how the impacts of climate change influence the environmental, social, economic, and political processes that can lead to conflict and insecurity. Following the participatory discussion, the participants identified six main pathways through which climate impacts, human security and conflict interact, that is, climate security.

- 1. Competition over scarce natural resources.** Climate variability and extremes are further decreasing the availability of and access to already scarce natural resources, strained by overexploitation and environmental degradation. This, in turn, can erode social cohesion and increase the risk of tensions, competition and conflict over water, land, and forestry resources within and between communities, including indigenous peoples, companies, and government.
- 2. Loss and reduction of livelihoods based on subsistence farming.** Climate-induced loss and reduction of livelihoods and food insecurity are contributing to increased migration from rural to urban areas

and abroad. While migration can contribute to improving livelihoods, it is also associated with poverty and marginalization, especially among young people, leaving them vulnerable to gang recruitment and organized crime.

3. **Food insecurity and social unrest.** Climate impacts can contribute to food insecurity by undermining subsistence agriculture and by increasing food prices. This can exacerbate existing socioeconomic vulnerabilities such as insecure land tenure or poverty, which can lead to social unrest and mobilization, mainly against the state.
4. **Compounding impacts of climate change and insecurity on institutional capacity.** The simultaneous occurrence of climate shocks, violence, and insecurity dynamics is thought to diminish the capacity of political institutions, at all levels, to cope with these challenges, including the responses to extreme weather events. This undermines the legitimacy of the institutions, which can be exploited by criminal groups.
5. **Migration, displacement and associated security risks.** The effects of climate change can have both a direct and indirect influence over migration and displacement dynamics. Although migration can act as a coping and adaptive mechanism, it also comes with human security risks in both transit and destination areas.
6. **Reduction in adaptive capacity due to insecurity.** Violence, conflicts, and insecurity also negatively impact communities, undermining their resilience and further increasing their vulnerability to climate variability and extreme weather events.

Considering the critical importance of breaking down policy silos between the climate and security sectors, a series of **recommendations** were identified as further critical steps towards developing short-term strategies for strengthening a climate security agenda at the national and subnational levels.

1. **Evidence and research gaps:** Workshop participants emphasized the importance of improving and expanding current empirical research on the links between climate change, peace, and security in Guatemala. Given the current diversity of sometimes contradictory findings and the dispersion of research approaches which are hard to integrate into coherent policy narratives, empirical research to date has been unable to offer comprehensive perspectives on the climate, peace, and security nexus.
2. **Policy and governance:** Implementing participatory spaces for collective conversations can support the establishment of policy networks composed of interdependent actors who can then learn to operate in greater synergy, thereby effectively becoming a system. Given that governance frameworks for climate change and peace have traditionally evolved independently due to inadequate cross-sectoral collaboration, a significant degree of institutional learning is required to effectively integrate climate security as a topic of concern in Guatemala's policies and governance systems. To modify current practices for climate adaptation and peacebuilding and move towards integrating a climate security sensitive approach, governance efforts must adopt strategies to develop multi-stakeholder agreements and shared perceptions of climate, peace, and security linkages that span across policy sectors and political-administrative levels. Recognizing this challenge, workshop participants emphasized the need to implement efforts towards developing a community of practice for Climate Security in Guatemala that fosters multi-level governance approaches.

- 3. *Programming strategies for climate adaptation:*** There is a need to design climate adaptation programmes and initiatives that proactively contribute to building and sustaining peace. Similarly, peace and security actors should undertake programme planning with a climate perspective. Such efforts should crucially be responsive to specific local contexts and needs. Integrating climate and security risk analyses into the design of resilience projects with peace co-benefits across Guatemala therefore demands significant engagement and coordination across sectors and scales of governance, along with increasing capacity assessments where needed. These recommendations focus on facilitating continuous engagement between climate and peace-related actors to identify cross-cutting and synergistic strategies that build upon existing programming practices.
- 4. *Finance:*** Understanding that conflict-affected areas receive significantly less climate action investment than those viewed as secure (UNDP, 2021), workshop participants acknowledged the need for investments with co-benefits for both adaptation and peacebuilding across Guatemala's hotspots for climate-related security risks. Even though climate adaptation action has traditionally avoided conflict-affected regions due to their high-risk profile and security concerns, there is an opportunity to link investment initiatives with climate security hotspots. Building on the workshop's outputs, investment planning procedures are needed to co-design climate security investments together with local communities and multiple stakeholders that align incentives across the humanitarian-development-peace nexus.



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## SECTION 1:

# Context

Guatemala is considered a primary hotspot for climate change due to its high vulnerability and low readiness to cope with climate change impacts (Notre Dame University, 2022). Guatemala is considered one of the most exposed countries to climate variability and extreme weather events as well as to non-climatic-related natural hazards such as earthquakes, tsunamis, and volcano eruptions (IEP, 2021; MARN et al., 2021). In the past twenty years, the average annual temperature as well as the maximum and minimum daily temperatures have increased by 0.8°C and 0.6 °C respectively, particularly in February, July, August and September (MARN et al., 2021). The greatest temperature increases have been in the Pacific coast, Bocacosta, Valles de Oriente and the Caribbean (MARN et al., 2021). In the last 20 years, rainfall patterns have significantly been altered, indicating an increase of 122mm in the average annual rainfall as well as more intense and less distributed rainy days (MARN et al., 2021). Only from 2010 to 2015, coastal zones in the Pacific have experienced increases in superficial sea temperature by 0.44°C and 1.7-2.5 mm in sea level rise (MARN et al., 2021). In general, the sea surface temperature in the region near Guatemala has increased, and in the year 2021, despite having colder months, the average temperature for the year was higher than in the 1991-2020 period (INSIVUMEH, 2022). By 2050, temperatures are expected to increase between 2°C and 4°C, with the greatest increases on the Caribbean coast, the east, the north and the southern coast (García Morales, 2019; MARN et al., 2021). Climate projections expect a decrease in precipitation of up to 50 per cent in the semi-arid region of the country situated in the Dry Corridor (Arnoldo Bardales et al., 2021). Nevertheless, while rainy days are expected to decrease, extreme events, such as tropical cyclones, are predicted to be more frequent across the country (Arnoldo Bardales et al., 2021). Climate projections expect the mid-summer drought onset date to occur earlier and for longer (+18 days), consequently expanding the semi-arid climate across regions (Maurer et al., 2017). The biggest impact on water availability is expected in the departments of Baja Verapaz, Sacatepéquez, Totonicapán, Chimaltenango, Guatemala, El Progreso, Zacapa, Jutiapa, Chiquimula as well as the south of Quiche and Huehuetenango (Arnoldo Bardales et al., 2021).

Due to rising sea levels, predicted to increase by 9 to 13 cm by 2050, causing flooding and erosion, municipalities located in the coastal-marine areas will have a “high” to “very high” vulnerability to climate change (MARN et al., 2021; USAID, 2017). Figure 1 shows that the departments of Petén and Izaban fall within climate and conflict hotspots. These departments are vulnerable to high precipitation causing the area to experience many days of waterlogging and flooding. Similarly southern coastal areas tend to experience moderate to high flooding.

Guatemala is particularly vulnerable to climate impacts due to the strong reliance of the communities on natural resources for their livelihoods. Agriculture remains one of the most important economic activities that plays a crucial role in helping families meet their nutritional needs and also has a preponderant role in job creation and exports. It accounts for up to 31 per cent of the total employment and 9.9 per cent of GDP (World Bank, 2021). Considering that more than 80 percent of Guatemala’s GDP is produced in at risk areas and that the majority of agricultural production is rainfed, it is a sector highly vulnerable to climate impacts (World Bank, 2011; Hernández, A., 2012). The impact of climate change is intensifying socioeconomic vulnerabilities that have also been heavily influenced by insecurity and violence dynamics.

The impacts of climate change are compounded by high violence and insecurity levels which also reduce the resilience and coping capacities of communities. Despite the signing and adoption of the peace agreement, thirty years after the Civil War, post-conflict Guatemala still experiences violence daily, from both state as well as non-state actors, including organized crime and gang violence (Godoy, 2006; Knowlton, 2017; Rodgers & Muggah, 2009). Situated in the middle of the drug smuggling route from South to North America,

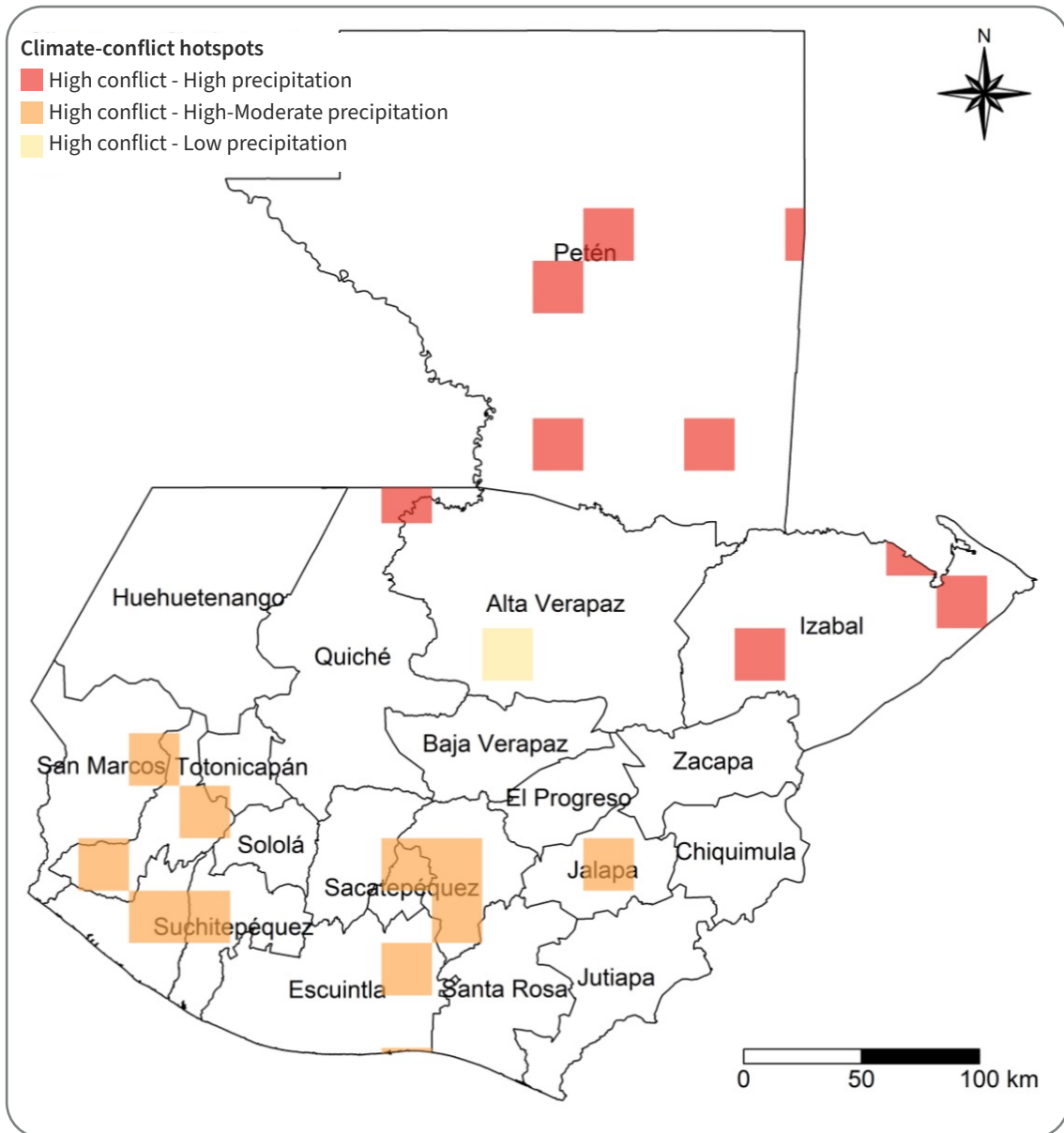


Figure 1: Guatemala climate and conflict intersection hotspots. The hotspots were generated using CHIRPS, TerraClimate, and ACLED data. Achicanoy Estrella H. A., Mendez, A., Ramirez-Villegas, J. *Spatial Analysis. Climate Security Observatory Methods papers series* (2023).

Guatemala has witnessed a rise in violence linked to drug trafficking, micro-trafficking, extortion and money laundering activities (del Mercado et al., 2021; ICG, 2017; Nett & Rüttinger, 2016).

Guatemala has also witnessed an increase in tensions and conflicts over the access and use of natural resources, especially land and water. These socioenvironmental conflicts have led to confrontations between local communities and extractive industries linked to transnational corporations (Martínez, A. et al., 2009; López et al., 2021). Evidence also points out the occurrence of inter- and intra-community conflict in San Marcos, between Tajomulco and Ixchiguán municipalities, and in Sololá, between Santa Catarina Ixtahuacán and Nahualá municipalities (ACLEDA, 2022; Garcia, 2022; Tejiendo Paz, 2021). Despite not being directly linked, these conflicts are understood as continuities of the social and economic inequalities of the previous armed conflict, as they are concentrated in regions characterised by unequal distribution and being severely affected by the civil war (López et al., 2021).

Increasing temperatures, combined with declines in precipitation rates, sea level rise as well as more frequent intense and extreme weather events, make Guatemala, particularly the areas situated in the Dry Corridor, one of the most vulnerable countries to climate change (MARN et al., 2021). Climate projections, particularly the droughts in the Western Highlands and across the Dry Corridor, are expected to continue compounding crop climate suitability and yields, resulting in livelihood and food insecurity and, consequently, driving poverty, malnutrition, and human mobility across the country. This, in turn, may spur economic migration towards urban centres inside and outside the country. The lack of access to alternative livelihood options may increase engagement in illicit activities and recruitment by criminal groups, indirectly contributing to the strength of organized crime networks active in the border regions with Mexico and Honduras.

Climate change impacts on water, land, and food systems have been observed and are predicted to further decline agricultural land productivity, decrease key cash crop yields as well as hinder the availability and access to natural resources in Guatemala. As climate change impacts become more prominent and recurrent, access and availability of resources are expected to be further jeopardised, increasing competition and, consequently, the likelihood of tensions and conflicts over natural resources (Hernández Bonilla et al., 2018; Nett & Rüttinger, 2016).

Despite the increasingly recognised interconnections between climate change, conflict, and human insecurity (IPCC, 2022), there is a lack of a clear understanding of how these complex climate security dynamics operate in Central America and Guatemala, including a nuanced comprehension of where the most vulnerable places are and who are the most affected people. Understanding the intricate and dynamic connection between climate and conflict demands an interdisciplinary assessment at a granular level on multiple livelihood domains; one that accounts also for local level perceptions of insecurity and vulnerability.

Populations that depend on natural resources for their livelihoods and lack income diversification are more vulnerable to internal and irregular migration, as livelihoods can be affected by climatic events such as extended periods of drought or flooding due to tropical storms. Men are generally the ones who migrate in search of new opportunities and women face the difficulties of supporting families in their home communities, while men find a place to settle and earn an alternative income (World Bank Group, 2016).

Despite growing recognition of the interconnection between climate change, human insecurity, and conflict (IPCC, 2022), there is a lack of a clear understanding of how these complex climate security dynamics operate in Central America and Guatemala, including a nuanced understanding of which places are most vulnerable and who are the people most affected. Understanding the complex and dynamic connections between climate change and conflicts requires an interdisciplinary assessment at a detailed level across different livelihoods, which also takes into account local perceptions of insecurity and vulnerability.

Conflict, violence, and fragility are already causing great suffering to millions of people around the world, including in Guatemala, and the ongoing climate crisis will very likely only make things worse. The need for countries to achieve and maintain climate security will only grow bigger against the backdrop of a climate crisis. However, this will not be achievable without collaborations, partnerships, and innovations. The Climate Resilience and Agri-LAC Initiative and its local and national partners in Guatemala and other countries are devoted to meeting the urgent demand for climate security actions. To achieve national climate governance goals and promote sustainability and stability, all the parties involved will work together to co-develop intelligence capabilities for contextualized, coordinated, and collaborative climate security actions at scale.

## SECTION 2

# Climate Security Pathways in Guatemala

As highlighted in the previous section, Guatemala is highly vulnerable to the impacts of climate variability and change including increasing temperatures, lower precipitation rates, sea level rise, as well as more frequent and extreme climate events such as droughts and floods. These climate impacts are compounded by socioeconomic and environmental factors, such as environmental degradation, poverty and marginalization, dependence on rain-fed agriculture, as well as issues surrounding land tenure, which can heighten the risks of conflict. It is these climate-related security risks that this section will now explore through six main pathways, which are: 1) competition over scarce natural resources, 2) loss and a reduction of livelihoods based on subsistence farming, 3) food insecurity and social unrest, 4) compounding impacts of climate change and insecurity on institutional capacity, 5) migration, displacement and associated security risks, and 6) reduction in adaptive capacity due to insecurity. While these causal pathways are interconnected, they are separated to facilitate clarity over the drivers of climate insecurity in Guatemala. Readers can refer to annex three for a detailed description of individual linkages in each of the main pathways, as discussed by participants during the workshop.

### 1. Competition over scarce natural resources

Due to a combination of overexploitation of natural resources such as land and water resources, illegal exploitation of forests and slash and burn subsistence agricultural practices, Guatemala faces high levels of degradation of its natural resources (IFAD 2012). In fact, around 12% of the territory is threatened by desertification while only 8% of Guatemala's land area is arable (Hernández Bonilla et al., 2018; World Bank 2020).

Participants have highlighted however that climate variability and extremes are further decreasing the availability of and access to already scarce and degraded natural resources, which increase food and livelihood insecurity. This particularly affects rural households who are dependent on rain-fed agriculture for their livelihoods and face low financial resources, poverty, and malnutrition (WFP et al., 2017). These vulnerable households therefore often lack the adaptive capacity to cope with the impacts of climate change and variability (Milan and Ruano, 2014; Warner and Afifi, 2014).

As climate-related stresses and shocks on scarce natural resources become more prominent and recurrent, it can erode social cohesion and increase the risk of tensions, competition and conflict over water, land, and forestry resources within and between communities (World Bank, 2018). This has already been noted in various instances, such as in the southern coastal areas where a lack of access to water and land resources has led to conflicts between large and small irrigation users (EJAtlas, 2020). This is particularly worrisome considering that the cosmovision of Mayan communities perceive natural resources as playing a central role which implies that a deterioration and degradation of these resources has profound impacts that go beyond the loss of resources needed to sustain income-generating activities and can therefore generate strong tensions. As climate impacts intensify, these climate-related conflicts are expected to increase (Martínez, A. et al., 2009; Medina et al., in process). As highlighted by workshop participants, the risk of conflict and social

tensions over natural resources is however, compounded by other contextual factors, in particular, insecure and unequal distribution of land tenure and access to natural resources.

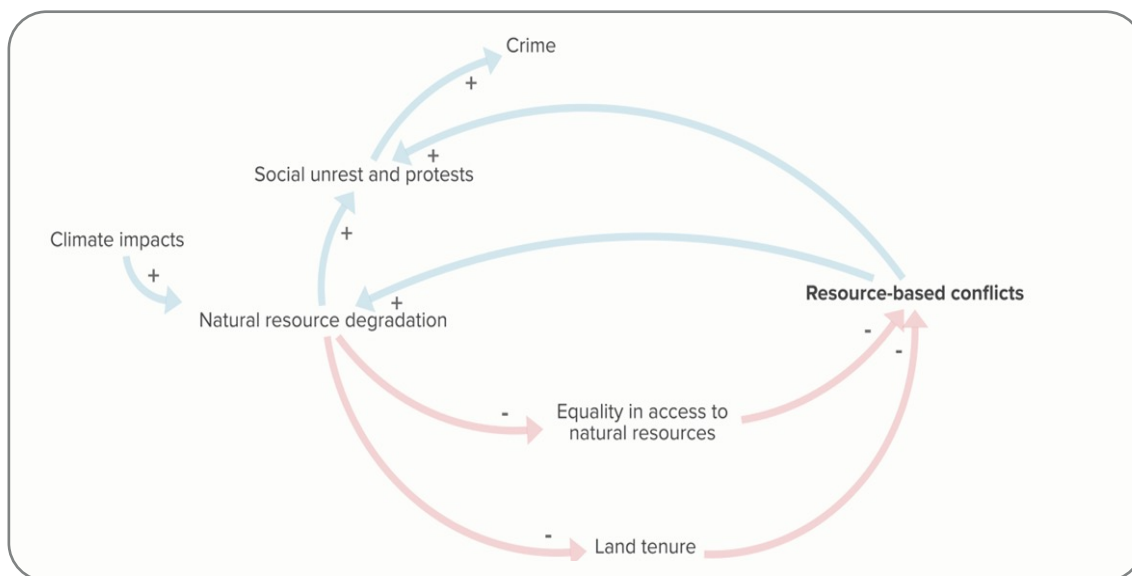


Figure 2: The nexus between climate impacts and resource-based conflicts

## 2. Loss and reduction of livelihood strategies based on subsistence farming

As climate change has adverse impacts on the availability of natural resources, it also has cascading effects on agricultural productivity, leading to reduced crop yields, failed harvests, or degraded pastureland. By 2050, agricultural productivity is predicted to decrease in the country, with a 14% yield decline in maize and beans, and up to 35% for sugarcane (Castellanos and Thomas, 2018). Given Guatemalan rural households are highly dependent on rain-fed subsistence agriculture for their livelihoods and food security (Valencia, 2022), they are particularly vulnerable to climate-related stresses and shocks, making it difficult to sustain current agriculture-based livelihood strategies.

Participants highlighted that as these livelihood opportunities are undermined as a result of climate change, many Guatemalans migrate from rural to urban areas and abroad to search for better income opportunities. For instance, in municipalities such as Cabricán, 70% of households have migrated either to larger cities, to other areas as seasonal workers, or to the U.S. (Milan and Ruano, 2014), while it is projected that by 2050, for the sub-region of Mexico and Central America, there could be between 1.4 to 2.1 million climate refugees (Rigaud et al., 2018).

While migration can contribute to improving livelihoods, it is also associated with social exclusion, poverty, and marginalization, especially among youth, leaving them vulnerable to gang recruitment. An example of this is in the Western Highlands, where due to climate-driven livelihood insecurity in many households and high levels of poverty, there has been a rise in migration to the U.S. to seek alternative livelihood options (Nett and Ruttinger, 2016; Clare, 2020). Many of these migrants however are deported and sent back, and



subsequently, the lack of reintegration programmes leaves them vulnerable to petty crime and recruitment into organized criminal groups and gangs (Worby 2013; Nett and Ruttinger, 2016).

Lastly, similarly, to the previous pathway, participants noted that unequal access to natural resources, as well as insecure land tenure, also play an important role in this feedback process, as they also affect the adaptive capacity for smallholder farmers in coping with climate impacts on rain-fed subsistence farming.

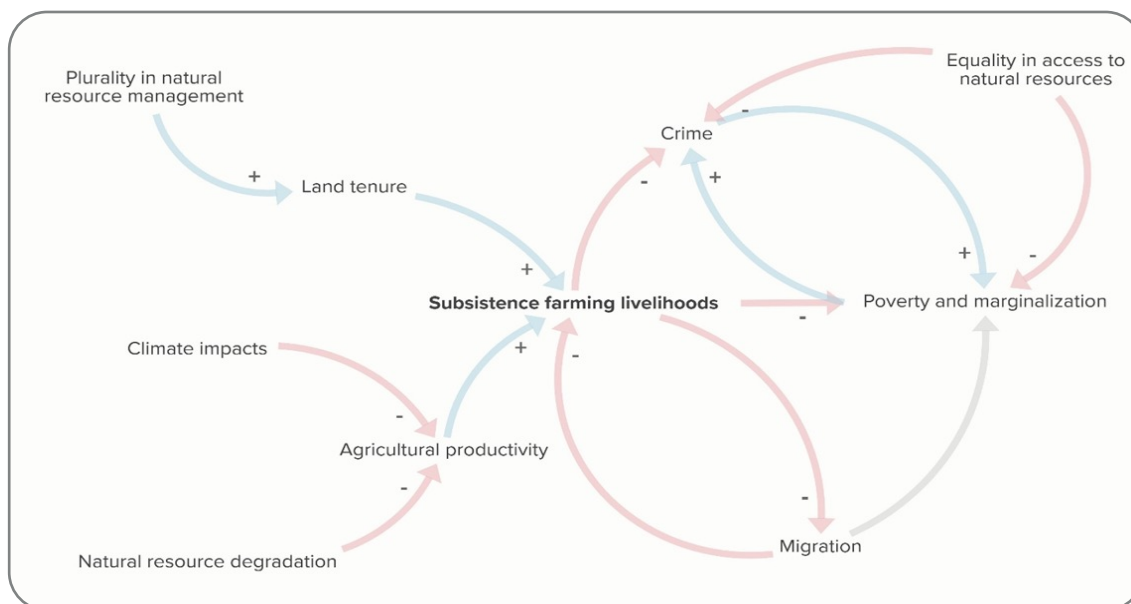


Figure 3: The nexus between climate impacts and subsistence farming livelihoods

### 3. Food insecurity and social unrest

The impacts of climate change on rain-fed subsistence agriculture, not only exacerbate livelihood insecurity, but also food insecurity. As subsistence agriculture is eroded through extreme weather events, increasing temperatures, and prolonged dry spells, further degrading natural resources, the supply of food is reduced. Consequently, it increases food prices, and decreases the consumer’s purchasing power (Milan and Ruano, 2014). This especially affects poorer populations, who spend large sums of their income on basic staple commodities (mainly maize and beans), as climate-related food price spikes affect the affordability of food. At the same time, subsistence farmers, who face poorer yields or failed harvests, are unable to attain sufficient food from their farms, forcing them to depend on off-farm sources of food and seek other forms of employment to reduce food insecurity (Lopez-Ridaura et al., 2019).

Malnutrition, food, and nutritional insecurity affect more than half of the Guatemalan population. The causes of these problems are multiple and environmental factors are key to food production and access, but are compromised by levels of environmental degradation and contamination, pests and diseases affecting crops, disasters, and the effects of climate variability and change such as droughts, high temperatures, frosts and rainfall outside expected patterns (Arrecis, 2021). Many areas of Guatemala, in particular, subsistence farmers living in the departments of Quiché, Huehuetenango, Chimaltenango, Totonicapán,

Sololá and Quetzaltenango, already face food insecurity during the mid-summer drought period contributing to low productivity, which correlates with the most severe food insecurity rates of the year (Laderach et al., 2021; FEWS NET, 2022). For instance, in 2022, a record number of 4.6 million people were projected to be highly food insecure during the June-September dry period (IPC, 2022). Hence, as droughts become more frequent and intense, it is expected to further exacerbate food insecurity and malnutrition. It is not only droughts however that affect food security, rising temperatures also lead to more cases of pests and diseases undermining crop productivity (Avelino et al., 2015), while extreme weather events, such as tropical cyclones and floods are also expected to increase in frequency (Arnoldo Bardales et al., 2021), which can further damage agricultural production. For example, the Julia tropical cyclone in 2022, affected up to 147,000 harvest hectares (OCHA, 2022).

Climate change however was not perceived by participants as having a direct impact on food insecurity in the country, but rather as exacerbating existing socioeconomic vulnerabilities such as environmental degradation, insecure land tenure, poverty and marginalization, which can lead to social unrest and mobilization, mainly against the state. This social discontent is aggravated by tensions over natural resources arising from extractivist projects, mainly linked to mining and hydroelectric projects, which have contributed to increased polarization and conflict and which, in turn, are sometimes linked to the degradation of ecosystems and natural resources. This causal connection is also evinced from recent findings that illustrate how conflicts in Guatemala, including protests and riots, are a product of food insecurity and basic social needs not being met, which are heightened by the impacts of climate change on staple crop production (CGIAR and WFP, 2021).

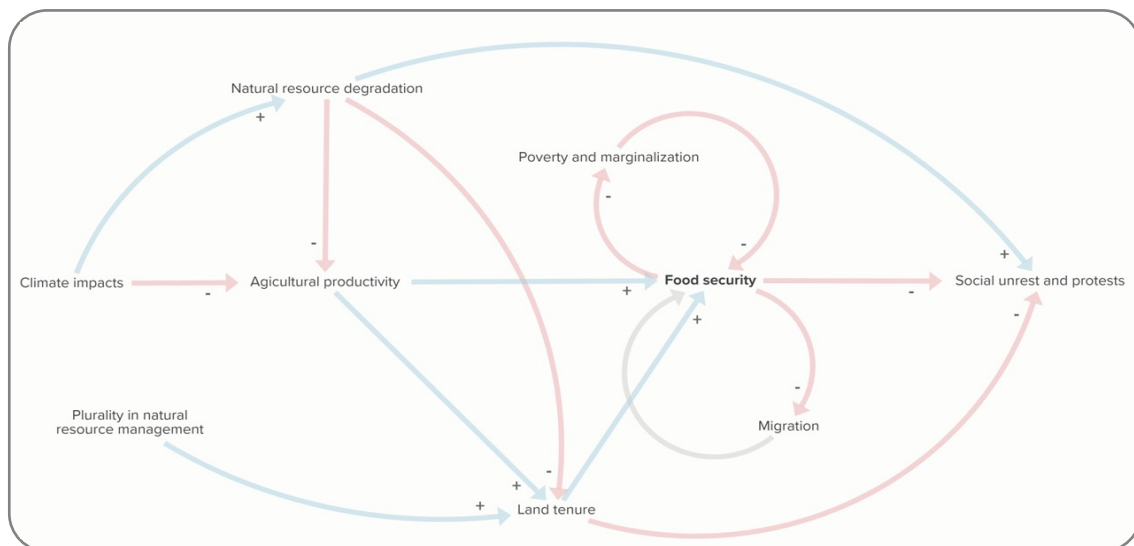


Figure 4: The nexus between climate impacts and food security

#### 4. Compounding impacts of climate change and insecurity on institutional capacity

The simultaneous presence of climate impacts and insecurity dynamics, such as conflicts over natural resources, crime and gang violence, is thought to diminish the capacity of political institutions, at all levels, to cope with these challenges. Firstly, the costs of climate change solely in terms of losses and damages due to disasters are extremely high. For instance, the Eta and Iota hurricanes cost the country 6 billion GTQ (around USD\$770 million), devastating not only private property and harvests, but also national and local infrastructure, including roads, bridges, public buildings, schools and health infrastructure (IFRC, 2022). From the 1998 Hurricane Mitch to the 2021 Eta and Iota hurricanes, damages cost more than Q49 billion (US\$6 billion) (SEGEPLAN, 2022). This undermines the government's ability to provide basic services to the population, which are already strained, as it faces the additional challenges of providing emergency food aid, infrastructure reconstruction and other disaster responses (Nett and Ruttinger, 2016).

Government institutions at the territorial and national levels are not yet prepared to face the social problems arising from the effects of climate change and the increase in violence and citizen insecurity. There is a lack of preparedness and capacity to respond to the occurrence of extreme climate events. The lack of planning to address different social phenomena weakens institutions, which can be exploited by criminal groups and organized crime. These groups take advantage of the government's inability to provide these basic services, especially security, to fill the void. For example, narco-traffickers have developed alternative state-like structures filling the void left by the state, gaining local support and expanding their illicit activities, while organised criminal groups have taken advantage of operating in zones that have restricted access due to disasters, further undermining state legitimacy (Nett and Ruttinger, 2016; Fetzek, 2009).

These patterns of climate impacts were reported to affect the government's ability to perform its state obligations, thereby threatening the legitimacy of institutions towards Guatemalan constituents and creating a vicious feedback loop, as this in turn aggravates social instability and climate change-related effects.

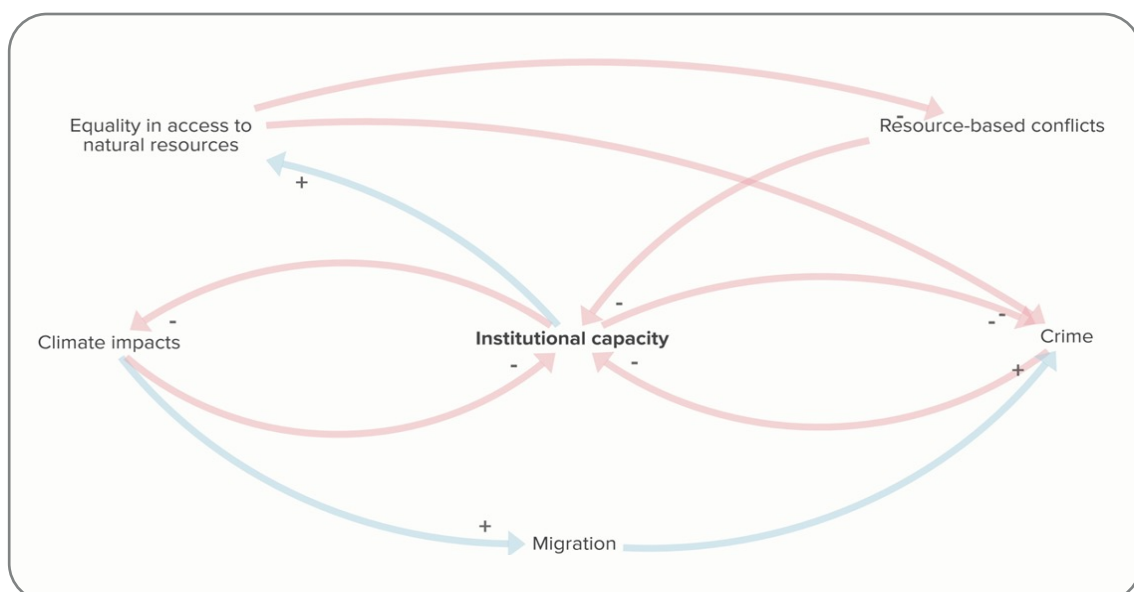


Figure 5: The nexus between climate impacts and institutional capacity

## 5. Migration, displacement, and associated security risks

Migration drivers are determined by a multiplicity of climate and non-climate related factors such as social and gender inequality, poverty, marginalization, ethnic discrimination, poor access to education and employment opportunities, limited access to credit, violence and insecurity, and others related to climate (IOM & WFP, 2021). The effects of climate change on the decision to migrate can have a direct impact, as in the case of forced displacement due to the impact of extreme weather events, for example, the occurrence of tropical storms Eta and Iota in 2020. However, it can also influence other migration drivers, such as the loss of agriculture-based livelihoods. There is a positive association between migration and drought episodes (Hernandez et al. 2023). The loss of jobs and income and lack of alternative income-generating activities raises the possibility for affected individuals and households to search for alternative incomes elsewhere. For instance, the 2014-2015 and 2018 droughts in Guatemala, which led to increased hardship for agricultural workers, acted as a major driver of increased migration to the U.S. (Bermeo et al., 2022; Olivera et al., 2021).

Migration can act as a coping mechanism and has been a strategy for many Guatemalans to adapt to the impacts of climate change and can have positive effects on both places of origin and destination areas. For instance, in 2021, personal remittances from migrants contributed to 17.9% of GDP in Guatemala (World Bank, 2021). Besides migrating abroad to the U.S., internal migration to urban areas, such as Guatemala City, has become one of the most frequent migration routes used to diversify livelihoods and income and is projected to be a climate in-migration hotspot (Rigaud et al., 2018).

Migration, however, also comes with human security risks, as people on the move are vulnerable to human trafficking, robberies, human rights abuses and violence, kidnapping, extortion, gender-based violence and even death in both transit and destination countries (Hernández Bonilla et al., 2018; IOM, 2018; Selee et al., 2022; IOM and WFP, 2022). Additionally, migrants, displaced populations, and refugees are vulnerable to poverty, social marginalization and limited income opportunities. The country's large cities, where these people tend to migrate to, are the places with the highest incidence of crime, with the presence of maras and gangs. This may make them more vulnerable to the impacts of climate change and more likely to join gangs, organized crime or other illicit activities as a means of survival (Albaladejo and Lasusa, 2017; Nett & Ruttinger, 2016). At the same time, crime, insecurity, and violence itself can lead to forced migration, as both livelihood insecurity and violence act as migration drivers (Nett and Ruttinger, 2016).

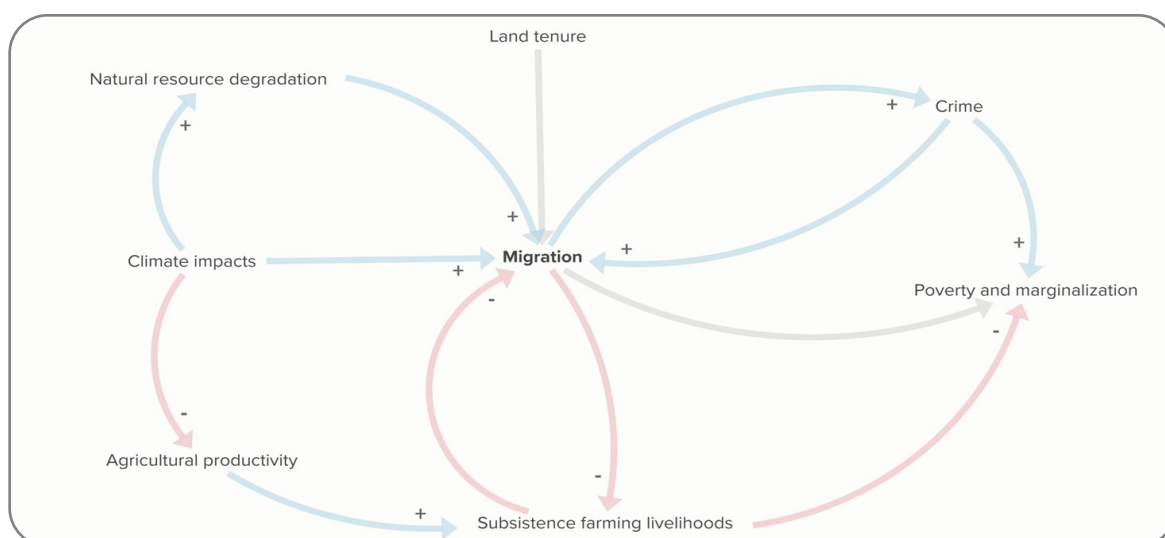


Figure 6: The nexus between climate impacts and migration

## 6. Reduction in adaptive capacity due to insecurity

It is important to recognize that the compounded risks of conflict and insecurity as a result of climate extremes and variability represent a one-sided understanding of climate-related security risks. Just as exposure to climate hazards under a context of high vulnerability can undermine human security and exacerbate the risk of conflict, conflicts also have a significant effect on the well-being of affected populations, increasing their vulnerability to future climate hazards (Buhaug and Uexkull, 2021). This reinforcing feedback loop can potentially trap societies in a “vicious circle” of increased vulnerability and fragility, whereby the presence of conflict and insecurity further undermine their capacity to adapt and cope with the effects of climate extremes and variability, while the impacts of climate change worsen the underlying drivers of conflict (Buhaug and Uexkull, 2021).

Additionally, while insecurity threats such as conflicts over natural resources, crime, violence and the risks associated with human mobility feed back on one another, they can also exacerbate climate-related vulnerabilities, such as environmental degradation, unequal access to natural resources, the precarity of subsistence farming, strained institutional capacity, as well as poverty and marginalization (Medina et al., in process).

This connection was perceived by participants who noted that the presence of insecurity variables reduced the capacity of Guatemalans to cope with the impacts of climate change and that this creates a vicious circle. For example, in Guatemala, there have been numerous conflicts over the access to natural resources due to the growth in the extractive industry and lack of consultation with local communities and its impacts on access to land and water such as in the case of ‘El Tambor’ mining project, creating social unrest and protests (Climate Diplomacy, n.d.) This in turn weakens the government’s legitimacy and therefore capacity to access these areas to mitigate climate impacts, increasing climate vulnerability.

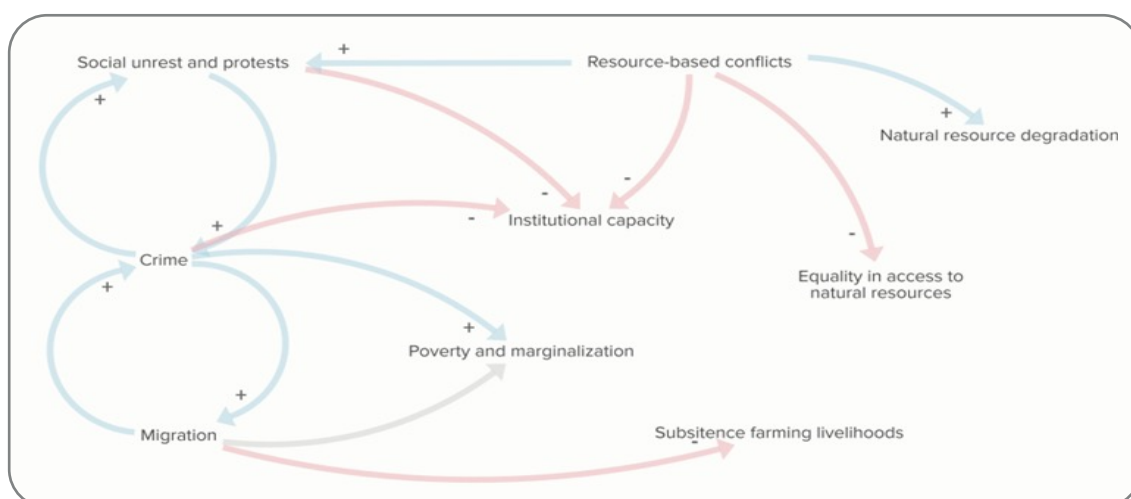


Figure 7: The nexus between climate impacts, adaptive capacity, and insecurity

## SECTION 3:

# Policy and Institutional Strategies to Foster Climate Security Cooperation in Guatemala

Climate-related security risks in Guatemala are very much a product of – and embedded within – an increasingly complex governance landscape. These risks can be best understood as cascading processes of change occurring over different spatial and temporal scales, dotting a complex landscape in which causes, and effects are exceptionally difficult to detect and frequently interconnected into feedback-type relationships. Effective governance in the face of these risks thus requires recognition of the multidimensional, and often multi-scalar, nature of how climate-related security risks emerge, as characterized by unpredictability and, in some cases, unknowability.

Considering the critical importance of breaking down policy silos between the climate and security sectors, the recommendations presented here are intended to be short-term strategies for strengthening a climate security agenda at the national and subnational levels. They do, however, embody high-level recommendations based on an initial conversation with representatives of practitioner organizations working at the intersection of the climate and security nexus. Further coordination between sectors, levels, and stakeholders is thus proposed to translate the recommendations posed here into concrete actionable plans that build upon a diverse set of capacities, viewpoints, and interests. The formation of a community of practice is identified as a necessary first step toward more vertically and horizontally integrated and responsive climate security governance. Such a community should deliberate, implement, and design adaptive approaches that explicitly define climate adaptation as an instrument for peace.

### 1. Evidence and research gaps

Workshop participants emphasised the importance of improving and expanding current empirical research on the links between climate change, peace, and security in Guatemala. Given the current diversity of, sometimes contradictory, findings and the dispersion of research approaches which are hard to integrate into coherent policy narratives, empirical research to date has been unable to offer comprehensive perspectives on the climate, peace, and security nexus. Stakeholders identified ways to fill existing research and evidence gaps by:

- **Understand climate-related security risks beyond a homogenous view of conflict.** Identify how different effects of climate impacts can potentially exacerbate the risk of various forms of conflict, such as territorial or natural resource-based disputes, crime, drug trafficking or recruitment by criminal groups, social discontent towards the government, among others, in a way that the causal connections between climate and various forms of instability are distinguished through their disaggregated intermediated factors.

- **Developing further evidence on the indirect linkages between climate, peace, and security by expanding on the role of migration and displacement, political drivers of conflict, the role of extractive natural resource use, or loss of livelihoods.** Most of the current research is focused on the increase in resource-based conflict because of climatic variability and extremes; however, such a focus risks undermining an understanding of the complexities of the entire climate, peace, and security nexus, which involves various economic, social, political, and environmental factors.
- **Focus research on the intermediate effects of different forms of human mobility and unequal access to natural resources use over climate-related security risks.** Irregular migration, forced displacement, and rural-urban mobility played a role in all of the climate security causal pathways identified by participant stakeholders. Similarly, institutional structures responsible for defining access to and use of natural resource by various social groups was also deemed a key intermediate variable in linking climate and social instability. The specific forms in which these connections occur, however, were deemed as still not sufficiently understood to be able to develop comprehensive strategies.
- **Strengthen research on gender and climate security through intersectional approaches.** The gender dimensions of climate security in Guatemala need to be further investigated, especially as gender roles are changing rapidly in both rural and urban settings. Consistently applying and mainstreaming an intersectional approach to understanding risks and resilience with regards to climate-related security risks was deemed crucial. This facilitates consideration for the role of different social groups in mitigating risks to social instability through resilience-building.
- **Building upon community knowledge to conceptualise climate, peace, and security linkages.** It is critical to integrate, to a much greater extent, the experience of those living and working in areas subject to emerging climate-related security risks to co-produce knowledge, set research agendas, help prioritize efforts and investments, and re-orient the focus of climate security. This practical framework can be fostered by incentivizing research conducted through participatory approaches and ensuring that the results are capitalized towards advising programmatic and policy strategies together with the communities participating in the research process.
- **Distinguish between regional scopes for climate, peace, and security linkages.** It is necessary to develop a more nuanced understanding of how climate interacts with instability at the level of each locality and department of Guatemala. Conflict maps need to be developed and overlaid with climate vulnerability maps in order to identify priority regions in the country. Likewise, the mapping of natural resources at local levels in relation to climate threats and community livelihoods can support the development of peace and resilience building strategies that rely on sustainable and equitable natural resource management. This work should be conducted under the principle that there are no single scalable solutions capable of mitigating climate-related security risks throughout Guatemala.
- **Expand climate modeling capabilities to gain a better understanding of future risks** by linking current dynamics of climate security with future hazards, while emphasizing the uncertainties inherent in modeling work, as well as the complex and non-linear interactions that are essential to decision-making processes.
- **Foster research focusing on developing good practice recommendations for climate, peace, and security programming within climate adaptation efforts.** Developing comprehensive understandings of how climate and instability risks are potentially interlinked in Guatemala is only one side of the required

efforts. It is furthermore necessary to enhance research around the mechanisms and programmatic strategies through which climate adaptation and resilience building initiatives could act as instruments for peacebuilding. In this regard, it is crucial to build upon already present adaptive capacities within communities, and design supporting programmes that facilitate collective action based on local cultural particularities, rather than imposed vision of security and resilience. It is also proposed to develop a national-level repository of climate and peacebuilding strategies that effectively integrate a climate security perspective, prioritising actions in line with prevention and early warning systems.

## 2. Policy and governance

Implementing participatory spaces for collective conversations can support the establishment of policy networks composed of interdependent actors who can then learn to operate in greater synergy, thereby effectively becoming a system. Given that governance frameworks for climate change and peace have traditionally evolved independently due to inadequate cross-sectoral collaboration, a significant degree of institutional learning is required to effectively integrate climate security as a topic of concern in Guatemala's policies and governance systems. To modify current practices for climate adaptation and peacebuilding towards integrating a climate security sensitive approach, governance efforts must adopt conscious strategies to develop multi-actor agreements and shared perceptions of climate, peace and security linkages that span across policy sectors and political-administrative levels. Recognizing this challenge, workshop participants emphasized the need to implement efforts towards developing a community of practice for Climate Security in Guatemala that fosters multi-level governance approaches. Some initial high-level actions proposed by workshop participants include:

- **Map existing legal and policy frameworks with relevance to climate and security** and assess their coherence in terms of climate security. Map existing action plans that may be relevant to climate security within climate and peace strategies at regional, national and sub-national levels, such as SICA's Regional Climate Change Strategy, or Guatemala's National Climate Change Plan (PANCC, which includes a chapter on human mobility).
- **Conduct a gap analysis for the integration of climate security into the policy framework** of relevant sectors, including climate change, peacebuilding, rural and urban development, human mobility, among others. It is necessary, in this regard, to define key priorities and actions towards integrating climate security as a topic of concern in updating regional and national policies. Actions in this direction could build on the six climate security pathways identified by workshop participants (section 2), which embody the priority areas of concern collectively evidenced by Guatemalan stakeholders currently working at the intersection of climate and security. Priorities for action and intervention to effectively address the complex linkages between climate, peace and security could, for instance, be designed to mitigate some of the key contextual factors that render communities more vulnerable to climate-related security risks and impacts, such as unequal access to natural resources or insecure land tenure. This work should be cross-sectoral and at different levels ranging from national to departmental, municipal and community levels, also including consultation with indigenous peoples and the implementation of the Escazu Accords as an essential part of the security agenda.
- **Identify existing multi-stakeholder platforms at national and sub-national levels** that may serve as a base towards integrating a climate security focus on both climate action and peacebuilding strategies.



These spaces should serve as potential meeting places for the existing communities of practice for climate change adaptation, disaster risk reduction and management, and peace and security. Initially identified multi-stakeholder spaces deemed suitable to foster a climate security agenda in Guatemala include:

- the Inter-sectorial table on climate change and human mobility, hosted by the National Climate Change Council;
- Guatemala's Climate Change Science System;
- Agro-climatic Technical Tables (MTA), which are now present in all departments.
- **Conduct a needs assessment of the designated multi-stakeholder platforms to identify actions required for increasing their capacity to include a climate security perspective.** This includes accounting for the needs of the platforms and their members in terms of stakeholder engagement, technical capacity on climate security, leadership, resources, and capacity for change as well as developing recommendations and action plans to increase the capacity of these spaces to effectively integrate climate security as a topic for strategic action.
- **Develop a multi-level governance strategy for the participating platforms** that ensure the effective participation and recognition of department- and community-level priorities for action at the intersection of climate, peace, and security. To facilitate this, governance systems relating to both climate action and peace and security at sub-national levels should be examined to identify where current cross-sectorial integration mechanisms and processes are located, and to pinpoint local civil society groups that could be included in the community of practice. A consultation and dialogue process should thereafter be carried out with the objective of defining how and where multi-level coordinating structures can be made more effective and adaptive.
- **Co-develop an agenda and clear terms of reference for the community of practice** that indicate coordinating mandates, priority areas of action and mechanisms for collaboration and building stakeholder capacity. This would imply, identifying channels for sharing experiences and information and developing a knowledge management system that fosters capacity building at the network level. More specifically, it includes defining indicators and monitoring systems that allow practitioners and affected communities to understand the impacts of interventions over the climate-peace and security nexus.

### 3. Programming strategies for climate adaptation

There is a need to design climate adaptation programmes and initiatives that proactively contribute to sustaining peace. Similarly, peace and security actors should undertake programme planning with a climate perspective. Such efforts should crucially be responsive to specific local contexts and needs. Integrating climate and security risk analyses into the design of resilience projects with peace co-benefits across Guatemala therefore demands significant engagement and coordination across sectors and scales of governance, along with increasing capacity assessments where needed. These recommendations focus on facilitating continuous engagement between climate and peace-related actors to identify cross-cutting and synergistic strategies that build upon existing programming practices. Actions in line with this objective

include:

- **Map existing climate action and peacebuilding programmes throughout Guatemala that may be relevant to addressing climate security risks.** A potential starting point is to identify resilience and peacebuilding projects that act at the intersection between the six climate security pathways outlined above, and that focus on a diversity of settings, such as urban areas and different agroclimatic regions. This would ensure that efforts towards developing climate security-sensitive programming practices achieve a wider set of co-benefits and peace dividends.
- **Conduct evaluation processes of selected projects at the climate, peace and security intersection.** Carry out impact assessment processes of climate action programmes and policies with a focus on indicators for sustainable peace, such as building social cohesion, strengthening capacities for conflict resolution, adaptive capacity through collaborative action, shared identities around territorial traits, among others. Derive programmatic lessons for addressing climate security risks with a localized approach in the Guatemalan context.
- **Strengthen peacebuilding and climate actors' capacity to conduct conflict assessments and develop project proposals that integrate a climate perspective and vulnerability assessments that account for conflict risks respectively.** Both sectors should be supported in implementing conflict-sensitive approaches to resilience building and natural-resource management strategies that protect rural livelihoods. This includes technical coordination and collaboration between peace and climate actors during programmatic planning and implementation. The latter should also account for complex assessments of the need to complement long-held practices and assumptions in both sectors, such as operating and evaluating metrics, trade-offs between programmatic priorities, sector level intelligence, and formal and informal norms that govern network dynamics.
- **Build upon a better understanding of community-level risk coping and conflict management strategies towards developing climate security action plans.** Climate-related security risks are frequently conceptualized through technocratic perspectives of system dynamics, favouring prescriptions for action that overly focus on high-level governance priorities rather than human security needs as experienced in everyday life. This highlights the need for conflict-sensitive interventions that account for people's self-articulated visions of risk, resilience, and peace. During programming processes, there is a need to incorporate approaches of linking weakened traditional institutions, youth preferences for resilience building and development, and formal mechanisms for peacebuilding and security.
- **Channel international cooperation and public funding towards conflict-sensitive climate adaptation.** Formalise resilience-building programmes and projects with a focus on climate, peace and security, emphasising a multi-stakeholder approach that draws on diverse forms of expertise and knowledge from the climate and peacebuilding sectors.

#### 4. Finance

Understanding that conflict-affected areas receive significantly less climate action investment than those viewed as secure (UNDP, 2021), workshop participants acknowledged the need for investments with co-benefits for both adaptation and peacebuilding across **Guatemala's hotspots for climate-related security risks**. Even though climate adaptation action has traditionally avoided conflict-affected regions due to their

high-risk profile and security concerns, there is an opportunity to link investment initiatives with climate security hotspots. Building on the workshop's outputs, investment planning procedures are needed to co-design climate security investments together with local communities and multiple stakeholders that align incentives across the humanitarian-development-peace nexus with an emphasis on the following:

- **In violence-affected areas, climate-smart agricultural investments can help mitigate the drivers of violence as related to scarce natural resources and insecure livelihoods.** The development of climate-resilient value chains for production systems and subsistence agriculture can increase household incomes and food security, improving adaptive capacity to both climate and insecurity risks. Financial products with built-in environmental insurance components (such as those that rescind the need for repayment if a pre-determined 'trigger point' in climate conditions is reached) can shift economic risk away from producers—who are already bearing the brunt of environmental risk.
- **Rather than create new and adjacent organizing structures, climate security practitioners should leverage pre-existing networks and multi-stakeholder platforms to support the development, implementation, and scaling of financial interventions.** Guatemala's rich patchwork of actors and organizations who are working towards climate adaptation and peacebuilding are a resource for climate security practitioners that should be maximized. Participation in multi-stakeholder platforms can help mainstream climate security concerns, raising awareness of climate security risks across disciplines and incorporating disparate forms of knowledge production. In this regard, workshop participants identified the Technical Agroclimatic Tables across Guatemala's departments as a suitable space to explore investment options for resilience building in violence-prone regions.
- **Enhance the grant writing and fundraising skills of organizations working at the intersection of climate, peace and security.** This action entails mapping funding partners and organizations, such as the Green Climate Fund (GCF), that are increasingly interested in addressing climate-related security risks through climate action, as well as learning from previous and current projects funded in other countries and regions.
- **Climate security should feature more prominently in climate action strategies and plans.** A dedicated budget line for climate security in budgets allocated to climate action across levels of government can help focus funds where they are needed. Tagging can help policymakers identify climate action investments at the national and sub-national levels that may need to be made climate-sensitive, and vice versa. In this sense, it is necessary that the different policy mechanisms for climate action in Guatemala account for climate-related security risks when planning for finance. This includes the National Action Climate Change Plan.

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## ANNEX 1:

# Workshop methodology

### **SESSION 1 – LINKAGES BETWEEN CLIMATE AND SECURITY: DEVELOPING A COMMON VISION**

The purpose of this session was to facilitate an open-ended discussion around indirect linkages between climate change impacts and risks of social instability. To capture these complex links, the workshop sessions were designed to identify socio-economic, environmental, cultural, and political variables that act as intermediate factors potentially connecting climate hazards and conflict, while assessing the potential relations between them. First, participants were asked to reflect upon i) the main climate hazards faced by Guatemalan populations; ii) the environmental, socio-economic, cultural, and political factors that may act as root causes of vulnerability towards climate hazards; and iii) the primary manifestations of conflict and societal instability throughout the country. Second, the group focused on identifying the links between the most relevant components defined for each of the three categories, as perceived by each participant in their context of work. The outputs from this first session were used to create schematic representations of the various climate security pathways as perceived by participating stakeholders.

### **SESSION 2 – ACTORS AT THE INTERSECTION OF CLIMATE AND SECURITY**

The main goal of this session was to identify the stakeholders acting at the intersection between climate change impacts and social insecurity, along with the means through which they currently engage with one another. The discussion focused predominantly on examining whether participating organizations – at the sub-national, national, and regional levels – have a mandate relevant to mitigating climate-related security links as identified in session 1, and the way they act upon these. Following the identification of the actors and entities operating within the governance system in question, the group focused on proposing spaces for engagement and coordination, such as multi-stakeholder platforms, that may serve as an institutional base to foster a climate security agenda in Guatemala. Once the suitable platforms were identified, participants examined the challenges towards integrating climate security as a matter of concern within these.

### **SESSION 3 – TOWARDS A COMMUNITY OF PRACTICE FOR CLIMATE SECURITY IN SENEGAL?**

For this session, participants build upon the knowledge gained throughout the previous sessions to explore a shared vision of a climate security agenda in Guatemala. The main question posed to the participant was: “What is needed to develop a Community of Practice on Climate Security in Guatemala?”. Participants were asked to jointly develop a set of recommendations towards achieving this goal and propose short-term actions towards 1) building upon existing institutions to foster a community of practice for climate security; 2) updating policy and governance systems through a climate security lens; 3) integrating climate security in programmatic practices for climate and peacebuilding action; and 4) financing climate security action.



## ANNEX 2:

# Workshop participants

- The Alliance of Bioversity International and the International Center for Tropical Agriculture (CIAT)
- CGIAR FOCUS Climate Security
- International Food Policy Research Institute (IFPRI)
- Leibniz Centre for Agricultural Landscape Research (ZALF)
- Ministerio de Ambiente y Recursos Naturales (MARN)
- Ministerio de Agricultura Ganadería y Alimentación (MAGA)
- Secretaria de Seguridad Alimentaria y Nutricional (SESAN)
- Comisión Presidencial por la Paz y los Derechos Humanos (COPADEH)
- Instituto Nacional de Sismología, Vulcanología, Meteorología e Hidrología (INSIVUMEH)
- Comisión Centroamericana de Ambiente y Desarrollo (CCAD)
- Consejo Agropecuario Centroamericano (CAC)
- Instituto Interamericano de Cooperación para la Agricultura (IICA)
- Programa Mundial de Alimentos de Naciones Unidas (PMA)
- Organización de las Naciones Unidas para la Agricultura y la Alimentación (FAO)
- Oficina de Naciones Unidas para la Coordinación de Asuntos Humanitarios (OCHA)
- Programa de las Naciones Unidas para el Medio Ambiente (PNUMA)
- Alto Comisionado de las Naciones Unidas para los Refugiados (ACNUR)
- Organización Internacional para las Migraciones (OIM)
- Programa de las Naciones Unidas para el Desarrollo (PNUD)
- Federación Internacional de Sociedades de la Cruz Roja y de la Media Luna Roja (IFRC)
- Centro de Investigación para la Prevención de la Violencia en Centroamérica (CIPREVICA)
- Fundación Propaz
- SERES
- Instituto Demos
- Asociación de Servicios y Desarrollo Socioeconómico de Chiquimula (ASEDECHI)
- Instituto de Relaciones Internacionales e Investigación para la Paz (IRIPAZ)
- Instituto de Agricultura, Recursos Naturales y Ambiente (IARNA)

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